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INTERVENTO

FONDO COMPLEMENTARE AL PIANO NAZIONALE DI RIPRESA E RESILIENZA PROGRAMMA "SICURO, VERDE E SOCIALE: RIQUALIFICAZIONE DELL'EDILIZIA RESIDENZIALE PUBBLICA"

PROGETTO DI MANUTENZIONE STRAORDINARIA PER IL RESTAURO E RISANAMENTO
CONSERVATIVO DI DUE CASAMENTI A CORTE SITI IN
COMUNE DI BOLOGNA LOCALITA' CIRENAICA.
VIA LIBIA CIV. 29÷51 PER COMPLESSIVI 70 ALLOGGI
DI ERP CON RELATIVE PERTINENZE E PARTI COMUNI

LOTTO **3053/PN_2**

PROGETTO ESECUTIVO

TAV. TAB_20		OGGETTO TABULATI DI CALCOLO CIVICO 49 STATO DI PROGETTO			DATA Settembre 2022	
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TABULATI DI CALCOLO
CIVICO 49
STATO DI PROGETTO



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1 Risultati numerici

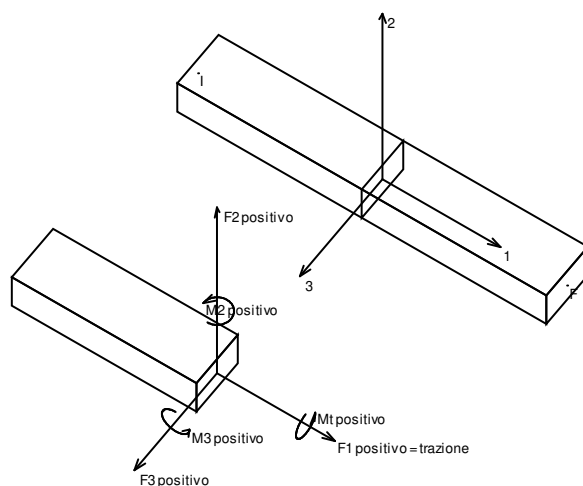
1.1 Sollecitazioni

1.1.1 Sollecitazioni aste

1.1.1.1 Convenzioni di segno aste

Le abbreviazioni relative alle sollecitazioni sugli elementi aste sono da intendersi:

- $F1$ (N): sforzo normale nell'asta;
- $F2$: sforzo di taglio agente nella direzione dell'asse locale 2;
- $F3$: sforzo di taglio agente nella direzione dell'asse locale 3;
- $M1$ (Mt): momento attorno all'asse locale 1; equivale al momento torcente;
- $M2$: momento attorno all'asse locale 2;
- $M3$: momento attorno all'asse locale 3.



La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:

presa un'asta con nodo iniziale i e nodo finale f , asse 1 che va da i a f , assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando la sezione sinistra del punto in cui si è effettuato il taglio (sezione da cui esce il versore asse 1) i parametri di sollecitazione sono positivi se hanno verso e direzione concordi con il sistema di riferimento locale dell'asta 1, 2, 3 (per i momenti si adotta la regola della mano destra).

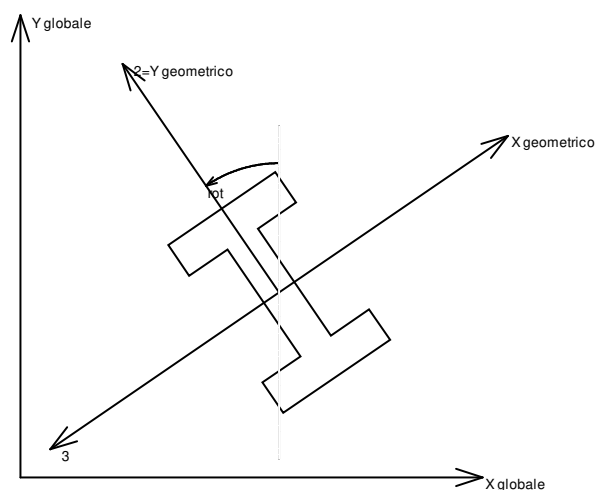
Il sistema è definito diversamente per tre categorie di aste, a seconda che siano originate da:

- aste verticali ad esempio pilastri e colonne;
- aste non verticali non di c.a., ad esempio travi di acciaio o legno;
- aste non verticali in c.a.: travi in c.a. di piano, falda o a quota generica.

Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

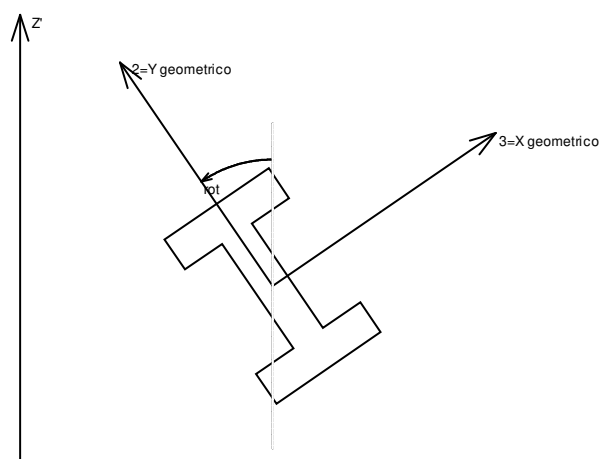


Sistema locale aste verticali



Nella figura si considera l'asse 1 uscente dal foglio (l'osservatore guarda in direzione opposta a quella dell'asse 1).

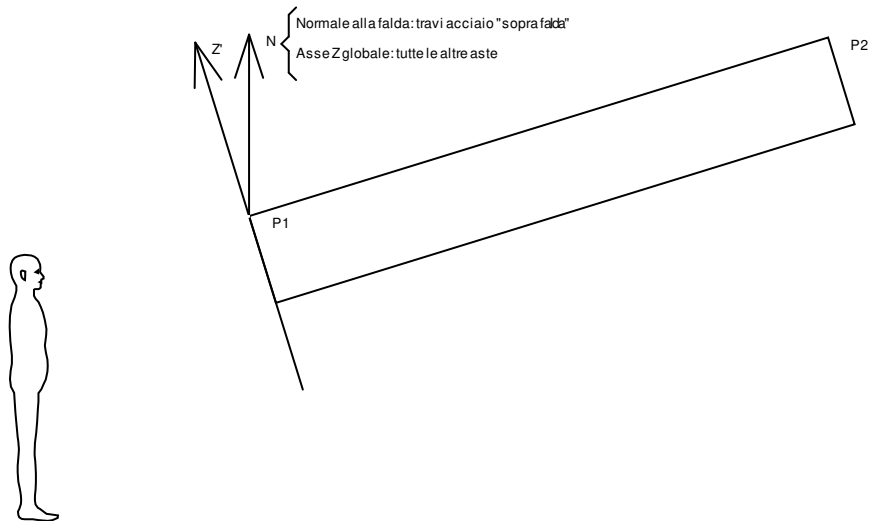
Sistema locale aste non verticali



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1).

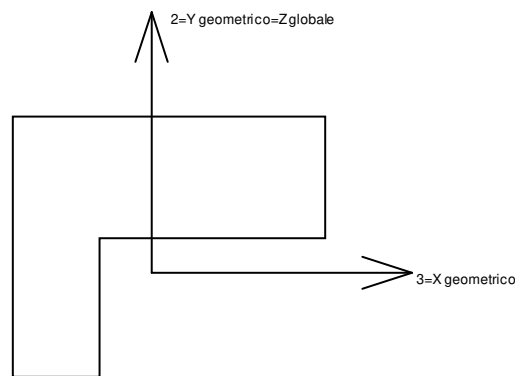
L'asse Z' è illustrato nella figura seguente dove:

- P1 è il punto di inserimento iniziale dell'asta;
- P2 è il punto di inserimento finale dell'asta;
- N è la normale al piano o falda di inserimento;



Z' è quindi l'intersezione tra il piano passante per $P1$, $P2$ contenente N e il piano della sezione iniziale dell'asta.

Sistema locale aste derivanti da travi in c.a.



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. Si sottolinea il fatto che gli assi 2 e 3 non corrispondono agli assi principali della sezione.

1.1.1.2 Sollecitazioni estreme aste

Asta: elemento asta a cui si riferiscono le sollecitazioni.

Ind.: indice dell'asta.

Cont.: contesto a cui si riferisce la sollecitazione

N.br.: nome breve della condizione o combinazione di carico.

Pos.: numero della sezione all'interno dell'asta (tra 1 e 31, dove 1 corrisponde alla sezione al nodo iniziale, 16 è la sezione in mezzera, 31 corrisponde alla sezione al nodo finale).

Posizione: posizione a cui si riferisce la sollecitazione dell'asta.

X: componente X della posizione a cui si riferisce la sollecitazione dell'asta. [m]

Y: componente Y della posizione a cui si riferisce la sollecitazione dell'asta. [m]

Z: componente Z della posizione a cui si riferisce la sollecitazione dell'asta. [m]

Soll.traslazionale: componente traslazionale della sollecitazione dell'asta.

F1: componente $F1$ della sollecitazione dell'asta. [daN]

F2: componente $F2$ della sollecitazione dell'asta. [daN]

F3: componente $F3$ della sollecitazione dell'asta. [daN]

Soll.rotazionale: componente rotazionale della sollecitazione dell'asta.

M1: componente $M1$ della sollecitazione dell'asta. [daN*m]

M2: componente $M2$ della sollecitazione dell'asta. [daN*m]

M3: componente $M3$ della sollecitazione dell'asta. [daN*m]

Sollecitazioni con sforzo normale (N) minimo

Vengono mostrate le sole 5 aste più sollecitate.



Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
56	SLV 13	31	32.3	17.93	-1.6	-23031	-8562	1413	-594.53	2017.66	-3589.92
33	SLV 8	1	24.53	22.2	-1.6	-17872	6635	2079	-6.05	927.57	-2265.32
57	SLV 13	31	31.9	17.95	-1.6	-16106	-5349	1170	-169.75	565.74	-852.93
44	SLV 7	1	29.47	22.7	-1.6	-15351	4797	-163	-22.37	-1000.12	-69.9
43	SLV 7	1	29.86	22.7	-1.6	-14499	3759	-368	-10.59	-903.65	344.94

Sollecitazioni con sforzo normale (N) massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
58	SLV 4	31	31.5	17.97	-1.6	18064	-2632	-335	-158.4	-148.02	-377.67
57	SLV 4	31	31.9	17.95	-1.6	18006	-3691	-291	-193.71	14.29	-1596.37
59	SLV 4	31	31.1	17.99	-1.6	17862	-1737	-357	-132.74	-320.02	423.93
60	SLV 4	31	30.71	18.01	-1.6	17394	-1067	-372	-125.94	-209.66	851.23
61	SLV 4	31	30.31	18.03	-1.6	16797	-722	-391	-128.29	-205.91	1037.29

Sollecitazioni con momento M2 minimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
110	SLV 12	31	24.49	22.45	-1.6	-1012	-12794	-3920	-280.94	-5655.19	6507.59
121	SLV 12	31	24.26	18.1	-1.6	3786	-2332	-3833	-114.95	-4928.55	-97.06
130	SLV 5	31	33.12	27.16	-1.6	4696	-2300	-3433	-118.16	-4101.31	-1097.74
109	SLV 12	31	24.51	22.82	-1.6	413	-10871	-3831	-104.7	-4017.44	3777.42
77	SLV 5	1	33.37	26.81	-1.6	4199	3265	3787	210.23	-3817.64	-344.24

Sollecitazioni con momento M2 massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
98	SLV 7	31	24.36	26.81	-1.6	-4087	-8970	6072	-480.08	6649.92	-2824.75
99	SLV 7	1	24.73	27.16	-1.6	-5307	9422	-4683	395.08	6173.35	-2940.04
76	SLV 12	31	23.92	18.37	-1.6	5641	-756	3715	100.36	4819.15	-800.32
111	SLV 8	1	24.49	22.45	-1.6	-13262	10032	-4704	97.69	4648.79	7583.35
100	SLV 7	1	24.71	26.75	-1.6	-5232	6423	-4137	37.15	4642.2	-4563.27

Sollecitazioni con momento M3 minimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
56	SLU 81	1	32.9	17.9	-1.6	-4733	-10805	974	-469.42	1177.12	-12108.25
101	SLU 82	31	24.67	25.97	-1.6	-1379	389	-832	547.97	594.73	-7842.86
100	SLU 82	31	24.69	26.36	-1.6	-995	2934	-1043	595.02	1028.3	-7766.79
102	SLU 82	20	24.66	25.72	-1.6	-1896	13	-711	205.02	262.05	-7579.78
103	SLU 82	8	24.64	25.48	-1.6	-2440	-7	-609	-178.8	-51.03	-7254.45

Sollecitazioni con momento M3 massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
110	SLU 81	31	24.49	22.45	-1.6	-8260	-18685	234	-378.82	-2139.3	12899.95
111	SLU 81	1	24.49	22.45	-1.6	-10895	17322	-2163	204.72	932.91	12653.68
109	SLU 81	31	24.51	22.82	-1.6	-4930	-15883	111	-107.19	-1104.54	7566.24
122	SLU 82	1	33.12	22.45	-1.6	45	10561	248	112.58	-167	7127.48
112	SLU 82	1	24.46	22.04	-1.6	-7626	13877	-2076	25.13	1321.07	6901.32

1.1.2 Sollecitazioni gusci

1.1.2.1 Convenzioni di segno gusci

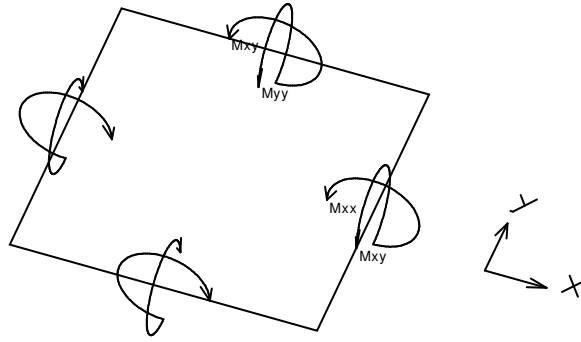
Sono individuate distinte convenzioni di segno in relazione al tipo di elemento strutturale a cui il guscio si riferisce:

- convenzione per gusci non verticali, originati ad esempio da piastre e platee;
- convenzione per gusci verticali, originati ad esempio da pareti e muri.

Convenzione di segno per gusci non verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse x e y contenuti nel piano dell'elemento e terzo asse (z) ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse x ha proiezione in pianta parallela ed equiversa all'asse globale X. Nel caso di piastre orizzontali (caso più comune) gli assi x, y e z locali all'elemento sono paralleli ed equiversi agli assi X, Y e Z globali. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione.

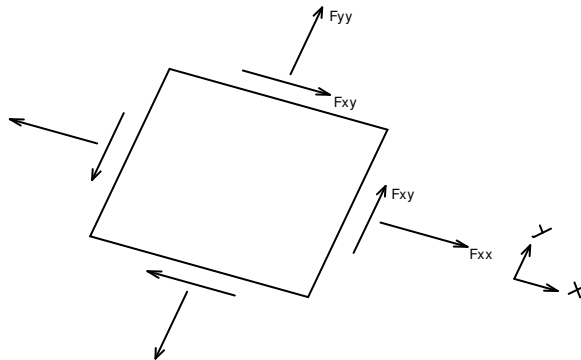
In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione Mxx, Myy, Mxy.



Si definiscono:

- M_{xx} : momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- M_{yy} : momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale y (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- M_{xy} : momento torcente [Forza*Lunghezza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione F_{xx} , F_{yy} , F_{xy} .



Si definiscono:

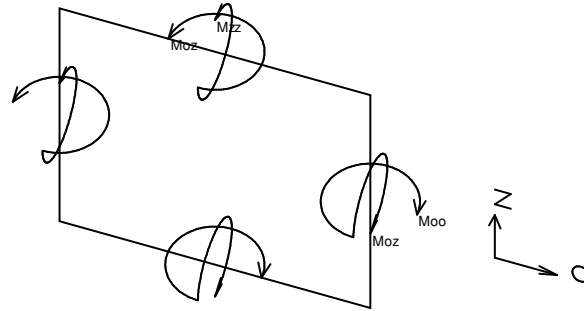
- F_{xx} : sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- F_{yy} : sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale all'asse y (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- F_{xy} : sforzo di taglio [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Vengono riportati inoltre i tagli fuori dal piano dell'elemento guscio:

- V_x : taglio fuori piano [Forza/Lunghezza] applicato al bordo di normale parallela all'asse x ;
- V_y : taglio fuori piano [Forza/Lunghezza] applicato al bordo di normale parallela all'asse y .

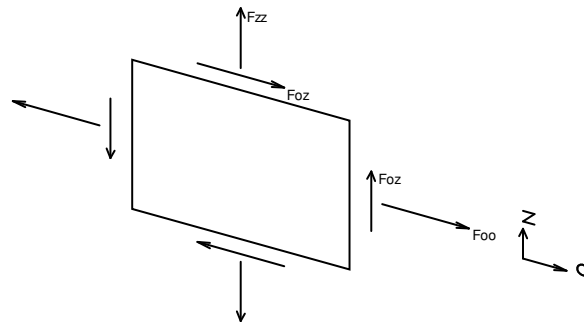
Convenzione di segno per gusci verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse O (ascisse) e z (ordinate) contenuti nel piano dell'elemento e terzo asse ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse O è orizzontale e l'asse z parallelo ed equiverso con l'asse Z globale. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione. In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione M_{xx} , M_{yy} , M_{xy} .



- Moo: momento flettente distribuito $[Forza * Lunghezza / Lunghezza]$ applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Mzz: momento flettente distribuito $[Forza * Lunghezza / Lunghezza]$ applicato al bordo di normale parallela all'asse z (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Moz: momento 'torcente' distribuito $[Forza * Lunghezza / Lunghezza]$ applicato sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell con indicato il sistema di riferimento i parametri di sollecitazione Foo, Fzz, Foz sono rispettivamente:



- Fzz: sforzo tensionale distribuito $[Forza / Lunghezza]$ applicato al bordo di normale parallela all'asse z (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foo: sforzo tensionale distribuito $[Forza / Lunghezza]$ applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foz: sforzo tagliante distribuito $[Forza / Lunghezza]$ applicato sui bordi (verso positivo indicato dalla freccia in figura).

Vengono riportati inoltre i tagli fuori dal piano dell'elemento guscio:

- Vo: taglio fuori piano applicato al bordo di normale parallela all'asse O;
- Vz: taglio fuori piano applicato al bordo di normale parallela all'asse z.

1.1.2.2 Sollecitazioni estreme gusci

Shell: elemento guscio a cui si riferiscono le sollecitazioni.

Ind: indice del guscio.

Cont.: contesto a cui si riferiscono le sollecitazioni.

N.br.: nome breve della condizione o combinazione di carico.

Nodo: nodo su cui si basa il guscio a cui si riferisce la sollecitazione.

Ind: indice del nodo.

Sollecitazione: valori della sollecitazione.

M11: componente M11 della sollecitazione del guscio nel nodo indicato. $[daN * m / m]$

M12: componente M12 della sollecitazione del guscio nel nodo indicato. $[daN * m / m]$

M22: componente M22 della sollecitazione del guscio nel nodo indicato. $[daN * m / m]$

F11: componente F11 della sollecitazione del guscio nel nodo indicato. $[daN / m]$

F12: componente F12 della sollecitazione del guscio nel nodo indicato. $[daN / m]$

F22: componente F22 della sollecitazione del guscio nel nodo indicato. $[daN / m]$

V13: componente V13 della sollecitazione del guscio nel nodo indicato. $[daN / m]$

V23: componente V23 della sollecitazione del guscio nel nodo indicato. $[daN / m]$

Sollecitazioni con momento M11 minimo

Vengono mostrati i soli 5 gusci più sollecitati.



Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
1339	SLV 5	1698	-409	7	-57	3328	-246	2004	483	83
1231	SLV 13	1757	-399	10	-100	98	646	-2274	526	67
1230	SLV 13	1757	-398	19	-98	123	656	-1745	532	-52
1343	SLV 14	1701	-396	-21	-42	-164	-1573	-4211	-433	-55
1186	SLV 15	1757	-396	-8	-100	291	1415	-2365	-628	60

Sollecitazioni con momento M11 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
1343	SLV 3	1701	452	12	47	-275	-1026	-2779	547	76
1230	SLV 4	1757	404	-19	104	-420	2292	-2305	-541	78
1231	SLV 4	1757	402	-10	96	-423	2330	-2032	-526	-35
1196	SLV 2	1757	399	17	103	-647	405	-2229	633	56
1186	SLV 2	1757	398	8	95	-719	303	-2104	627	-28

Sollecitazioni con momento M22 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
1015	SLV 10	1938	-240	185	-657	-1991	1492	-7416	-790	1160
345	SLV 11	942	-101	33	-605	-750	812	-3459	-253	588
338	SLV 12	943	-71	-33	-588	-2040	-1787	-9764	310	584
1050	SLV 10	1807	-10	22	-545	5	-585	-1716	-141	284
1032	SLV 10	1807	-9	28	-544	-40	-488	-1761	-132	240

Sollecitazioni con momento M22 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
1015	SLV 7	1938	235	-178	645	3507	-1453	2660	763	-1133
345	SLV 6	942	97	-26	617	-1750	1572	-6012	238	-647
338	SLV 5	943	64	23	604	-453	-547	-4485	-292	-643
57	SLV 10	806	40	48	543	2560	2452	-10203	-191	-951
1050	SLV 7	1807	10	-24	530	-74	-283	-3498	138	-297

Sollecitazioni con sforzo F11 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
314	SLV 10	12	-32	4	36	-111308	51962	7456	63	125
359	SLU 81	6	-86	-74	-351	-66356	77097	6781	-203	-884
320	SLV 11	1132	-18	20	-73	-56343	-644	-14462	2329	-1148
311	SLV 10	292	-27	8	18	-45843	13179	-44188	94	72
310	SLV 10	292	-51	7	-57	-42976	13951	8945	150	275

Sollecitazioni con sforzo F11 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
314	SLV Y	12	12	-4	-14	56816	-14734	-8942	-162	88
320	SLV 6	1132	29	-15	116	36245	515	1325	-2573	1086
310	SLV 11	38	-31	1	-37	35249	-11369	8554	-70	-127
323	SLV 10	794	23	-21	0	32932	23912	8130	-7	9
129	SLU 82	340	-123	-10	-25	30054	13844	-33424	-405	426

Sollecitazioni con sforzo F22 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
359	SLU 81	5	-31	-75	-138	3702	80280	-214938	-238	-407
314	SLV 10	4	-77	-1	-125	-102692	51172	-191253	64	-946
315	SLV 10	290	-126	19	-215	4314	12287	-94692	286	-139
360	SLU 81	291	140	-17	151	-18807	2345	-90934	-517	487
317	SLV 10	532	-140	14	29	-7683	-3326	-79887	199	228

Sollecitazioni con sforzo F22 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
314	SLV Y	290	27	-12	48	4041	-25491	71941	-48	307
359	SLV Y	5	-46	6	-182	-4263	-14391	39134	132	-925
1358	SLV 6	1363	30	0	-397	-592	-39	38745	6991	-2070
1359	SLV 6	1477	-68	0	-280	368	-4	31983	-16719	-1463
317	SLV Y	532	67	-7	-69	5133	4292	29064	-100	-329

1.1.2.3 Sollecitazioni estreme gusci non verticali

Shell: elemento guscio a cui si riferiscono le sollecitazioni.

Ind: indice del guscio.

Cont.: contesto a cui si riferiscono le sollecitazioni.

N.br.: nome breve della condizione o combinazione di carico.

Nodo: nodo su cui si basa il guscio a cui si riferisce la sollecitazione.

Ind: indice del nodo.



Sollecitazione: valori della sollecitazione.

Mxx: componente Mxx della sollecitazione del guscio nel nodo indicato. [daN*m/m]

Mxy: componente Mxy della sollecitazione del guscio nel nodo indicato. [daN*m/m]

Myy: componente Myy della sollecitazione del guscio nel nodo indicato. [daN*m/m]

Fxx: componente Fxx della sollecitazione del guscio nel nodo indicato. [daN/m]

Fxy: componente Fxy della sollecitazione del guscio nel nodo indicato. [daN/m]

Fyy: componente Fyy della sollecitazione del guscio nel nodo indicato. [daN/m]

Vx: componente Vo della sollecitazione del guscio nel nodo indicato. [daN/m]

Vy: componente Vz della sollecitazione del guscio nel nodo indicato. [daN/m]

Sollecitazioni con momento Mxx minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy

Sollecitazioni con momento Mxx massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy

Sollecitazioni con momento Myy minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy

Sollecitazioni con momento Myy massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy

Sollecitazioni con sforzo Fxx minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy

Sollecitazioni con sforzo Fxx massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy

Sollecitazioni con sforzo Fyy minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy

Sollecitazioni con sforzo Fyy massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy

1.1.2.4 Sollecitazioni estreme gusci verticali

Shell: elemento guscio a cui si riferiscono le sollecitazioni.

Ind: indice del guscio.

Cont.: contesto a cui si riferiscono le sollecitazioni.

N.br.: nome breve della condizione o combinazione di carico.

Nodo: nodo su cui si basa il guscio a cui si riferisce la sollecitazione.

Ind: indice del nodo.

Sollecitazione: valori della sollecitazione.

Moo: componente Moo della sollecitazione del guscio nel nodo indicato. [daN*m/m]

Moz: componente Moz della sollecitazione del guscio nel nodo indicato. [daN*m/m]

Mzz: componente Mzz della sollecitazione del guscio nel nodo indicato. [daN*m/m]

Foo: componente Foo della sollecitazione del guscio nel nodo indicato. [daN/m]

Foz: componente Foz della sollecitazione del guscio nel nodo indicato. [daN/m]

Fzz: componente Fzz della sollecitazione del guscio nel nodo indicato. [daN/m]

Vo: componente Vo della sollecitazione del guscio nel nodo indicato. [daN/m]

Vz: componente Vz della sollecitazione del guscio nel nodo indicato. [daN/m]

Sollecitazioni con momento Moo minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
1343	SLV 3	1701	-452	12	-47	-275	1026	-2779	547	-76
1230	SLV 4	1757	-404	-19	-104	-420	-2292	-2305	-541	-78
1231	SLV 4	1757	-402	-10	-96	-423	-2330	-2032	-526	35
1196	SLV 2	1757	-399	17	-103	-647	-405	-2229	633	-56
1186	SLV 2	1757	-398	8	-95	-719	-303	-2104	627	28



Sollecitazioni con momento Moo massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
1339	SLV 5	1698	409	7	57	3328	246	2004	483	-83
1231	SLV 13	1757	399	10	100	98	-646	-2274	526	-67
1230	SLV 13	1757	398	19	98	123	-656	-1745	532	52
1343	SLV 14	1701	396	-21	42	-164	1573	-4211	-433	55
1186	SLV 15	1757	396	-8	100	291	-1415	-2365	-628	-60

Sollecitazioni con momento Mzz minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
1015	SLV 10	1938	-240	185	-657	-1991	1492	-7416	-790	1160
345	SLV 11	942	-101	33	-605	-750	812	-3459	-253	588
338	SLV 12	943	-71	-33	-588	-2040	-1787	-9764	310	584
1050	SLV 10	1807	-10	22	-545	5	-585	-1716	-141	284
1032	SLV 10	1807	-9	28	-544	-40	-488	-1761	-132	240

Sollecitazioni con momento Mzz massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
1015	SLV 7	1938	235	-178	645	3507	-1453	2660	763	-1133
345	SLV 6	942	97	-26	617	-1750	1572	-6012	238	-647
338	SLV 5	943	64	23	604	-453	-547	-4485	-292	-643
57	SLV 10	806	40	48	543	2560	2452	-10203	-191	-951
1335	SLV 14	1698	-21	-404	531	-796	3054	-8805	-31245	37135

Sollecitazioni con sforzo Foo minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
314	SLV 10	12	32	4	-36	-111308	-51962	7456	63	-125
359	SLU 81	6	-86	-74	-351	-66356	77097	6781	-203	-884
320	SLV 11	1132	18	20	73	-56343	644	-14462	2329	1148
311	SLV 10	292	27	8	-18	-45843	-13179	-44188	94	-72
310	SLV 10	292	51	7	57	-42976	-13951	8945	150	-275

Sollecitazioni con sforzo Foo massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
314	SLV Y	12	-12	-4	14	56816	14734	-8942	-162	-88
320	SLV 6	1132	-29	-15	-116	36245	-515	1325	-2573	-1086
310	SLV 11	38	31	1	37	35249	11369	8554	-70	127
323	SLV 10	794	-23	-21	0	32932	-23912	8130	-7	-9
129	SLU 82	340	-123	-10	-25	30054	13844	-33424	-405	426

Sollecitazioni con sforzo Fzz minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
359	SLU 81	5	-31	-75	-138	3702	80280	-214938	-238	-407
314	SLV 10	4	77	-1	125	-102692	-51172	-191253	64	946
315	SLV 10	290	126	19	215	4314	-12287	-94692	286	139
360	SLU 81	291	140	-17	151	-18807	2345	-90934	-517	487
317	SLV 10	532	140	14	-29	-7683	3326	-79887	199	-228

Sollecitazioni con sforzo Fzz massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
314	SLV Y	290	-27	-12	-48	4041	25491	71941	-48	-307
359	SLV Y	5	-46	6	-182	-4263	-14391	39134	132	-925
1358	SLV 6	1363	-30	0	397	-592	39	38745	6991	2070
1359	SLV 6	1477	68	0	280	368	4	31983	-16719	1463
317	SLV Y	532	-67	-7	69	5133	-4292	29064	-100	329

1.1.3 Sollecitazioni gusci armati

1.1.3.1 Convenzioni di segno gusci

Sono individuate distinte convenzioni di segno in relazione al tipo di elemento strutturale a cui il guscio si riferisce:

- convenzione per gusci non verticali, originati ad esempio da piastre e platee;
- convenzione per gusci verticali, originati ad esempio da pareti e muri.

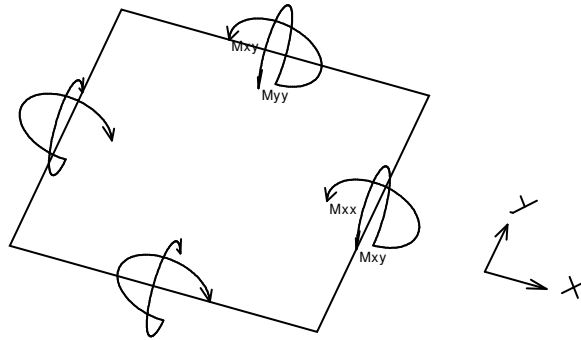
Convenzione di segno per gusci non verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse x e y contenuti nel piano dell'elemento e terzo asse (z) ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse x ha proiezione in pianta parallela ed equivale all'asse globale X. Nel caso di piastre orizzontali (caso più comune) gli assi x, y e z locali all'elemento sono paralleli ed equivale agli assi X, Y e Z globali. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale



posizione.

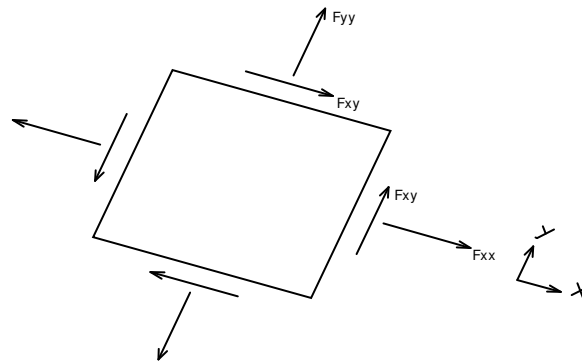
In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione M_{xx} , M_{yy} , M_{xy} .



Si definiscono:

- M_{xx} : momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- M_{yy} : momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale y (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- M_{xy} : momento torcente [Forza*Lunghezza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione F_{xx} , F_{yy} , F_{xy} .



Si definiscono:

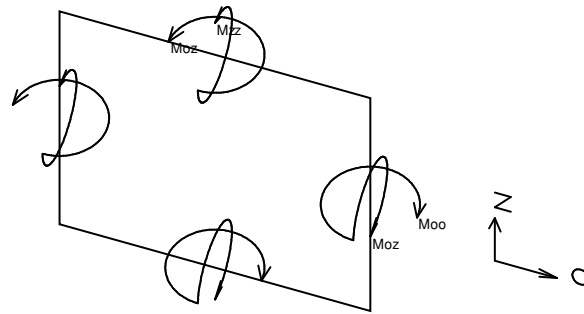
- F_{xx} : sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- F_{yy} : sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale all'asse y (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- F_{xy} : sforzo di taglio [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Vengono riportati inoltre i tagli fuori dal piano dell'elemento guscio:

- V_x : taglio fuori piano [Forza/Lunghezza] applicato al bordo di normale parallela all'asse x ;
- V_y : taglio fuori piano [Forza/Lunghezza] applicato al bordo di normale parallela all'asse y .

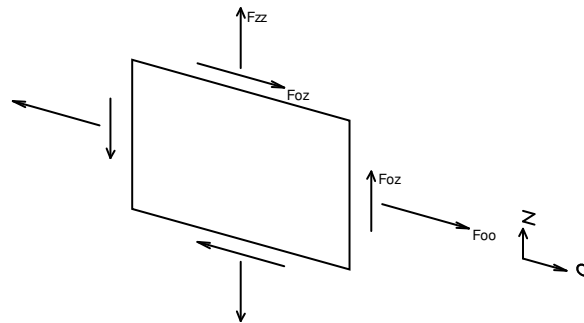
Convenzione di segno per gusci verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse O (ascisse) e z (ordinate) contenuti nel piano dell'elemento e terzo asse ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse O è orizzontale e l'asse z parallelo ed equiverso con l'asse Z globale. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione. In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione M_{xx} , M_{yy} , M_{xy} .



- Moo: momento flettente distribuito $[Forza * Lunghezza / Lunghezza]$ applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Mzz: momento flettente distribuito $[Forza * Lunghezza / Lunghezza]$ applicato al bordo di normale parallela all'asse z (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Moz: momento 'torcente' distribuito $[Forza * Lunghezza / Lunghezza]$ applicato sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell con indicato il sistema di riferimento i parametri di sollecitazione Foo, Fzz, Foz sono rispettivamente:



- Fzz: sforzo tensionale distribuito $[Forza / Lunghezza]$ applicato al bordo di normale parallela all'asse z (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foo: sforzo tensionale distribuito $[Forza / Lunghezza]$ applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foz: sforzo tagliante distribuito $[Forza / Lunghezza]$ applicato sui bordi (verso positivo indicato dalla freccia in figura).

Vengono riportati inoltre i tagli fuori dal piano dell'elemento guscio:

- Vo: taglio fuori piano applicato al bordo di normale parallela all'asse O;
- Vz: taglio fuori piano applicato al bordo di normale parallela all'asse z.

1.1.4 Sollecitazioni gusci muratura

1.1.4.1 Convenzioni di segno gusci muratura

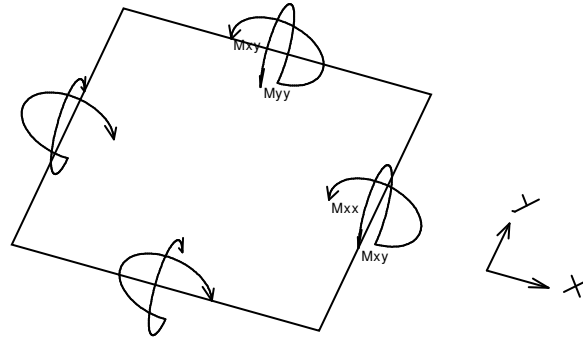
Sono individuate distinte convenzioni di segno in relazione al tipo di elemento strutturale a cui il guscio muratura si riferisce:

- convenzione per gusci non verticali, originati ad esempio da piastre e platee;
- convenzione per gusci verticali, originati ad esempio da pareti e muri.

Convenzione di segno per gusci non verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse x e y contenuti nel piano dell'elemento e terzo asse (z) ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse x ha proiezione in pianta parallela ed equivale all'asse globale X. Nel caso di piastre orizzontali (caso più comune) gli assi x, y e z locali all'elemento sono paralleli ed equivale agli assi X, Y e Z globali. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione.

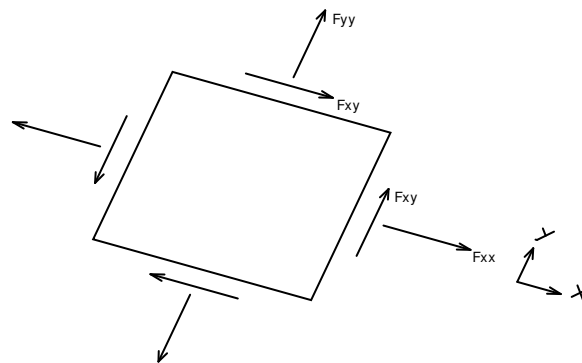
In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione Mxx, Myy, Mxy.



Si definiscono:

- M_{xx} : momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- M_{yy} : momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale y (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- M_{xy} : momento torcente [Forza*Lunghezza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione F_{xx} , F_{yy} , F_{xy} .

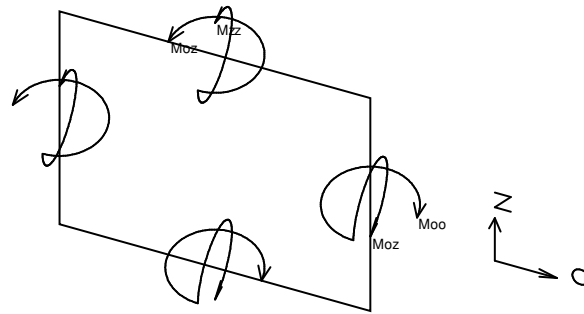


Si definiscono:

- F_{xx} : sforzo tensionale [Forza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- F_{yy} : sforzo tensionale [Forza/Lunghezza] agente sul bordo di normale all'asse y (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- F_{xy} : sforzo tagliente [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

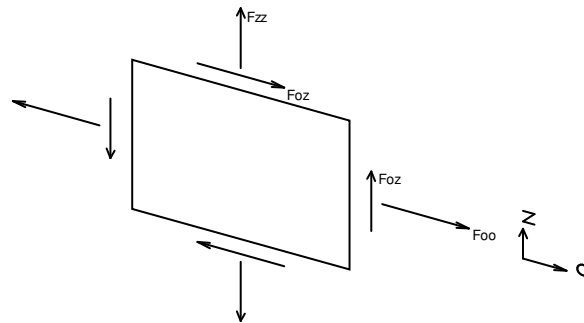
Convenzione di segno per gusci verticali

Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse O (ascisse) e z (ordinate) contenuti nel piano dell'elemento e terzo asse ortogonale al piano dell'elemento a formare una terna destrorsa. In particolare l'asse O è orizzontale e l'asse z parallelo ed equiverso con l'asse Z globale. Si sottolinea che non ha alcun interesse collocare esattamente nel piano dell'elemento la posizione dell'origine in quanto i parametri di sollecitazione sono invarianti rispetto a tale posizione. In figura è mostrato un elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione M_{xx} , M_{yy} , M_{xy} , F_{xx} , F_{yy} , F_{xy} .



- Moo: momento flettente distribuito $[Forza * Lunghezza / Lunghezza]$ applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Mzz: momento flettente distribuito $[Forza * Lunghezza / Lunghezza]$ applicato al bordo di normale parallela all'asse z (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Moz: momento 'torcente' distribuito $[Forza * Lunghezza / Lunghezza]$ applicato sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell con indicato il sistema di riferimento i parametri di sollecitazione Foo, Fzz, Foz sono rispettivamente:



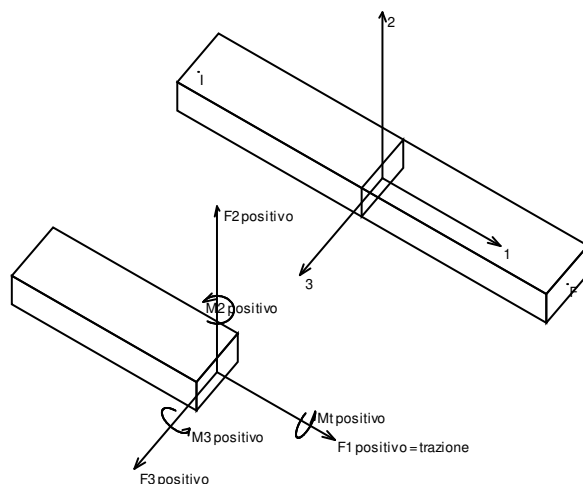
- Fzz: sforzo tensionale distribuito $[Forza / Lunghezza]$ applicato al bordo di normale parallela all'asse z (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foo: sforzo tensionale distribuito $[Forza / Lunghezza]$ applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foz: sforzo tagliante distribuito $[Forza / Lunghezza]$ applicato sui bordi (verso positivo indicato dalla freccia in figura).

1.1.5 Sollecitazioni aste in muratura

1.1.5.1 Convenzioni di segno aste

Le abbreviazioni relative alle sollecitazioni sugli elementi aste sono da intendersi:

- F1 (N): sforzo normale nell'asta;
- F2: sforzo di taglio agente nella direzione dell'asse locale 2;
- F3: sforzo di taglio agente nella direzione dell'asse locale 3;
- M1 (Mt): momento attorno all'asse locale 1; equivale al momento torcente;
- M2: momento attorno all'asse locale 2;
- M3: momento attorno all'asse locale 3.



La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:

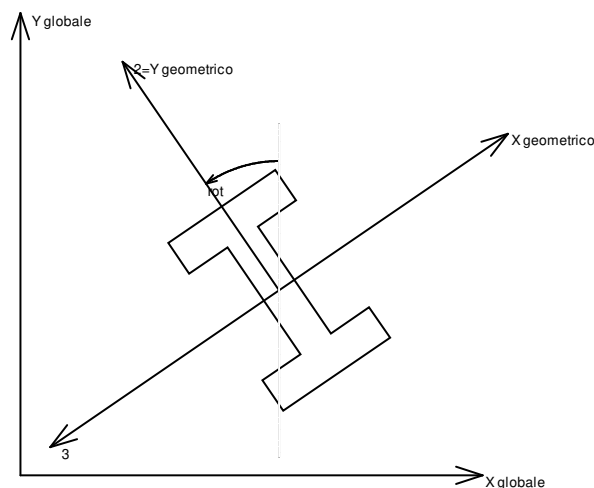
presa un'asta con nodo iniziale i e nodo finale f , asse 1 che va da i a f , assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando la sezione sinistra del punto in cui si è effettuato il taglio (sezione da cui esce il vettore asse 1) i parametri di sollecitazione sono positivi se hanno verso e direzione concordi con il sistema di riferimento locale dell'asta 1, 2, 3 (per i momenti si adotta la regola della mano destra).

Il sistema è definito diversamente per tre categorie di aste, a seconda che siano originate da:

- aste verticali ad esempio pilastri e colonne;
- aste non verticali non di c.a., ad esempio travi di acciaio o legno;
- aste non verticali in c.a.: travi in c.a. di piano, falda o a quota generica.

Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

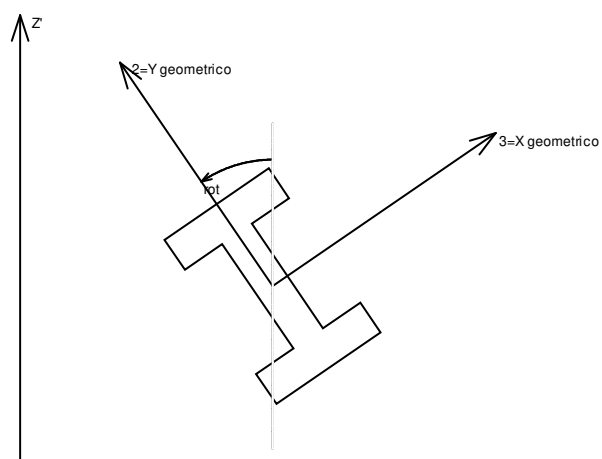
Sistema locale aste verticali



Nella figura si considera l'asse 1 uscente dal foglio (l'osservatore guarda in direzione opposta a quella dell'asse 1).



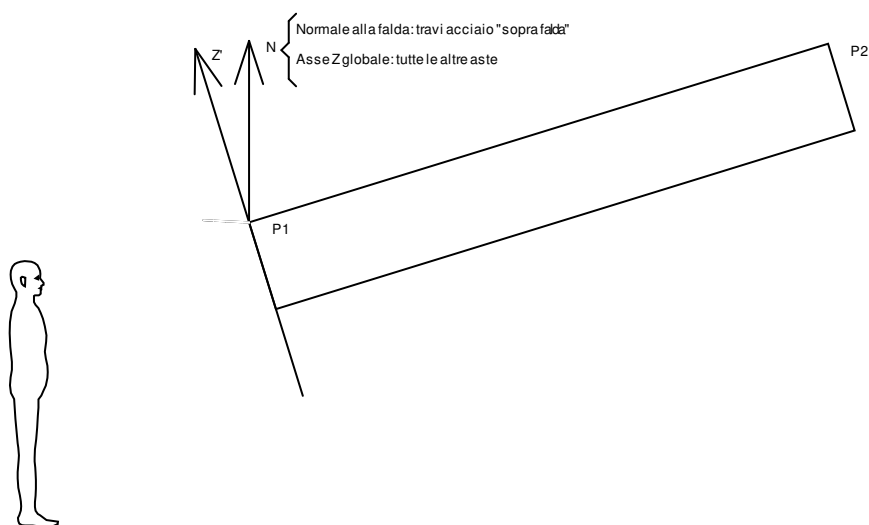
Sistema locale aste non verticali



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1).

L'asse Z' è illustrato nella figura seguente dove:

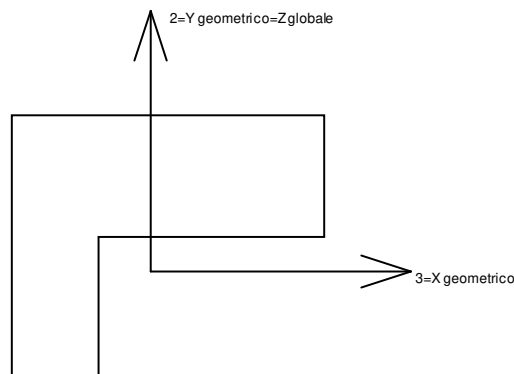
- P1 è il punto di inserimento iniziale dell'asta;
- P2 è il punto di inserimento finale dell'asta;
- N è la normale al piano o falda di inserimento;



Z' è quindi l'intersezione tra il piano passante per P1, P2 contenente N e il piano della sezione iniziale dell'asta.



Sistema locale aste derivanti da travi in c.a.



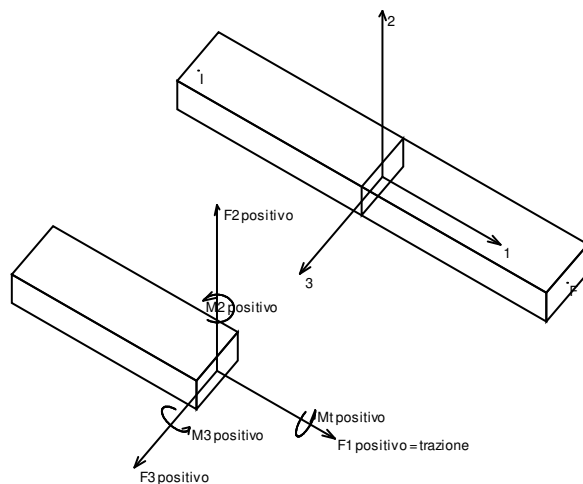
Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. Si sottolinea il fatto che gli assi 2 e 3 non corrispondono agli assi principali della sezione.

1.1.6 Sollecitazioni aste in muratura FRCM

1.1.6.1 Convenzioni di segno aste

Le abbreviazioni relative alle sollecitazioni sugli elementi aste sono da intendersi:

- F1 (N): sforzo normale nell'asta;
- F2: sforzo di taglio agente nella direzione dell'asse locale 2;
- F3: sforzo di taglio agente nella direzione dell'asse locale 3;
- M1 (Mt): momento attorno all'asse locale 1; equivale al momento torcente;
- M2: momento attorno all'asse locale 2;
- M3: momento attorno all'asse locale 3.



La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:

presa un'asta con nodo iniziale i e nodo finale f, asse 1 che va da i a f, assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando la sezione sinistra del punto in cui si è effettuato il taglio (sezione da cui esce il versore asse 1) i parametri di sollecitazione sono positivi se hanno verso e direzione concordi con il sistema di riferimento locale dell'asta 1, 2, 3 (per i momenti si adotta la regola della mano destra).

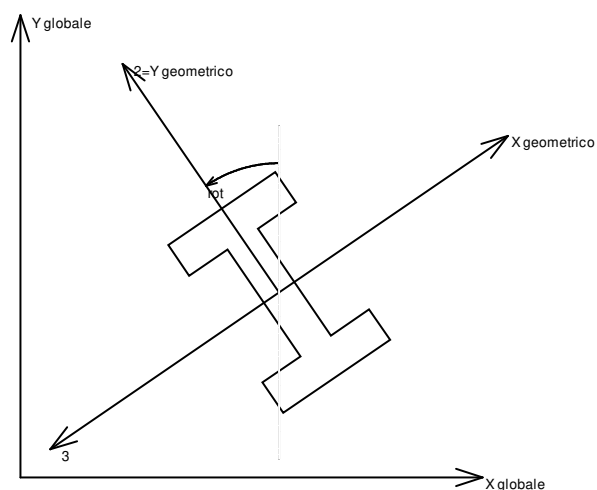
Il sistema è definito diversamente per tre categorie di aste, a seconda che siano originate da:

- aste verticali ad esempio pilastri e colonne;
- aste non verticali non di c.a., ad esempio travi di acciaio o legno;
- aste non verticali in c.a.: travi in c.a. di piano, falda o a quota generica.

Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

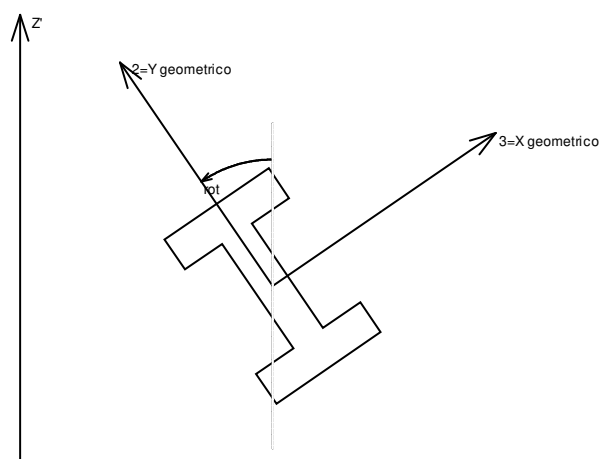


Sistema locale aste verticali



Nella figura si considera l'asse 1 uscente dal foglio (l'osservatore guarda in direzione opposta a quella dell'asse 1).

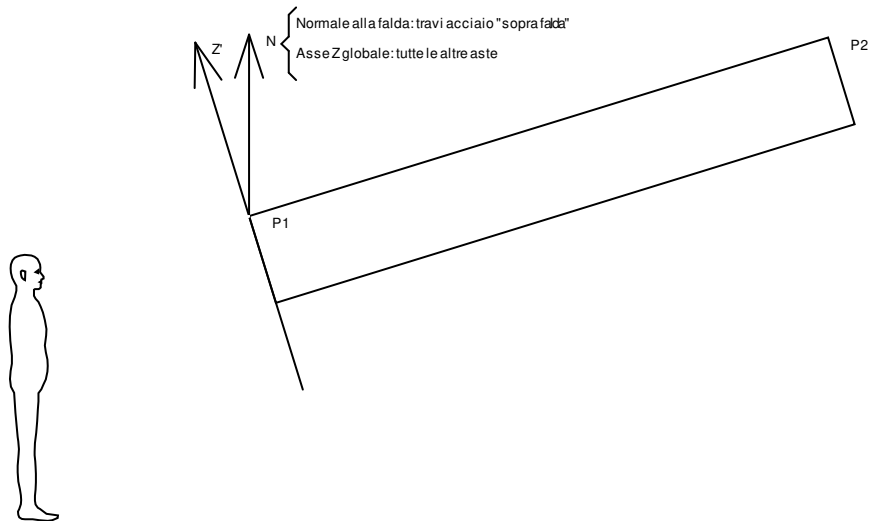
Sistema locale aste non verticali



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1).

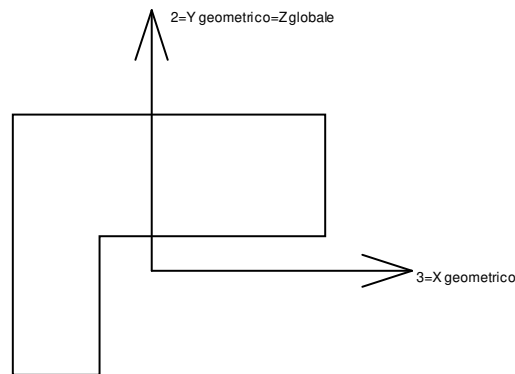
L'asse Z' è illustrato nella figura seguente dove:

- P1 è il punto di inserimento iniziale dell'asta;
- P2 è il punto di inserimento finale dell'asta;
- N è la normale al piano o falda di inserimento;



Z' è quindi l'intersezione tra il piano passante per P1, P2 contenente N e il piano della sezione iniziale dell'asta.

Sistema locale aste derivanti da travi in c.a.



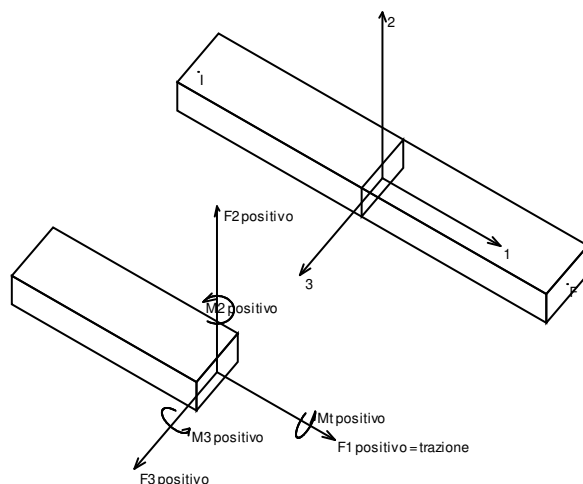
Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. Si sottolinea il fatto che gli assi 2 e 3 non corrispondono agli assi principali della sezione.

1.1.7 Sollecitazioni aste in muratura armata

1.1.7.1 Convenzioni di segno aste

Le abbreviazioni relative alle sollecitazioni sugli elementi aste sono da intendersi:

- F1 (N): sforzo normale nell'asta;
- F2: sforzo di taglio agente nella direzione dell'asse locale 2;
- F3: sforzo di taglio agente nella direzione dell'asse locale 3;
- M1 (Mt): momento attorno all'asse locale 1; equivale al momento torcente;
- M2: momento attorno all'asse locale 2;
- M3: momento attorno all'asse locale 3.



La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:

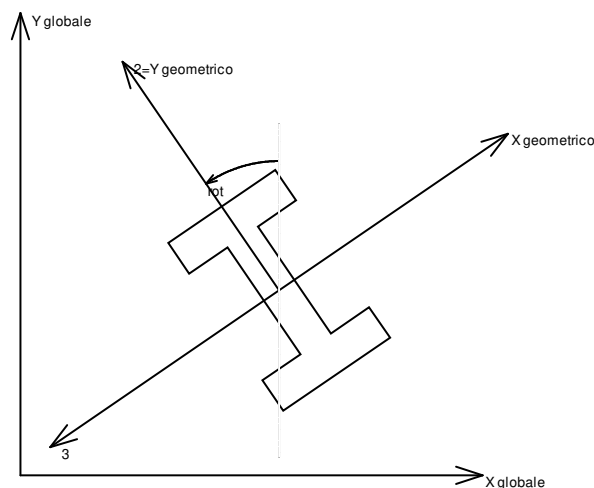
presa un'asta con nodo iniziale i e nodo finale f , asse 1 che va da i a f , assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando la sezione sinistra del punto in cui si è effettuato il taglio (sezione da cui esce il vettore asse 1) i parametri di sollecitazione sono positivi se hanno verso e direzione concordi con il sistema di riferimento locale dell'asta 1, 2, 3 (per i momenti si adotta la regola della mano destra).

Il sistema è definito diversamente per tre categorie di aste, a seconda che siano originate da:

- aste verticali ad esempio pilastri e colonne;
- aste non verticali non di c.a., ad esempio travi di acciaio o legno;
- aste non verticali in c.a.: travi in c.a. di piano, falda o a quota generica.

Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

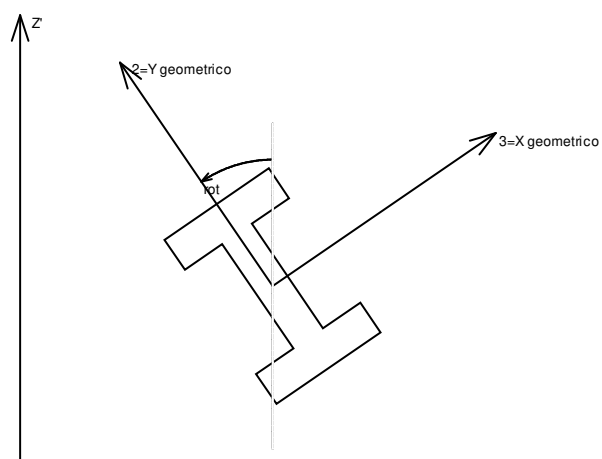
Sistema locale aste verticali



Nella figura si considera l'asse 1 uscente dal foglio (l'osservatore guarda in direzione opposta a quella dell'asse 1).



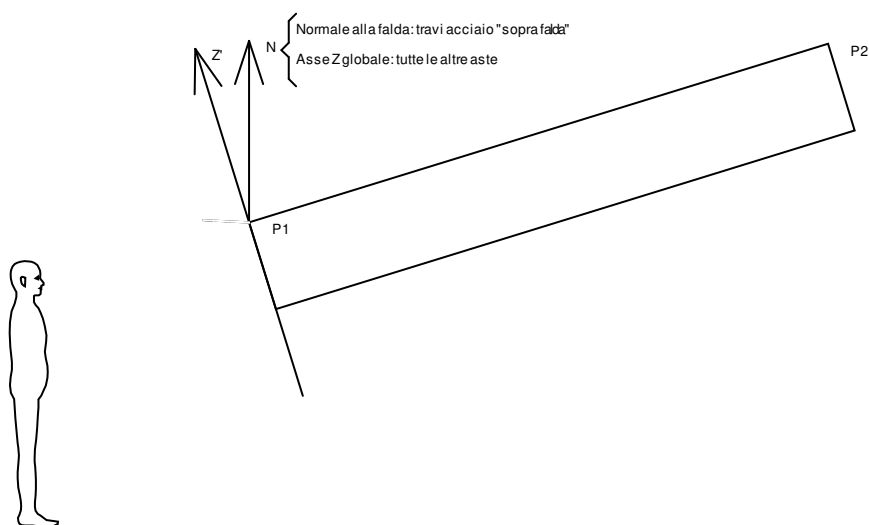
Sistema locale aste non verticali



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1).

L'asse Z' è illustrato nella figura seguente dove:

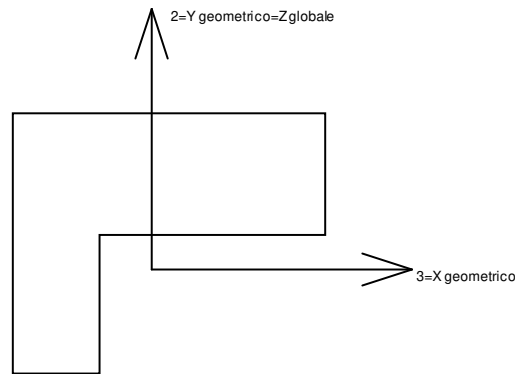
- P1 è il punto di inserimento iniziale dell'asta;
- P2 è il punto di inserimento finale dell'asta;
- N è la normale al piano o falda di inserimento;



Z' è quindi l'intersezione tra il piano passante per P1, P2 contenente N e il piano della sezione iniziale dell'asta.



Sistema locale aste derivanti da travi in c.a.



Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. Si sottolinea il fatto che gli assi 2 e 3 non corrispondono agli assi principali della sezione.

1.2 Reazioni nodali

1.2.1 Reazioni nodali estreme

Nodo: Nodo sollecitato dalla reazione vincolare.

Ind.: indice del nodo.

Cont.: Contesto a cui si riferisce la reazione vincolare.

N.br.: nome breve della condizione o combinazione di carico.

Reazione a traslazione: reazione vincolare traslazionale del nodo.

x: componente X della reazione vincolare del nodo. [daN]

y: componente Y della reazione vincolare del nodo. [daN]

z: componente Z della reazione vincolare del nodo. [daN]

Reazione a rotazione: reazione vincolare rotazionale del nodo.

x: componente X della reazione a rotazione del nodo. [daN*m]

y: componente Y della reazione a rotazione del nodo. [daN*m]

z: componente Z della reazione a rotazione del nodo. [daN*m]

Reazioni Fx minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLV 13	-28461	13270	77248	10345.45	827.36	10483.62
165	SLV 16	-920	765	8941	-959.14	1722.75	-214.76
130	SLV 16	-906	-694	7115	97.36	-1060.77	19.33
131	SLV 16	-899	132	7015	107.39	1061.65	100.5
228	SLV 16	-887	-839	5025	-1090.33	-1052.61	-364.9

Reazioni Fx massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLV 4	16424	-2345	28187	5292.75	3157.27	-7010.17
165	SLV 1	1188	-813	4420	-472.37	919.59	250.36
228	SLV 1	1166	558	6227	-1365.71	-1278.65	367.55
131	SLV 1	1139	-230	7268	35.45	1102.78	-77.48
130	SLV 1	1136	531	7427	25.02	-1102.25	-33.45

Reazioni Fy minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLV Y	7337	-8835	-20849	-1673.64	-829.31	-3581.12
165	SLV 7	-42	-2121	8038	-850.01	1571.67	460.33
118	SLV 12	-504	-1836	5669	4.11	-1321.39	-437.45
121	SLV 12	-375	-1256	4141	67.71	0.66	16.37
174	SLV 7	597	-1197	4740	-876.37	774.86	361.11

Reazioni Fy massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLV 10	-16334	16392	79028	10007.49	2483.01	6636.91



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
165	SLV 10	310	2072	5323	-581.5	1070.66	-424.73
118	SLV 5	643	1339	8725	-61.12	-1951.96	319.33
174	SLV 10	-411	1171	3071	-572.81	482.7	-321.97
139	SLV 10	171	1036	3088	28.69	3.84	14.89

Reazioni Fz minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLV Y	7337	-8835	-20849	-1673.64	-829.31	-3581.12
118	SLV X	-626	-738	-1714	20.15	357	-175.92
39	SLV Y	36	-666	-1415	-218.19	318.76	-170.14
121	SLV X	-468	-494	-1055	14.9	-4.73	8.36
120	SLV X	-400	-455	-1028	16.38	25.25	-7.91

Reazioni Fz massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLU 81	-9197	8124	79499	11748.05	2925.31	2577.83
130	SLU 82	179	-133	11133	92.36	-1656.2	-11.96
131	SLU 82	185	-83	10937	107.9	1657.28	18.89
118	SLU 81	116	-378	10826	-43.12	-2465.51	-89.81
165	SLU 82	199	-46	10142	-1087.53	2008.71	28.49

1.2.2 Reazioni nodali in combinazioni di carico

Nodo: Nodo sollecitato dalla reazione vincolare.

Ind.: indice del nodo.

Cont.: Contesto a cui si riferisce la reazione vincolare.

N.br.: nome breve della condizione o combinazione di carico.

Reazione a traslazione: reazione vincolare traslazionale del nodo.

x: componente X della reazione vincolare del nodo. [daN]

y: componente Y della reazione vincolare del nodo. [daN]

z: componente Z della reazione vincolare del nodo. [daN]

Reazione a rotazione: reazione vincolare rotazionale del nodo.

x: componente X della reazione a rotazione del nodo. [daN*m]

y: componente Y della reazione a rotazione del nodo. [daN*m]

z: componente Z della reazione a rotazione del nodo. [daN*m]

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLU 1	-5479	5056	48393	7195.8	1862.32	1609.29
4	SLU 2	-5462	4830	47845	7151.65	1853.41	1534.46
4	SLU 3	-5479	5056	48393	7195.8	1862.32	1609.29
4	SLU 4	-5469	4921	48064	7169.31	1856.97	1564.39
4	SLU 5	-5462	4830	47845	7151.65	1853.41	1534.46
4	SLU 6	-5479	5056	48393	7195.8	1862.32	1609.29
4	SLU 7	-5469	4921	48064	7169.31	1856.97	1564.39
4	SLU 8	-5479	5056	48393	7195.8	1862.32	1609.29
4	SLU 9	-5469	4921	48064	7169.31	1856.97	1564.39
4	SLU 10	-6542	5629	56454	8395.98	2119.54	1784.19
4	SLU 11	-6558	5855	57002	8440.13	2128.44	1859.02
4	SLU 12	-6548	5720	56673	8413.64	2123.1	1814.12
4	SLU 13	-6542	5629	56454	8395.98	2119.54	1784.19
4	SLU 14	-6558	5855	57002	8440.13	2128.44	1859.02
4	SLU 15	-6548	5720	56673	8413.64	2123.1	1814.12
4	SLU 16	-6558	5855	57002	8440.13	2128.44	1859.02
4	SLU 17	-6548	5720	56673	8413.64	2123.1	1814.12
4	SLU 18	-7021	6198	60692	8973.41	2242.49	1966.05
4	SLU 19	-7011	6062	60363	8946.92	2237.15	1921.15
4	SLU 20	-7021	6198	60692	8973.41	2242.49	1966.05
4	SLU 21	-7011	6062	60363	8946.92	2237.15	1921.15
4	SLU 22	-6288	5680	54920	8133.03	2051.19	1805.57
4	SLU 23	-6271	5454	54372	8088.88	2042.29	1730.74
4	SLU 24	-6288	5680	54920	8133.03	2051.19	1805.57
4	SLU 25	-6278	5544	54592	8106.54	2045.85	1760.67
4	SLU 26	-6271	5454	54372	8088.88	2042.29	1730.74
4	SLU 27	-6288	5680	54920	8133.03	2051.19	1805.57
4	SLU 28	-6278	5544	54592	8106.54	2045.85	1760.67
4	SLU 29	-6288	5680	54920	8133.03	2051.19	1805.57
4	SLU 30	-6278	5544	54592	8106.54	2045.85	1760.67
4	SLU 31	-7351	6253	62982	9333.21	2308.41	1980.48
4	SLU 32	-7368	6479	63530	9377.36	2317.32	2055.31
4	SLU 33	-7358	6343	63201	9350.87	2311.97	2010.41
4	SLU 34	-7351	6253	62982	9333.21	2308.41	1980.48
4	SLU 35	-7368	6479	63530	9377.36	2317.32	2055.31
4	SLU 36	-7358	6343	63201	9350.87	2311.97	2010.41
4	SLU 37	-7368	6479	63530	9377.36	2317.32	2055.31
4	SLU 38	-7358	6343	63201	9350.87	2311.97	2010.41
4	SLU 39	-7830	6821	67219	9910.65	2431.37	2162.34
4	SLU 40	-7820	6686	66890	9884.16	2426.03	2117.44
4	SLU 41	-7830	6821	67219	9910.65	2431.37	2162.34
4	SLU 42	-7820	6686	66890	9884.16	2426.03	2117.44



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLU 43	-6845	6359	60672	9033.2	2356.25	2024.78
4	SLU 44	-6828	6134	60124	8989.05	2347.35	1949.95
4	SLU 45	-6845	6359	60672	9033.2	2356.25	2024.78
4	SLU 46	-6835	6224	60344	9006.71	2350.91	1979.88
4	SLU 47	-6828	6134	60124	8989.05	2347.35	1949.95
4	SLU 48	-6845	6359	60672	9033.2	2356.25	2024.78
4	SLU 49	-6835	6224	60344	9006.71	2350.91	1979.88
4	SLU 50	-6845	6359	60672	9033.2	2356.25	2024.78
4	SLU 51	-6835	6224	60344	9006.71	2350.91	1979.88
4	SLU 52	-7908	6933	68733	10233.38	2613.47	2199.68
4	SLU 53	-7925	7158	69282	10277.53	2622.38	2274.51
4	SLU 54	-7915	7023	68953	10251.04	2617.04	2229.61
4	SLU 55	-7908	6933	68733	10233.38	2613.47	2199.68
4	SLU 56	-7925	7158	69282	10277.53	2622.38	2274.51
4	SLU 57	-7915	7023	68953	10251.04	2617.04	2229.61
4	SLU 58	-7925	7158	69282	10277.53	2622.38	2274.51
4	SLU 59	-7915	7023	68953	10251.04	2617.04	2229.61
4	SLU 60	-8387	7501	72971	10810.81	2736.43	2381.54
4	SLU 61	-8377	7365	72642	10784.32	2731.09	2336.64
4	SLU 62	-8387	7501	72971	10810.81	2736.43	2381.54
4	SLU 63	-8377	7365	72642	10784.32	2731.09	2336.64
4	SLU 64	-7654	6983	67200	9970.43	2545.13	2221.06
4	SLU 65	-7638	6757	66652	9926.29	2536.23	2146.23
4	SLU 66	-7654	6983	67200	9970.43	2545.13	2221.06
4	SLU 67	-7644	6847	66871	9943.95	2539.79	2176.16
4	SLU 68	-7638	6757	66652	9926.29	2536.23	2146.23
4	SLU 69	-7654	6983	67200	9970.43	2545.13	2221.06
4	SLU 70	-7644	6847	66871	9943.95	2539.79	2176.16
4	SLU 71	-7654	6983	67200	9970.43	2545.13	2221.06
4	SLU 72	-7644	6847	66871	9943.95	2539.79	2176.16
4	SLU 73	-8717	7556	75261	11170.62	2802.35	2395.97
4	SLU 74	-8734	7782	75809	11214.76	2811.25	2470.8
4	SLU 75	-8724	7646	75481	11188.27	2805.91	2425.9
4	SLU 76	-8717	7556	75261	11170.62	2802.35	2395.97
4	SLU 77	-8734	7782	75809	11214.76	2811.25	2470.8
4	SLU 78	-8724	7646	75481	11188.27	2805.91	2425.9
4	SLU 79	-8734	7782	75809	11214.76	2811.25	2470.8
4	SLU 80	-8724	7646	75481	11188.27	2805.91	2425.9
4	SLU 81	-9197	8124	79499	11748.05	2925.31	2577.83
4	SLU 82	-9187	7989	79170	11721.56	2919.96	2532.93
4	SLU 83	-9197	8124	79499	11748.05	2925.31	2577.83
4	SLU 84	-9187	7989	79170	11721.56	2919.96	2532.93
4	SLE RA 1	-5710	5234	50258	7463.58	1916.28	1665.37
4	SLE RA 2	-5699	5084	49892	7434.15	1910.34	1615.48
4	SLE RA 3	-5710	5234	50258	7463.58	1916.28	1665.37
4	SLE RA 4	-5703	5144	50039	7445.92	1912.72	1635.44
4	SLE RA 5	-5699	5084	49892	7434.15	1910.34	1615.48
4	SLE RA 6	-5710	5234	50258	7463.58	1916.28	1665.37
4	SLE RA 7	-5703	5144	50039	7445.92	1912.72	1635.44
4	SLE RA 8	-5710	5234	50258	7463.58	1916.28	1665.37
4	SLE RA 9	-5703	5144	50039	7445.92	1912.72	1635.44
4	SLE RA 10	-6419	5617	55632	8263.7	2087.76	1781.97
4	SLE RA 11	-6430	5767	55997	8293.13	2093.7	1831.86
4	SLE RA 12	-6423	5677	55778	8275.47	2090.14	1801.93
4	SLE RA 13	-6419	5617	55632	8263.7	2087.76	1781.97
4	SLE RA 14	-6430	5767	55997	8293.13	2093.7	1831.86
4	SLE RA 15	-6423	5677	55778	8275.47	2090.14	1801.93
4	SLE RA 16	-6430	5767	55997	8293.13	2093.7	1831.86
4	SLE RA 17	-6423	5677	55778	8275.47	2090.14	1801.93
4	SLE RA 18	-6738	5995	58457	8648.65	2169.73	1903.21
4	SLE RA 19	-6732	5905	58238	8631	2166.17	1873.28
4	SLE RA 20	-6738	5995	58457	8648.65	2169.73	1903.21
4	SLE RA 21	-6732	5905	58238	8631	2166.17	1873.28
4	SLE FR 1	-5710	5234	50258	7463.58	1916.28	1665.37
4	SLE FR 2	-5708	5204	50185	7457.69	1915.09	1655.39
4	SLE FR 3	-5710	5234	50258	7463.58	1916.28	1665.37
4	SLE FR 4	-6016	5433	52644	7813.22	1991.13	1726.74
4	SLE FR 5	-6019	5463	52718	7819.1	1992.32	1736.72
4	SLE FR 6	-6224	5615	54357	8056.12	2043.01	1784.29
4	SLE QP 1	-5710	5234	50258	7463.58	1916.28	1665.37
4	SLE QP 2	-6019	5463	52718	7819.1	1992.32	1736.72
4	SLD 1	-249	3980	47422	7212.68	2659.9	-481.32
4	SLD 2	1847	4351	47407	7150	2717.82	-1147
4	SLD 3	1667	1682	41980	6774.66	2445.29	-1421.75
4	SLD 4	3763	2052	41966	6711.98	2503.21	-2087.42
4	SLD 5	-7927	8375	59387	8323.44	2497.81	2730.61
4	SLD 6	-5831	8745	59373	8260.76	2555.73	2064.93
4	SLD 7	-1541	712	41248	6863.38	1782.44	-404.15
4	SLD 8	555	1083	41234	6800.7	1840.37	-1069.82
4	SLD 9	-12593	9843	64202	8837.5	2144.26	4543.27
4	SLD 10	-10496	10213	64187	8774.82	2202.19	3877.59
4	SLD 11	-6206	2180	46062	7377.45	1428.9	1408.51
4	SLD 12	-4110	2551	46048	7314.76	1486.83	742.83
4	SLD 13	-15800	8873	63469	8926.22	1481.42	5560.87
4	SLD 14	-13704	9244	63455	8863.54	1539.35	4895.19
4	SLD 15	-13884	6574	58028	8488.21	1266.81	4620.44
4	SLD 16	-11788	6945	58013	8425.52	1324.74	3954.76
4	SLV 1	7261	40729	6439.3	3523.29	-3349.65	
4	SLV 2	12022	2956	40697	6296.94	3654.85	-4861.5



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
4	SLV 3	11664	-3187	28220	5435.12	3025.7	-5498.32
4	SLV 4	16424	-2345	28187	5292.75	3157.27	-7010.17
4	SLV 5	-10378	12203	68105	8978	3160.23	3998.78
4	SLV 6	-5617	13045	68073	8835.64	3291.79	2486.93
4	SLV 7	4297	-5467	26407	5630.72	1501.62	-3163.46
4	SLV 8	9057	-4625	26374	5488.35	1633.18	-4675.31
4	SLV 9	-21095	15550	79061	10149.85	2351.45	8148.76
4	SLV 10	-16334	16392	79028	10007.49	2483.01	6636.91
4	SLV 11	-6420	-2120	37363	6802.56	692.84	986.52
4	SLV 12	-1659	-1278	37330	6660.2	824.4	-525.33
4	SLV 13	-28461	13270	77248	10345.45	827.36	10483.62
4	SLV 14	-23701	14112	77215	10203.09	958.93	8971.77
4	SLV 15	-24059	7970	64738	9341.26	329.78	8334.95
4	SLV 16	-19298	8811	64706	9198.9	461.35	6823.1
4	CRTFP Ux+	0	0	0	0.05	-0.04	0.15
4	CRTFP Ux-	0	0	0	-0.05	0.04	-0.15
4	CRTFP Uy+	0	0	-1	-0.05	-0.01	-0.07
4	CRTFP Uy-	0	0	1	0.05	0.01	0.07
4	CRTFP Rz+	0	0	0	0	0	0
4	CRTFP Rz-	0	0	0	0	0	0
6	SLU 1	-1	5	79	-187.66	12.63	0.11
6	SLU 2	-1	5	79	-186.17	12.53	0.09
6	SLU 3	-1	5	79	-187.66	12.63	0.11
6	SLU 4	-1	5	79	-186.76	12.57	0.1
6	SLU 5	-1	5	79	-186.17	12.53	0.09
6	SLU 6	-1	5	79	-187.66	12.63	0.11
6	SLU 7	-1	5	79	-186.76	12.57	0.1
6	SLU 8	-1	5	79	-187.66	12.63	0.11
6	SLU 9	-1	5	79	-186.76	12.57	0.1
6	SLU 10	-1	6	92	-221.57	14.85	0.1
6	SLU 11	-1	6	92	-223.06	14.95	0.12
6	SLU 12	-1	6	92	-222.17	14.89	0.11
6	SLU 13	-1	6	92	-221.57	14.85	0.1
6	SLU 14	-1	6	92	-223.06	14.95	0.12
6	SLU 15	-1	6	92	-222.17	14.89	0.11
6	SLU 16	-1	6	92	-223.06	14.95	0.12
6	SLU 17	-1	6	92	-222.17	14.89	0.11
6	SLU 18	-1	6	98	-238.24	15.94	0.12
6	SLU 19	-1	6	98	-237.34	15.89	0.11
6	SLU 20	-1	6	98	-238.24	15.94	0.12
6	SLU 21	-1	6	98	-237.34	15.89	0.11
6	SLU 22	-1	6	89	-214.29	14.37	0.12
6	SLU 23	-1	6	89	-212.8	14.27	0.1
6	SLU 24	-1	6	89	-214.29	14.37	0.12
6	SLU 25	-1	6	89	-213.39	14.31	0.11
6	SLU 26	-1	6	89	-212.8	14.27	0.1
6	SLU 27	-1	6	89	-214.29	14.37	0.12
6	SLU 28	-1	6	89	-213.39	14.31	0.11
6	SLU 29	-1	6	89	-214.29	14.37	0.12
6	SLU 30	-1	6	89	-213.39	14.31	0.11
6	SLU 31	-1	7	102	-248.2	16.59	0.11
6	SLU 32	-1	7	102	-249.69	16.69	0.12
6	SLU 33	-1	7	102	-248.8	16.63	0.11
6	SLU 34	-1	7	102	-248.2	16.59	0.11
6	SLU 35	-1	7	102	-249.69	16.69	0.12
6	SLU 36	-1	7	102	-248.8	16.63	0.11
6	SLU 37	-1	7	102	-249.69	16.69	0.12
6	SLU 38	-1	7	102	-248.8	16.63	0.11
6	SLU 39	-1	7	108	-264.86	17.68	0.13
6	SLU 40	-1	7	108	-263.97	17.63	0.12
6	SLU 41	-1	7	108	-264.86	17.68	0.13
6	SLU 42	-1	7	108	-263.97	17.63	0.12
6	SLU 43	-1	6	100	-234.82	15.82	0.14
6	SLU 44	-1	6	99	-233.34	15.72	0.12
6	SLU 45	-1	6	100	-234.82	15.82	0.14
6	SLU 46	-1	6	99	-233.93	15.76	0.13
6	SLU 47	-1	6	99	-233.34	15.72	0.12
6	SLU 48	-1	6	100	-234.82	15.82	0.14
6	SLU 49	-1	6	99	-233.93	15.76	0.13
6	SLU 50	-1	6	100	-234.82	15.82	0.14
6	SLU 51	-1	6	99	-233.93	15.76	0.13
6	SLU 52	-1	7	112	-268.74	18.05	0.13
6	SLU 53	-1	7	113	-270.23	18.14	0.15
6	SLU 54	-1	7	113	-269.34	18.08	0.14
6	SLU 55	-1	7	112	-268.74	18.05	0.13
6	SLU 56	-1	7	113	-270.23	18.14	0.15
6	SLU 57	-1	7	113	-269.34	18.08	0.14
6	SLU 58	-1	7	113	-270.23	18.14	0.15
6	SLU 59	-1	7	113	-269.34	18.08	0.14
6	SLU 60	-1	8	118	-285.4	19.13	0.15
6	SLU 61	-1	8	118	-284.51	19.08	0.14
6	SLU 62	-1	8	118	-285.4	19.13	0.15
6	SLU 63	-1	8	118	-284.51	19.08	0.14
6	SLU 64	-1	7	109	-261.45	17.56	0.15
6	SLU 65	-1	7	109	-259.96	17.47	0.13
6	SLU 66	-1	7	109	-261.45	17.56	0.15
6	SLU 67	-1	7	109	-260.56	17.5	0.14
6	SLU 68	-1	7	109	-259.96	17.47	0.13
6	SLU 69	-1	7	109	-261.45	17.56	0.15



Nodo Ind.	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
6	SLU 70	-1	7	109	-260.56	17.5	0.14
6	SLU 71	-1	7	109	-261.45	17.56	0.15
6	SLU 72	-1	7	109	-260.56	17.5	0.14
6	SLU 73	-1	8	122	-295.37	19.79	0.14
6	SLU 74	-2	8	123	-296.86	19.88	0.15
6	SLU 75	-1	8	122	-295.97	19.82	0.14
6	SLU 76	-1	8	122	-295.37	19.79	0.14
6	SLU 77	-2	8	123	-296.86	19.88	0.15
6	SLU 78	-1	8	122	-295.97	19.82	0.14
6	SLU 79	-2	8	123	-296.86	19.88	0.15
6	SLU 80	-1	8	122	-295.97	19.82	0.14
6	SLU 81	-2	8	128	-312.03	20.88	0.16
6	SLU 82	-2	8	128	-311.14	20.82	0.15
6	SLU 83	-2	8	128	-312.03	20.88	0.16
6	SLU 84	-2	8	128	-311.14	20.82	0.15
6	SLE RA 1	-1	5	82	-195.27	13.12	0.11
6	SLE RA 2	-1	5	82	-194.27	13.06	0.1
6	SLE RA 3	-1	5	82	-195.27	13.12	0.11
6	SLE RA 4	-1	5	82	-194.67	13.09	0.11
6	SLE RA 5	-1	5	82	-194.27	13.06	0.1
6	SLE RA 6	-1	5	82	-195.27	13.12	0.11
6	SLE RA 7	-1	5	82	-194.67	13.09	0.11
6	SLE RA 8	-1	5	82	-195.27	13.12	0.11
6	SLE RA 9	-1	5	82	-194.67	13.09	0.11
6	SLE RA 10	-1	6	90	-217.88	14.61	0.1
6	SLE RA 11	-1	6	91	-218.87	14.67	0.12
6	SLE RA 12	-1	6	91	-218.27	14.63	0.11
6	SLE RA 13	-1	6	90	-217.88	14.61	0.1
6	SLE RA 14	-1	6	91	-218.87	14.67	0.12
6	SLE RA 15	-1	6	91	-218.27	14.63	0.11
6	SLE RA 16	-1	6	91	-218.87	14.67	0.12
6	SLE RA 17	-1	6	91	-218.27	14.63	0.11
6	SLE RA 18	-1	6	95	-228.98	15.34	0.12
6	SLE RA 19	-1	6	94	-228.39	15.3	0.11
6	SLE RA 20	-1	6	95	-228.98	15.34	0.12
6	SLE RA 21	-1	6	94	-228.39	15.3	0.11
6	SLE FR 1	-1	5	82	-195.27	13.12	0.11
6	SLE FR 2	-1	5	82	-195.07	13.11	0.11
6	SLE FR 3	-1	5	82	-195.27	13.12	0.11
6	SLE FR 4	-1	5	86	-205.18	13.78	0.11
6	SLE FR 5	-1	5	86	-205.38	13.79	0.11
6	SLE FR 6	-1	6	88	-212.13	14.23	0.12
6	SLE QP 1	-1	5	82	-195.27	13.12	0.11
6	SLE QP 2	-1	5	86	-205.38	13.79	0.11
6	SLD 1	1	4	92	-190.8	13.05	-0.45
6	SLD 2	2	3	92	-190.03	13.02	-0.63
6	SLD 3	2	4	87	-175.84	12.12	-0.68
6	SLD 4	3	4	87	-175.07	12.08	-0.86
6	SLD 5	-2	4	95	-223.96	15	0.36
6	SLD 6	-1	4	95	-223.2	14.96	0.18
6	SLD 7	1	6	79	-174.1	11.88	-0.41
6	SLD 8	2	6	79	-173.33	11.85	-0.59
6	SLD 9	-4	5	93	-237.43	15.73	0.82
6	SLD 10	-3	5	93	-236.67	15.69	0.64
6	SLD 11	-1	7	77	-187.57	12.61	0.05
6	SLD 12	0	7	77	-186.8	12.58	-0.13
6	SLD 13	-5	7	85	-235.69	15.49	1.09
6	SLD 14	-4	6	85	-234.93	15.46	0.91
6	SLD 15	-4	7	80	-220.73	14.56	0.85
6	SLD 16	-3	7	80	-219.97	14.52	0.68
6	SLV 1	4	1	99	-172.33	12.13	-1.18
6	SLV 2	6	1	99	-170.59	12.04	-1.58
6	SLV 3	7	3	88	-137.93	9.97	-1.71
6	SLV 4	8	3	88	-136.19	9.89	-2.11
6	SLV 5	-3	2	106	-248.24	16.58	0.67
6	SLV 6	-2	1	107	-246.5	16.5	0.27
6	SLV 7	4	7	70	-133.59	9.41	-1.09
6	SLV 8	6	7	70	-131.85	9.33	-1.5
6	SLV 9	-8	4	102	-278.92	18.25	1.73
6	SLV 10	-6	3	102	-277.18	18.17	1.32
6	SLV 11	-1	9	65	-164.26	11.07	-0.04
6	SLV 12	1	9	65	-162.52	10.99	-0.44
6	SLV 13	-10	8	83	-274.57	17.68	2.34
6	SLV 14	-9	8	83	-272.83	17.6	1.93
6	SLV 15	-8	10	72	-240.17	15.53	1.81
6	SLV 16	-7	9	72	-238.43	15.45	1.4
6	CRTFP Ux+	0	0	0	0	0	0
6	CRTFP Ux-	0	0	0	0	0	0
6	CRTFP Uy+	0	0	0	0	0	0
6	CRTFP Uy-	0	0	0	0	0	0
7	SLU 1	0	13	204	-186.14	14.31	-0.05
7	SLU 2	0	13	203	-184.62	14.21	-0.07
7	SLU 3	0	13	204	-186.14	14.31	-0.05
7	SLU 4	0	13	203	-185.23	14.25	-0.06
7	SLU 5	0	13	203	-184.62	14.21	-0.07
7	SLU 6	0	13	204	-186.14	14.31	-0.05
7	SLU 7	0	13	203	-185.23	14.25	-0.06
7	SLU 8	0	13	204	-186.14	14.31	-0.05
7	SLU 9	0	13	203	-185.23	14.25	-0.06



Nodo Ind.	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
7	SLU 10	0	16	237	-221.04	16.87	-0.11
7	SLU 11	0	16	238	-222.56	16.98	-0.08
7	SLU 12	0	16	237	-221.65	16.92	-0.1
7	SLU 13	0	16	237	-221.04	16.87	-0.11
7	SLU 14	0	16	238	-222.56	16.98	-0.08
7	SLU 15	0	16	237	-221.65	16.92	-0.1
7	SLU 16	0	16	238	-222.56	16.98	-0.08
7	SLU 17	0	16	237	-221.65	16.92	-0.1
7	SLU 18	0	17	252	-238.17	18.12	-0.1
7	SLU 19	0	17	252	-237.26	18.06	-0.12
7	SLU 20	0	17	252	-238.17	18.12	-0.1
7	SLU 21	0	17	252	-237.26	18.06	-0.12
7	SLU 22	0	15	229	-213.46	16.3	-0.07
7	SLU 23	0	15	228	-211.94	16.2	-0.1
7	SLU 24	0	15	229	-213.46	16.3	-0.07
7	SLU 25	0	15	228	-212.55	16.24	-0.09
7	SLU 26	0	15	228	-211.94	16.2	-0.1
7	SLU 27	0	15	229	-213.46	16.3	-0.07
7	SLU 28	0	15	228	-212.55	16.24	-0.09
7	SLU 29	0	15	229	-213.46	16.3	-0.07
7	SLU 30	0	15	228	-212.55	16.24	-0.09
7	SLU 31	0	18	262	-248.36	18.87	-0.14
7	SLU 32	0	18	263	-249.88	18.97	-0.11
7	SLU 33	0	18	262	-248.97	18.91	-0.12
7	SLU 34	0	18	262	-248.36	18.87	-0.14
7	SLU 35	0	18	263	-249.88	18.97	-0.11
7	SLU 36	0	18	262	-248.97	18.91	-0.12
7	SLU 37	0	18	263	-249.88	18.97	-0.11
7	SLU 38	0	18	262	-248.97	18.91	-0.12
7	SLU 39	0	19	278	-265.49	20.12	-0.12
7	SLU 40	0	19	277	-264.58	20.05	-0.14
7	SLU 41	0	19	278	-265.49	20.12	-0.12
7	SLU 42	0	19	277	-264.58	20.05	-0.14
7	SLU 43	0	16	256	-232.62	17.92	-0.05
7	SLU 44	0	16	255	-231.09	17.82	-0.08
7	SLU 45	0	16	256	-232.62	17.92	-0.05
7	SLU 46	0	16	256	-231.7	17.86	-0.07
7	SLU 47	0	16	255	-231.09	17.82	-0.08
7	SLU 48	0	16	256	-232.62	17.92	-0.05
7	SLU 49	0	16	256	-231.7	17.86	-0.07
7	SLU 50	0	16	256	-232.62	17.92	-0.05
7	SLU 51	0	16	256	-231.7	17.86	-0.07
7	SLU 52	0	19	289	-267.52	20.48	-0.12
7	SLU 53	0	19	290	-269.04	20.59	-0.09
7	SLU 54	0	19	290	-268.13	20.53	-0.11
7	SLU 55	0	19	289	-267.52	20.48	-0.12
7	SLU 56	0	19	290	-269.04	20.59	-0.09
7	SLU 57	0	19	290	-268.13	20.53	-0.11
7	SLU 58	0	19	290	-269.04	20.59	-0.09
7	SLU 59	0	19	290	-268.13	20.53	-0.11
7	SLU 60	0	20	305	-284.65	21.73	-0.11
7	SLU 61	0	20	304	-283.74	21.67	-0.12
7	SLU 62	0	20	305	-284.65	21.73	-0.11
7	SLU 63	0	20	304	-283.74	21.67	-0.12
7	SLU 64	0	18	282	-259.94	19.91	-0.08
7	SLU 65	0	18	280	-258.41	19.81	-0.1
7	SLU 66	0	18	282	-259.94	19.91	-0.08
7	SLU 67	0	18	281	-259.02	19.85	-0.09
7	SLU 68	0	18	280	-258.41	19.81	-0.1
7	SLU 69	0	18	282	-259.94	19.91	-0.08
7	SLU 70	0	18	281	-259.02	19.85	-0.09
7	SLU 71	0	18	282	-259.94	19.91	-0.08
7	SLU 72	0	18	281	-259.02	19.85	-0.09
7	SLU 73	0	21	314	-294.84	22.48	-0.14
7	SLU 74	0	21	316	-296.36	22.58	-0.11
7	SLU 75	0	21	315	-295.45	22.52	-0.13
7	SLU 76	0	21	314	-294.84	22.48	-0.14
7	SLU 77	0	21	316	-296.36	22.58	-0.11
7	SLU 78	0	21	315	-295.45	22.52	-0.13
7	SLU 79	0	21	316	-296.36	22.58	-0.11
7	SLU 80	0	21	315	-295.45	22.52	-0.13
7	SLU 81	0	22	330	-311.97	23.73	-0.13
7	SLU 82	0	22	329	-311.06	23.66	-0.15
7	SLU 83	0	22	330	-311.97	23.73	-0.13
7	SLU 84	0	22	329	-311.06	23.66	-0.15
7	SLE RA 1	0	13	211	-193.95	14.88	-0.05
7	SLE RA 2	0	13	210	-192.93	14.81	-0.07
7	SLE RA 3	0	13	211	-193.95	14.88	-0.05
7	SLE RA 4	0	13	211	-193.34	14.84	-0.06
7	SLE RA 5	0	13	210	-192.93	14.81	-0.07
7	SLE RA 6	0	13	211	-193.95	14.88	-0.05
7	SLE RA 7	0	13	211	-193.34	14.84	-0.06
7	SLE RA 8	0	13	211	-193.95	14.88	-0.05
7	SLE RA 9	0	13	211	-193.34	14.84	-0.06
7	SLE RA 10	0	15	233	-217.21	16.59	-0.1
7	SLE RA 11	0	15	234	-218.23	16.66	-0.08
7	SLE RA 12	0	15	233	-217.62	16.62	-0.09
7	SLE RA 13	0	15	233	-217.21	16.59	-0.1
7	SLE RA 14	0	15	234	-218.23	16.66	-0.08



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
7	SLE RA 15	0	15	233	-217.62	16.62	-0.09
7	SLE RA 16	0	15	234	-218.23	16.66	-0.08
7	SLE RA 17	0	15	233	-217.62	16.62	-0.09
7	SLE RA 18	0	16	243	-228.64	17.42	-0.09
7	SLE RA 19	0	16	243	-228.03	17.38	-0.1
7	SLE RA 20	0	16	243	-228.64	17.42	-0.09
7	SLE RA 21	0	16	243	-228.03	17.38	-0.1
7	SLE FR 1	0	13	211	-193.95	14.88	-0.05
7	SLE FR 2	0	13	211	-193.74	14.87	-0.06
7	SLE FR 3	0	13	211	-193.95	14.88	-0.05
7	SLE FR 4	0	14	221	-204.15	15.63	-0.07
7	SLE FR 5	0	14	221	-204.35	15.64	-0.06
7	SLE FR 6	0	15	227	-211.29	16.15	-0.07
7	SLE QP 1	0	13	211	-193.95	14.88	-0.05
7	SLE QP 2	0	14	221	-204.35	15.64	-0.06
7	SLD 1	3	10	236	-191.87	15.05	-0.97
7	SLD 2	5	9	236	-191.34	15.03	-1.26
7	SLD 3	5	12	224	-176.02	13.97	-1.34
7	SLD 4	6	11	224	-175.49	13.96	-1.63
7	SLD 5	-2	10	244	-224.84	17.1	0.34
7	SLD 6	-1	9	244	-224.31	17.08	0.05
7	SLD 7	3	17	203	-171.99	13.52	-0.92
7	SLD 8	4	16	203	-171.46	13.5	-1.21
7	SLD 9	-5	12	238	-237.24	17.78	1.08
7	SLD 10	-4	12	239	-236.72	17.77	0.79
7	SLD 11	0	19	197	-184.39	14.2	-0.18
7	SLD 12	1	19	198	-183.87	14.19	-0.47
7	SLD 13	-7	17	218	-233.21	17.33	1.51
7	SLD 14	-6	17	218	-232.69	17.31	1.22
7	SLD 15	-5	19	205	-217.36	16.26	1.13
7	SLD 16	-4	19	206	-216.84	16.24	0.84
7	SLV 1	8	3	256	-176.1	14.3	-2.14
7	SLV 2	11	2	257	-174.91	14.25	-2.79
7	SLV 3	12	8	228	-139.58	11.82	-3
7	SLV 4	14	7	228	-138.39	11.78	-3.66
7	SLV 5	-4	4	274	-251.69	19.01	0.86
7	SLV 6	-1	3	275	-250.5	18.97	0.2
7	SLV 7	8	20	179	-129.94	10.75	-2.03
7	SLV 8	10	19	180	-128.75	10.71	-2.68
7	SLV 9	-11	10	262	-279.96	20.58	2.56
7	SLV 10	-8	8	262	-278.76	20.54	1.9
7	SLV 11	1	25	166	-158.21	12.32	-0.32
7	SLV 12	3	24	167	-157.01	12.27	-0.98
7	SLV 13	-15	21	213	-270.32	19.51	3.53
7	SLV 14	-12	20	214	-269.13	19.47	2.87
7	SLV 15	-12	26	185	-233.8	17.03	2.67
7	SLV 16	-9	25	185	-232.6	16.99	2.01
7	CRTFP Ux+	0	0	0	0	0	0
7	CRTFP Ux-	0	0	0	0	0	0
7	CRTFP Uy+	0	0	0	0	0	0
7	CRTFP Uy-	0	0	0	0	0	0
8	SLU 1	1	21	352	-156.1	13.03	-0.25
8	SLU 2	1	21	350	-154.75	12.93	-0.29
8	SLU 3	1	21	352	-156.1	13.03	-0.25
8	SLU 4	1	21	351	-155.29	12.97	-0.27
8	SLU 5	1	21	350	-154.75	12.93	-0.29
8	SLU 6	1	21	352	-156.1	13.03	-0.25
8	SLU 7	1	21	351	-155.29	12.97	-0.27
8	SLU 8	1	21	352	-156.1	13.03	-0.25
8	SLU 9	1	21	351	-155.29	12.97	-0.27
8	SLU 10	2	26	409	-187.22	15.44	-0.38
8	SLU 11	1	26	411	-188.56	15.54	-0.34
8	SLU 12	2	26	410	-187.75	15.48	-0.37
8	SLU 13	2	26	409	-187.22	15.44	-0.38
8	SLU 14	1	26	411	-188.56	15.54	-0.34
8	SLU 15	2	26	410	-187.75	15.48	-0.37
8	SLU 16	1	26	411	-188.56	15.54	-0.34
8	SLU 17	2	26	410	-187.75	15.48	-0.37
8	SLU 18	2	28	436	-202.47	16.61	-0.38
8	SLU 19	2	28	435	-201.67	16.55	-0.41
8	SLU 20	2	28	436	-202.47	16.61	-0.38
8	SLU 21	2	28	435	-201.67	16.55	-0.41
8	SLU 22	1	25	396	-180.39	14.9	-0.31
8	SLU 23	1	25	394	-179.04	14.8	-0.35
8	SLU 24	1	25	396	-180.39	14.9	-0.31
8	SLU 25	1	25	395	-179.58	14.84	-0.34
8	SLU 26	1	25	394	-179.04	14.8	-0.35
8	SLU 27	1	25	396	-180.39	14.9	-0.31
8	SLU 28	1	25	395	-179.58	14.84	-0.34
8	SLU 29	1	25	396	-180.39	14.9	-0.31
8	SLU 30	1	25	395	-179.58	14.84	-0.34
8	SLU 31	2	29	453	-211.51	17.31	-0.45
8	SLU 32	2	29	455	-212.85	17.41	-0.41
8	SLU 33	2	29	454	-212.05	17.35	-0.43
8	SLU 34	2	29	453	-211.51	17.31	-0.45
8	SLU 35	2	29	455	-212.85	17.41	-0.41
8	SLU 36	2	29	454	-212.05	17.35	-0.43
8	SLU 37	2	29	455	-212.85	17.41	-0.41
8	SLU 38	2	29	454	-212.05	17.35	-0.43



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
8	SLU 39	2	31	480	-226.77	18.48	-0.45
8	SLU 40	2	31	479	-225.96	18.42	-0.47
8	SLU 41	2	31	480	-226.77	18.48	-0.45
8	SLU 42	2	31	479	-225.96	18.42	-0.47
8	SLU 43	1	27	443	-194.6	16.3	-0.3
8	SLU 44	1	27	441	-193.25	16.2	-0.34
8	SLU 45	1	27	443	-194.6	16.3	-0.3
8	SLU 46	1	27	442	-193.79	16.24	-0.33
8	SLU 47	1	27	441	-193.25	16.2	-0.34
8	SLU 48	1	27	443	-194.6	16.3	-0.3
8	SLU 49	1	27	442	-193.79	16.24	-0.33
8	SLU 50	1	27	443	-194.6	16.3	-0.3
8	SLU 51	1	27	442	-193.79	16.24	-0.33
8	SLU 52	2	31	500	-225.72	18.71	-0.44
8	SLU 53	2	31	502	-227.06	18.81	-0.4
8	SLU 54	2	31	501	-226.26	18.75	-0.42
8	SLU 55	2	31	500	-225.72	18.71	-0.44
8	SLU 56	2	31	502	-227.06	18.81	-0.4
8	SLU 57	2	31	501	-226.26	18.75	-0.42
8	SLU 58	2	31	502	-227.06	18.81	-0.4
8	SLU 59	2	31	501	-226.26	18.75	-0.42
8	SLU 60	2	33	527	-240.98	19.88	-0.44
8	SLU 61	2	33	526	-240.17	19.82	-0.46
8	SLU 62	2	33	527	-240.98	19.88	-0.44
8	SLU 63	2	33	526	-240.17	19.82	-0.46
8	SLU 64	2	30	487	-218.89	18.17	-0.37
8	SLU 65	2	30	485	-217.54	18.07	-0.41
8	SLU 66	2	30	487	-218.89	18.17	-0.37
8	SLU 67	2	30	485	-218.08	18.11	-0.39
8	SLU 68	2	30	485	-217.54	18.07	-0.41
8	SLU 69	2	30	487	-218.89	18.17	-0.37
8	SLU 70	2	30	485	-218.08	18.11	-0.39
8	SLU 71	2	30	487	-218.89	18.17	-0.37
8	SLU 72	2	30	485	-218.08	18.11	-0.39
8	SLU 73	2	34	543	-250.01	20.58	-0.5
8	SLU 74	2	35	545	-251.35	20.67	-0.46
8	SLU 75	2	35	544	-250.55	20.62	-0.48
8	SLU 76	2	34	543	-250.01	20.58	-0.5
8	SLU 77	2	35	545	-251.35	20.67	-0.46
8	SLU 78	2	35	544	-250.55	20.62	-0.48
8	SLU 79	2	35	545	-251.35	20.67	-0.46
8	SLU 80	2	35	544	-250.55	20.62	-0.48
8	SLU 81	2	36	571	-265.27	21.75	-0.5
8	SLU 82	2	36	569	-264.46	21.69	-0.52
8	SLU 83	2	36	571	-265.27	21.75	-0.5
8	SLU 84	2	36	569	-264.46	21.69	-0.52
8	SLE RA 1	1	22	365	-163.04	13.56	-0.27
8	SLE RA 2	1	22	363	-162.14	13.5	-0.3
8	SLE RA 3	1	22	365	-163.04	13.56	-0.27
8	SLE RA 4	1	22	364	-162.5	13.52	-0.29
8	SLE RA 5	1	22	363	-162.14	13.5	-0.3
8	SLE RA 6	1	22	365	-163.04	13.56	-0.27
8	SLE RA 7	1	22	364	-162.5	13.52	-0.29
8	SLE RA 8	1	22	365	-163.04	13.56	-0.27
8	SLE RA 9	1	22	364	-162.5	13.52	-0.29
8	SLE RA 10	1	25	403	-183.78	15.17	-0.36
8	SLE RA 11	1	25	404	-184.68	15.24	-0.33
8	SLE RA 12	1	25	403	-184.14	15.2	-0.35
8	SLE RA 13	1	25	403	-183.78	15.17	-0.36
8	SLE RA 14	1	25	404	-184.68	15.24	-0.33
8	SLE RA 15	1	25	403	-184.14	15.2	-0.35
8	SLE RA 16	1	25	404	-184.68	15.24	-0.33
8	SLE RA 17	1	25	403	-184.14	15.2	-0.35
8	SLE RA 18	1	27	421	-193.96	15.95	-0.36
8	SLE RA 19	2	27	420	-193.42	15.91	-0.37
8	SLE RA 20	1	27	421	-193.96	15.95	-0.36
8	SLE RA 21	2	27	420	-193.42	15.91	-0.37
8	SLE FR 1	1	22	365	-163.04	13.56	-0.27
8	SLE FR 2	1	22	365	-162.86	13.55	-0.27
8	SLE FR 3	1	22	365	-163.04	13.56	-0.27
8	SLE FR 4	1	24	381	-172.13	14.27	-0.3
8	SLE FR 5	1	24	382	-172.31	14.28	-0.3
8	SLE FR 6	1	25	393	-178.5	14.76	-0.31
8	SLE QP 1	1	22	365	-163.04	13.56	-0.27
8	SLE QP 2	1	24	382	-172.31	14.28	-0.3
8	SLD 1	6	15	409	-162.59	13.83	-1.55
8	SLD 2	8	15	410	-162.2	13.82	-1.96
8	SLD 3	8	19	388	-147.32	12.78	-2.08
8	SLD 4	10	18	388	-146.92	12.78	-2.48
8	SLD 5	-1	16	422	-192.7	15.73	0.26
8	SLD 6	1	15	423	-192.31	15.73	-0.14
8	SLD 7	6	28	351	-141.79	12.25	-1.48
8	SLD 8	8	27	351	-141.39	12.24	-1.89
8	SLD 9	-5	20	412	-203.23	16.32	1.29
8	SLD 10	-3	19	413	-202.84	16.31	0.89
8	SLD 11	2	32	340	-152.32	12.83	-0.45
8	SLD 12	3	32	341	-151.93	12.83	-0.85
8	SLD 13	-8	29	375	-197.7	15.78	1.89
8	SLD 14	-6	28	376	-197.31	15.78	1.49



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
8	SLD 15	-5	33	353	-182.43	14.74	1.37
8	SLD 16	-4	32	354	-182.04	14.73	0.96
8	SLV 1	13	5	445	-150.33	13.26	-3.18
8	SLV 2	17	3	447	-149.44	13.24	-4.1
8	SLV 3	18	14	395	-115.06	10.84	-4.38
8	SLV 4	21	12	397	-114.17	10.82	-5.29
8	SLV 5	-4	5	476	-219.52	17.65	0.97
8	SLV 6	0	3	477	-218.63	17.63	0.06
8	SLV 7	12	35	309	-101.96	9.59	-3.02
8	SLV 8	16	33	311	-101.07	9.57	-3.93
8	SLV 9	-13	15	452	-243.56	18.99	3.34
8	SLV 10	-10	13	454	-242.67	18.97	2.42
8	SLV 11	3	44	286	-126	10.93	-0.65
8	SLV 12	6	42	287	-125.1	10.91	-1.57
8	SLV 13	-19	36	366	-230.46	17.74	4.7
8	SLV 14	-15	34	368	-229.56	17.72	3.79
8	SLV 15	-14	44	316	-195.19	15.32	3.51
8	SLV 16	-10	42	318	-194.3	15.3	2.59
8	CRTFP Ux+	0	0	0	0	0	0
8	CRTFP Ux-	0	0	0	0	0	0
8	CRTFP Uy+	0	0	0	0	0	0
8	CRTFP Uy-	0	0	0	0	0	0
9	SLU 1	3	29	501	-113	10.56	-0.53
9	SLU 2	3	29	498	-111.91	10.48	-0.58
9	SLU 3	3	29	501	-113	10.56	-0.53
9	SLU 4	3	29	499	-112.34	10.51	-0.56
9	SLU 5	3	29	498	-111.91	10.48	-0.58
9	SLU 6	3	29	501	-113	10.56	-0.53
9	SLU 7	3	29	499	-112.34	10.51	-0.56
9	SLU 8	3	29	501	-113	10.56	-0.53
9	SLU 9	3	29	499	-112.34	10.51	-0.56
9	SLU 10	4	35	582	-137.96	12.61	-0.74
9	SLU 11	4	35	585	-139.05	12.7	-0.69
9	SLU 12	4	35	583	-138.4	12.65	-0.72
9	SLU 13	4	35	582	-137.96	12.61	-0.74
9	SLU 14	4	35	585	-139.05	12.7	-0.69
9	SLU 15	4	35	583	-138.4	12.65	-0.72
9	SLU 16	4	35	585	-139.05	12.7	-0.69
9	SLU 17	4	35	583	-138.4	12.65	-0.72
9	SLU 18	4	38	621	-150.22	13.61	-0.76
9	SLU 19	4	38	619	-149.56	13.56	-0.79
9	SLU 20	4	38	621	-150.22	13.61	-0.76
9	SLU 21	4	38	619	-149.56	13.56	-0.79
9	SLU 22	3	33	563	-132.45	12.15	-0.64
9	SLU 23	3	33	560	-131.36	12.06	-0.69
9	SLU 24	3	33	563	-132.45	12.15	-0.64
9	SLU 25	3	33	561	-131.79	12.1	-0.67
9	SLU 26	3	33	560	-131.36	12.06	-0.69
9	SLU 27	3	33	563	-132.45	12.15	-0.64
9	SLU 28	3	33	561	-131.79	12.1	-0.67
9	SLU 29	3	33	563	-132.45	12.15	-0.64
9	SLU 30	3	33	561	-131.79	12.1	-0.67
9	SLU 31	4	39	644	-157.41	14.2	-0.85
9	SLU 32	4	40	647	-158.5	14.28	-0.8
9	SLU 33	4	39	645	-157.85	14.23	-0.83
9	SLU 34	4	39	644	-157.41	14.2	-0.85
9	SLU 35	4	40	647	-158.5	14.28	-0.8
9	SLU 36	4	39	645	-157.85	14.23	-0.83
9	SLU 37	4	40	647	-158.5	14.28	-0.8
9	SLU 38	4	39	645	-157.85	14.23	-0.83
9	SLU 39	4	42	682	-169.67	15.2	-0.87
9	SLU 40	5	42	681	-169.01	15.15	-0.9
9	SLU 41	4	42	682	-169.67	15.2	-0.87
9	SLU 42	5	42	681	-169.01	15.15	-0.9
9	SLU 43	3	36	630	-140.23	13.19	-0.64
9	SLU 44	4	36	627	-139.14	13.1	-0.69
9	SLU 45	3	36	630	-140.23	13.19	-0.64
9	SLU 46	3	36	629	-139.57	13.14	-0.67
9	SLU 47	4	36	627	-139.14	13.1	-0.69
9	SLU 48	3	36	630	-140.23	13.19	-0.64
9	SLU 49	3	36	629	-139.57	13.14	-0.67
9	SLU 50	3	36	630	-140.23	13.19	-0.64
9	SLU 51	3	36	629	-139.57	13.14	-0.67
9	SLU 52	4	42	711	-165.19	15.24	-0.86
9	SLU 53	4	42	714	-166.28	15.32	-0.81
9	SLU 54	4	42	712	-165.63	15.27	-0.84
9	SLU 55	4	42	711	-165.19	15.24	-0.86
9	SLU 56	4	42	714	-166.28	15.32	-0.81
9	SLU 57	4	42	712	-165.63	15.27	-0.84
9	SLU 58	4	42	714	-166.28	15.32	-0.81
9	SLU 59	4	42	712	-165.63	15.27	-0.84
9	SLU 60	4	45	750	-177.45	16.24	-0.88
9	SLU 61	5	45	748	-176.79	16.19	-0.91
9	SLU 62	4	45	750	-177.45	16.24	-0.88
9	SLU 63	5	45	748	-176.79	16.19	-0.91
9	SLU 64	4	40	692	-159.68	14.77	-0.76
9	SLU 65	4	40	689	-158.59	14.69	-0.81
9	SLU 66	4	40	692	-159.68	14.77	-0.76
9	SLU 67	4	40	690	-159.02	14.72	-0.79



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
9	SLU 68	4	40	689	-158.59	14.69	-0.81
9	SLU 69	4	40	692	-159.68	14.77	-0.76
9	SLU 70	4	40	690	-159.02	14.72	-0.79
9	SLU 71	4	40	692	-159.68	14.77	-0.76
9	SLU 72	4	40	690	-159.02	14.72	-0.79
9	SLU 73	5	47	773	-184.64	16.82	-0.97
9	SLU 74	5	47	776	-185.73	16.91	-0.92
9	SLU 75	5	47	774	-185.08	16.86	-0.95
9	SLU 76	5	47	773	-184.64	16.82	-0.97
9	SLU 77	5	47	776	-185.73	16.91	-0.92
9	SLU 78	5	47	774	-185.08	16.86	-0.95
9	SLU 79	5	47	776	-185.73	16.91	-0.92
9	SLU 80	5	47	774	-185.08	16.86	-0.95
9	SLU 81	5	49	812	-196.9	17.82	-0.99
9	SLU 82	5	49	810	-196.24	17.77	-1.02
9	SLU 83	5	49	812	-196.9	17.82	-0.99
9	SLU 84	5	49	810	-196.24	17.77	-1.02
9	SLE RA 1	3	30	519	-118.55	11.01	-0.56
9	SLE RA 2	3	30	517	-117.83	10.96	-0.59
9	SLE RA 3	3	30	519	-118.55	11.01	-0.56
9	SLE RA 4	3	30	518	-118.12	10.98	-0.58
9	SLE RA 5	3	30	517	-117.83	10.96	-0.59
9	SLE RA 6	3	30	519	-118.55	11.01	-0.56
9	SLE RA 7	3	30	518	-118.12	10.98	-0.58
9	SLE RA 8	3	30	519	-118.55	11.01	-0.56
9	SLE RA 9	3	30	518	-118.12	10.98	-0.58
9	SLE RA 10	4	34	573	-135.2	12.38	-0.7
9	SLE RA 11	3	34	575	-135.92	12.44	-0.67
9	SLE RA 12	3	34	573	-135.49	12.4	-0.69
9	SLE RA 13	4	34	573	-135.2	12.38	-0.7
9	SLE RA 14	3	34	575	-135.92	12.44	-0.67
9	SLE RA 15	3	34	573	-135.49	12.4	-0.69
9	SLE RA 16	3	34	575	-135.92	12.44	-0.67
9	SLE RA 17	3	34	573	-135.49	12.4	-0.69
9	SLE RA 18	4	36	598	-143.37	13.05	-0.71
9	SLE RA 19	4	36	597	-142.93	13.01	-0.73
9	SLE RA 20	4	36	598	-143.37	13.05	-0.71
9	SLE RA 21	4	36	597	-142.93	13.01	-0.73
9	SLE FR 1	3	30	519	-118.55	11.01	-0.56
9	SLE FR 2	3	30	518	-118.41	11	-0.57
9	SLE FR 3	3	30	519	-118.55	11.01	-0.56
9	SLE FR 4	3	32	542	-125.85	11.61	-0.61
9	SLE FR 5	3	32	543	-126	11.62	-0.61
9	SLE FR 6	3	33	559	-130.96	12.03	-0.64
9	SLE QP 1	3	30	519	-118.55	11.01	-0.56
9	SLE QP 2	3	32	543	-126	11.62	-0.61
9	SLD 1	9	20	584	-119	12.95	-2.19
9	SLD 2	11	19	585	-118.71	12.95	-2.7
9	SLD 3	12	26	553	-104.36	11.97	-2.85
9	SLD 4	14	24	554	-104.07	11.97	-3.35
9	SLD 5	0	20	602	-146.2	13.51	0.09
9	SLD 6	2	19	603	-145.91	13.51	-0.41
9	SLD 7	9	39	498	-97.4	10.24	-2.1
9	SLD 8	11	38	499	-97.12	10.24	-2.6
9	SLD 9	-5	26	586	-154.88	13.01	1.39
9	SLD 10	-3	25	587	-154.59	13.01	0.89
9	SLD 11	4	45	482	-106.08	9.74	-0.8
9	SLD 12	6	44	483	-105.8	9.74	-1.3
9	SLD 13	-8	39	531	-147.92	11.28	2.14
9	SLD 14	-6	38	532	-147.64	11.28	1.64
9	SLD 15	-5	45	500	-133.29	10.3	1.49
9	SLD 16	-3	44	501	-133	10.3	0.98
9	SLV 1	17	5	639	-110.2	14.69	-4.24
9	SLV 2	22	2	642	-109.55	14.69	-5.39
9	SLV 3	23	18	567	-76.3	12.42	-5.74
9	SLV 4	28	15	569	-75.64	12.42	-6.9
9	SLV 5	-3	5	680	-172.91	15.99	0.98
9	SLV 6	1	2	683	-172.26	15.99	-0.17
9	SLV 7	17	49	439	-59.9	8.42	-4.02
9	SLV 8	21	46	442	-59.24	8.42	-5.17
9	SLV 9	-15	18	643	-192.75	14.83	3.96
9	SLV 10	-10	15	646	-192.1	14.83	2.81
9	SLV 11	5	62	403	-79.74	7.26	-1.04
9	SLV 12	9	59	405	-79.09	7.26	-2.2
9	SLV 13	-22	49	516	-176.35	10.83	5.69
9	SLV 14	-17	46	518	-175.7	10.83	4.53
9	SLV 15	-16	62	444	-142.45	8.56	4.18
9	SLV 16	-11	59	446	-141.79	8.56	3.03
9	CRTFP Ux+	0	0	0	0	0	0
9	CRTFP Ux-	0	0	0	0	0	0
9	CRTFP Uy+	0	0	0	0	0	0
9	CRTFP Uy-	0	0	0	0	0	0
10	SLU 1	5	34	638	-69.47	7.79	-0.85
10	SLU 2	5	34	635	-68.64	7.73	-0.91
10	SLU 3	5	34	638	-69.47	7.79	-0.85
10	SLU 4	5	34	636	-68.97	7.75	-0.89
10	SLU 5	5	34	635	-68.64	7.73	-0.91
10	SLU 6	5	34	638	-69.47	7.79	-0.85
10	SLU 7	5	34	636	-68.97	7.75	-0.89



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
10	SLU 8	5	34	638	-69.47	7.79	-0.85
10	SLU 9	5	34	636	-68.97	7.75	-0.89
10	SLU 10	6	42	741	-88.04	9.43	-1.16
10	SLU 11	6	42	745	-88.87	9.5	-1.1
10	SLU 12	6	42	742	-88.37	9.46	-1.13
10	SLU 13	6	42	741	-88.04	9.43	-1.16
10	SLU 14	6	42	745	-88.87	9.5	-1.1
10	SLU 15	6	42	742	-88.37	9.46	-1.13
10	SLU 16	6	42	745	-88.87	9.5	-1.1
10	SLU 17	6	42	742	-88.37	9.46	-1.13
10	SLU 18	6	45	790	-97.18	10.23	-1.2
10	SLU 19	6	45	788	-96.68	10.19	-1.24
10	SLU 20	6	45	790	-97.18	10.23	-1.2
10	SLU 21	6	45	788	-96.68	10.19	-1.24
10	SLU 22	5	40	717	-83.91	9.06	-1.03
10	SLU 23	6	40	713	-83.08	8.99	-1.08
10	SLU 24	5	40	717	-83.91	9.06	-1.03
10	SLU 25	6	40	715	-83.41	9.01	-1.06
10	SLU 26	6	40	713	-83.08	8.99	-1.08
10	SLU 27	5	40	717	-83.91	9.06	-1.03
10	SLU 28	6	40	715	-83.41	9.01	-1.06
10	SLU 29	5	40	717	-83.91	9.06	-1.03
10	SLU 30	6	40	715	-83.41	9.01	-1.06
10	SLU 31	7	47	820	-102.48	10.69	-1.33
10	SLU 32	7	47	823	-103.31	10.76	-1.27
10	SLU 33	7	47	821	-102.81	10.72	-1.3
10	SLU 34	7	47	820	-102.48	10.69	-1.33
10	SLU 35	7	47	823	-103.31	10.76	-1.27
10	SLU 36	7	47	821	-102.81	10.72	-1.3
10	SLU 37	7	47	823	-103.31	10.76	-1.27
10	SLU 38	7	47	821	-102.81	10.72	-1.3
10	SLU 39	7	51	869	-111.62	11.49	-1.37
10	SLU 40	7	51	867	-111.12	11.45	-1.41
10	SLU 41	7	51	869	-111.62	11.49	-1.37
10	SLU 42	7	51	867	-111.12	11.45	-1.41
10	SLU 43	6	43	803	-85.36	9.7	-1.05
10	SLU 44	6	43	799	-84.53	9.63	-1.11
10	SLU 45	6	43	803	-85.36	9.7	-1.05
10	SLU 46	6	43	801	-84.86	9.66	-1.09
10	SLU 47	6	43	799	-84.53	9.63	-1.11
10	SLU 48	6	43	803	-85.36	9.7	-1.05
10	SLU 49	6	43	801	-84.86	9.66	-1.09
10	SLU 50	6	43	803	-85.36	9.7	-1.05
10	SLU 51	6	43	801	-84.86	9.66	-1.09
10	SLU 52	7	50	905	-103.93	11.34	-1.35
10	SLU 53	7	50	909	-104.76	11.4	-1.29
10	SLU 54	7	50	907	-104.26	11.36	-1.33
10	SLU 55	7	50	905	-103.93	11.34	-1.35
10	SLU 56	7	50	909	-104.76	11.4	-1.29
10	SLU 57	7	50	907	-104.26	11.36	-1.33
10	SLU 58	7	50	909	-104.76	11.4	-1.29
10	SLU 59	7	50	907	-104.26	11.36	-1.33
10	SLU 60	7	54	955	-113.07	12.13	-1.4
10	SLU 61	8	53	953	-112.57	12.09	-1.43
10	SLU 62	7	54	955	-113.07	12.13	-1.4
10	SLU 63	8	53	953	-112.57	12.09	-1.43
10	SLU 64	7	48	881	-99.8	10.96	-1.22
10	SLU 65	7	48	878	-98.97	10.89	-1.28
10	SLU 66	7	48	881	-99.8	10.96	-1.22
10	SLU 67	7	48	879	-99.3	10.92	-1.26
10	SLU 68	7	48	878	-98.97	10.89	-1.28
10	SLU 69	7	48	881	-99.8	10.96	-1.22
10	SLU 70	7	48	879	-99.3	10.92	-1.26
10	SLU 71	7	48	881	-99.8	10.96	-1.22
10	SLU 72	7	48	879	-99.3	10.92	-1.26
10	SLU 73	8	56	984	-118.37	12.6	-1.53
10	SLU 74	8	56	988	-119.2	12.66	-1.47
10	SLU 75	8	56	986	-118.7	12.62	-1.5
10	SLU 76	8	56	984	-118.37	12.6	-1.53
10	SLU 77	8	56	988	-119.2	12.66	-1.47
10	SLU 78	8	56	986	-118.7	12.62	-1.5
10	SLU 79	8	56	988	-119.2	12.66	-1.47
10	SLU 80	8	56	986	-118.7	12.62	-1.5
10	SLU 81	8	59	1033	-127.51	13.39	-1.57
10	SLU 82	8	59	1031	-127.01	13.35	-1.61
10	SLU 83	8	59	1033	-127.51	13.39	-1.57
10	SLU 84	8	59	1031	-127.01	13.35	-1.61
10	SLE RA 1	5	36	661	-73.6	8.15	-0.9
10	SLE RA 2	5	36	658	-73.04	8.11	-0.94
10	SLE RA 3	5	36	661	-73.6	8.15	-0.9
10	SLE RA 4	5	36	659	-73.26	8.13	-0.93
10	SLE RA 5	5	36	658	-73.04	8.11	-0.94
10	SLE RA 6	5	36	661	-73.6	8.15	-0.9
10	SLE RA 7	5	36	659	-73.26	8.13	-0.93
10	SLE RA 8	5	36	661	-73.6	8.15	-0.9
10	SLE RA 9	5	36	659	-73.26	8.13	-0.93
10	SLE RA 10	6	41	729	-85.97	9.25	-1.1
10	SLE RA 11	6	41	732	-86.53	9.29	-1.07
10	SLE RA 12	6	41	730	-86.19	9.26	-1.09



Nodo Ind.	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
10	SLE RA 13	6	41	729	-85.97	9.25	-1.1
10	SLE RA 14	6	41	732	-86.53	9.29	-1.07
10	SLE RA 15	6	41	730	-86.19	9.26	-1.09
10	SLE RA 16	6	41	732	-86.53	9.29	-1.07
10	SLE RA 17	6	41	730	-86.19	9.26	-1.09
10	SLE RA 18	6	43	762	-92.07	9.78	-1.13
10	SLE RA 19	6	43	761	-91.74	9.75	-1.16
10	SLE RA 20	6	43	762	-92.07	9.78	-1.13
10	SLE RA 21	6	43	761	-91.74	9.75	-1.16
10	SLE FR 1	5	36	661	-73.6	8.15	-0.9
10	SLE FR 2	5	36	660	-73.49	8.15	-0.91
10	SLE FR 3	5	36	661	-73.6	8.15	-0.9
10	SLE FR 4	5	38	691	-79.03	8.63	-0.98
10	SLE FR 5	5	38	691	-79.14	8.64	-0.97
10	SLE FR 6	5	40	711	-82.83	8.97	-1.02
10	SLE QP 1	5	36	661	-73.6	8.15	-0.9
10	SLE QP 2	5	38	691	-79.14	8.64	-0.97
10	SLD 1	12	23	748	-74.46	9.87	-2.86
10	SLD 2	15	21	750	-74.27	9.88	-3.46
10	SLD 3	16	31	708	-59.78	8.94	-3.64
10	SLD 4	18	29	709	-59.59	8.94	-4.24
10	SLD 5	2	23	769	-100.07	10.43	-0.15
10	SLD 6	4	21	771	-99.88	10.43	-0.75
10	SLD 7	12	48	634	-51.13	7.31	-2.74
10	SLD 8	15	46	636	-50.94	7.31	-3.35
10	SLD 9	-4	30	746	-107.34	9.97	1.4
10	SLD 10	-2	28	748	-107.15	9.97	0.8
10	SLD 11	6	55	612	-58.39	6.85	-1.2
10	SLD 12	9	54	613	-58.2	6.85	-1.8
10	SLD 13	-8	47	673	-98.69	8.34	2.3
10	SLD 14	-5	46	674	-98.5	8.35	1.7
10	SLD 15	-4	55	632	-84	7.41	1.52
10	SLD 16	-2	53	634	-83.81	7.41	0.92
10	SLV 1	22	3	823	-68.63	11.49	-5.31
10	SLV 2	27	-1	827	-68.2	11.51	-6.67
10	SLV 3	29	21	729	-34.52	9.32	-7.09
10	SLV 4	34	17	733	-34.08	9.33	-8.45
10	SLV 5	-2	2	872	-127.88	12.79	0.91
10	SLV 6	3	-2	876	-127.45	12.8	-0.46
10	SLV 7	21	62	559	-14.16	5.55	-5.03
10	SLV 8	27	58	562	-13.73	5.56	-6.4
10	SLV 9	-16	19	820	-144.55	11.72	4.45
10	SLV 10	-11	15	824	-144.11	11.73	3.09
10	SLV 11	8	78	506	-30.83	4.48	-1.49
10	SLV 12	13	74	510	-30.39	4.5	-2.85
10	SLV 13	-24	59	649	-124.19	7.95	6.51
10	SLV 14	-19	55	653	-123.76	7.96	5.14
10	SLV 15	-17	77	555	-90.08	5.78	4.73
10	SLV 16	-11	73	559	-89.64	5.79	3.36
10	CRTFP Ux+	0	0	0	0	0	0
10	CRTFP Ux-	0	0	0	0	0	0
10	CRTFP Uy+	0	0	0	0	0	0
10	CRTFP Uy-	0	0	0	0	0	0
11	SLU 1	7	38	758	-31.57	5.2	-1.22
11	SLU 2	7	38	753	-30.96	5.15	-1.29
11	SLU 3	7	38	758	-31.57	5.2	-1.22
11	SLU 4	7	38	755	-31.2	5.17	-1.26
11	SLU 5	7	38	753	-30.96	5.15	-1.29
11	SLU 6	7	38	758	-31.57	5.2	-1.22
11	SLU 7	7	38	755	-31.2	5.17	-1.26
11	SLU 8	7	38	758	-31.57	5.2	-1.22
11	SLU 9	7	38	755	-31.2	5.17	-1.26
11	SLU 10	8	46	880	-44.52	6.44	-1.62
11	SLU 11	8	46	884	-45.13	6.49	-1.55
11	SLU 12	8	46	881	-44.76	6.46	-1.6
11	SLU 13	8	46	880	-44.52	6.44	-1.62
11	SLU 14	8	46	884	-45.13	6.49	-1.55
11	SLU 15	8	46	881	-44.76	6.46	-1.6
11	SLU 16	8	46	884	-45.13	6.49	-1.55
11	SLU 17	8	46	881	-44.76	6.46	-1.6
11	SLU 18	9	50	938	-50.94	7.05	-1.7
11	SLU 19	9	50	935	-50.57	7.02	-1.74
11	SLU 20	9	50	938	-50.94	7.05	-1.7
11	SLU 21	9	50	935	-50.57	7.02	-1.74
11	SLU 22	8	44	851	-41.62	6.15	-1.46
11	SLU 23	8	44	846	-41.01	6.1	-1.53
11	SLU 24	8	44	851	-41.62	6.15	-1.46
11	SLU 25	8	44	848	-41.26	6.12	-1.5
11	SLU 26	8	44	846	-41.01	6.1	-1.53
11	SLU 27	8	44	851	-41.62	6.15	-1.46
11	SLU 28	8	44	848	-41.26	6.12	-1.5
11	SLU 29	8	44	851	-41.62	6.15	-1.46
11	SLU 30	8	44	848	-41.26	6.12	-1.5
11	SLU 31	10	52	973	-54.58	7.39	-1.86
11	SLU 32	9	52	977	-55.19	7.45	-1.79
11	SLU 33	10	52	974	-54.82	7.42	-1.83
11	SLU 34	10	52	973	-54.58	7.39	-1.86
11	SLU 35	9	52	977	-55.19	7.45	-1.79
11	SLU 36	10	52	974	-54.82	7.42	-1.83



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
11	SLU 37	9	52	977	-55.19	7.45	-1.79
11	SLU 38	10	52	974	-54.82	7.42	-1.83
11	SLU 39	10	56	1031	-61	8	-1.94
11	SLU 40	10	56	1029	-60.63	7.97	-1.98
11	SLU 41	10	56	1031	-61	8	-1.94
11	SLU 42	10	56	1029	-60.63	7.97	-1.98
11	SLU 43	8	47	953	-37.59	6.43	-1.51
11	SLU 44	8	47	949	-36.98	6.38	-1.57
11	SLU 45	8	47	953	-37.59	6.43	-1.51
11	SLU 46	8	47	950	-37.22	6.4	-1.55
11	SLU 47	8	47	949	-36.98	6.38	-1.57
11	SLU 48	8	47	953	-37.59	6.43	-1.51
11	SLU 49	8	47	950	-37.22	6.4	-1.55
11	SLU 50	8	47	953	-37.59	6.43	-1.51
11	SLU 51	8	47	950	-37.22	6.4	-1.55
11	SLU 52	10	55	1075	-50.54	7.67	-1.91
11	SLU 53	10	56	1079	-51.15	7.73	-1.84
11	SLU 54	10	55	1077	-50.78	7.7	-1.88
11	SLU 55	10	55	1075	-50.54	7.67	-1.91
11	SLU 56	10	56	1079	-51.15	7.73	-1.84
11	SLU 57	10	55	1077	-50.78	7.7	-1.88
11	SLU 58	10	56	1079	-51.15	7.73	-1.84
11	SLU 59	10	55	1077	-50.78	7.7	-1.88
11	SLU 60	10	59	1133	-56.96	8.28	-1.98
11	SLU 61	11	59	1131	-56.6	8.25	-2.02
11	SLU 62	10	59	1133	-56.96	8.28	-1.98
11	SLU 63	11	59	1131	-56.6	8.25	-2.02
11	SLU 64	9	53	1046	-47.65	7.39	-1.74
11	SLU 65	10	53	1042	-47.04	7.33	-1.81
11	SLU 66	9	53	1046	-47.65	7.39	-1.74
11	SLU 67	9	53	1044	-47.28	7.36	-1.78
11	SLU 68	10	53	1042	-47.04	7.33	-1.81
11	SLU 69	9	53	1046	-47.65	7.39	-1.74
11	SLU 70	9	53	1044	-47.28	7.36	-1.78
11	SLU 71	9	53	1046	-47.65	7.39	-1.74
11	SLU 72	9	53	1044	-47.28	7.36	-1.78
11	SLU 73	11	62	1168	-60.6	8.63	-2.14
11	SLU 74	11	62	1172	-61.21	8.68	-2.08
11	SLU 75	11	62	1170	-60.84	8.65	-2.12
11	SLU 76	11	62	1168	-60.6	8.63	-2.14
11	SLU 77	11	62	1172	-61.21	8.68	-2.08
11	SLU 78	11	62	1170	-60.84	8.65	-2.12
11	SLU 79	11	62	1172	-61.21	8.68	-2.08
11	SLU 80	11	62	1170	-60.84	8.65	-2.12
11	SLU 81	12	65	1226	-67.02	9.23	-2.22
11	SLU 82	12	65	1224	-66.65	9.2	-2.26
11	SLU 83	12	65	1226	-67.02	9.23	-2.22
11	SLU 84	12	65	1224	-66.65	9.2	-2.26
11	SLE RA 1	7	40	784	-34.44	5.47	-1.29
11	SLE RA 2	7	40	781	-34.03	5.44	-1.33
11	SLE RA 3	7	40	784	-34.44	5.47	-1.29
11	SLE RA 4	7	40	783	-34.2	5.45	-1.32
11	SLE RA 5	7	40	781	-34.03	5.44	-1.33
11	SLE RA 6	7	40	784	-34.44	5.47	-1.29
11	SLE RA 7	7	40	783	-34.2	5.45	-1.32
11	SLE RA 8	7	40	784	-34.44	5.47	-1.29
11	SLE RA 9	7	40	783	-34.2	5.45	-1.32
11	SLE RA 10	8	45	866	-43.07	6.3	-1.56
11	SLE RA 11	8	45	868	-43.48	6.34	-1.51
11	SLE RA 12	8	45	867	-43.24	6.31	-1.54
11	SLE RA 13	8	45	866	-43.07	6.3	-1.56
11	SLE RA 14	8	45	868	-43.48	6.34	-1.51
11	SLE RA 15	8	45	867	-43.24	6.31	-1.54
11	SLE RA 16	8	45	868	-43.48	6.34	-1.51
11	SLE RA 17	8	45	867	-43.24	6.31	-1.54
11	SLE RA 18	8	48	904	-47.36	6.7	-1.61
11	SLE RA 19	9	48	903	-47.11	6.68	-1.63
11	SLE RA 20	8	48	904	-47.36	6.7	-1.61
11	SLE RA 21	9	48	903	-47.11	6.68	-1.63
11	SLE FR 1	7	40	784	-34.44	5.47	-1.29
11	SLE FR 2	7	40	784	-34.36	5.47	-1.3
11	SLE FR 3	7	40	784	-34.44	5.47	-1.29
11	SLE FR 4	7	42	820	-38.23	5.84	-1.39
11	SLE FR 5	7	42	820	-38.31	5.84	-1.38
11	SLE FR 6	8	44	844	-40.9	6.09	-1.45
11	SLE QP 1	7	40	784	-34.44	5.47	-1.29
11	SLE QP 2	7	42	820	-38.31	5.84	-1.38
11	SLD 1	16	24	894	-56.65	7.06	-3.56
11	SLD 2	18	22	896	-56.59	7.07	-4.24
11	SLD 3	19	34	845	-41.23	6.13	-4.45
11	SLD 4	22	32	847	-41.17	6.14	-5.13
11	SLD 5	3	23	917	-67.22	7.62	-0.44
11	SLD 6	6	21	919	-67.16	7.63	-1.13
11	SLD 7	15	55	752	-15.83	4.51	-3.41
11	SLD 8	18	53	754	-15.77	4.52	-4.1
11	SLD 9	-3	31	887	-60.86	7.16	1.33
11	SLD 10	-1	29	889	-60.8	7.17	0.65
11	SLD 11	9	64	722	-9.47	4.06	-1.64
11	SLD 12	11	61	724	-9.41	4.07	-2.32



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
11	SLD 13	-7	53	794	-35.46	5.55	2.37
11	SLD 14	-4	50	796	-35.4	5.56	1.68
11	SLD 15	-4	62	745	-20.04	4.62	1.47
11	SLD 16	-1	60	747	-19.98	4.63	0.79
11	SLV 1	26	1	991	-80.72	8.66	-6.37
11	SLV 2	32	-4	995	-80.59	8.69	-7.92
11	SLV 3	34	23	876	-44.82	6.5	-8.4
11	SLV 4	41	18	880	-44.69	6.52	-9.96
11	SLV 5	-2	-3	1044	-105.54	9.96	0.76
11	SLV 6	5	-8	1048	-105.4	9.99	-0.8
11	SLV 7	26	72	661	14.14	2.75	-6.03
11	SLV 8	32	67	666	14.27	2.77	-7.59
11	SLV 9	-17	17	975	-90.9	8.91	4.82
11	SLV 10	-11	12	979	-90.77	8.94	3.26
11	SLV 11	10	92	592	28.77	1.7	-1.97
11	SLV 12	16	87	597	28.91	1.72	-3.52
11	SLV 13	-26	66	760	-31.94	5.16	7.19
11	SLV 14	-20	61	765	-31.81	5.19	5.63
11	SLV 15	-18	88	646	3.96	3	5.15
11	SLV 16	-12	83	650	4.09	3.02	3.6
11	CRTFP Ux+	0	0	0	0	0	0
11	CRTFP Ux-	0	0	0	0	0	0
11	CRTFP Uy+	0	0	0	0	0	0
11	CRTFP Uy-	0	0	0	0	0	0
13	SLU 1	8	39	858	-1.82	3.01	-1.62
13	SLU 2	9	39	853	-1.39	2.97	-1.69
13	SLU 3	8	39	858	-1.82	3.01	-1.62
13	SLU 4	9	39	855	-1.56	2.99	-1.66
13	SLU 5	9	39	853	-1.39	2.97	-1.69
13	SLU 6	8	39	858	-1.82	3.01	-1.62
13	SLU 7	9	39	855	-1.56	2.99	-1.66
13	SLU 8	8	39	858	-1.82	3.01	-1.62
13	SLU 9	9	39	855	-1.56	2.99	-1.66
13	SLU 10	11	48	995	-10.42	3.92	-2.12
13	SLU 11	11	48	1000	-10.85	3.96	-2.05
13	SLU 12	11	48	997	-10.6	3.94	-2.09
13	SLU 13	11	48	995	-10.42	3.92	-2.12
13	SLU 14	11	48	1000	-10.85	3.96	-2.05
13	SLU 15	11	48	997	-10.6	3.94	-2.09
13	SLU 16	11	48	1000	-10.85	3.96	-2.05
13	SLU 17	11	48	997	-10.6	3.94	-2.09
13	SLU 18	12	52	1061	-14.73	4.37	-2.23
13	SLU 19	12	52	1058	-14.47	4.34	-2.28
13	SLU 20	12	52	1061	-14.73	4.37	-2.23
13	SLU 21	12	52	1058	-14.47	4.34	-2.28
13	SLU 22	10	46	963	-8.47	3.71	-1.93
13	SLU 23	10	45	958	-8.04	3.67	-2
13	SLU 24	10	46	963	-8.47	3.71	-1.93
13	SLU 25	10	46	960	-8.22	3.68	-1.97
13	SLU 26	10	45	958	-8.04	3.67	-2
13	SLU 27	10	46	963	-8.47	3.71	-1.93
13	SLU 28	10	46	960	-8.22	3.68	-1.97
13	SLU 29	10	46	963	-8.47	3.71	-1.93
13	SLU 30	10	46	960	-8.22	3.68	-1.97
13	SLU 31	12	54	1100	-17.08	4.61	-2.43
13	SLU 32	12	54	1105	-17.51	4.65	-2.36
13	SLU 33	12	54	1102	-17.25	4.63	-2.4
13	SLU 34	12	54	1100	-17.08	4.61	-2.43
13	SLU 35	12	54	1105	-17.51	4.65	-2.36
13	SLU 36	12	54	1102	-17.25	4.63	-2.4
13	SLU 37	12	54	1105	-17.51	4.65	-2.36
13	SLU 38	12	54	1102	-17.25	4.63	-2.4
13	SLU 39	13	58	1166	-21.38	5.06	-2.54
13	SLU 40	13	58	1163	-21.12	5.03	-2.59
13	SLU 41	13	58	1166	-21.38	5.06	-2.54
13	SLU 42	13	58	1163	-21.12	5.03	-2.59
13	SLU 43	10	49	1079	-0.09	3.68	-2
13	SLU 44	11	49	1074	0.34	3.64	-2.07
13	SLU 45	10	49	1079	-0.09	3.68	-2
13	SLU 46	11	49	1076	0.17	3.66	-2.04
13	SLU 47	11	49	1074	0.34	3.64	-2.07
13	SLU 48	10	49	1079	-0.09	3.68	-2
13	SLU 49	11	49	1076	0.17	3.66	-2.04
13	SLU 50	10	49	1079	-0.09	3.68	-2
13	SLU 51	11	49	1076	0.17	3.66	-2.04
13	SLU 52	13	57	1216	-8.69	4.59	-2.51
13	SLU 53	13	58	1221	-9.12	4.63	-2.43
13	SLU 54	13	57	1218	-8.86	4.6	-2.48
13	SLU 55	13	57	1216	-8.69	4.59	-2.51
13	SLU 56	13	58	1221	-9.12	4.63	-2.43
13	SLU 57	13	57	1218	-8.86	4.6	-2.48
13	SLU 58	13	58	1221	-9.12	4.63	-2.43
13	SLU 59	13	57	1218	-8.86	4.6	-2.48
13	SLU 60	14	61	1282	-12.99	5.03	-2.61
13	SLU 61	14	61	1279	-12.73	5.01	-2.66
13	SLU 62	14	61	1282	-12.99	5.03	-2.61
13	SLU 63	14	61	1279	-12.73	5.01	-2.66
13	SLU 64	12	55	1184	-6.74	4.37	-2.31
13	SLU 65	12	55	1179	-6.31	4.33	-2.38



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
13	SLU 66	12	55	1184	-6.74	4.37	-2.31
13	SLU 67	12	55	1181	-6.48	4.35	-2.35
13	SLU 68	12	55	1179	-6.31	4.33	-2.38
13	SLU 69	12	55	1184	-6.74	4.37	-2.31
13	SLU 70	12	55	1181	-6.48	4.35	-2.35
13	SLU 71	12	55	1184	-6.74	4.37	-2.31
13	SLU 72	12	55	1181	-6.48	4.35	-2.35
13	SLU 73	14	64	1322	-15.34	5.28	-2.81
13	SLU 74	14	64	1326	-15.77	5.32	-2.74
13	SLU 75	14	64	1323	-15.51	5.3	-2.78
13	SLU 76	14	64	1322	-15.34	5.28	-2.81
13	SLU 77	14	64	1326	-15.77	5.32	-2.74
13	SLU 78	14	64	1323	-15.51	5.3	-2.78
13	SLU 79	14	64	1326	-15.77	5.32	-2.74
13	SLU 80	14	64	1323	-15.51	5.3	-2.78
13	SLU 81	15	68	1388	-19.64	5.73	-2.92
13	SLU 82	15	68	1385	-19.39	5.7	-2.97
13	SLU 83	15	68	1388	-19.64	5.73	-2.92
13	SLU 84	15	68	1385	-19.39	5.7	-2.97
13	SLE RA 1	9	41	888	-3.72	3.21	-1.71
13	SLE RA 2	9	41	884	-3.44	3.18	-1.76
13	SLE RA 3	9	41	888	-3.72	3.21	-1.71
13	SLE RA 4	9	41	886	-3.55	3.2	-1.74
13	SLE RA 5	9	41	884	-3.44	3.18	-1.76
13	SLE RA 6	9	41	888	-3.72	3.21	-1.71
13	SLE RA 7	9	41	886	-3.55	3.2	-1.74
13	SLE RA 8	9	41	888	-3.72	3.21	-1.71
13	SLE RA 9	9	41	886	-3.55	3.2	-1.74
13	SLE RA 10	11	47	979	-9.46	3.82	-2.04
13	SLE RA 11	10	47	983	-9.74	3.84	-1.99
13	SLE RA 12	10	47	981	-9.57	3.83	-2.02
13	SLE RA 13	11	47	979	-9.46	3.82	-2.04
13	SLE RA 14	10	47	983	-9.74	3.84	-1.99
13	SLE RA 15	10	47	981	-9.57	3.83	-2.02
13	SLE RA 16	10	47	983	-9.74	3.84	-1.99
13	SLE RA 17	10	47	981	-9.57	3.83	-2.02
13	SLE RA 18	11	49	1023	-12.33	4.11	-2.12
13	SLE RA 19	11	49	1021	-12.15	4.1	-2.15
13	SLE RA 20	11	49	1023	-12.33	4.11	-2.12
13	SLE RA 21	11	49	1021	-12.15	4.1	-2.15
13	SLE FR 1	9	41	888	-3.72	3.21	-1.71
13	SLE FR 2	9	41	887	-3.67	3.21	-1.72
13	SLE FR 3	9	41	888	-3.72	3.21	-1.71
13	SLE FR 4	10	44	928	-6.25	3.48	-1.84
13	SLE FR 5	10	44	928	-6.3	3.48	-1.83
13	SLE FR 6	10	45	955	-8.02	3.66	-1.91
13	SLE QP 1	9	41	888	-3.72	3.21	-1.71
13	SLE QP 2	10	44	928	-6.3	3.48	-1.83
13	SLD 1	19	23	1019	-7.85	4.74	-4.26
13	SLD 2	22	21	1021	-8.01	4.76	-5.03
13	SLD 3	23	35	961	-24.37	3.78	-5.26
13	SLD 4	26	32	964	-24.53	3.8	-6.02
13	SLD 5	5	21	1042	18.34	5.31	-0.79
13	SLD 6	8	18	1044	18.17	5.33	-1.55
13	SLD 7	19	59	850	-36.71	2.1	-4.1
13	SLD 8	22	57	852	-36.88	2.12	-4.86
13	SLD 9	-2	30	1004	24.27	4.84	1.2
13	SLD 10	1	28	1007	24.11	4.86	0.44
13	SLD 11	11	69	812	-30.78	1.63	-2.11
13	SLD 12	14	66	815	-30.95	1.65	-2.87
13	SLD 13	-7	55	893	11.92	3.17	2.36
13	SLD 14	-4	52	895	11.76	3.19	1.6
13	SLD 15	-3	66	835	-4.59	2.2	1.37
13	SLD 16	0	64	838	-4.76	2.22	0.6
13	SLV 1	30	-3	1138	-9.71	6.41	-7.41
13	SLV 2	37	-9	1143	-10.08	6.45	-9.14
13	SLV 3	40	24	1004	-48.22	4.17	-9.68
13	SLV 4	46	18	1009	-48.59	4.21	-11.41
13	SLV 5	0	-9	1192	51.22	7.74	0.54
13	SLV 6	6	-15	1198	50.85	7.79	-1.19
13	SLV 7	30	81	746	-77.16	0.27	-7.02
13	SLV 8	37	75	751	-77.53	0.32	-8.75
13	SLV 9	-18	12	1105	64.92	6.65	5.09
13	SLV 10	-11	7	1111	64.55	6.69	3.36
13	SLV 11	13	102	659	-63.46	-0.82	-2.47
13	SLV 12	20	96	664	-63.82	-0.78	-4.2
13	SLV 13	-27	69	847	35.98	2.75	7.75
13	SLV 14	-21	63	853	35.61	2.8	6.02
13	SLV 15	-18	96	714	-2.53	0.51	5.48
13	SLV 16	-11	90	719	-2.9	0.56	3.75
13	CRTFP Ux+	0	0	0	0	0	0
13	CRTFP Ux-	0	0	0	0	0	0
13	CRTFP Uy+	0	0	0	0	0	0
13	CRTFP Uy-	0	0	0	0	0	0
14	SLU 1	10	38	938	19.25	1.32	-2.04
14	SLU 2	11	38	933	19.55	1.29	-2.12
14	SLU 3	10	38	938	19.25	1.32	-2.04
14	SLU 4	11	38	935	19.43	1.31	-2.09
14	SLU 5	11	38	933	19.55	1.29	-2.12



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
14	SLU 6	10	38	938	19.25	1.32	-2.04
14	SLU 7	11	38	935	19.43	1.31	-2.09
14	SLU 8	10	38	938	19.25	1.32	-2.04
14	SLU 9	11	38	935	19.43	1.31	-2.09
14	SLU 10	13	47	1088	13.61	1.97	-2.65
14	SLU 11	13	47	1094	13.31	2.01	-2.57
14	SLU 12	13	47	1091	13.49	1.99	-2.62
14	SLU 13	13	47	1088	13.61	1.97	-2.65
14	SLU 14	13	47	1094	13.31	2.01	-2.57
14	SLU 15	13	47	1091	13.49	1.99	-2.62
14	SLU 16	13	47	1094	13.31	2.01	-2.57
14	SLU 17	13	47	1091	13.49	1.99	-2.62
14	SLU 18	14	51	1161	10.77	2.3	-2.8
14	SLU 19	14	51	1157	10.94	2.28	-2.85
14	SLU 20	14	51	1161	10.77	2.3	-2.8
14	SLU 21	14	51	1157	10.94	2.28	-2.85
14	SLU 22	12	45	1053	14.94	1.82	-2.42
14	SLU 23	13	44	1047	15.23	1.79	-2.5
14	SLU 24	12	45	1053	14.94	1.82	-2.42
14	SLU 25	12	45	1050	15.11	1.8	-2.47
14	SLU 26	13	44	1047	15.23	1.79	-2.5
14	SLU 27	12	45	1053	14.94	1.82	-2.42
14	SLU 28	12	45	1050	15.11	1.8	-2.47
14	SLU 29	12	45	1053	14.94	1.82	-2.42
14	SLU 30	12	45	1050	15.11	1.8	-2.47
14	SLU 31	15	53	1203	9.29	2.47	-3.04
14	SLU 32	15	54	1209	9	2.5	-2.95
14	SLU 33	15	53	1205	9.17	2.48	-3
14	SLU 34	15	53	1203	9.29	2.47	-3.04
14	SLU 35	15	54	1209	9	2.5	-2.95
14	SLU 36	15	53	1205	9.17	2.48	-3
14	SLU 37	15	54	1209	9	2.5	-2.95
14	SLU 38	15	53	1205	9.17	2.48	-3
14	SLU 39	16	57	1275	6.45	2.79	-3.18
14	SLU 40	16	57	1272	6.63	2.77	-3.23
14	SLU 41	16	57	1275	6.45	2.79	-3.18
14	SLU 42	16	57	1272	6.63	2.77	-3.23
14	SLU 43	13	48	1180	26.51	1.55	-2.52
14	SLU 44	13	47	1175	26.8	1.52	-2.6
14	SLU 45	13	48	1180	26.51	1.55	-2.52
14	SLU 46	13	47	1177	26.68	1.53	-2.57
14	SLU 47	13	47	1175	26.8	1.52	-2.6
14	SLU 48	13	48	1180	26.51	1.55	-2.52
14	SLU 49	13	47	1177	26.68	1.53	-2.57
14	SLU 50	13	48	1180	26.51	1.55	-2.52
14	SLU 51	13	47	1177	26.68	1.53	-2.57
14	SLU 52	16	56	1331	20.86	2.2	-3.14
14	SLU 53	15	57	1336	20.57	2.23	-3.05
14	SLU 54	16	56	1333	20.74	2.21	-3.1
14	SLU 55	16	56	1331	20.86	2.2	-3.14
14	SLU 56	15	57	1336	20.57	2.23	-3.05
14	SLU 57	16	56	1333	20.74	2.21	-3.1
14	SLU 58	15	57	1336	20.57	2.23	-3.05
14	SLU 59	16	56	1333	20.74	2.21	-3.1
14	SLU 60	17	60	1403	18.02	2.53	-3.28
14	SLU 61	17	60	1399	18.2	2.51	-3.33
14	SLU 62	17	60	1403	18.02	2.53	-3.28
14	SLU 63	17	60	1399	18.2	2.51	-3.33
14	SLU 64	15	54	1295	22.19	2.05	-2.9
14	SLU 65	15	54	1290	22.49	2.02	-2.98
14	SLU 66	15	54	1295	22.19	2.05	-2.9
14	SLU 67	15	54	1292	22.37	2.03	-2.95
14	SLU 68	15	54	1290	22.49	2.02	-2.98
14	SLU 69	15	54	1295	22.19	2.05	-2.9
14	SLU 70	15	54	1292	22.37	2.03	-2.95
14	SLU 71	15	54	1295	22.19	2.05	-2.9
14	SLU 72	15	54	1292	22.37	2.03	-2.95
14	SLU 73	18	63	1445	16.55	2.7	-3.52
14	SLU 74	17	63	1451	16.25	2.73	-3.43
14	SLU 75	18	63	1447	16.43	2.71	-3.48
14	SLU 76	18	63	1445	16.55	2.7	-3.52
14	SLU 77	17	63	1451	16.25	2.73	-3.43
14	SLU 78	18	63	1447	16.43	2.71	-3.48
14	SLU 79	17	63	1451	16.25	2.73	-3.43
14	SLU 80	18	63	1447	16.43	2.71	-3.48
14	SLU 81	18	67	1517	13.71	3.02	-3.66
14	SLU 82	19	67	1514	13.88	3	-3.71
14	SLU 83	18	67	1517	13.71	3.02	-3.66
14	SLU 84	19	67	1514	13.88	3	-3.71
14	SLE RA 1	11	40	971	18.02	1.47	-2.15
14	SLE RA 2	11	40	967	18.22	1.44	-2.2
14	SLE RA 3	11	40	971	18.02	1.47	-2.15
14	SLE RA 4	11	40	969	18.14	1.45	-2.18
14	SLE RA 5	11	40	967	18.22	1.44	-2.2
14	SLE RA 6	11	40	971	18.02	1.47	-2.15
14	SLE RA 7	11	40	969	18.14	1.45	-2.18
14	SLE RA 8	11	40	971	18.02	1.47	-2.15
14	SLE RA 9	11	40	969	18.14	1.45	-2.18
14	SLE RA 10	13	46	1071	14.26	1.9	-2.56



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
14	SLE RA 11	13	46	1075	14.06	1.92	-2.5
14	SLE RA 12	13	46	1073	14.18	1.91	-2.54
14	SLE RA 13	13	46	1071	14.26	1.9	-2.56
14	SLE RA 14	13	46	1075	14.06	1.92	-2.5
14	SLE RA 15	13	46	1073	14.18	1.91	-2.54
14	SLE RA 16	13	46	1075	14.06	1.92	-2.5
14	SLE RA 17	13	46	1073	14.18	1.91	-2.54
14	SLE RA 18	13	49	1119	12.36	2.11	-2.66
14	SLE RA 19	14	49	1117	12.48	2.1	-2.69
14	SLE RA 20	13	49	1119	12.36	2.11	-2.66
14	SLE RA 21	14	49	1117	12.48	2.1	-2.69
14	SLE FR 1	11	40	971	18.02	1.47	-2.15
14	SLE FR 2	11	40	970	18.06	1.46	-2.16
14	SLE FR 3	11	40	971	18.02	1.47	-2.15
14	SLE FR 4	12	43	1015	16.36	1.66	-2.31
14	SLE FR 5	12	43	1015	16.32	1.66	-2.3
14	SLE FR 6	12	44	1045	15.19	1.79	-2.4
14	SLE QP 1	11	40	971	18.02	1.47	-2.15
14	SLE QP 2	12	43	1015	16.32	1.66	-2.3
14	SLD 1	22	21	1123	15.35	1.99	-4.98
14	SLD 2	25	18	1126	14.81	2.03	-5.81
14	SLD 3	26	34	1058	-2.32	3.01	-6.06
14	SLD 4	29	31	1061	-2.86	3.04	-6.89
14	SLD 5	7	17	1146	43.02	0.21	-1.17
14	SLD 6	10	14	1148	42.49	0.24	-2
14	SLD 7	22	62	928	-15.89	3.59	-4.79
14	SLD 8	25	59	931	-16.42	3.63	-5.62
14	SLD 9	-1	27	1100	49.07	-0.31	1.02
14	SLD 10	2	24	1103	48.54	-0.27	0.19
14	SLD 11	13	72	882	-9.84	3.08	-2.6
14	SLD 12	17	69	885	-10.37	3.11	-3.44
14	SLD 13	-6	54	970	35.51	0.28	2.29
14	SLD 14	-3	51	973	34.97	0.31	1.46
14	SLD 15	-2	68	905	17.83	1.29	1.21
14	SLD 16	2	65	908	17.3	1.33	0.38
14	SLV 1	35	-8	1264	14.19	2.42	-8.44
14	SLV 2	42	-14	1270	12.98	2.5	-10.32
14	SLV 3	45	24	1112	-27.04	4.79	-10.92
14	SLV 4	52	17	1118	-28.25	4.87	-12.8
14	SLV 5	1	-17	1318	78.65	-1.72	0.28
14	SLV 6	8	-24	1324	77.44	-1.64	-1.61
14	SLV 7	34	87	812	-58.8	6.15	-7.99
14	SLV 8	42	80	818	-60.01	6.24	-9.87
14	SLV 9	-18	5	1213	92.66	-2.91	5.27
14	SLV 10	-11	-1	1219	91.45	-2.83	3.39
14	SLV 11	15	110	707	-44.79	4.96	-2.99
14	SLV 12	23	103	713	-46	5.04	-4.88
14	SLV 13	-29	68	912	60.9	-1.55	8.2
14	SLV 14	-21	62	919	59.69	-1.47	6.32
14	SLV 15	-18	100	761	19.67	0.82	5.72
14	SLV 16	-11	93	767	18.45	0.9	3.84
14	CRTFP Ux+	0	0	0	0	0	0
14	CRTFP Ux-	0	0	0	0	0	0
14	CRTFP Uy+	0	0	0	0	0	0
14	CRTFP Uy-	0	0	0	0	0	0
15	SLU 1	12	36	1002	32.64	0.12	-2.47
15	SLU 2	13	35	996	32.82	0.1	-2.56
15	SLU 3	12	36	1002	32.64	0.12	-2.47
15	SLU 4	12	35	998	32.74	0.11	-2.53
15	SLU 5	13	35	996	32.82	0.1	-2.56
15	SLU 6	12	36	1002	32.64	0.12	-2.47
15	SLU 7	12	35	998	32.74	0.11	-2.53
15	SLU 8	12	36	1002	32.64	0.12	-2.47
15	SLU 9	12	35	998	32.74	0.11	-2.53
15	SLU 10	16	43	1162	28.67	0.59	-3.2
15	SLU 11	15	44	1168	28.49	0.62	-3.11
15	SLU 12	16	44	1164	28.6	0.6	-3.16
15	SLU 13	16	43	1162	28.67	0.59	-3.2
15	SLU 14	15	44	1168	28.49	0.62	-3.11
15	SLU 15	16	44	1164	28.6	0.6	-3.16
15	SLU 16	15	44	1168	28.49	0.62	-3.11
15	SLU 17	16	44	1164	28.6	0.6	-3.16
15	SLU 18	17	48	1239	26.71	0.83	-3.38
15	SLU 19	17	47	1235	26.82	0.81	-3.44
15	SLU 20	17	48	1239	26.71	0.83	-3.38
15	SLU 21	17	47	1235	26.82	0.81	-3.44
15	SLU 22	14	42	1124	29.7	0.48	-2.93
15	SLU 23	15	41	1118	29.88	0.45	-3.02
15	SLU 24	14	42	1124	29.7	0.48	-2.93
15	SLU 25	15	41	1120	29.81	0.46	-2.98
15	SLU 26	15	41	1118	29.88	0.45	-3.02
15	SLU 27	14	42	1124	29.7	0.48	-2.93
15	SLU 28	15	41	1120	29.81	0.46	-2.98
15	SLU 29	14	42	1124	29.7	0.48	-2.93
15	SLU 30	15	41	1120	29.81	0.46	-2.98
15	SLU 31	18	50	1283	25.73	0.95	-3.66
15	SLU 32	18	50	1289	25.55	0.97	-3.57
15	SLU 33	18	50	1286	25.66	0.96	-3.62
15	SLU 34	18	50	1283	25.73	0.95	-3.66



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
15	SLU 35	18	50	1289	25.55	0.97	-3.57
15	SLU 36	18	50	1286	25.66	0.96	-3.62
15	SLU 37	18	50	1289	25.55	0.97	-3.57
15	SLU 38	18	50	1286	25.66	0.96	-3.62
15	SLU 39	19	54	1360	23.77	1.18	-3.84
15	SLU 40	19	53	1357	23.88	1.17	-3.89
15	SLU 41	19	54	1360	23.77	1.18	-3.84
15	SLU 42	19	53	1357	23.88	1.17	-3.89
15	SLU 43	15	44	1261	43.43	0.03	-3.06
15	SLU 44	16	44	1255	43.62	0.01	-3.15
15	SLU 45	15	44	1261	43.43	0.03	-3.06
15	SLU 46	15	44	1257	43.54	0.02	-3.11
15	SLU 47	16	44	1255	43.62	0.01	-3.15
15	SLU 48	15	44	1261	43.43	0.03	-3.06
15	SLU 49	15	44	1257	43.54	0.02	-3.11
15	SLU 50	15	44	1261	43.43	0.03	-3.06
15	SLU 51	15	44	1257	43.54	0.02	-3.11
15	SLU 52	19	52	1420	39.47	0.51	-3.79
15	SLU 53	18	53	1426	39.29	0.53	-3.7
15	SLU 54	18	52	1423	39.4	0.52	-3.75
15	SLU 55	19	52	1420	39.47	0.51	-3.79
15	SLU 56	18	53	1426	39.29	0.53	-3.7
15	SLU 57	18	52	1423	39.4	0.52	-3.75
15	SLU 58	18	53	1426	39.29	0.53	-3.7
15	SLU 59	18	52	1423	39.4	0.52	-3.75
15	SLU 60	20	56	1497	37.51	0.74	-3.97
15	SLU 61	20	56	1494	37.62	0.73	-4.02
15	SLU 62	20	56	1497	37.51	0.74	-3.97
15	SLU 63	20	56	1494	37.62	0.73	-4.02
15	SLU 64	17	50	1383	40.5	0.39	-3.52
15	SLU 65	18	50	1377	40.68	0.37	-3.61
15	SLU 66	17	50	1383	40.5	0.39	-3.52
15	SLU 67	18	50	1379	40.6	0.38	-3.57
15	SLU 68	18	50	1377	40.68	0.37	-3.61
15	SLU 69	17	50	1383	40.5	0.39	-3.52
15	SLU 70	18	50	1379	40.6	0.38	-3.57
15	SLU 71	17	50	1383	40.5	0.39	-3.52
15	SLU 72	18	50	1379	40.6	0.38	-3.57
15	SLU 73	21	58	1542	36.53	0.86	-4.24
15	SLU 74	20	59	1548	36.35	0.89	-4.15
15	SLU 75	21	58	1545	36.46	0.87	-4.21
15	SLU 76	21	58	1542	36.53	0.86	-4.24
15	SLU 77	20	59	1548	36.35	0.89	-4.15
15	SLU 78	21	58	1545	36.46	0.87	-4.21
15	SLU 79	20	59	1548	36.35	0.89	-4.15
15	SLU 80	21	58	1545	36.46	0.87	-4.21
15	SLU 81	22	62	1619	34.57	1.1	-4.43
15	SLU 82	22	62	1616	34.68	1.08	-4.48
15	SLU 83	22	62	1619	34.57	1.1	-4.43
15	SLU 84	22	62	1616	34.68	1.08	-4.48
15	SLE RA 1	13	37	1037	31.8	0.22	-2.6
15	SLE RA 2	13	37	1033	31.92	0.21	-2.66
15	SLE RA 3	13	37	1037	31.8	0.22	-2.6
15	SLE RA 4	13	37	1034	31.87	0.21	-2.64
15	SLE RA 5	13	37	1033	31.92	0.21	-2.66
15	SLE RA 6	13	37	1037	31.8	0.22	-2.6
15	SLE RA 7	13	37	1034	31.87	0.21	-2.64
15	SLE RA 8	13	37	1037	31.8	0.22	-2.6
15	SLE RA 9	13	37	1034	31.87	0.21	-2.64
15	SLE RA 10	15	43	1143	29.15	0.54	-3.09
15	SLE RA 11	15	43	1147	29.03	0.55	-3.03
15	SLE RA 12	15	43	1145	29.1	0.54	-3.06
15	SLE RA 13	15	43	1143	29.15	0.54	-3.09
15	SLE RA 14	15	43	1147	29.03	0.55	-3.03
15	SLE RA 15	15	43	1145	29.1	0.54	-3.06
15	SLE RA 16	15	43	1147	29.03	0.55	-3.03
15	SLE RA 17	15	43	1145	29.1	0.54	-3.06
15	SLE RA 18	16	45	1195	27.85	0.69	-3.21
15	SLE RA 19	16	45	1192	27.92	0.68	-3.25
15	SLE RA 20	16	45	1195	27.85	0.69	-3.21
15	SLE RA 21	16	45	1192	27.92	0.68	-3.25
15	SLE FR 1	13	37	1037	31.8	0.22	-2.6
15	SLE FR 2	13	37	1036	31.82	0.22	-2.62
15	SLE FR 3	13	37	1037	31.8	0.22	-2.6
15	SLE FR 4	14	40	1083	30.64	0.36	-2.8
15	SLE FR 5	14	40	1084	30.61	0.36	-2.79
15	SLE FR 6	14	41	1116	29.82	0.46	-2.91
15	SLE QP 1	13	37	1037	31.8	0.22	-2.6
15	SLE QP 2	14	40	1084	30.61	0.36	-2.79
15	SLD 1	25	17	1208	29.06	0.76	-5.69
15	SLD 2	28	13	1211	27.95	0.82	-6.58
15	SLD 3	29	32	1136	10.39	1.83	-6.86
15	SLD 4	33	29	1139	9.28	1.89	-7.75
15	SLD 5	9	11	1230	58.86	-1.16	-1.57
15	SLD 6	12	7	1233	57.75	-1.1	-2.46
15	SLD 7	24	62	989	-3.39	2.41	-5.47
15	SLD 8	28	59	992	-4.5	2.47	-6.36
15	SLD 9	0	21	1176	65.72	-1.74	0.79
15	SLD 10	3	18	1179	64.61	-1.68	-0.1



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
15	SLD 11	16	72	935	3.47	1.83	-3.11
15	SLD 12	19	69	938	2.37	1.89	-4
15	SLD 13	-5	51	1029	51.94	-1.16	2.18
15	SLD 14	-2	48	1032	50.84	-1.1	1.29
15	SLD 15	0	66	957	33.27	-0.09	1.01
15	SLD 16	3	63	960	32.16	-0.03	0.12
15	SLV 1	38	-14	1371	27.14	1.28	-9.44
15	SLV 2	46	-21	1378	24.62	1.41	-11.47
15	SLV 3	49	22	1203	-16.44	3.77	-12.12
15	SLV 4	57	15	1209	-18.95	3.9	-14.14
15	SLV 5	2	-28	1423	96.54	-3.19	-0.02
15	SLV 6	10	-36	1430	94.02	-3.06	-2.04
15	SLV 7	38	92	862	-48.71	5.12	-8.93
15	SLV 8	46	84	868	-51.22	5.25	-10.96
15	SLV 9	-19	-5	1300	112.45	-4.53	5.38
15	SLV 10	-11	-12	1306	109.93	-4.39	3.36
15	SLV 11	18	115	738	-32.8	3.79	-3.53
15	SLV 12	26	108	745	-35.31	3.92	-5.55
15	SLV 13	-30	65	959	80.17	-3.18	8.57
15	SLV 14	-22	57	965	77.66	-3.04	6.54
15	SLV 15	-19	101	790	36.6	-0.68	5.89
15	SLV 16	-11	93	797	34.09	-0.55	3.87
15	CRTFP Ux+	0	0	0	0	0	0
15	CRTFP Ux-	0	0	0	0	0	0
15	CRTFP Uy+	0	0	0	0	0	0
15	CRTFP Uy-	0	0	0	0	0	0
16	SLU 1	14	31	1051	40.61	-0.69	-2.91
16	SLU 2	14	30	1045	40.7	-0.71	-3.01
16	SLU 3	14	31	1051	40.61	-0.69	-2.91
16	SLU 4	14	30	1048	40.66	-0.71	-2.97
16	SLU 5	14	30	1045	40.7	-0.71	-3.01
16	SLU 6	14	31	1051	40.61	-0.69	-2.91
16	SLU 7	14	30	1048	40.66	-0.71	-2.97
16	SLU 8	14	31	1051	40.61	-0.69	-2.91
16	SLU 9	14	30	1048	40.66	-0.71	-2.97
16	SLU 10	18	38	1218	37.45	-0.34	-3.75
16	SLU 11	17	39	1225	37.36	-0.32	-3.66
16	SLU 12	18	38	1221	37.41	-0.33	-3.71
16	SLU 13	18	38	1218	37.45	-0.34	-3.75
16	SLU 14	17	39	1225	37.36	-0.32	-3.66
16	SLU 15	18	38	1221	37.41	-0.33	-3.71
16	SLU 16	17	39	1225	37.36	-0.32	-3.66
16	SLU 17	18	38	1221	37.41	-0.33	-3.71
16	SLU 18	19	42	1299	35.96	-0.16	-3.97
16	SLU 19	19	41	1295	36.02	-0.17	-4.03
16	SLU 20	19	42	1299	35.96	-0.16	-3.97
16	SLU 21	19	41	1295	36.02	-0.17	-4.03
16	SLU 22	16	37	1179	38.38	-0.43	-3.45
16	SLU 23	17	36	1172	38.48	-0.45	-3.54
16	SLU 24	16	37	1179	38.38	-0.43	-3.45
16	SLU 25	17	36	1175	38.44	-0.44	-3.5
16	SLU 26	17	36	1172	38.48	-0.45	-3.54
16	SLU 27	16	37	1179	38.38	-0.43	-3.45
16	SLU 28	17	36	1175	38.44	-0.44	-3.5
16	SLU 29	16	37	1179	38.38	-0.43	-3.45
16	SLU 30	17	36	1175	38.44	-0.44	-3.5
16	SLU 31	20	43	1346	35.23	-0.07	-4.29
16	SLU 32	20	44	1352	35.13	-0.05	-4.19
16	SLU 33	20	44	1348	35.19	-0.06	-4.25
16	SLU 34	20	43	1346	35.23	-0.07	-4.29
16	SLU 35	20	44	1352	35.13	-0.05	-4.19
16	SLU 36	20	44	1348	35.19	-0.06	-4.25
16	SLU 37	20	44	1352	35.13	-0.05	-4.19
16	SLU 38	20	44	1348	35.19	-0.06	-4.25
16	SLU 39	21	48	1426	33.74	0.11	-4.51
16	SLU 40	22	47	1422	33.8	0.1	-4.57
16	SLU 41	21	48	1426	33.74	0.11	-4.51
16	SLU 42	22	47	1422	33.8	0.1	-4.57
16	SLU 43	17	38	1323	53.55	-0.99	-3.61
16	SLU 44	18	37	1317	53.64	-1.01	-3.7
16	SLU 45	17	38	1323	53.55	-0.99	-3.61
16	SLU 46	18	38	1319	53.61	-1	-3.66
16	SLU 47	18	37	1317	53.64	-1.01	-3.7
16	SLU 48	17	38	1323	53.55	-0.99	-3.61
16	SLU 49	18	38	1319	53.61	-1	-3.66
16	SLU 50	17	38	1323	53.55	-0.99	-3.61
16	SLU 51	18	38	1319	53.61	-1	-3.66
16	SLU 52	21	45	1490	50.39	-0.64	-4.44
16	SLU 53	21	46	1496	50.3	-0.62	-4.35
16	SLU 54	21	46	1493	50.36	-0.63	-4.4
16	SLU 55	21	45	1490	50.39	-0.64	-4.44
16	SLU 56	21	46	1496	50.3	-0.62	-4.35
16	SLU 57	21	46	1493	50.36	-0.63	-4.4
16	SLU 58	21	46	1496	50.3	-0.62	-4.35
16	SLU 59	21	46	1493	50.36	-0.63	-4.4
16	SLU 60	22	49	1571	48.91	-0.45	-4.67
16	SLU 61	23	49	1567	48.96	-0.47	-4.72
16	SLU 62	22	49	1571	48.91	-0.45	-4.67
16	SLU 63	23	49	1567	48.96	-0.47	-4.72



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
16	SLU 64	20	44	1451	51.33	-0.73	-4.14
16	SLU 65	20	43	1444	51.42	-0.75	-4.23
16	SLU 66	20	44	1451	51.33	-0.73	-4.14
16	SLU 67	20	43	1447	51.38	-0.74	-4.2
16	SLU 68	20	43	1444	51.42	-0.75	-4.23
16	SLU 69	20	44	1451	51.33	-0.73	-4.14
16	SLU 70	20	43	1447	51.38	-0.74	-4.2
16	SLU 71	20	44	1451	51.33	-0.73	-4.14
16	SLU 72	20	43	1447	51.38	-0.74	-4.2
16	SLU 73	24	51	1617	48.17	-0.37	-4.98
16	SLU 74	23	52	1624	48.08	-0.35	-4.88
16	SLU 75	24	51	1620	48.13	-0.36	-4.94
16	SLU 76	24	51	1617	48.17	-0.37	-4.98
16	SLU 77	23	52	1624	48.08	-0.35	-4.88
16	SLU 78	24	51	1620	48.13	-0.36	-4.94
16	SLU 79	23	52	1624	48.08	-0.35	-4.88
16	SLU 80	24	51	1620	48.13	-0.36	-4.94
16	SLU 81	25	55	1698	46.69	-0.19	-5.2
16	SLU 82	25	54	1694	46.74	-0.2	-5.26
16	SLU 83	25	55	1698	46.69	-0.19	-5.2
16	SLU 84	25	54	1694	46.74	-0.2	-5.26
16	SLE RA 1	15	33	1088	39.97	-0.62	-3.07
16	SLE RA 2	15	32	1084	40.03	-0.63	-3.13
16	SLE RA 3	15	33	1088	39.97	-0.62	-3.07
16	SLE RA 4	15	32	1085	40.01	-0.63	-3.1
16	SLE RA 5	15	32	1084	40.03	-0.63	-3.13
16	SLE RA 6	15	33	1088	39.97	-0.62	-3.07
16	SLE RA 7	15	32	1085	40.01	-0.63	-3.1
16	SLE RA 8	15	33	1088	39.97	-0.62	-3.07
16	SLE RA 9	15	32	1085	40.01	-0.63	-3.1
16	SLE RA 10	17	37	1199	37.87	-0.38	-3.63
16	SLE RA 11	17	38	1203	37.81	-0.37	-3.56
16	SLE RA 12	17	37	1201	37.84	-0.37	-3.6
16	SLE RA 13	17	37	1199	37.87	-0.38	-3.63
16	SLE RA 14	17	38	1203	37.81	-0.37	-3.56
16	SLE RA 15	17	37	1201	37.84	-0.37	-3.6
16	SLE RA 16	17	38	1203	37.81	-0.37	-3.56
16	SLE RA 17	17	37	1201	37.84	-0.37	-3.6
16	SLE RA 18	18	40	1253	36.88	-0.26	-3.77
16	SLE RA 19	18	40	1250	36.91	-0.27	-3.81
16	SLE RA 20	18	40	1253	36.88	-0.26	-3.77
16	SLE RA 21	18	40	1250	36.91	-0.27	-3.81
16	SLE FR 1	15	33	1088	39.97	-0.62	-3.07
16	SLE FR 2	15	32	1087	39.98	-0.62	-3.08
16	SLE FR 3	15	33	1088	39.97	-0.62	-3.07
16	SLE FR 4	16	35	1136	39.06	-0.51	-3.29
16	SLE FR 5	16	35	1137	39.04	-0.51	-3.28
16	SLE FR 6	16	36	1170	38.42	-0.44	-3.42
16	SLE QP 1	15	33	1088	39.97	-0.62	-3.07
16	SLE QP 2	16	35	1137	39.04	-0.51	-3.28
16	SLD 1	27	28	1278	35.57	-0.01	-6.39
16	SLD 2	31	24	1281	33.68	0.07	-7.34
16	SLD 3	32	10	1199	16.22	1.1	-7.64
16	SLD 4	36	6	1201	14.33	1.19	-8.59
16	SLD 5	10	61	1299	68.01	-2.08	-1.98
16	SLD 6	14	57	1301	66.11	-1.99	-2.93
16	SLD 7	27	2	1035	3.52	1.63	-6.15
16	SLD 8	31	-2	1037	1.62	1.72	-7.1
16	SLD 9	1	72	1237	76.47	-2.74	0.54
16	SLD 10	4	68	1240	74.57	-2.65	-0.4
16	SLD 11	18	12	973	11.97	0.97	-3.63
16	SLD 12	21	9	976	10.08	1.06	-4.57
16	SLD 13	-5	63	1073	63.76	-2.21	2.03
16	SLD 14	-1	60	1076	61.86	-2.12	1.09
16	SLD 15	0	45	994	44.41	-1.09	0.78
16	SLD 16	4	42	997	42.52	-1.01	-0.16
16	SLV 1	42	19	1462	31.16	0.62	-10.42
16	SLV 2	51	11	1468	26.86	0.83	-12.57
16	SLV 3	54	-22	1277	-13.97	3.22	-13.27
16	SLV 4	62	-31	1284	-18.27	3.42	-15.42
16	SLV 5	3	96	1512	106.63	-4.18	-0.34
16	SLV 6	11	88	1518	102.33	-3.97	-2.49
16	SLV 7	42	-42	898	-43.8	4.47	-9.85
16	SLV 8	50	-51	904	-48.11	4.67	-12
16	SLV 9	-19	120	1371	126.19	-5.7	5.45
16	SLV 10	-11	112	1377	121.89	-5.49	3.29
16	SLV 11	20	-18	756	-24.24	2.95	-4.07
16	SLV 12	28	-26	763	-28.55	3.15	-6.22
16	SLV 13	-31	100	991	96.36	-4.44	8.86
16	SLV 14	-23	92	997	92.06	-4.24	6.71
16	SLV 15	-19	59	807	51.23	-1.85	6.01
16	SLV 16	-11	50	813	46.92	-1.65	3.86
16	CRTFP Ux+	0	0	0	0	0	0
16	CRTFP Ux-	0	0	0	0	0	0
16	CRTFP Uy+	0	0	0	0	0	0
16	CRTFP Uy-	0	0	0	0	0	0
17	SLU 1	28	39	1940	157.97	288.22	-11.35
17	SLU 2	29	36	1928	157.52	286.3	-11.06
17	SLU 3	28	39	1940	157.97	288.22	-11.35



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
17	SLU 4	29	37	1933	157.7	287.06	-11.17
17	SLU 5	29	36	1928	157.52	286.3	-11.06
17	SLU 6	28	39	1940	157.97	288.22	-11.35
17	SLU 7	29	37	1933	157.7	287.06	-11.17
17	SLU 8	28	39	1940	157.97	288.22	-11.35
17	SLU 9	29	37	1933	157.7	287.06	-11.17
17	SLU 10	36	47	2245	168.29	334.06	-14.12
17	SLU 11	36	50	2257	168.73	335.98	-14.42
17	SLU 12	36	48	2250	168.46	334.83	-14.24
17	SLU 13	36	47	2245	168.29	334.06	-14.12
17	SLU 14	36	50	2257	168.73	335.98	-14.42
17	SLU 15	36	48	2250	168.46	334.83	-14.24
17	SLU 16	36	50	2257	168.73	335.98	-14.42
17	SLU 17	36	48	2250	168.46	334.83	-14.24
17	SLU 18	39	54	2393	173.35	356.45	-15.73
17	SLU 19	39	53	2386	173.08	355.3	-15.56
17	SLU 20	39	54	2393	173.35	356.45	-15.73
17	SLU 21	39	53	2386	173.08	355.3	-15.56
17	SLU 22	34	47	2173	166.12	323.25	-13.56
17	SLU 23	34	44	2160	165.67	321.33	-13.27
17	SLU 24	34	47	2173	166.12	323.25	-13.56
17	SLU 25	34	45	2165	165.85	322.1	-13.38
17	SLU 26	34	44	2160	165.67	321.33	-13.27
17	SLU 27	34	47	2173	166.12	323.25	-13.56
17	SLU 28	34	45	2165	165.85	322.1	-13.38
17	SLU 29	34	47	2173	166.12	323.25	-13.56
17	SLU 30	34	45	2165	165.85	322.1	-13.38
17	SLU 31	41	55	2478	176.43	369.09	-16.33
17	SLU 32	41	57	2490	176.88	371.01	-16.63
17	SLU 33	41	56	2483	176.61	369.86	-16.45
17	SLU 34	41	55	2478	176.43	369.09	-16.33
17	SLU 35	41	57	2490	176.88	371.01	-16.63
17	SLU 36	41	56	2483	176.61	369.86	-16.45
17	SLU 37	41	57	2490	176.88	371.01	-16.63
17	SLU 38	41	56	2483	176.61	369.86	-16.45
17	SLU 39	44	62	2626	181.49	391.48	-17.94
17	SLU 40	44	60	2619	181.22	390.33	-17.76
17	SLU 41	44	62	2626	181.49	391.48	-17.94
17	SLU 42	44	60	2619	181.22	390.33	-17.76
17	SLU 43	35	48	2442	202.57	362.67	-14
17	SLU 44	36	45	2430	202.12	360.75	-13.71
17	SLU 45	35	48	2442	202.57	362.67	-14
17	SLU 46	36	46	2435	202.3	361.52	-13.82
17	SLU 47	36	45	2430	202.12	360.75	-13.71
17	SLU 48	35	48	2442	202.57	362.67	-14
17	SLU 49	36	46	2435	202.3	361.52	-13.82
17	SLU 50	35	48	2442	202.57	362.67	-14
17	SLU 51	36	46	2435	202.3	361.52	-13.82
17	SLU 52	43	56	2747	212.88	408.51	-16.77
17	SLU 53	42	59	2759	213.33	410.43	-17.06
17	SLU 54	43	57	2752	213.06	409.28	-16.89
17	SLU 55	43	56	2747	212.88	408.51	-16.77
17	SLU 56	42	59	2759	213.33	410.43	-17.06
17	SLU 57	43	57	2752	213.06	409.28	-16.89
17	SLU 58	42	59	2759	213.33	410.43	-17.06
17	SLU 59	43	57	2752	213.06	409.28	-16.89
17	SLU 60	45	63	2895	217.94	430.9	-18.38
17	SLU 61	46	62	2888	217.68	429.75	-18.2
17	SLU 62	45	63	2895	217.94	430.9	-18.38
17	SLU 63	46	62	2888	217.68	429.75	-18.2
17	SLU 64	40	56	2675	210.72	397.7	-16.21
17	SLU 65	41	53	2663	210.27	395.78	-15.91
17	SLU 66	40	56	2675	210.72	397.7	-16.21
17	SLU 67	41	54	2668	210.45	396.55	-16.03
17	SLU 68	41	53	2663	210.27	395.78	-15.91
17	SLU 69	40	56	2675	210.72	397.7	-16.21
17	SLU 70	41	54	2668	210.45	396.55	-16.03
17	SLU 71	40	56	2675	210.72	397.7	-16.21
17	SLU 72	41	54	2668	210.45	396.55	-16.03
17	SLU 73	48	64	2980	221.03	443.54	-18.98
17	SLU 74	47	66	2992	221.48	445.47	-19.27
17	SLU 75	48	65	2985	221.21	444.31	-19.1
17	SLU 76	48	64	2980	221.03	443.54	-18.98
17	SLU 77	47	66	2992	221.48	445.47	-19.27
17	SLU 78	48	65	2985	221.21	444.31	-19.1
17	SLU 79	47	66	2992	221.48	445.47	-19.27
17	SLU 80	48	65	2985	221.21	444.31	-19.1
17	SLU 81	50	71	3128	226.09	465.93	-20.59
17	SLU 82	51	69	3121	225.82	464.78	-20.41
17	SLU 83	50	71	3128	226.09	465.93	-20.59
17	SLU 84	51	69	3121	225.82	464.78	-20.41
17	SLE RA 1	30	41	2007	160.3	298.23	-11.98
17	SLE RA 2	30	39	1998	160	296.95	-11.79
17	SLE RA 3	30	41	2007	160.3	298.23	-11.98
17	SLE RA 4	30	40	2002	160.12	297.46	-11.86
17	SLE RA 5	30	39	1998	160	296.95	-11.79
17	SLE RA 6	30	41	2007	160.3	298.23	-11.98
17	SLE RA 7	30	40	2002	160.12	297.46	-11.86
17	SLE RA 8	30	41	2007	160.3	298.23	-11.98



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
17	SLE RA 9	30	40	2002	160.12	297.46	-11.86
17	SLE RA 10	35	46	2210	167.18	328.79	-13.83
17	SLE RA 11	35	48	2218	167.47	330.07	-14.03
17	SLE RA 12	35	47	2213	167.3	329.3	-13.91
17	SLE RA 13	35	46	2210	167.18	328.79	-13.83
17	SLE RA 14	35	48	2218	167.47	330.07	-14.03
17	SLE RA 15	35	47	2213	167.3	329.3	-13.91
17	SLE RA 16	35	48	2218	167.47	330.07	-14.03
17	SLE RA 17	35	47	2213	167.3	329.3	-13.91
17	SLE RA 18	37	51	2309	170.55	343.71	-14.9
17	SLE RA 19	37	50	2304	170.37	342.95	-14.79
17	SLE RA 20	37	51	2309	170.55	343.71	-14.9
17	SLE RA 21	37	50	2304	170.37	342.95	-14.79
17	SLE FR 1	30	41	2007	160.3	298.23	-11.98
17	SLE FR 2	30	41	2005	160.24	297.97	-11.94
17	SLE FR 3	30	41	2007	160.3	298.23	-11.98
17	SLE FR 4	32	44	2096	163.32	311.62	-12.82
17	SLE FR 5	32	44	2097	163.38	311.87	-12.86
17	SLE FR 6	33	46	2158	165.43	320.97	-13.44
17	SLE QP 1	30	41	2007	160.3	298.23	-11.98
17	SLE QP 2	32	44	2097	163.38	311.87	-12.86
17	SLD 1	54	33	2381	165.19	357.2	-23.62
17	SLD 2	61	25	2384	162.49	357.72	-24.21
17	SLD 3	64	-7	2225	136.95	332.85	-17.1
17	SLD 4	71	-15	2229	134.25	333.37	-17.69
17	SLD 5	21	104	2417	207.69	362.23	-25.77
17	SLD 6	28	96	2420	204.99	362.74	-26.36
17	SLD 7	54	-29	1899	113.57	281.05	-4.03
17	SLD 8	61	-37	1902	110.87	281.57	-4.63
17	SLD 9	3	125	2292	215.88	342.18	-21.09
17	SLD 10	10	118	2296	213.18	342.7	-21.68
17	SLD 11	35	-8	1774	121.76	261	0.64
17	SLD 12	42	-16	1778	119.06	261.52	0.05
17	SLD 13	-7	104	1966	192.5	290.38	-8.03
17	SLD 14	0	96	1969	189.8	290.9	-8.62
17	SLD 15	3	64	1810	164.26	266.02	-1.51
17	SLD 16	10	56	1814	161.56	266.54	-2.1
17	SLV 1	83	18	2751	167.9	416.51	-37.76
17	SLV 2	99	0	2759	161.76	417.69	-39.1
17	SLV 3	105	-75	2390	101.97	359.89	-22.59
17	SLV 4	121	-93	2398	95.83	361.06	-23.94
17	SLV 5	8	183	2839	266.88	428.74	-42.85
17	SLV 6	24	166	2847	260.74	429.92	-44.2
17	SLV 7	82	-126	1634	47.11	239.98	7.69
17	SLV 8	98	-144	1642	40.97	241.16	6.35
17	SLV 9	-34	233	2553	285.78	382.59	-32.06
17	SLV 10	-18	215	2560	279.64	383.77	-33.41
17	SLV 11	40	-77	1347	66.01	193.83	18.48
17	SLV 12	56	-95	1355	59.87	195.01	17.14
17	SLV 13	-57	181	1797	230.92	262.68	-1.78
17	SLV 14	-41	164	1805	224.78	263.86	-3.12
17	SLV 15	-35	88	1435	164.99	206.06	13.38
17	SLV 16	-19	71	1443	158.85	207.23	12.04
17	CRTFP Ux+	0	0	0	0	0	0
17	CRTFP Ux-	0	0	0	0	0	0
17	CRTFP Uy+	0	0	0	0	0	0
17	CRTFP Uy-	0	0	0	0	0	0
20	SLU 1	32	13	2026	141.91	-313.27	-4.07
20	SLU 2	33	8	2012	141.91	-311.23	-4.92
20	SLU 3	32	13	2026	141.91	-313.27	-4.07
20	SLU 4	33	10	2018	141.91	-312.05	-4.58
20	SLU 5	33	8	2012	141.91	-311.23	-4.92
20	SLU 6	32	13	2026	141.91	-313.27	-4.07
20	SLU 7	33	10	2018	141.91	-312.05	-4.58
20	SLU 8	32	13	2026	141.91	-313.27	-4.07
20	SLU 9	33	10	2018	141.91	-312.05	-4.58
20	SLU 10	41	14	2341	152.09	-361.52	-5.6
20	SLU 11	41	19	2355	152.1	-363.56	-4.75
20	SLU 12	41	16	2347	152.09	-362.33	-5.26
20	SLU 13	41	14	2341	152.09	-361.52	-5.6
20	SLU 14	41	19	2355	152.1	-363.56	-4.75
20	SLU 15	41	16	2347	152.09	-362.33	-5.26
20	SLU 16	41	19	2355	152.1	-363.56	-4.75
20	SLU 17	41	16	2347	152.09	-362.33	-5.26
20	SLU 18	44	22	2496	156.46	-385.11	-5.04
20	SLU 19	44	19	2488	156.46	-383.89	-5.55
20	SLU 20	44	22	2496	156.46	-385.11	-5.04
20	SLU 21	44	19	2488	156.46	-383.89	-5.55
20	SLU 22	38	17	2268	149.33	-350.16	-4.58
20	SLU 23	39	12	2254	149.32	-348.11	-5.42
20	SLU 24	38	17	2268	149.33	-350.16	-4.58
20	SLU 25	39	14	2259	149.33	-348.93	-5.08
20	SLU 26	39	12	2254	149.32	-348.11	-5.42
20	SLU 27	38	17	2268	149.33	-350.16	-4.58
20	SLU 28	39	14	2259	149.33	-348.93	-5.08
20	SLU 29	38	17	2268	149.33	-350.16	-4.58
20	SLU 30	39	14	2259	149.33	-348.93	-5.08
20	SLU 31	47	18	2583	159.51	-398.4	-6.1
20	SLU 32	46	23	2597	159.51	-400.44	-5.25



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
20	SLU 33	47	20	2588	159.51	-399.22	-5.76
20	SLU 34	47	18	2583	159.51	-398.4	-6.1
20	SLU 35	46	23	2597	159.51	-400.44	-5.25
20	SLU 36	47	20	2588	159.51	-399.22	-5.76
20	SLU 37	46	23	2597	159.51	-400.44	-5.25
20	SLU 38	47	20	2588	159.51	-399.22	-5.76
20	SLU 39	50	26	2738	163.88	-422	-5.54
20	SLU 40	50	23	2729	163.87	-420.77	-6.05
20	SLU 41	50	26	2738	163.88	-422	-5.54
20	SLU 42	50	23	2729	163.87	-420.77	-6.05
20	SLU 43	40	16	2552	181.94	-394.61	-5.13
20	SLU 44	41	11	2538	181.94	-392.56	-5.97
20	SLU 45	40	16	2552	181.94	-394.61	-5.13
20	SLU 46	41	13	2543	181.94	-393.38	-5.63
20	SLU 47	41	11	2538	181.94	-392.56	-5.97
20	SLU 48	40	16	2552	181.94	-394.61	-5.13
20	SLU 49	41	13	2543	181.94	-393.38	-5.63
20	SLU 50	40	16	2552	181.94	-394.61	-5.13
20	SLU 51	41	13	2543	181.94	-393.38	-5.63
20	SLU 52	49	17	2867	192.12	-442.85	-6.65
20	SLU 53	48	22	2881	192.13	-444.9	-5.8
20	SLU 54	49	19	2872	192.12	-443.67	-6.31
20	SLU 55	49	17	2867	192.12	-442.85	-6.65
20	SLU 56	48	22	2881	192.13	-444.9	-5.8
20	SLU 57	49	19	2872	192.12	-443.67	-6.31
20	SLU 58	48	22	2881	192.13	-444.9	-5.8
20	SLU 59	49	19	2872	192.12	-443.67	-6.31
20	SLU 60	52	24	3022	196.49	-466.45	-6.09
20	SLU 61	52	21	3013	196.49	-465.22	-6.6
20	SLU 62	52	24	3022	196.49	-466.45	-6.09
20	SLU 63	52	21	3013	196.49	-465.22	-6.6
20	SLU 64	46	20	2793	189.36	-431.49	-5.63
20	SLU 65	47	15	2779	189.35	-429.45	-6.47
20	SLU 66	46	20	2793	189.36	-431.49	-5.63
20	SLU 67	46	17	2784	189.36	-430.26	-6.13
20	SLU 68	47	15	2779	189.35	-429.45	-6.47
20	SLU 69	46	20	2793	189.36	-431.49	-5.63
20	SLU 70	46	17	2784	189.36	-430.26	-6.13
20	SLU 71	46	20	2793	189.36	-431.49	-5.63
20	SLU 72	46	17	2784	189.36	-430.26	-6.13
20	SLU 73	55	21	3108	199.54	-479.73	-7.15
20	SLU 74	54	26	3122	199.54	-481.78	-6.3
20	SLU 75	55	23	3113	199.54	-480.55	-6.81
20	SLU 76	55	21	3108	199.54	-479.73	-7.15
20	SLU 77	54	26	3122	199.54	-481.78	-6.3
20	SLU 78	55	23	3113	199.54	-480.55	-6.81
20	SLU 79	54	26	3122	199.54	-481.78	-6.3
20	SLU 80	55	23	3113	199.54	-480.55	-6.81
20	SLU 81	58	28	3263	203.91	-503.33	-6.59
20	SLU 82	58	25	3254	203.9	-502.11	-7.1
20	SLU 83	58	28	3263	203.91	-503.33	-6.59
20	SLU 84	58	25	3254	203.9	-502.11	-7.1
20	SLE RA 1	34	14	2095	144.03	-323.81	-4.22
20	SLE RA 2	35	11	2086	144.03	-322.45	-4.78
20	SLE RA 3	34	14	2095	144.03	-323.81	-4.22
20	SLE RA 4	34	12	2090	144.03	-322.99	-4.56
20	SLE RA 5	35	11	2086	144.03	-322.45	-4.78
20	SLE RA 6	34	14	2095	144.03	-323.81	-4.22
20	SLE RA 7	34	12	2090	144.03	-322.99	-4.56
20	SLE RA 8	34	14	2095	144.03	-323.81	-4.22
20	SLE RA 9	34	12	2090	144.03	-322.99	-4.56
20	SLE RA 10	40	15	2305	150.82	-355.97	-5.24
20	SLE RA 11	39	18	2315	150.82	-357.34	-4.67
20	SLE RA 12	40	16	2309	150.82	-356.52	-5.01
20	SLE RA 13	40	15	2305	150.82	-355.97	-5.24
20	SLE RA 14	39	18	2315	150.82	-357.34	-4.67
20	SLE RA 15	40	16	2309	150.82	-356.52	-5.01
20	SLE RA 16	39	18	2315	150.82	-357.34	-4.67
20	SLE RA 17	40	16	2309	150.82	-356.52	-5.01
20	SLE RA 18	42	20	2409	153.73	-371.7	-4.86
20	SLE RA 19	42	18	2403	153.73	-370.89	-5.2
20	SLE RA 20	42	20	2409	153.73	-371.7	-4.86
20	SLE RA 21	42	18	2403	153.73	-370.89	-5.2
20	SLE FR 1	34	14	2095	144.03	-323.81	-4.22
20	SLE FR 2	34	14	2093	144.03	-323.54	-4.33
20	SLE FR 3	34	14	2095	144.03	-323.81	-4.22
20	SLE FR 4	36	15	2187	146.94	-337.91	-4.52
20	SLE FR 5	36	16	2189	146.94	-338.18	-4.41
20	SLE FR 6	38	17	2252	148.88	-347.76	-4.54
20	SLE QP 1	34	14	2095	144.03	-323.81	-4.22
20	SLE QP 2	36	16	2189	146.94	-338.18	-4.41
20	SLD 1	61	101	2519	175.97	-386.34	-10.44
20	SLD 2	68	91	2520	178.76	-386.75	-13.78
20	SLD 3	71	43	2342	152.84	-360.48	-19.48
20	SLD 4	79	33	2343	155.63	-360.89	-22.82
20	SLD 5	25	134	2555	189.74	-391.71	8.66
20	SLD 6	33	123	2556	192.53	-392.12	5.32
20	SLD 7	60	-60	1968	112.67	-305.5	-21.48
20	SLD 8	67	-71	1968	115.46	-305.91	-24.82



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
20	SLD 9	5	103	2410	178.43	-370.45	15.99
20	SLD 10	13	92	2411	181.22	-370.86	12.65
20	SLD 11	40	-91	1822	101.35	-284.24	-14.14
20	SLD 12	47	-102	1823	104.14	-284.65	-17.48
20	SLD 13	-6	-1	2035	138.25	-315.47	14
20	SLD 14	2	-11	2036	141.04	-315.88	10.66
20	SLD 15	5	-59	1859	115.13	-289.6	4.96
20	SLD 16	12	-69	1860	117.92	-290.02	1.62
20	SLV 1	93	214	2950	213.74	-449.32	-18.17
20	SLV 2	109	189	2952	220.08	-450.25	-25.76
20	SLV 3	116	79	2540	159.71	-389.15	-39.07
20	SLV 4	133	54	2542	166.05	-390.08	-46.66
20	SLV 5	11	288	3039	246.7	-462.45	25.81
20	SLV 6	28	264	3041	253.05	-463.38	18.22
20	SLV 7	90	-161	1672	66.61	-261.89	-43.85
20	SLV 8	107	-186	1674	72.95	-262.82	-51.43
20	SLV 9	-34	218	2705	220.93	-413.54	42.61
20	SLV 10	-18	193	2707	227.27	-414.47	35.02
20	SLV 11	45	-232	1338	40.84	-212.97	-27.04
20	SLV 12	61	-256	1340	47.18	-213.91	-34.63
20	SLV 13	-60	-22	1837	127.83	-286.28	37.83
20	SLV 14	-44	-47	1839	134.17	-287.21	30.25
20	SLV 15	-36	-157	1427	73.8	-226.11	16.94
20	SLV 16	-20	-182	1429	80.15	-227.04	9.35
20	CRTFP Ux+	0	0	0	0	0	0
20	CRTFP Ux-	0	0	0	0	0	0
20	CRTFP Uy+	0	0	0	0	0	0
20	CRTFP Uy-	0	0	0	0	0	0
22	SLU 1	20	-6	1170	61.7	-1.82	-4.64
22	SLU 2	20	-10	1162	61.81	-1.85	-4.76
22	SLU 3	20	-6	1170	61.7	-1.82	-4.64
22	SLU 4	20	-8	1165	61.77	-1.84	-4.71
22	SLU 5	20	-10	1162	61.81	-1.85	-4.76
22	SLU 6	20	-6	1170	61.7	-1.82	-4.64
22	SLU 7	20	-8	1165	61.77	-1.84	-4.71
22	SLU 8	20	-6	1170	61.7	-1.82	-4.64
22	SLU 9	20	-8	1165	61.77	-1.84	-4.71
22	SLU 10	25	-9	1351	63.59	-1.72	-5.91
22	SLU 11	24	-5	1360	63.47	-1.69	-5.79
22	SLU 12	25	-7	1355	63.54	-1.71	-5.86
22	SLU 13	25	-9	1351	63.59	-1.72	-5.91
22	SLU 14	24	-5	1360	63.47	-1.69	-5.79
22	SLU 15	25	-7	1355	63.54	-1.71	-5.86
22	SLU 16	24	-5	1360	63.47	-1.69	-5.79
22	SLU 17	25	-7	1355	63.54	-1.71	-5.86
22	SLU 18	27	-5	1441	64.23	-1.64	-6.28
22	SLU 19	27	-7	1436	64.3	-1.65	-6.35
22	SLU 20	27	-5	1441	64.23	-1.64	-6.28
22	SLU 21	27	-7	1436	64.3	-1.65	-6.35
22	SLU 22	23	-5	1309	62.94	-1.73	-5.47
22	SLU 23	23	-9	1301	63.05	-1.75	-5.59
22	SLU 24	23	-5	1309	62.94	-1.73	-5.47
22	SLU 25	23	-8	1304	63.01	-1.74	-5.54
22	SLU 26	23	-9	1301	63.05	-1.75	-5.59
22	SLU 27	23	-5	1309	62.94	-1.73	-5.47
22	SLU 28	23	-8	1304	63.01	-1.74	-5.54
22	SLU 29	23	-5	1309	62.94	-1.73	-5.47
22	SLU 30	23	-8	1304	63.01	-1.74	-5.54
22	SLU 31	28	-9	1490	64.82	-1.63	-6.74
22	SLU 32	28	-5	1499	64.71	-1.6	-6.62
22	SLU 33	28	-7	1493	64.78	-1.62	-6.69
22	SLU 34	28	-9	1490	64.82	-1.63	-6.74
22	SLU 35	28	-5	1499	64.71	-1.6	-6.62
22	SLU 36	28	-7	1493	64.78	-1.62	-6.69
22	SLU 37	28	-5	1499	64.71	-1.6	-6.62
22	SLU 38	28	-7	1493	64.78	-1.62	-6.69
22	SLU 39	30	-4	1580	65.47	-1.55	-7.11
22	SLU 40	30	-7	1575	65.54	-1.56	-7.19
22	SLU 41	30	-4	1580	65.47	-1.55	-7.11
22	SLU 42	30	-7	1575	65.54	-1.56	-7.19
22	SLU 43	24	-8	1474	79.79	-2.4	-5.74
22	SLU 44	25	-11	1465	79.9	-2.42	-5.86
22	SLU 45	24	-8	1474	79.79	-2.4	-5.74
22	SLU 46	24	-10	1469	79.85	-2.41	-5.81
22	SLU 47	25	-11	1465	79.9	-2.42	-5.86
22	SLU 48	24	-8	1474	79.79	-2.4	-5.74
22	SLU 49	24	-10	1469	79.85	-2.41	-5.81
22	SLU 50	24	-8	1474	79.79	-2.4	-5.74
22	SLU 51	24	-10	1469	79.85	-2.41	-5.81
22	SLU 52	29	-11	1655	81.67	-2.3	-7.01
22	SLU 53	29	-7	1663	81.56	-2.27	-6.89
22	SLU 54	29	-9	1658	81.63	-2.29	-6.97
22	SLU 55	29	-11	1655	81.67	-2.3	-7.01
22	SLU 56	29	-7	1663	81.56	-2.27	-6.89
22	SLU 57	29	-9	1658	81.63	-2.29	-6.97
22	SLU 58	29	-7	1663	81.56	-2.27	-6.89
22	SLU 59	29	-9	1658	81.63	-2.29	-6.97
22	SLU 60	31	-7	1745	82.32	-2.22	-7.39
22	SLU 61	31	-9	1739	82.39	-2.23	-7.46



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
22	SLU 62	31	-7	1745	82.32	-2.22	-7.39
22	SLU 63	31	-9	1739	82.39	-2.23	-7.46
22	SLU 64	28	-7	1613	81.03	-2.31	-6.57
22	SLU 65	28	-11	1604	81.14	-2.33	-6.69
22	SLU 66	28	-7	1613	81.03	-2.31	-6.57
22	SLU 67	28	-10	1607	81.09	-2.32	-6.65
22	SLU 68	28	-11	1604	81.14	-2.33	-6.69
22	SLU 69	28	-7	1613	81.03	-2.31	-6.57
22	SLU 70	28	-10	1607	81.09	-2.32	-6.65
22	SLU 71	28	-7	1613	81.03	-2.31	-6.57
22	SLU 72	28	-10	1607	81.09	-2.32	-6.65
22	SLU 73	33	-10	1794	82.91	-2.21	-7.85
22	SLU 74	33	-7	1802	82.8	-2.18	-7.73
22	SLU 75	33	-9	1797	82.86	-2.2	-7.8
22	SLU 76	33	-10	1794	82.91	-2.21	-7.85
22	SLU 77	33	-7	1802	82.8	-2.18	-7.73
22	SLU 78	33	-9	1797	82.86	-2.2	-7.8
22	SLU 79	33	-7	1802	82.8	-2.18	-7.73
22	SLU 80	33	-9	1797	82.86	-2.2	-7.8
22	SLU 81	35	-6	1883	83.56	-2.13	-8.22
22	SLU 82	35	-9	1878	83.62	-2.14	-8.29
22	SLU 83	35	-6	1883	83.56	-2.13	-8.22
22	SLU 84	35	-9	1878	83.62	-2.14	-8.29
22	SLE RA 1	21	-6	1210	62.06	-1.79	-4.87
22	SLE RA 2	21	-8	1204	62.13	-1.81	-4.95
22	SLE RA 3	21	-6	1210	62.06	-1.79	-4.87
22	SLE RA 4	21	-7	1207	62.1	-1.8	-4.92
22	SLE RA 5	21	-8	1204	62.13	-1.81	-4.95
22	SLE RA 6	21	-6	1210	62.06	-1.79	-4.87
22	SLE RA 7	21	-7	1207	62.1	-1.8	-4.92
22	SLE RA 8	21	-6	1210	62.06	-1.79	-4.87
22	SLE RA 9	21	-7	1207	62.1	-1.8	-4.92
22	SLE RA 10	24	-8	1331	63.31	-1.73	-5.72
22	SLE RA 11	24	-5	1336	63.24	-1.71	-5.64
22	SLE RA 12	24	-7	1333	63.28	-1.72	-5.69
22	SLE RA 13	24	-8	1331	63.31	-1.73	-5.72
22	SLE RA 14	24	-5	1336	63.24	-1.71	-5.64
22	SLE RA 15	24	-7	1333	63.28	-1.72	-5.69
22	SLE RA 16	24	-5	1336	63.24	-1.71	-5.64
22	SLE RA 17	24	-7	1333	63.28	-1.72	-5.69
22	SLE RA 18	25	-5	1390	63.74	-1.67	-5.97
22	SLE RA 19	25	-7	1387	63.79	-1.68	-6.02
22	SLE RA 20	25	-5	1390	63.74	-1.67	-5.97
22	SLE RA 21	25	-7	1387	63.79	-1.68	-6.02
22	SLE FR 1	21	-6	1210	62.06	-1.79	-4.87
22	SLE FR 2	21	-6	1209	62.07	-1.8	-4.89
22	SLE FR 3	21	-6	1210	62.06	-1.79	-4.87
22	SLE FR 4	22	-6	1263	62.58	-1.76	-5.22
22	SLE FR 5	22	-5	1264	62.56	-1.76	-5.2
22	SLE FR 6	23	-5	1300	62.9	-1.73	-5.42
22	SLE QP 1	21	-6	1210	62.06	-1.79	-4.87
22	SLE QP 2	22	-5	1264	62.56	-1.76	-5.2
22	SLD 1	37	59	1473	79.77	-1.56	-8.9
22	SLD 2	41	51	1472	81.41	-1.66	-9.99
22	SLD 3	42	16	1364	65.81	-0.67	-10.41
22	SLD 4	47	8	1364	67.45	-0.77	-11.5
22	SLD 5	16	83	1492	88.33	-3.02	-3.64
22	SLD 6	20	75	1492	89.97	-3.11	-4.73
22	SLD 7	36	-62	1129	41.79	-0.05	-8.67
22	SLD 8	40	-70	1129	43.43	-0.14	-9.77
22	SLD 9	4	59	1399	81.7	-3.37	-0.64
22	SLD 10	8	51	1399	83.34	-3.47	-1.73
22	SLD 11	24	-85	1036	35.16	-0.41	-5.67
22	SLD 12	28	-93	1036	36.8	-0.5	-6.77
22	SLD 13	-3	-19	1165	57.67	-2.75	1.1
22	SLD 14	1	-27	1165	59.31	-2.84	0
22	SLD 15	3	-62	1056	43.71	-1.86	-0.41
22	SLD 16	7	-70	1056	45.35	-1.95	-1.51
22	SLV 1	55	144	1745	102.22	-1.32	-13.68
22	SLV 2	65	126	1745	105.95	-1.52	-16.16
22	SLV 3	69	44	1492	69.61	0.76	-17.12
22	SLV 4	78	25	1492	73.34	0.55	-19.61
22	SLV 5	8	198	1793	122.6	-4.7	-1.65
22	SLV 6	18	180	1792	126.33	-4.91	-4.13
22	SLV 7	53	-137	948	13.92	2.22	-13.14
22	SLV 8	63	-155	948	17.65	2.01	-15.62
22	SLV 9	-19	144	1580	107.47	-5.53	5.21
22	SLV 10	-9	126	1580	111.2	-5.73	2.73
22	SLV 11	26	-191	736	-1.21	1.39	-6.27
22	SLV 12	36	-209	736	2.52	1.18	-8.76
22	SLV 13	-35	-36	1037	51.78	-4.07	9.2
22	SLV 14	-25	-55	1036	55.51	-4.27	6.71
22	SLV 15	-21	-137	783	19.18	-1.99	5.75
22	SLV 16	-11	-155	783	22.91	-2.2	3.27
22	CRTFP Ux+	0	0	0	0	0	0
22	CRTFP Ux-	0	0	0	0	0	0
22	CRTFP Uy+	0	0	0	0	0	0
22	CRTFP Uy-	0	0	0	0	0	0
24	SLU 1	21	-16	1219	71.82	-2.13	-5.02



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
24	SLU 2	21	-21	1209	71.75	-2.15	-5.14
24	SLU 3	21	-16	1219	71.82	-2.13	-5.02
24	SLU 4	21	-19	1213	71.78	-2.14	-5.09
24	SLU 5	21	-21	1209	71.75	-2.15	-5.14
24	SLU 6	21	-16	1219	71.82	-2.13	-5.02
24	SLU 7	21	-19	1213	71.78	-2.14	-5.09
24	SLU 8	21	-16	1219	71.82	-2.13	-5.02
24	SLU 9	21	-19	1213	71.78	-2.14	-5.09
24	SLU 10	26	-23	1407	75.19	-2.07	-6.38
24	SLU 11	26	-18	1416	75.26	-2.05	-6.26
24	SLU 12	26	-21	1410	75.22	-2.06	-6.33
24	SLU 13	26	-23	1407	75.19	-2.07	-6.38
24	SLU 14	26	-18	1416	75.26	-2.05	-6.26
24	SLU 15	26	-21	1410	75.22	-2.06	-6.33
24	SLU 16	26	-18	1416	75.26	-2.05	-6.26
24	SLU 17	26	-21	1410	75.22	-2.06	-6.33
24	SLU 18	28	-19	1500	76.73	-2.01	-6.79
24	SLU 19	28	-21	1495	76.69	-2.02	-6.87
24	SLU 20	28	-19	1500	76.73	-2.01	-6.79
24	SLU 21	28	-21	1495	76.69	-2.02	-6.87
24	SLU 22	24	-18	1363	74.28	-2.07	-5.92
24	SLU 23	25	-23	1354	74.21	-2.09	-6.04
24	SLU 24	24	-18	1363	74.28	-2.07	-5.92
24	SLU 25	25	-21	1357	74.24	-2.08	-5.99
24	SLU 26	25	-23	1354	74.21	-2.09	-6.04
24	SLU 27	24	-18	1363	74.28	-2.07	-5.92
24	SLU 28	25	-21	1357	74.24	-2.08	-5.99
24	SLU 29	24	-18	1363	74.28	-2.07	-5.92
24	SLU 30	25	-21	1357	74.24	-2.08	-5.99
24	SLU 31	30	-24	1551	77.65	-2.01	-7.28
24	SLU 32	30	-19	1560	77.72	-1.99	-7.16
24	SLU 33	30	-22	1555	77.68	-2	-7.23
24	SLU 34	30	-24	1551	77.65	-2.01	-7.28
24	SLU 35	30	-19	1560	77.72	-1.99	-7.16
24	SLU 36	30	-22	1555	77.68	-2	-7.23
24	SLU 37	30	-19	1560	77.72	-1.99	-7.16
24	SLU 38	30	-22	1555	77.68	-2	-7.23
24	SLU 39	32	-20	1645	79.19	-1.95	-7.69
24	SLU 40	32	-23	1639	79.15	-1.97	-7.76
24	SLU 41	32	-20	1645	79.19	-1.95	-7.69
24	SLU 42	32	-23	1639	79.15	-1.97	-7.76
24	SLU 43	26	-21	1535	92.53	-2.79	-6.22
24	SLU 44	26	-26	1526	92.46	-2.81	-6.34
24	SLU 45	26	-21	1535	92.53	-2.79	-6.22
24	SLU 46	26	-24	1529	92.49	-2.8	-6.29
24	SLU 47	26	-26	1526	92.46	-2.81	-6.34
24	SLU 48	26	-21	1535	92.53	-2.79	-6.22
24	SLU 49	26	-24	1529	92.49	-2.8	-6.29
24	SLU 50	26	-21	1535	92.53	-2.79	-6.22
24	SLU 51	26	-24	1529	92.49	-2.8	-6.29
24	SLU 52	31	-27	1723	95.9	-2.72	-7.58
24	SLU 53	31	-22	1732	95.96	-2.7	-7.46
24	SLU 54	31	-25	1727	95.92	-2.72	-7.53
24	SLU 55	31	-27	1723	95.9	-2.72	-7.58
24	SLU 56	31	-22	1732	95.96	-2.7	-7.46
24	SLU 57	31	-25	1727	95.92	-2.72	-7.53
24	SLU 58	31	-22	1732	95.96	-2.7	-7.46
24	SLU 59	31	-25	1727	95.92	-2.72	-7.53
24	SLU 60	33	-23	1817	97.44	-2.67	-7.99
24	SLU 61	33	-26	1811	97.4	-2.68	-8.06
24	SLU 62	33	-23	1817	97.44	-2.67	-7.99
24	SLU 63	33	-26	1811	97.4	-2.68	-8.06
24	SLU 64	29	-22	1679	94.98	-2.73	-7.11
24	SLU 65	30	-27	1670	94.92	-2.75	-7.24
24	SLU 66	29	-22	1679	94.98	-2.73	-7.11
24	SLU 67	30	-25	1673	94.94	-2.74	-7.19
24	SLU 68	30	-27	1670	94.92	-2.75	-7.24
24	SLU 69	29	-22	1679	94.98	-2.73	-7.11
24	SLU 70	30	-25	1673	94.94	-2.74	-7.19
24	SLU 71	29	-22	1679	94.98	-2.73	-7.11
24	SLU 72	30	-25	1673	94.94	-2.74	-7.19
24	SLU 73	35	-29	1867	98.35	-2.67	-8.48
24	SLU 74	34	-24	1876	98.42	-2.65	-8.35
24	SLU 75	35	-27	1871	98.38	-2.66	-8.43
24	SLU 76	35	-29	1867	98.35	-2.67	-8.48
24	SLU 77	34	-24	1876	98.42	-2.65	-8.35
24	SLU 78	35	-27	1871	98.38	-2.66	-8.43
24	SLU 79	34	-24	1876	98.42	-2.65	-8.35
24	SLU 80	35	-27	1871	98.38	-2.66	-8.43
24	SLU 81	37	-24	1961	99.89	-2.61	-8.89
24	SLU 82	37	-27	1955	99.85	-2.62	-8.96
24	SLU 83	37	-24	1961	99.89	-2.61	-8.89
24	SLU 84	37	-27	1955	99.85	-2.62	-8.96
24	SLE RA 1	22	-17	1260	72.52	-2.11	-5.27
24	SLE RA 2	22	-20	1254	72.48	-2.13	-5.36
24	SLE RA 3	22	-17	1260	72.52	-2.11	-5.27
24	SLE RA 4	22	-19	1256	72.5	-2.12	-5.32
24	SLE RA 5	22	-20	1254	72.48	-2.13	-5.36
24	SLE RA 6	22	-17	1260	72.52	-2.11	-5.27



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
24	SLE RA 7	22	-19	1256	72.5	-2.12	-5.32
24	SLE RA 8	22	-17	1260	72.52	-2.11	-5.27
24	SLE RA 9	22	-19	1256	72.5	-2.12	-5.32
24	SLE RA 10	25	-21	1385	74.77	-2.07	-6.19
24	SLE RA 11	25	-18	1391	74.82	-2.06	-6.1
24	SLE RA 12	25	-20	1388	74.79	-2.07	-6.15
24	SLE RA 13	25	-21	1385	74.77	-2.07	-6.19
24	SLE RA 14	25	-18	1391	74.82	-2.06	-6.1
24	SLE RA 15	25	-20	1388	74.79	-2.07	-6.15
24	SLE RA 16	25	-18	1391	74.82	-2.06	-6.1
24	SLE RA 17	25	-20	1388	74.79	-2.07	-6.15
24	SLE RA 18	27	-18	1448	75.8	-2.03	-6.46
24	SLE RA 19	27	-20	1444	75.77	-2.04	-6.51
24	SLE RA 20	27	-18	1448	75.8	-2.03	-6.46
24	SLE RA 21	27	-20	1444	75.77	-2.04	-6.51
24	SLE FR 1	22	-17	1260	72.52	-2.11	-5.27
24	SLE FR 2	22	-17	1259	72.52	-2.11	-5.29
24	SLE FR 3	22	-17	1260	72.52	-2.11	-5.27
24	SLE FR 4	23	-18	1315	73.5	-2.09	-5.65
24	SLE FR 5	23	-17	1316	73.51	-2.09	-5.63
24	SLE FR 6	24	-18	1354	74.16	-2.07	-5.87
24	SLE QP 1	22	-17	1260	72.52	-2.11	-5.27
24	SLE QP 2	23	-17	1316	73.51	-2.09	-5.63
24	SLD 1	39	63	1549	89.13	-1.92	-9.45
24	SLD 2	43	53	1549	90.08	-1.97	-10.58
24	SLD 3	45	10	1430	76.25	-1.07	-11.03
24	SLD 4	49	0	1430	77.19	-1.12	-12.15
24	SLD 5	17	91	1567	97.41	-3.31	-4
24	SLD 6	21	81	1567	98.35	-3.36	-5.13
24	SLD 7	37	-86	1169	54.46	-0.47	-9.24
24	SLD 8	42	-96	1169	55.4	-0.52	-10.36
24	SLD 9	5	62	1463	91.61	-3.66	-0.9
24	SLD 10	9	52	1463	92.56	-3.7	-2.02
24	SLD 11	25	-116	1065	48.66	-0.82	-6.13
24	SLD 12	29	-125	1065	49.61	-0.87	-7.26
24	SLD 13	-2	-34	1203	69.82	-3.06	0.89
24	SLD 14	2	-44	1203	70.76	-3.11	-0.23
24	SLD 15	4	-87	1083	56.94	-2.21	-0.68
24	SLD 16	8	-97	1083	57.88	-2.26	-1.8
24	SLV 1	58	168	1854	109.49	-1.7	-14.39
24	SLV 2	68	146	1853	111.63	-1.81	-16.95
24	SLV 3	72	45	1576	79.38	0.28	-17.98
24	SLV 4	82	22	1576	81.52	0.17	-20.53
24	SLV 5	9	233	1899	129.22	-4.95	-1.93
24	SLV 6	19	211	1898	131.36	-5.05	-4.48
24	SLV 7	55	-178	973	28.86	1.67	-13.88
24	SLV 8	65	-201	973	31	1.56	-16.43
24	SLV 9	-19	166	1660	116.02	-5.74	5.17
24	SLV 10	-9	144	1659	118.16	-5.85	2.62
24	SLV 11	27	-245	734	15.66	0.88	-6.78
24	SLV 12	37	-268	734	17.8	0.77	-9.33
24	SLV 13	-35	-57	1057	65.49	-4.35	9.27
24	SLV 14	-26	-79	1056	67.63	-4.46	6.72
24	SLV 15	-22	-180	779	35.38	-2.37	5.69
24	SLV 16	-12	-203	779	37.52	-2.47	3.14
24	CRTFP Ux+	0	0	0	0	0	0
24	CRTFP Ux-	0	0	0	0	0	0
24	CRTFP Uy+	0	0	0	0	0	0
24	CRTFP Uy-	0	0	0	0	0	0
26	SLU 1	22	-28	1275	89.7	-2.75	-5.39
26	SLU 2	22	-34	1265	89.41	-2.76	-5.52
26	SLU 3	22	-28	1275	89.7	-2.75	-5.39
26	SLU 4	22	-32	1269	89.52	-2.75	-5.47
26	SLU 5	22	-34	1265	89.41	-2.76	-5.52
26	SLU 6	22	-28	1275	89.7	-2.75	-5.39
26	SLU 7	22	-32	1269	89.52	-2.75	-5.47
26	SLU 8	22	-28	1275	89.7	-2.75	-5.39
26	SLU 9	22	-32	1269	89.52	-2.75	-5.47
26	SLU 10	27	-38	1472	96.07	-2.79	-6.85
26	SLU 11	27	-32	1482	96.36	-2.77	-6.71
26	SLU 12	27	-36	1476	96.18	-2.78	-6.79
26	SLU 13	27	-38	1472	96.07	-2.79	-6.85
26	SLU 14	27	-32	1482	96.36	-2.77	-6.71
26	SLU 15	27	-36	1476	96.18	-2.78	-6.79
26	SLU 16	27	-32	1482	96.36	-2.77	-6.71
26	SLU 17	27	-36	1476	96.18	-2.78	-6.79
26	SLU 18	29	-34	1571	99.21	-2.79	-7.28
26	SLU 19	30	-37	1565	99.04	-2.79	-7.36
26	SLU 20	29	-34	1571	99.21	-2.79	-7.28
26	SLU 21	30	-37	1565	99.04	-2.79	-7.36
26	SLU 22	26	-31	1426	94.49	-2.77	-6.35
26	SLU 23	26	-37	1416	94.2	-2.78	-6.48
26	SLU 24	26	-31	1426	94.49	-2.77	-6.35
26	SLU 25	26	-35	1420	94.32	-2.78	-6.43
26	SLU 26	26	-37	1416	94.2	-2.78	-6.48
26	SLU 27	26	-31	1426	94.49	-2.77	-6.35
26	SLU 28	26	-35	1420	94.32	-2.78	-6.43
26	SLU 29	26	-31	1426	94.49	-2.77	-6.35
26	SLU 30	26	-35	1420	94.32	-2.78	-6.43



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
26	SLU 31	31	-41	1623	100.86	-2.81	-7.81
26	SLU 32	31	-35	1633	101.15	-2.8	-7.68
26	SLU 33	31	-39	1627	100.98	-2.8	-7.75
26	SLU 34	31	-41	1623	100.86	-2.81	-7.81
26	SLU 35	31	-35	1633	101.15	-2.8	-7.68
26	SLU 36	31	-39	1627	100.98	-2.8	-7.75
26	SLU 37	31	-35	1633	101.15	-2.8	-7.68
26	SLU 38	31	-39	1627	100.98	-2.8	-7.75
26	SLU 39	33	-37	1721	104.01	-2.81	-8.24
26	SLU 40	33	-40	1715	103.83	-2.82	-8.32
26	SLU 41	33	-37	1721	104.01	-2.81	-8.24
26	SLU 42	33	-40	1715	103.83	-2.82	-8.32
26	SLU 43	27	-36	1606	114.97	-3.56	-6.68
26	SLU 44	27	-41	1596	114.67	-3.57	-6.81
26	SLU 45	27	-36	1606	114.97	-3.56	-6.68
26	SLU 46	27	-39	1600	114.79	-3.57	-6.75
26	SLU 47	27	-41	1596	114.67	-3.57	-6.81
26	SLU 48	27	-36	1606	114.97	-3.56	-6.68
26	SLU 49	27	-39	1600	114.79	-3.57	-6.75
26	SLU 50	27	-36	1606	114.97	-3.56	-6.68
26	SLU 51	27	-39	1600	114.79	-3.57	-6.75
26	SLU 52	33	-45	1803	121.33	-3.6	-8.13
26	SLU 53	32	-39	1813	121.63	-3.59	-8
26	SLU 54	32	-43	1807	121.45	-3.6	-8.08
26	SLU 55	33	-45	1803	121.33	-3.6	-8.13
26	SLU 56	32	-39	1813	121.63	-3.59	-8
26	SLU 57	32	-43	1807	121.45	-3.6	-8.08
26	SLU 58	32	-39	1813	121.63	-3.59	-8
26	SLU 59	32	-43	1807	121.45	-3.6	-8.08
26	SLU 60	34	-41	1901	124.48	-3.6	-8.57
26	SLU 61	35	-45	1895	124.3	-3.61	-8.65
26	SLU 62	34	-41	1901	124.48	-3.6	-8.57
26	SLU 63	35	-45	1895	124.3	-3.61	-8.65
26	SLU 64	31	-39	1757	119.76	-3.59	-7.64
26	SLU 65	31	-45	1747	119.47	-3.6	-7.77
26	SLU 66	31	-39	1757	119.76	-3.59	-7.64
26	SLU 67	31	-42	1751	119.58	-3.59	-7.72
26	SLU 68	31	-45	1747	119.47	-3.6	-7.77
26	SLU 69	31	-39	1757	119.76	-3.59	-7.64
26	SLU 70	31	-42	1751	119.58	-3.59	-7.72
26	SLU 71	31	-39	1757	119.76	-3.59	-7.64
26	SLU 72	31	-42	1751	119.58	-3.59	-7.72
26	SLU 73	36	-48	1954	126.13	-3.63	-9.09
26	SLU 74	36	-42	1964	126.42	-3.61	-8.96
26	SLU 75	36	-46	1958	126.24	-3.62	-9.04
26	SLU 76	36	-48	1954	126.13	-3.63	-9.09
26	SLU 77	36	-42	1964	126.42	-3.61	-8.96
26	SLU 78	36	-46	1958	126.24	-3.62	-9.04
26	SLU 79	36	-42	1964	126.42	-3.61	-8.96
26	SLU 80	36	-46	1958	126.24	-3.62	-9.04
26	SLU 81	38	-44	2052	129.27	-3.63	-9.53
26	SLU 82	39	-48	2046	129.1	-3.63	-9.61
26	SLU 83	38	-44	2052	129.27	-3.63	-9.53
26	SLU 84	39	-48	2046	129.1	-3.63	-9.61
26	SLE RA 1	23	-29	1319	91.07	-2.75	-5.66
26	SLE RA 2	23	-33	1312	90.87	-2.76	-5.75
26	SLE RA 3	23	-29	1319	91.07	-2.75	-5.66
26	SLE RA 4	23	-31	1315	90.95	-2.76	-5.72
26	SLE RA 5	23	-33	1312	90.87	-2.76	-5.75
26	SLE RA 6	23	-29	1319	91.07	-2.75	-5.66
26	SLE RA 7	23	-31	1315	90.95	-2.76	-5.72
26	SLE RA 8	23	-29	1319	91.07	-2.75	-5.66
26	SLE RA 9	23	-31	1315	90.95	-2.76	-5.72
26	SLE RA 10	27	-36	1450	95.31	-2.78	-6.64
26	SLE RA 11	26	-32	1456	95.51	-2.77	-6.55
26	SLE RA 12	26	-34	1452	95.39	-2.78	-6.6
26	SLE RA 13	27	-36	1450	95.31	-2.78	-6.64
26	SLE RA 14	26	-32	1456	95.51	-2.77	-6.55
26	SLE RA 15	26	-34	1452	95.39	-2.78	-6.6
26	SLE RA 16	26	-32	1456	95.51	-2.77	-6.55
26	SLE RA 17	26	-34	1452	95.39	-2.78	-6.6
26	SLE RA 18	28	-33	1515	97.41	-2.78	-6.93
26	SLE RA 19	28	-35	1511	97.29	-2.78	-6.98
26	SLE RA 20	28	-33	1515	97.41	-2.78	-6.93
26	SLE RA 21	28	-35	1511	97.29	-2.78	-6.98
26	SLE FR 1	23	-29	1319	91.07	-2.75	-5.66
26	SLE FR 2	23	-30	1317	91.03	-2.76	-5.68
26	SLE FR 3	23	-29	1319	91.07	-2.75	-5.66
26	SLE FR 4	24	-31	1376	92.93	-2.76	-6.06
26	SLE FR 5	24	-30	1378	92.97	-2.76	-6.04
26	SLE FR 6	25	-31	1417	94.24	-2.77	-6.29
26	SLE QP 1	23	-29	1319	91.07	-2.75	-5.66
26	SLE QP 2	24	-30	1378	92.97	-2.76	-6.04
26	SLD 1	40	67	1640	108.95	-2.64	-9.98
26	SLD 2	45	55	1640	109.45	-2.66	-11.13
26	SLD 3	47	3	1508	97.37	-1.87	-11.61
26	SLD 4	51	-9	1508	97.86	-1.89	-12.77
26	SLD 5	18	100	1656	115.15	-3.88	-4.34
26	SLD 6	23	88	1656	115.65	-3.9	-5.5



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
26	SLD 7	39	-113	1217	76.55	-1.32	-9.79
26	SLD 8	43	-125	1217	77.05	-1.34	-10.94
26	SLD 9	5	65	1539	108.89	-4.18	-1.15
26	SLD 10	10	53	1538	109.39	-4.2	-2.3
26	SLD 11	26	-148	1099	70.29	-1.62	-6.59
26	SLD 12	30	-161	1099	70.79	-1.64	-7.74
26	SLD 13	-2	-51	1247	88.08	-3.63	0.68
26	SLD 14	2	-63	1247	88.58	-3.65	-0.47
26	SLD 15	4	-115	1116	76.5	-2.87	-0.95
26	SLD 16	8	-127	1115	77	-2.89	-2.1
26	SLV 1	61	194	1982	129.7	-2.48	-15.06
26	SLV 2	71	167	1982	130.84	-2.53	-17.68
26	SLV 3	75	46	1676	102.62	-0.69	-18.79
26	SLV 4	85	18	1675	103.75	-0.74	-21.41
26	SLV 5	11	272	2024	144.67	-5.38	-2.18
26	SLV 6	20	245	2024	145.81	-5.42	-4.8
26	SLV 7	58	-223	1002	54.39	0.59	-14.6
26	SLV 8	67	-251	1002	55.53	0.54	-17.22
26	SLV 9	-19	190	1753	130.42	-6.07	5.13
26	SLV 10	-9	163	1753	131.55	-6.11	2.51
26	SLV 11	28	-305	731	40.14	-0.1	-7.28
26	SLV 12	38	-332	731	41.27	-0.15	-9.9
26	SLV 13	-36	-78	1080	82.19	-4.79	9.32
26	SLV 14	-27	-106	1080	83.32	-4.83	6.7
26	SLV 15	-22	-227	773	55.11	-3	5.6
26	SLV 16	-13	-255	773	56.24	-3.04	2.98
26	CRTFP Ux+	0	0	0	0	0	0
26	CRTFP Ux-	0	0	0	0	0	0
26	CRTFP Uy+	0	0	0	0	0	0
26	CRTFP Uy-	0	0	0	0	0	0
28	SLU 1	22	-41	1344	116.97	-3.74	-5.75
28	SLU 2	23	-48	1333	116.38	-3.74	-5.88
28	SLU 3	22	-41	1344	116.97	-3.74	-5.75
28	SLU 4	23	-45	1338	116.62	-3.74	-5.83
28	SLU 5	23	-48	1333	116.38	-3.74	-5.88
28	SLU 6	22	-41	1344	116.97	-3.74	-5.75
28	SLU 7	23	-45	1338	116.62	-3.74	-5.83
28	SLU 8	22	-41	1344	116.97	-3.74	-5.75
28	SLU 9	23	-45	1338	116.62	-3.74	-5.83
28	SLU 10	28	-54	1551	128.11	-3.95	-7.29
28	SLU 11	28	-47	1562	128.69	-3.95	-7.15
28	SLU 12	28	-51	1556	128.34	-3.95	-7.24
28	SLU 13	28	-54	1551	128.11	-3.95	-7.29
28	SLU 14	28	-47	1562	128.69	-3.95	-7.15
28	SLU 15	28	-51	1556	128.34	-3.95	-7.24
28	SLU 16	28	-47	1562	128.69	-3.95	-7.15
28	SLU 17	28	-51	1556	128.34	-3.95	-7.24
28	SLU 18	30	-50	1656	133.72	-4.04	-7.76
28	SLU 19	31	-54	1649	133.36	-4.04	-7.84
28	SLU 20	30	-50	1656	133.72	-4.04	-7.76
28	SLU 21	31	-54	1649	133.36	-4.04	-7.84
28	SLU 22	27	-45	1503	125.42	-3.89	-6.77
28	SLU 23	27	-53	1492	124.83	-3.89	-6.9
28	SLU 24	27	-45	1503	125.42	-3.89	-6.77
28	SLU 25	27	-50	1497	125.07	-3.89	-6.85
28	SLU 26	27	-53	1492	124.83	-3.89	-6.9
28	SLU 27	27	-45	1503	125.42	-3.89	-6.77
28	SLU 28	27	-50	1497	125.07	-3.89	-6.85
28	SLU 29	27	-45	1503	125.42	-3.89	-6.77
28	SLU 30	27	-50	1497	125.07	-3.89	-6.85
28	SLU 31	32	-59	1710	136.56	-4.1	-8.31
28	SLU 32	32	-52	1721	137.14	-4.1	-8.17
28	SLU 33	32	-56	1715	136.79	-4.1	-8.26
28	SLU 34	32	-59	1710	136.56	-4.1	-8.31
28	SLU 35	32	-52	1721	137.14	-4.1	-8.17
28	SLU 36	32	-56	1715	136.79	-4.1	-8.26
28	SLU 37	32	-52	1721	137.14	-4.1	-8.17
28	SLU 38	32	-56	1715	136.79	-4.1	-8.26
28	SLU 39	35	-55	1815	142.17	-4.19	-8.78
28	SLU 40	35	-59	1808	141.82	-4.19	-8.86
28	SLU 41	35	-55	1815	142.17	-4.19	-8.78
28	SLU 42	35	-59	1808	141.82	-4.19	-8.86
28	SLU 43	28	-51	1693	149.17	-4.8	-7.12
28	SLU 44	28	-58	1682	148.58	-4.8	-7.26
28	SLU 45	28	-51	1693	149.17	-4.8	-7.12
28	SLU 46	28	-55	1686	148.81	-4.8	-7.2
28	SLU 47	28	-58	1682	148.58	-4.8	-7.26
28	SLU 48	28	-51	1693	149.17	-4.8	-7.12
28	SLU 49	28	-55	1686	148.81	-4.8	-7.2
28	SLU 50	28	-51	1693	149.17	-4.8	-7.12
28	SLU 51	28	-55	1686	148.81	-4.8	-7.2
28	SLU 52	34	-65	1900	160.3	-5.01	-8.67
28	SLU 53	33	-57	1911	160.89	-5.01	-8.53
28	SLU 54	34	-62	1905	160.53	-5.01	-8.61
28	SLU 55	34	-65	1900	160.3	-5.01	-8.67
28	SLU 56	33	-57	1911	160.89	-5.01	-8.53
28	SLU 57	34	-62	1905	160.53	-5.01	-8.61
28	SLU 58	33	-57	1911	160.89	-5.01	-8.53
28	SLU 59	34	-62	1905	160.53	-5.01	-8.61



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
28	SLU 60	36	-60	2005	165.91	-5.1	-9.13
28	SLU 61	36	-64	1998	165.56	-5.1	-9.21
28	SLU 62	36	-60	2005	165.91	-5.1	-9.13
28	SLU 63	36	-64	1998	165.56	-5.1	-9.21
28	SLU 64	32	-56	1852	157.62	-4.96	-8.14
28	SLU 65	32	-63	1841	157.03	-4.96	-8.28
28	SLU 66	32	-56	1852	157.62	-4.96	-8.14
28	SLU 67	32	-60	1845	157.26	-4.96	-8.22
28	SLU 68	32	-63	1841	157.03	-4.96	-8.28
28	SLU 69	32	-56	1852	157.62	-4.96	-8.14
28	SLU 70	32	-60	1845	157.26	-4.96	-8.22
28	SLU 71	32	-56	1852	157.62	-4.96	-8.14
28	SLU 72	32	-60	1845	157.26	-4.96	-8.22
28	SLU 73	38	-69	2059	168.75	-5.17	-9.69
28	SLU 74	38	-62	2070	169.34	-5.17	-9.55
28	SLU 75	38	-67	2064	168.99	-5.17	-9.63
28	SLU 76	38	-69	2059	168.75	-5.17	-9.69
28	SLU 77	38	-62	2070	169.34	-5.17	-9.55
28	SLU 78	38	-67	2064	168.99	-5.17	-9.63
28	SLU 79	38	-62	2070	169.34	-5.17	-9.55
28	SLU 80	38	-67	2064	168.99	-5.17	-9.63
28	SLU 81	40	-65	2164	174.36	-5.26	-10.15
28	SLU 82	40	-69	2157	174.01	-5.26	-10.23
28	SLU 83	40	-65	2164	174.36	-5.26	-10.15
28	SLU 84	40	-69	2157	174.01	-5.26	-10.23
28	SLE RA 1	24	-42	1390	119.39	-3.78	-6.04
28	SLE RA 2	24	-47	1382	118.99	-3.78	-6.13
28	SLE RA 3	24	-42	1390	119.39	-3.78	-6.04
28	SLE RA 4	24	-45	1385	119.15	-3.78	-6.09
28	SLE RA 5	24	-47	1382	118.99	-3.78	-6.13
28	SLE RA 6	24	-42	1390	119.39	-3.78	-6.04
28	SLE RA 7	24	-45	1385	119.15	-3.78	-6.09
28	SLE RA 8	24	-42	1390	119.39	-3.78	-6.04
28	SLE RA 9	24	-45	1385	119.15	-3.78	-6.09
28	SLE RA 10	28	-51	1528	126.81	-3.92	-7.07
28	SLE RA 11	27	-46	1535	127.2	-3.92	-6.98
28	SLE RA 12	28	-49	1531	126.97	-3.92	-7.03
28	SLE RA 13	28	-51	1528	126.81	-3.92	-7.07
28	SLE RA 14	27	-46	1535	127.2	-3.92	-6.98
28	SLE RA 15	28	-49	1531	126.97	-3.92	-7.03
28	SLE RA 16	27	-46	1535	127.2	-3.92	-6.98
28	SLE RA 17	28	-49	1531	126.97	-3.92	-7.03
28	SLE RA 18	29	-48	1597	130.55	-3.98	-7.38
28	SLE RA 19	29	-51	1593	130.31	-3.98	-7.43
28	SLE RA 20	29	-48	1597	130.55	-3.98	-7.38
28	SLE RA 21	29	-51	1593	130.31	-3.98	-7.43
28	SLE FR 1	24	-42	1390	119.39	-3.78	-6.04
28	SLE FR 2	24	-43	1388	119.31	-3.78	-6.06
28	SLE FR 3	24	-42	1390	119.39	-3.78	-6.04
28	SLE FR 4	25	-45	1450	122.66	-3.84	-6.46
28	SLE FR 5	25	-44	1452	122.73	-3.84	-6.44
28	SLE FR 6	26	-45	1494	124.97	-3.88	-6.71
28	SLE QP 1	24	-42	1390	119.39	-3.78	-6.04
28	SLE QP 2	25	-44	1452	122.73	-3.84	-6.44
28	SLD 1	42	71	1748	143	-3.81	-10.47
28	SLD 2	46	57	1748	143.26	-3.82	-11.65
28	SLD 3	48	-4	1602	131.72	-3.17	-12.17
28	SLD 4	53	-19	1602	131.98	-3.18	-13.35
28	SLD 5	19	110	1763	145.83	-4.8	-4.66
28	SLD 6	24	96	1764	146.09	-4.81	-5.84
28	SLD 7	40	-141	1274	108.23	-2.67	-10.32
28	SLD 8	44	-156	1274	108.49	-2.67	-11.5
28	SLD 9	6	68	1629	136.98	-5.01	-1.38
28	SLD 10	10	54	1630	137.24	-5.02	-2.56
28	SLD 11	27	-183	1140	99.37	-2.87	-7.04
28	SLD 12	31	-198	1141	99.64	-2.88	-8.22
28	SLD 13	-2	-69	1302	113.49	-4.51	0.47
28	SLD 14	2	-83	1302	113.75	-4.51	-0.71
28	SLD 15	4	-144	1155	102.21	-3.86	-1.23
28	SLD 16	9	-159	1156	102.47	-3.87	-2.41
28	SLV 1	64	223	2136	169.34	-3.78	-15.67
28	SLV 2	73	189	2136	169.93	-3.79	-18.35
28	SLV 3	78	47	1794	142.96	-2.28	-19.54
28	SLV 4	88	14	1795	143.56	-2.3	-22.22
28	SLV 5	12	314	2174	176.51	-6.09	-2.4
28	SLV 6	21	280	2175	177.1	-6.1	-5.08
28	SLV 7	59	-271	1037	88.6	-1.1	-15.31
28	SLV 8	69	-304	1038	89.19	-1.11	-17.99
28	SLV 9	-19	216	1866	156.28	-6.57	5.11
28	SLV 10	-9	183	1867	156.87	-6.58	2.43
28	SLV 11	29	-368	729	68.37	-1.58	-7.8
28	SLV 12	39	-401	730	68.96	-1.59	-10.48
28	SLV 13	-37	-102	1109	101.91	-5.39	9.34
28	SLV 14	-27	-135	1109	102.51	-5.4	6.67
28	SLV 15	-23	-277	768	75.54	-3.89	5.47
28	SLV 16	-13	-310	768	76.13	-3.9	2.79
28	CRTFP Ux+	0	0	0	0	0	0
28	CRTFP Ux-	0	0	0	0	0	0
28	CRTFP Uy+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
28	CRTFP Uy-	0	0	0	0	0	0
30	SLU 1	23	-53	1429	155.76	-5.2	-6.09
30	SLU 2	23	-61	1417	154.79	-5.18	-6.24
30	SLU 3	23	-53	1429	155.76	-5.2	-6.09
30	SLU 4	23	-58	1422	155.18	-5.19	-6.18
30	SLU 5	23	-61	1417	154.79	-5.18	-6.24
30	SLU 6	23	-53	1429	155.76	-5.2	-6.09
30	SLU 7	23	-58	1422	155.18	-5.19	-6.18
30	SLU 8	23	-53	1429	155.76	-5.2	-6.09
30	SLU 9	23	-58	1422	155.18	-5.19	-6.18
30	SLU 10	29	-70	1650	173.78	-5.67	-7.72
30	SLU 11	29	-62	1662	174.75	-5.68	-7.57
30	SLU 12	29	-67	1654	174.17	-5.67	-7.66
30	SLU 13	29	-70	1650	173.78	-5.67	-7.72
30	SLU 14	29	-62	1662	174.75	-5.68	-7.57
30	SLU 15	29	-67	1654	174.17	-5.67	-7.66
30	SLU 16	29	-62	1662	174.75	-5.68	-7.57
30	SLU 17	29	-67	1654	174.17	-5.67	-7.66
30	SLU 18	31	-66	1761	182.89	-5.89	-8.21
30	SLU 19	32	-71	1754	182.3	-5.88	-8.29
30	SLU 20	31	-66	1761	182.89	-5.89	-8.21
30	SLU 21	32	-71	1754	182.3	-5.88	-8.29
30	SLU 22	27	-60	1598	169.46	-5.55	-7.16
30	SLU 23	28	-68	1586	168.48	-5.54	-7.31
30	SLU 24	27	-60	1598	169.46	-5.55	-7.16
30	SLU 25	28	-65	1591	168.87	-5.54	-7.25
30	SLU 26	28	-68	1586	168.48	-5.54	-7.31
30	SLU 27	27	-60	1598	169.46	-5.55	-7.16
30	SLU 28	28	-65	1591	168.87	-5.54	-7.25
30	SLU 29	27	-60	1598	169.46	-5.55	-7.16
30	SLU 30	28	-65	1591	168.87	-5.54	-7.25
30	SLU 31	33	-77	1819	187.47	-6.02	-8.79
30	SLU 32	33	-69	1831	188.44	-6.03	-8.65
30	SLU 33	33	-74	1824	187.86	-6.02	-8.73
30	SLU 34	33	-77	1819	187.47	-6.02	-8.79
30	SLU 35	33	-69	1831	188.44	-6.03	-8.65
30	SLU 36	33	-74	1824	187.86	-6.02	-8.73
30	SLU 37	33	-69	1831	188.44	-6.03	-8.65
30	SLU 38	33	-74	1824	187.86	-6.02	-8.73
30	SLU 39	36	-73	1931	196.58	-6.24	-9.28
30	SLU 40	36	-78	1924	196	-6.23	-9.37
30	SLU 41	36	-73	1931	196.58	-6.24	-9.28
30	SLU 42	36	-78	1924	196	-6.23	-9.37
30	SLU 43	29	-67	1800	197.8	-6.63	-7.55
30	SLU 44	29	-75	1788	196.83	-6.62	-7.69
30	SLU 45	29	-67	1800	197.8	-6.63	-7.55
30	SLU 46	29	-72	1792	197.22	-6.63	-7.63
30	SLU 47	29	-75	1788	196.83	-6.62	-7.69
30	SLU 48	29	-67	1800	197.8	-6.63	-7.55
30	SLU 49	29	-72	1792	197.22	-6.63	-7.63
30	SLU 50	29	-67	1800	197.8	-6.63	-7.55
30	SLU 51	29	-72	1792	197.22	-6.63	-7.63
30	SLU 52	35	-84	2020	215.81	-7.1	-9.18
30	SLU 53	34	-76	2032	216.79	-7.12	-9.03
30	SLU 54	35	-81	2025	216.2	-7.11	-9.12
30	SLU 55	35	-84	2020	215.81	-7.1	-9.18
30	SLU 56	34	-76	2032	216.79	-7.12	-9.03
30	SLU 57	35	-81	2025	216.2	-7.11	-9.12
30	SLU 58	34	-76	2032	216.79	-7.12	-9.03
30	SLU 59	35	-81	2025	216.2	-7.11	-9.12
30	SLU 60	37	-80	2132	224.92	-7.32	-9.66
30	SLU 61	37	-85	2125	224.34	-7.32	-9.75
30	SLU 62	37	-80	2132	224.92	-7.32	-9.66
30	SLU 63	37	-85	2125	224.34	-7.32	-9.75
30	SLU 64	33	-74	1969	211.49	-6.99	-8.62
30	SLU 65	33	-82	1957	210.52	-6.97	-8.77
30	SLU 66	33	-74	1969	211.49	-6.99	-8.62
30	SLU 67	33	-79	1962	210.91	-6.98	-8.71
30	SLU 68	33	-82	1957	210.52	-6.97	-8.77
30	SLU 69	33	-74	1969	211.49	-6.99	-8.62
30	SLU 70	33	-79	1962	210.91	-6.98	-8.71
30	SLU 71	33	-74	1969	211.49	-6.99	-8.62
30	SLU 72	33	-79	1962	210.91	-6.98	-8.71
30	SLU 73	39	-91	2190	229.5	-7.46	-10.25
30	SLU 74	39	-83	2202	230.48	-7.47	-10.1
30	SLU 75	39	-88	2194	229.89	-7.46	-10.19
30	SLU 76	39	-91	2190	229.5	-7.46	-10.25
30	SLU 77	39	-83	2202	230.48	-7.47	-10.1
30	SLU 78	39	-88	2194	229.89	-7.46	-10.19
30	SLU 79	39	-83	2202	230.48	-7.47	-10.1
30	SLU 80	39	-88	2194	229.89	-7.46	-10.19
30	SLU 81	41	-87	2301	238.62	-7.68	-10.74
30	SLU 82	41	-92	2294	238.03	-7.67	-10.83
30	SLU 83	41	-87	2301	238.62	-7.68	-10.74
30	SLU 84	41	-92	2294	238.03	-7.67	-10.83
30	SLE RA 1	24	-55	1477	159.68	-5.3	-6.4
30	SLE RA 2	25	-61	1469	159.03	-5.29	-6.49
30	SLE RA 3	24	-55	1477	159.68	-5.3	-6.4
30	SLE RA 4	24	-58	1473	159.29	-5.29	-6.45



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
30	SLE RA 5	25	-61	1469	159.03	-5.29	-6.49
30	SLE RA 6	24	-55	1477	159.68	-5.3	-6.4
30	SLE RA 7	24	-58	1473	159.29	-5.29	-6.45
30	SLE RA 8	24	-55	1477	159.68	-5.3	-6.4
30	SLE RA 9	24	-58	1473	159.29	-5.29	-6.45
30	SLE RA 10	28	-67	1624	171.69	-5.61	-7.48
30	SLE RA 11	28	-61	1632	172.33	-5.62	-7.38
30	SLE RA 12	28	-64	1628	171.94	-5.61	-7.44
30	SLE RA 13	28	-67	1624	171.69	-5.61	-7.48
30	SLE RA 14	28	-61	1632	172.33	-5.62	-7.38
30	SLE RA 15	28	-64	1628	171.94	-5.61	-7.44
30	SLE RA 16	28	-61	1632	172.33	-5.62	-7.38
30	SLE RA 17	28	-64	1628	171.94	-5.61	-7.44
30	SLE RA 18	30	-64	1699	177.76	-5.76	-7.81
30	SLE RA 19	30	-67	1694	177.37	-5.75	-7.87
30	SLE RA 20	30	-64	1699	177.76	-5.76	-7.81
30	SLE RA 21	30	-67	1694	177.37	-5.75	-7.87
30	SLE FR 1	24	-55	1477	159.68	-5.3	-6.4
30	SLE FR 2	24	-56	1476	159.55	-5.3	-6.42
30	SLE FR 3	24	-55	1477	159.68	-5.3	-6.4
30	SLE FR 4	26	-59	1542	164.97	-5.43	-6.84
30	SLE FR 5	26	-58	1544	165.1	-5.44	-6.82
30	SLE FR 6	27	-59	1588	168.72	-5.53	-7.1
30	SLE QP 1	24	-55	1477	159.68	-5.3	-6.4
30	SLE QP 2	26	-58	1544	165.1	-5.44	-6.82
30	SLD 1	43	76	1881	195.04	-5.95	-10.92
30	SLD 2	48	59	1881	195.22	-5.95	-12.12
30	SLD 3	50	-11	1716	181.09	-5.44	-12.69
30	SLD 4	54	-28	1717	181.26	-5.44	-13.89
30	SLD 5	20	121	1894	195.19	-6.36	-4.95
30	SLD 6	24	104	1895	195.36	-6.36	-6.15
30	SLD 7	41	-170	1346	148.67	-4.67	-10.84
30	SLD 8	46	-187	1346	148.85	-4.67	-12.04
30	SLD 9	6	72	1741	181.36	-6.21	-1.59
30	SLD 10	11	55	1742	181.53	-6.2	-2.8
30	SLD 11	28	-219	1193	134.84	-4.51	-7.49
30	SLD 12	32	-236	1194	135.02	-4.51	-8.69
30	SLD 13	-2	-87	1371	148.94	-5.43	0.25
30	SLD 14	2	-104	1372	149.12	-5.43	-0.95
30	SLD 15	4	-174	1207	134.99	-4.92	-1.51
30	SLD 16	9	-192	1207	135.16	-4.92	-2.72
30	SLV 1	66	252	2320	234	-6.63	-16.21
30	SLV 2	75	212	2322	234.4	-6.62	-18.95
30	SLV 3	80	49	1938	201.46	-5.44	-20.25
30	SLV 4	90	10	1939	201.86	-5.43	-22.98
30	SLV 5	12	356	2356	234.99	-7.6	-2.56
30	SLV 6	22	317	2357	235.39	-7.59	-5.29
30	SLV 7	61	-319	1082	126.51	-3.64	-16.01
30	SLV 8	71	-358	1083	126.91	-3.63	-18.75
30	SLV 9	-19	243	2005	203.29	-7.24	5.11
30	SLV 10	-9	204	2006	203.69	-7.23	2.37
30	SLV 11	30	-432	730	94.81	-3.28	-8.34
30	SLV 12	40	-471	731	95.21	-3.27	-11.08
30	SLV 13	-38	-125	1148	128.35	-5.44	9.34
30	SLV 14	-28	-165	1149	128.74	-5.43	6.61
30	SLV 15	-23	-328	766	95.8	-4.25	5.31
30	SLV 16	-14	-367	767	96.2	-4.24	2.57
30	CRTFP Ux+	0	0	0	0	0	0
30	CRTFP Ux-	0	0	0	0	0	0
30	CRTFP Uy+	0	0	0	0	0	0
30	CRTFP Uy-	0	0	0	0	0	0
32	SLU 1	24	-65	1534	208.7	-7.27	-6.41
32	SLU 2	24	-75	1520	207.22	-7.24	-6.57
32	SLU 3	24	-65	1534	208.7	-7.27	-6.41
32	SLU 4	24	-71	1526	207.81	-7.25	-6.51
32	SLU 5	24	-75	1520	207.22	-7.24	-6.57
32	SLU 6	24	-65	1534	208.7	-7.27	-6.41
32	SLU 7	24	-71	1526	207.81	-7.25	-6.51
32	SLU 8	24	-65	1534	208.7	-7.27	-6.41
32	SLU 9	24	-71	1526	207.81	-7.25	-6.51
32	SLU 10	30	-86	1771	236.15	-8.11	-8.13
32	SLU 11	30	-77	1785	237.62	-8.14	-7.97
32	SLU 12	30	-83	1777	236.74	-8.12	-8.06
32	SLU 13	30	-86	1771	236.15	-8.11	-8.13
32	SLU 14	30	-77	1785	237.62	-8.14	-7.97
32	SLU 15	30	-83	1777	236.74	-8.12	-8.06
32	SLU 16	30	-77	1785	237.62	-8.14	-7.97
32	SLU 17	30	-83	1777	236.74	-8.12	-8.06
32	SLU 18	32	-82	1892	250.02	-8.51	-8.63
32	SLU 19	32	-88	1884	249.14	-8.49	-8.73
32	SLU 20	32	-82	1892	250.02	-8.51	-8.63
32	SLU 21	32	-88	1884	249.14	-8.49	-8.73
32	SLU 22	28	-74	1716	229.56	-7.9	-7.54
32	SLU 23	28	-83	1703	228.09	-7.87	-7.7
32	SLU 24	28	-74	1716	229.56	-7.9	-7.54
32	SLU 25	28	-80	1708	228.68	-7.88	-7.64
32	SLU 26	28	-83	1703	228.09	-7.87	-7.7
32	SLU 27	28	-74	1716	229.56	-7.9	-7.54
32	SLU 28	28	-80	1708	228.68	-7.88	-7.64



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
32	SLU 29	28	-74	1716	229.56	-7.9	-7.54
32	SLU 30	28	-80	1708	228.68	-7.88	-7.64
32	SLU 31	34	-95	1954	257.01	-8.74	-9.25
32	SLU 32	34	-86	1967	258.49	-8.77	-9.1
32	SLU 33	34	-91	1959	257.6	-8.75	-9.19
32	SLU 34	34	-95	1954	257.01	-8.74	-9.25
32	SLU 35	34	-86	1967	258.49	-8.77	-9.1
32	SLU 36	34	-91	1959	257.6	-8.75	-9.19
32	SLU 37	34	-86	1967	258.49	-8.77	-9.1
32	SLU 38	34	-91	1959	257.6	-8.75	-9.19
32	SLU 39	36	-91	2075	270.89	-9.15	-9.76
32	SLU 40	37	-96	2067	270	-9.13	-9.86
32	SLU 41	36	-91	2075	270.89	-9.15	-9.76
32	SLU 42	37	-96	2067	270	-9.13	-9.86
32	SLU 43	29	-82	1931	264.15	-9.23	-7.95
32	SLU 44	30	-91	1918	262.68	-9.2	-8.11
32	SLU 45	29	-82	1931	264.15	-9.23	-7.95
32	SLU 46	30	-88	1923	263.27	-9.21	-8.05
32	SLU 47	30	-91	1918	262.68	-9.2	-8.11
32	SLU 48	29	-82	1931	264.15	-9.23	-7.95
32	SLU 49	30	-88	1923	263.27	-9.21	-8.05
32	SLU 50	29	-82	1931	264.15	-9.23	-7.95
32	SLU 51	30	-88	1923	263.27	-9.21	-8.05
32	SLU 52	36	-103	2169	291.6	-10.07	-9.66
32	SLU 53	35	-94	2182	293.08	-10.1	-9.5
32	SLU 54	35	-99	2174	292.19	-10.08	-9.6
32	SLU 55	36	-103	2169	291.6	-10.07	-9.66
32	SLU 56	35	-94	2182	293.08	-10.1	-9.5
32	SLU 57	35	-99	2174	292.19	-10.08	-9.6
32	SLU 58	35	-94	2182	293.08	-10.1	-9.5
32	SLU 59	35	-99	2174	292.19	-10.08	-9.6
32	SLU 60	38	-99	2290	305.48	-10.48	-10.17
32	SLU 61	38	-104	2282	304.59	-10.46	-10.27
32	SLU 62	38	-99	2290	305.48	-10.48	-10.17
32	SLU 63	38	-104	2282	304.59	-10.46	-10.27
32	SLU 64	34	-91	2114	285.02	-9.87	-9.08
32	SLU 65	34	-100	2100	283.54	-9.83	-9.24
32	SLU 66	34	-91	2114	285.02	-9.87	-9.08
32	SLU 67	34	-96	2106	284.13	-9.85	-9.18
32	SLU 68	34	-100	2100	283.54	-9.83	-9.24
32	SLU 69	34	-91	2114	285.02	-9.87	-9.08
32	SLU 70	34	-96	2106	284.13	-9.85	-9.18
32	SLU 71	34	-91	2114	285.02	-9.87	-9.08
32	SLU 72	34	-96	2106	284.13	-9.85	-9.18
32	SLU 73	40	-112	2352	312.47	-10.7	-10.79
32	SLU 74	40	-102	2365	313.94	-10.74	-10.63
32	SLU 75	40	-108	2357	313.06	-10.72	-10.73
32	SLU 76	40	-112	2352	312.47	-10.7	-10.79
32	SLU 77	40	-102	2365	313.94	-10.74	-10.63
32	SLU 78	40	-108	2357	313.06	-10.72	-10.73
32	SLU 79	40	-102	2365	313.94	-10.74	-10.63
32	SLU 80	40	-108	2357	313.06	-10.72	-10.73
32	SLU 81	42	-107	2472	326.34	-11.11	-11.3
32	SLU 82	42	-113	2464	325.46	-11.09	-11.39
32	SLU 83	42	-107	2472	326.34	-11.11	-11.3
32	SLU 84	42	-113	2464	325.46	-11.09	-11.39
32	SLE RA 1	25	-68	1586	214.66	-7.45	-6.74
32	SLE RA 2	25	-74	1577	213.67	-7.43	-6.84
32	SLE RA 3	25	-68	1586	214.66	-7.45	-6.74
32	SLE RA 4	25	-72	1581	214.07	-7.44	-6.8
32	SLE RA 5	25	-74	1577	213.67	-7.43	-6.84
32	SLE RA 6	25	-68	1586	214.66	-7.45	-6.74
32	SLE RA 7	25	-72	1581	214.07	-7.44	-6.8
32	SLE RA 8	25	-68	1586	214.66	-7.45	-6.74
32	SLE RA 9	25	-72	1581	214.07	-7.44	-6.8
32	SLE RA 10	29	-82	1744	232.96	-8.01	-7.88
32	SLE RA 11	29	-76	1753	233.94	-8.03	-7.77
32	SLE RA 12	29	-79	1748	233.35	-8.02	-7.84
32	SLE RA 13	29	-82	1744	232.96	-8.01	-7.88
32	SLE RA 14	29	-76	1753	233.94	-8.03	-7.77
32	SLE RA 15	29	-79	1748	233.35	-8.02	-7.84
32	SLE RA 16	29	-76	1753	233.94	-8.03	-7.77
32	SLE RA 17	29	-79	1748	233.35	-8.02	-7.84
32	SLE RA 18	31	-79	1825	242.21	-8.28	-8.22
32	SLE RA 19	31	-83	1820	241.62	-8.27	-8.28
32	SLE RA 20	31	-79	1825	242.21	-8.28	-8.22
32	SLE RA 21	31	-83	1820	241.62	-8.27	-8.28
32	SLE FR 1	25	-68	1586	214.66	-7.45	-6.74
32	SLE FR 2	25	-69	1584	214.46	-7.45	-6.76
32	SLE FR 3	25	-68	1586	214.66	-7.45	-6.74
32	SLE FR 4	27	-72	1656	222.73	-7.7	-7.2
32	SLE FR 5	27	-71	1658	222.92	-7.7	-7.18
32	SLE FR 6	28	-73	1705	228.43	-7.87	-7.48
32	SLE QP 1	25	-68	1586	214.66	-7.45	-6.74
32	SLE QP 2	27	-71	1658	222.92	-7.7	-7.18
32	SLD 1	44	81	2042	268.32	-8.57	-11.33
32	SLD 2	49	61	2043	268.53	-8.57	-12.56
32	SLD 3	51	-18	1856	247.97	-8.07	-13.17
32	SLD 4	55	-38	1857	248.18	-8.06	-14.4



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
32	SLD 5	21	131	2054	267.34	-8.73	-5.19
32	SLD 6	25	111	2055	267.54	-8.73	-6.42
32	SLD 7	42	-198	1436	199.5	-7.04	-11.35
32	SLD 8	47	-218	1437	199.71	-7.04	-12.58
32	SLD 9	7	75	1879	246.14	-8.36	-1.78
32	SLD 10	11	55	1880	246.34	-8.36	-3.01
32	SLD 11	28	-253	1260	178.31	-6.67	-7.94
32	SLD 12	33	-273	1261	178.51	-6.67	-9.17
32	SLD 13	-2	-105	1458	197.67	-7.34	0.04
32	SLD 14	2	-125	1459	197.87	-7.33	-1.19
32	SLD 15	5	-203	1273	177.32	-6.83	-1.81
32	SLD 16	9	-223	1273	177.52	-6.83	-3.04
32	SLV 1	68	281	2543	327.48	-9.71	-16.67
32	SLV 2	77	235	2546	327.94	-9.7	-19.47
32	SLV 3	82	52	2112	280.12	-8.53	-20.89
32	SLV 4	92	6	2115	280.58	-8.52	-23.69
32	SLV 5	13	398	2576	325.95	-10.1	-2.65
32	SLV 6	23	352	2578	326.42	-10.09	-5.44
32	SLV 7	62	-366	1140	168.09	-6.15	-16.72
32	SLV 8	72	-411	1142	168.56	-6.14	-19.52
32	SLV 9	-19	269	2173	277.29	-9.25	5.15
32	SLV 10	-9	223	2176	277.75	-9.24	2.36
32	SLV 11	31	-494	737	119.43	-5.31	-8.92
32	SLV 12	40	-540	739	119.89	-5.3	-11.72
32	SLV 13	-39	-149	1201	165.26	-6.88	9.33
32	SLV 14	-29	-194	1203	165.73	-6.87	6.53
32	SLV 15	-24	-378	770	117.91	-5.7	5.1
32	SLV 16	-14	-423	772	118.37	-5.69	2.31
32	CRTFP Ux+	0	0	0	0	0	0
32	CRTFP Ux-	0	0	0	0	0	0
32	CRTFP Uy+	0	0	0	0	0	0
32	CRTFP Uy-	0	0	0	0	0	0
34	SLU 1	24	-76	1662	278.01	-10.1	-6.73
34	SLU 2	24	-87	1647	275.89	-10.04	-6.9
34	SLU 3	24	-76	1662	278.01	-10.1	-6.73
34	SLU 4	24	-83	1653	276.74	-10.06	-6.83
34	SLU 5	24	-87	1647	275.89	-10.04	-6.9
34	SLU 6	24	-76	1662	278.01	-10.1	-6.73
34	SLU 7	24	-83	1653	276.74	-10.06	-6.83
34	SLU 8	24	-76	1662	278.01	-10.1	-6.73
34	SLU 9	24	-83	1653	276.74	-10.06	-6.83
34	SLU 10	30	-101	1921	317.85	-11.44	-8.52
34	SLU 11	30	-90	1936	319.97	-11.5	-8.34
34	SLU 12	30	-96	1927	318.7	-11.46	-8.45
34	SLU 13	30	-101	1921	317.85	-11.44	-8.52
34	SLU 14	30	-90	1936	319.97	-11.5	-8.34
34	SLU 15	30	-96	1927	318.7	-11.46	-8.45
34	SLU 16	30	-90	1936	319.97	-11.5	-8.34
34	SLU 17	30	-96	1927	318.7	-11.46	-8.45
34	SLU 18	33	-96	2054	337.95	-12.1	-9.04
34	SLU 19	33	-102	2045	336.68	-12.06	-9.14
34	SLU 20	33	-96	2054	337.95	-12.1	-9.04
34	SLU 21	33	-102	2045	336.68	-12.06	-9.14
34	SLU 22	29	-87	1861	308.28	-11.11	-7.9
34	SLU 23	29	-97	1846	306.17	-11.05	-8.08
34	SLU 24	29	-87	1861	308.28	-11.11	-7.9
34	SLU 25	29	-93	1852	307.01	-11.08	-8.01
34	SLU 26	29	-97	1846	306.17	-11.05	-8.08
34	SLU 27	29	-87	1861	308.28	-11.11	-7.9
34	SLU 28	29	-93	1852	307.01	-11.08	-8.01
34	SLU 29	29	-87	1861	308.28	-11.11	-7.9
34	SLU 30	29	-93	1852	307.01	-11.08	-8.01
34	SLU 31	35	-111	2120	348.13	-12.45	-9.69
34	SLU 32	35	-101	2135	350.24	-12.51	-9.52
34	SLU 33	35	-107	2126	348.97	-12.48	-9.62
34	SLU 34	35	-111	2120	348.13	-12.45	-9.69
34	SLU 35	35	-101	2135	350.24	-12.51	-9.52
34	SLU 36	35	-107	2126	348.97	-12.48	-9.62
34	SLU 37	35	-101	2135	350.24	-12.51	-9.52
34	SLU 38	35	-107	2126	348.97	-12.48	-9.62
34	SLU 39	37	-107	2252	368.22	-13.11	-10.21
34	SLU 40	37	-113	2243	366.96	-13.08	-10.32
34	SLU 41	37	-107	2252	368.22	-13.11	-10.21
34	SLU 42	37	-113	2243	366.96	-13.08	-10.32
34	SLU 43	30	-96	2093	351.03	-12.78	-8.34
34	SLU 44	30	-106	2078	348.92	-12.72	-8.51
34	SLU 45	30	-96	2093	351.03	-12.78	-8.34
34	SLU 46	30	-102	2084	349.76	-12.74	-8.44
34	SLU 47	30	-106	2078	348.92	-12.72	-8.51
34	SLU 48	30	-96	2093	351.03	-12.78	-8.34
34	SLU 49	30	-102	2084	349.76	-12.74	-8.44
34	SLU 50	30	-96	2093	351.03	-12.78	-8.34
34	SLU 51	30	-102	2084	349.76	-12.74	-8.44
34	SLU 52	36	-120	2352	390.88	-14.12	-10.13
34	SLU 53	36	-110	2367	392.99	-14.18	-9.96
34	SLU 54	36	-116	2358	391.72	-14.14	-10.06
34	SLU 55	36	-120	2352	390.88	-14.12	-10.13
34	SLU 56	36	-110	2367	392.99	-14.18	-9.96
34	SLU 57	36	-116	2358	391.72	-14.14	-10.06



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
34	SLU 58	36	-110	2367	392.99	-14.18	-9.96
34	SLU 59	36	-116	2358	391.72	-14.14	-10.06
34	SLU 60	39	-116	2484	410.98	-14.78	-10.65
34	SLU 61	39	-122	2475	409.71	-14.74	-10.75
34	SLU 62	39	-116	2484	410.98	-14.78	-10.65
34	SLU 63	39	-122	2475	409.71	-14.74	-10.75
34	SLU 64	34	-106	2291	381.3	-13.79	-9.52
34	SLU 65	35	-116	2277	379.19	-13.73	-9.69
34	SLU 66	34	-106	2291	381.3	-13.79	-9.52
34	SLU 67	35	-112	2283	380.03	-13.76	-9.62
34	SLU 68	35	-116	2277	379.19	-13.73	-9.69
34	SLU 69	34	-106	2291	381.3	-13.79	-9.52
34	SLU 70	35	-112	2283	380.03	-13.76	-9.62
34	SLU 71	34	-106	2291	381.3	-13.79	-9.52
34	SLU 72	35	-112	2283	380.03	-13.76	-9.62
34	SLU 73	41	-130	2551	421.15	-15.13	-11.31
34	SLU 74	40	-120	2565	423.26	-15.19	-11.14
34	SLU 75	41	-126	2556	422	-15.16	-11.24
34	SLU 76	41	-130	2551	421.15	-15.13	-11.31
34	SLU 77	40	-120	2565	423.26	-15.19	-11.14
34	SLU 78	41	-126	2556	422	-15.16	-11.24
34	SLU 79	40	-120	2565	423.26	-15.19	-11.14
34	SLU 80	41	-126	2556	422	-15.16	-11.24
34	SLU 81	43	-126	2683	441.25	-15.79	-11.83
34	SLU 82	43	-132	2674	439.98	-15.76	-11.93
34	SLU 83	43	-126	2683	441.25	-15.79	-11.83
34	SLU 84	43	-132	2674	439.98	-15.76	-11.93
34	SLE RA 1	25	-79	1719	286.66	-10.39	-7.06
34	SLE RA 2	26	-86	1709	285.25	-10.35	-7.18
34	SLE RA 3	25	-79	1719	286.66	-10.39	-7.06
34	SLE RA 4	26	-83	1713	285.81	-10.36	-7.13
34	SLE RA 5	26	-86	1709	285.25	-10.35	-7.18
34	SLE RA 6	25	-79	1719	286.66	-10.39	-7.06
34	SLE RA 7	26	-83	1713	285.81	-10.36	-7.13
34	SLE RA 8	25	-79	1719	286.66	-10.39	-7.06
34	SLE RA 9	26	-83	1713	285.81	-10.36	-7.13
34	SLE RA 10	30	-95	1892	313.22	-11.28	-8.26
34	SLE RA 11	29	-89	1902	314.63	-11.32	-8.14
34	SLE RA 12	30	-93	1896	313.79	-11.3	-8.21
34	SLE RA 13	30	-95	1892	313.22	-11.28	-8.26
34	SLE RA 14	29	-89	1902	314.63	-11.32	-8.14
34	SLE RA 15	30	-93	1896	313.79	-11.3	-8.21
34	SLE RA 16	29	-89	1902	314.63	-11.32	-8.14
34	SLE RA 17	30	-93	1896	313.79	-11.3	-8.21
34	SLE RA 18	31	-93	1980	326.62	-11.72	-8.6
34	SLE RA 19	31	-97	1974	325.77	-11.7	-8.67
34	SLE RA 20	31	-93	1980	326.62	-11.72	-8.6
34	SLE RA 21	31	-97	1974	325.77	-11.7	-8.67
34	SLE FR 1	25	-79	1719	286.66	-10.39	-7.06
34	SLE FR 2	26	-81	1717	286.37	-10.38	-7.09
34	SLE FR 3	25	-79	1719	286.66	-10.39	-7.06
34	SLE FR 4	27	-85	1795	298.36	-10.78	-7.55
34	SLE FR 5	27	-83	1797	298.65	-10.79	-7.52
34	SLE FR 6	28	-86	1849	306.64	-11.05	-7.83
34	SLE QP 1	25	-79	1719	286.66	-10.39	-7.06
34	SLE QP 2	27	-83	1797	298.65	-10.79	-7.52
34	SLD 1	45	86	2236	365.18	-12.44	-11.68
34	SLD 2	50	63	2238	365.49	-12.44	-12.94
34	SLD 3	52	-23	2026	335.2	-11.66	-13.63
34	SLD 4	56	-46	2028	335.52	-11.65	-14.89
34	SLD 5	21	141	2247	363.96	-12.48	-5.38
34	SLD 6	25	118	2248	364.28	-12.48	-6.64
34	SLD 7	43	-222	1547	264.04	-9.85	-11.87
34	SLD 8	47	-245	1549	264.35	-9.85	-13.13
34	SLD 9	7	78	2046	332.94	-11.72	-1.92
34	SLD 10	11	56	2047	333.26	-11.72	-3.18
34	SLD 11	29	-285	1346	233.01	-9.09	-8.41
34	SLD 12	33	-307	1348	233.33	-9.09	-9.67
34	SLD 13	-2	-121	1566	261.77	-9.92	-0.16
34	SLD 14	2	-144	1568	262.09	-9.92	-1.42
34	SLD 15	5	-230	1357	231.8	-9.13	-2.11
34	SLD 16	9	-253	1358	232.11	-9.13	-3.37
34	SLV 1	69	308	2810	451.95	-14.61	-17.05
34	SLV 2	78	257	2813	452.66	-14.6	-19.9
34	SLV 3	84	55	2322	382.25	-12.77	-21.5
34	SLV 4	94	4	2326	382.96	-12.77	-24.35
34	SLV 5	14	436	2840	450.1	-14.72	-2.64
34	SLV 6	23	384	2843	450.81	-14.71	-5.49
34	SLV 7	64	-407	1214	217.76	-8.6	-17.46
34	SLV 8	73	-459	1217	218.48	-8.59	-20.32
34	SLV 9	-19	292	2378	378.81	-12.98	5.27
34	SLV 10	-9	240	2381	379.53	-12.97	2.41
34	SLV 11	31	-551	751	146.48	-6.86	-9.56
34	SLV 12	41	-602	755	147.19	-6.85	-12.41
34	SLV 13	-39	-171	1269	214.33	-8.81	9.3
34	SLV 14	-30	-222	1272	215.04	-8.8	6.45
34	SLV 15	-24	-423	781	144.63	-6.97	4.85
34	SLV 16	-15	-475	784	145.34	-6.97	2
34	CRTFP Ux+	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
34	CRTFP Ux-	0	0	0	0	0	0
34	CRTFP Uy+	0	0	0	0	0	0
34	CRTFP Uy-	0	0	0	0	0	0
36	SLU 1	21	-72	1536	304.83	-55.64	-8
36	SLU 2	21	-81	1522	302.41	-55.16	-8.42
36	SLU 3	21	-72	1536	304.83	-55.64	-8
36	SLU 4	21	-78	1528	303.37	-55.35	-8.25
36	SLU 5	21	-81	1522	302.41	-55.16	-8.42
36	SLU 6	21	-72	1536	304.83	-55.64	-8
36	SLU 7	21	-78	1528	303.37	-55.35	-8.25
36	SLU 8	21	-72	1536	304.83	-55.64	-8
36	SLU 9	21	-78	1528	303.37	-55.35	-8.25
36	SLU 10	26	-95	1777	351.02	-64.25	-10.22
36	SLU 11	26	-85	1791	353.44	-64.73	-9.8
36	SLU 12	26	-91	1783	351.98	-64.44	-10.05
36	SLU 13	26	-95	1777	351.02	-64.25	-10.22
36	SLU 14	26	-85	1791	353.44	-64.73	-9.8
36	SLU 15	26	-91	1783	351.98	-64.44	-10.05
36	SLU 16	26	-85	1791	353.44	-64.73	-9.8
36	SLU 17	26	-91	1783	351.98	-64.44	-10.05
36	SLU 18	28	-91	1900	374.27	-68.62	-10.57
36	SLU 19	28	-97	1892	372.82	-68.34	-10.82
36	SLU 20	28	-91	1900	374.27	-68.62	-10.57
36	SLU 21	28	-97	1892	372.82	-68.34	-10.82
36	SLU 22	25	-82	1721	339.9	-62.23	-9.32
36	SLU 23	25	-91	1707	337.48	-61.74	-9.74
36	SLU 24	25	-82	1721	339.9	-62.23	-9.32
36	SLU 25	25	-88	1712	338.45	-61.94	-9.57
36	SLU 26	25	-91	1707	337.48	-61.74	-9.74
36	SLU 27	25	-82	1721	339.9	-62.23	-9.32
36	SLU 28	25	-88	1712	338.45	-61.94	-9.57
36	SLU 29	25	-82	1721	339.9	-62.23	-9.32
36	SLU 30	25	-88	1712	338.45	-61.94	-9.57
36	SLU 31	30	-105	1962	386.09	-70.83	-11.54
36	SLU 32	30	-95	1976	388.51	-71.31	-11.12
36	SLU 33	30	-101	1968	387.06	-71.02	-11.37
36	SLU 34	30	-105	1962	386.09	-70.83	-11.54
36	SLU 35	30	-95	1976	388.51	-71.31	-11.12
36	SLU 36	30	-101	1968	387.06	-71.02	-11.37
36	SLU 37	30	-95	1976	388.51	-71.31	-11.12
36	SLU 38	30	-101	1968	387.06	-71.02	-11.37
36	SLU 39	32	-101	2085	409.34	-75.21	-11.89
36	SLU 40	32	-107	2077	407.89	-74.92	-12.14
36	SLU 41	32	-101	2085	409.34	-75.21	-11.89
36	SLU 42	32	-107	2077	407.89	-74.92	-12.14
36	SLU 43	26	-90	1934	384.25	-70.08	-9.94
36	SLU 44	26	-100	1920	381.83	-69.6	-10.37
36	SLU 45	26	-90	1934	384.25	-70.08	-9.94
36	SLU 46	26	-96	1925	382.8	-69.79	-10.2
36	SLU 47	26	-100	1920	381.83	-69.6	-10.37
36	SLU 48	26	-90	1934	384.25	-70.08	-9.94
36	SLU 49	26	-96	1925	382.8	-69.79	-10.2
36	SLU 50	26	-90	1934	384.25	-70.08	-9.94
36	SLU 51	26	-96	1925	382.8	-69.79	-10.2
36	SLU 52	31	-113	2175	430.44	-78.68	-12.17
36	SLU 53	31	-103	2189	432.86	-79.17	-11.74
36	SLU 54	31	-109	2180	431.41	-78.88	-12
36	SLU 55	31	-113	2175	430.44	-78.68	-12.17
36	SLU 56	31	-103	2189	432.86	-79.17	-11.74
36	SLU 57	31	-109	2180	431.41	-78.88	-12
36	SLU 58	31	-103	2189	432.86	-79.17	-11.74
36	SLU 59	31	-109	2180	431.41	-78.88	-12
36	SLU 60	33	-109	2298	453.69	-83.06	-12.51
36	SLU 61	33	-115	2289	452.24	-82.77	-12.77
36	SLU 62	33	-109	2298	453.69	-83.06	-12.51
36	SLU 63	33	-115	2289	452.24	-82.77	-12.77
36	SLU 64	30	-100	2118	419.33	-76.66	-11.26
36	SLU 65	30	-110	2104	416.9	-76.18	-11.69
36	SLU 66	30	-100	2118	419.33	-76.66	-11.26
36	SLU 67	30	-106	2110	417.87	-76.37	-11.52
36	SLU 68	30	-110	2104	416.9	-76.18	-11.69
36	SLU 69	30	-100	2118	419.33	-76.66	-11.26
36	SLU 70	30	-106	2110	417.87	-76.37	-11.52
36	SLU 71	30	-100	2118	419.33	-76.66	-11.26
36	SLU 72	30	-106	2110	417.87	-76.37	-11.52
36	SLU 73	35	-123	2359	465.51	-85.27	-13.49
36	SLU 74	35	-114	2373	467.93	-85.75	-13.06
36	SLU 75	35	-119	2365	466.48	-85.46	-13.32
36	SLU 76	35	-123	2359	465.51	-85.27	-13.49
36	SLU 77	35	-114	2373	467.93	-85.75	-13.06
36	SLU 78	35	-119	2365	466.48	-85.46	-13.32
36	SLU 79	35	-114	2373	467.93	-85.75	-13.06
36	SLU 80	35	-119	2365	466.48	-85.46	-13.32
36	SLU 81	37	-119	2483	488.77	-89.64	-13.83
36	SLU 82	37	-125	2474	487.31	-89.35	-14.09
36	SLU 83	37	-119	2483	488.77	-89.64	-13.83
36	SLU 84	37	-125	2474	487.31	-89.35	-14.09
36	SLE RA 1	22	-75	1589	314.85	-57.52	-8.37
36	SLE RA 2	22	-81	1580	313.23	-57.2	-8.66



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
36	SLE RA 3	22	-75	1589	314.85	-57.52	-8.37
36	SLE RA 4	22	-79	1583	313.88	-57.33	-8.54
36	SLE RA 5	22	-81	1580	313.23	-57.2	-8.66
36	SLE RA 6	22	-75	1589	314.85	-57.52	-8.37
36	SLE RA 7	22	-79	1583	313.88	-57.33	-8.54
36	SLE RA 8	22	-75	1589	314.85	-57.52	-8.37
36	SLE RA 9	22	-79	1583	313.88	-57.33	-8.54
36	SLE RA 10	26	-90	1750	345.64	-63.26	-9.86
36	SLE RA 11	25	-84	1759	347.25	-63.58	-9.57
36	SLE RA 12	26	-88	1753	346.29	-63.39	-9.74
36	SLE RA 13	26	-90	1750	345.64	-63.26	-9.86
36	SLE RA 14	25	-84	1759	347.25	-63.58	-9.57
36	SLE RA 15	26	-88	1753	346.29	-63.39	-9.74
36	SLE RA 16	25	-84	1759	347.25	-63.58	-9.57
36	SLE RA 17	26	-88	1753	346.29	-63.39	-9.74
36	SLE RA 18	27	-88	1832	361.14	-66.18	-10.09
36	SLE RA 19	27	-91	1826	360.17	-65.99	-10.26
36	SLE RA 20	27	-88	1832	361.14	-66.18	-10.09
36	SLE RA 21	27	-91	1826	360.17	-65.99	-10.26
36	SLE FR 1	22	-75	1589	314.85	-57.52	-8.37
36	SLE FR 2	22	-76	1587	314.53	-57.46	-8.43
36	SLE FR 3	22	-75	1589	314.85	-57.52	-8.37
36	SLE FR 4	24	-80	1660	328.41	-60.06	-8.94
36	SLE FR 5	23	-79	1662	328.74	-60.12	-8.89
36	SLE FR 6	24	-81	1710	338	-61.85	-9.23
36	SLE QP 1	22	-75	1589	314.85	-57.52	-8.37
36	SLE QP 2	23	-79	1662	328.74	-60.12	-8.89
36	SLD 1	39	77	2085	406.23	-74.72	-11.35
36	SLD 2	43	56	2087	406.61	-74.78	-13.05
36	SLD 3	45	-22	1884	370.97	-67.84	-15.43
36	SLD 4	49	-44	1886	371.34	-67.89	-17.13
36	SLD 5	18	126	2092	405.34	-74.92	-2.85
36	SLD 6	22	105	2094	405.72	-74.98	-4.54
36	SLD 7	37	-205	1424	287.79	-51.98	-16.44
36	SLD 8	41	-226	1425	288.17	-52.03	-18.14
36	SLD 9	6	69	1898	369.31	-68.21	0.36
36	SLD 10	10	48	1900	369.69	-68.26	-1.33
36	SLD 11	25	-262	1229	251.76	-45.26	-13.23
36	SLD 12	29	-283	1231	252.14	-45.32	-14.93
36	SLD 13	-2	-114	1437	286.13	-52.35	-0.65
36	SLD 14	2	-135	1439	286.51	-52.4	-2.35
36	SLD 15	4	-213	1237	250.87	-45.46	-4.73
36	SLD 16	8	-234	1238	251.24	-45.52	-6.43
36	SLV 1	60	281	2638	507.35	-93.79	-14.52
36	SLV 2	68	233	2642	508.2	-93.92	-18.37
36	SLV 3	73	51	2172	425.38	-77.79	-23.95
36	SLV 4	81	3	2176	426.24	-77.92	-27.8
36	SLV 5	12	396	2661	506.33	-94.44	5.06
36	SLV 6	20	347	2665	507.19	-94.57	1.21
36	SLV 7	55	-372	1106	233.12	-41.11	-26.35
36	SLV 8	63	-421	1110	233.97	-41.24	-30.2
36	SLV 9	-16	263	2214	423.5	-79	12.43
36	SLV 10	-8	215	2218	424.36	-79.13	8.58
36	SLV 11	27	-505	659	150.28	-25.67	-18.99
36	SLV 12	35	-553	663	151.14	-25.8	-22.84
36	SLV 13	-34	-160	1148	231.24	-42.33	10.02
36	SLV 14	-26	-208	1152	232.1	-42.45	6.17
36	SLV 15	-21	-390	681	149.27	-26.33	0.6
36	SLV 16	-13	-439	686	150.13	-26.45	-3.26
36	CRTFP Ux+	0	0	0	0	0	0
36	CRTFP Ux-	0	0	0	0	0	0
36	CRTFP Uy+	0	0	0	0	0	0
36	CRTFP Uy-	0	0	0	0	0	0
39	SLU 1	37	-127	2717	447.5	-625.93	-38.38
39	SLU 2	37	-143	2692	443.64	-620.14	-42.59
39	SLU 3	37	-127	2717	447.5	-625.93	-38.38
39	SLU 4	37	-136	2702	445.18	-622.46	-40.9
39	SLU 5	37	-143	2692	443.64	-620.14	-42.59
39	SLU 6	37	-127	2717	447.5	-625.93	-38.38
39	SLU 7	37	-136	2702	445.18	-622.46	-40.9
39	SLU 8	37	-127	2717	447.5	-625.93	-38.38
39	SLU 9	37	-136	2702	445.18	-622.46	-40.9
39	SLU 10	46	-166	3145	517.94	-723.36	-50.08
39	SLU 11	46	-150	3170	521.79	-729.15	-45.87
39	SLU 12	46	-160	3155	519.48	-725.68	-48.4
39	SLU 13	46	-166	3145	517.94	-723.36	-50.08
39	SLU 14	46	-150	3170	521.79	-729.15	-45.87
39	SLU 15	46	-160	3155	519.48	-725.68	-48.4
39	SLU 16	46	-150	3170	521.79	-729.15	-45.87
39	SLU 17	46	-160	3155	519.48	-725.68	-48.4
39	SLU 18	50	-160	3365	553.64	-773.39	-49.08
39	SLU 19	50	-170	3349	551.32	-769.91	-51.61
39	SLU 20	50	-160	3365	553.64	-773.39	-49.08
39	SLU 21	50	-170	3349	551.32	-769.91	-51.61
39	SLU 22	43	-144	3046	501.19	-700.83	-43.99
39	SLU 23	44	-161	3020	497.34	-695.03	-48.2
39	SLU 24	43	-144	3046	501.19	-700.83	-43.99
39	SLU 25	44	-154	3030	498.88	-697.35	-46.52
39	SLU 26	44	-161	3020	497.34	-695.03	-48.2



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
39	SLU 27	43	-144	3046	501.19	-700.83	-43.99
39	SLU 28	44	-154	3030	498.88	-697.35	-46.52
39	SLU 29	43	-144	3046	501.19	-700.83	-43.99
39	SLU 30	44	-154	3030	498.88	-697.35	-46.52
39	SLU 31	53	-184	3473	571.64	-798.25	-55.7
39	SLU 32	53	-168	3499	575.49	-804.05	-51.48
39	SLU 33	53	-178	3483	573.18	-800.57	-54.01
39	SLU 34	53	-184	3473	571.64	-798.25	-55.7
39	SLU 35	53	-168	3499	575.49	-804.05	-51.48
39	SLU 36	53	-178	3483	573.18	-800.57	-54.01
39	SLU 37	53	-168	3499	575.49	-804.05	-51.48
39	SLU 38	53	-178	3483	573.18	-800.57	-54.01
39	SLU 39	56	-178	3693	607.33	-848.29	-54.69
39	SLU 40	57	-188	3678	605.02	-844.81	-57.22
39	SLU 41	56	-178	3693	607.33	-848.29	-54.69
39	SLU 42	57	-188	3678	605.02	-844.81	-57.22
39	SLU 43	46	-158	3420	563.34	-788.04	-47.96
39	SLU 44	46	-175	3395	559.48	-782.24	-52.18
39	SLU 45	46	-158	3420	563.34	-788.04	-47.96
39	SLU 46	46	-168	3405	561.02	-784.56	-50.49
39	SLU 47	46	-175	3395	559.48	-782.24	-52.18
39	SLU 48	46	-158	3420	563.34	-788.04	-47.96
39	SLU 49	46	-168	3405	561.02	-784.56	-50.49
39	SLU 50	46	-158	3420	563.34	-788.04	-47.96
39	SLU 51	46	-168	3405	561.02	-784.56	-50.49
39	SLU 52	55	-198	3848	633.78	-885.46	-59.67
39	SLU 53	55	-182	3873	637.63	-891.26	-55.45
39	SLU 54	55	-192	3858	635.32	-887.78	-57.98
39	SLU 55	55	-198	3848	633.78	-885.46	-59.67
39	SLU 56	55	-182	3873	637.63	-891.26	-55.45
39	SLU 57	55	-192	3858	635.32	-887.78	-57.98
39	SLU 58	55	-182	3873	637.63	-891.26	-55.45
39	SLU 59	55	-192	3858	635.32	-887.78	-57.98
39	SLU 60	59	-192	4067	669.47	-935.49	-58.67
39	SLU 61	59	-202	4052	667.16	-932.01	-61.19
39	SLU 62	59	-192	4067	669.47	-935.49	-58.67
39	SLU 63	59	-202	4052	667.16	-932.01	-61.19
39	SLU 64	52	-176	3748	617.03	-862.93	-53.58
39	SLU 65	53	-192	3723	613.18	-857.14	-57.79
39	SLU 66	52	-176	3748	617.03	-862.93	-53.58
39	SLU 67	53	-186	3733	614.72	-859.45	-56.11
39	SLU 68	53	-192	3723	613.18	-857.14	-57.79
39	SLU 69	52	-176	3748	617.03	-862.93	-53.58
39	SLU 70	53	-186	3733	614.72	-859.45	-56.11
39	SLU 71	52	-176	3748	617.03	-862.93	-53.58
39	SLU 72	53	-186	3733	614.72	-859.45	-56.11
39	SLU 73	62	-216	4176	687.47	-960.36	-65.28
39	SLU 74	61	-200	4201	691.33	-966.15	-61.07
39	SLU 75	62	-209	4186	689.02	-962.67	-63.6
39	SLU 76	62	-216	4176	687.47	-960.36	-65.28
39	SLU 77	61	-200	4201	691.33	-966.15	-61.07
39	SLU 78	62	-209	4186	689.02	-962.67	-63.6
39	SLU 79	61	-200	4201	691.33	-966.15	-61.07
39	SLU 80	62	-209	4186	689.02	-962.67	-63.6
39	SLU 81	65	-210	4395	723.17	-1010.39	-64.28
39	SLU 82	66	-219	4380	720.86	-1006.91	-66.81
39	SLU 83	65	-210	4395	723.17	-1010.39	-64.28
39	SLU 84	66	-219	4380	720.86	-1006.91	-66.81
39	SLE RA 1	39	-132	2811	462.84	-647.33	-39.98
39	SLE RA 2	39	-142	2794	460.27	-643.47	-42.79
39	SLE RA 3	39	-132	2811	462.84	-647.33	-39.98
39	SLE RA 4	39	-138	2801	461.3	-645.01	-41.67
39	SLE RA 5	39	-142	2794	460.27	-643.47	-42.79
39	SLE RA 6	39	-132	2811	462.84	-647.33	-39.98
39	SLE RA 7	39	-138	2801	461.3	-645.01	-41.67
39	SLE RA 8	39	-132	2811	462.84	-647.33	-39.98
39	SLE RA 9	39	-138	2801	461.3	-645.01	-41.67
39	SLE RA 10	45	-158	3096	509.8	-712.28	-47.78
39	SLE RA 11	45	-147	3113	512.37	-716.15	-44.97
39	SLE RA 12	45	-154	3103	510.83	-713.83	-46.66
39	SLE RA 13	45	-158	3096	509.8	-712.28	-47.78
39	SLE RA 14	45	-147	3113	512.37	-716.15	-44.97
39	SLE RA 15	45	-154	3103	510.83	-713.83	-46.66
39	SLE RA 16	45	-147	3113	512.37	-716.15	-44.97
39	SLE RA 17	45	-154	3103	510.83	-713.83	-46.66
39	SLE RA 18	47	-154	3243	533.6	-745.64	-47.11
39	SLE RA 19	48	-161	3232	532.06	-743.32	-48.8
39	SLE RA 20	47	-154	3243	533.6	-745.64	-47.11
39	SLE RA 21	48	-161	3232	532.06	-743.32	-48.8
39	SLE FR 1	39	-132	2811	462.84	-647.33	-39.98
39	SLE FR 2	39	-134	2808	462.33	-646.56	-40.54
39	SLE FR 3	39	-132	2811	462.84	-647.33	-39.98
39	SLE FR 4	41	-141	2937	483.55	-676.05	-42.68
39	SLE FR 5	41	-138	2941	484.07	-676.83	-42.12
39	SLE FR 6	43	-143	3027	498.22	-696.49	-43.55
39	SLE QP 1	39	-132	2811	462.84	-647.33	-39.98
39	SLE QP 2	41	-138	2941	484.07	-676.83	-42.12
39	SLD 1	67	133	3711	605.18	-848.49	26.2
39	SLD 2	73	96	3714	605.72	-849.14	15.71



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
39	SLD 3	76	-39	3346	548.85	-766.2	-17.79
39	SLD 4	83	-77	3349	549.39	-766.86	-28.28
39	SLD 5	33	217	3724	605.65	-852.9	48.76
39	SLD 6	39	180	3728	606.19	-853.55	38.27
39	SLD 7	64	-357	2507	417.88	-578.61	-97.86
39	SLD 8	70	-394	2510	418.42	-579.26	-108.36
39	SLD 9	12	117	3371	549.71	-774.39	24.12
39	SLD 10	19	80	3374	550.25	-775.04	13.62
39	SLD 11	44	-457	2153	361.95	-500.1	-122.51
39	SLD 12	50	-494	2157	362.49	-500.75	-133
39	SLD 13	0	-200	2532	418.74	-586.8	-55.96
39	SLD 14	6	-237	2535	419.28	-587.45	-66.45
39	SLD 15	9	-372	2167	362.41	-504.51	-99.95
39	SLD 16	16	-410	2170	362.95	-505.16	-110.44
39	SLV 1	100	489	4717	763.3	-1072.74	115.83
39	SLV 2	115	404	4725	764.52	-1074.23	92
39	SLV 3	122	89	3868	632.39	-881.49	13.74
39	SLV 4	136	4	3876	633.61	-882.97	-10.08
39	SLV 5	21	686	4758	765.96	-1085.15	168.43
39	SLV 6	36	601	4766	767.18	-1086.64	144.6
39	SLV 7	93	-647	1929	329.59	-447.63	-171.84
39	SLV 8	108	-731	1937	330.81	-449.12	-195.67
39	SLV 9	-25	455	3944	637.32	-904.53	111.43
39	SLV 10	-10	370	3952	638.55	-906.02	87.6
39	SLV 11	47	-878	1115	200.95	-267.01	-228.84
39	SLV 12	61	-962	1123	202.18	-268.5	-252.67
39	SLV 13	-53	-281	2005	334.52	-470.68	-74.16
39	SLV 14	-39	-366	2013	335.75	-472.16	-97.99
39	SLV 15	-32	-681	1156	203.61	-279.42	-176.24
39	SLV 16	-17	-765	1164	204.84	-280.91	-200.07
39	CRTFP Ux+	0	0	0	-0.01	0.01	0
39	CRTFP Ux-	0	0	0	0.01	-0.01	0
39	CRTFP Uy+	0	0	0	0	0.01	0
39	CRTFP Uy-	0	0	0	0	-0.01	0
53	SLU 1	26	1	597	-51.18	39.71	2.25
53	SLU 2	33	-11	594	-50.93	39.54	5.88
53	SLU 3	26	1	597	-51.18	39.71	2.25
53	SLU 4	30	-6	595	-51.03	39.61	4.43
53	SLU 5	33	-11	594	-50.93	39.54	5.88
53	SLU 6	26	1	597	-51.18	39.71	2.25
53	SLU 7	30	-6	595	-51.03	39.61	4.43
53	SLU 8	26	1	597	-51.18	39.71	2.25
53	SLU 9	30	-6	595	-51.03	39.61	4.43
53	SLU 10	32	-7	684	-58.5	38.22	4.76
53	SLU 11	26	5	686	-58.75	38.38	1.12
53	SLU 12	30	-2	685	-58.6	38.28	3.3
53	SLU 13	32	-7	684	-58.5	38.22	4.76
53	SLU 14	26	5	686	-58.75	38.38	1.12
53	SLU 15	30	-2	685	-58.6	38.28	3.3
53	SLU 16	26	5	686	-58.75	38.38	1.12
53	SLU 17	30	-2	685	-58.6	38.28	3.3
53	SLU 18	26	7	725	-61.99	37.81	0.64
53	SLU 19	30	0	723	-61.84	37.71	2.82
53	SLU 20	26	7	725	-61.99	37.81	0.64
53	SLU 21	30	0	723	-61.84	37.71	2.82
53	SLU 22	27	4	666	-57.04	39.04	1.61
53	SLU 23	33	-8	663	-56.79	38.88	5.25
53	SLU 24	27	4	666	-57.04	39.04	1.61
53	SLU 25	31	-4	664	-56.89	38.94	3.79
53	SLU 26	33	-8	663	-56.79	38.88	5.25
53	SLU 27	27	4	666	-57.04	39.04	1.61
53	SLU 28	31	-4	664	-56.89	38.94	3.79
53	SLU 29	27	4	666	-57.04	39.04	1.61
53	SLU 30	31	-4	664	-56.89	38.94	3.79
53	SLU 31	33	-4	753	-64.35	37.55	4.12
53	SLU 32	26	8	755	-64.6	37.71	0.48
53	SLU 33	30	1	754	-64.45	37.61	2.67
53	SLU 34	33	-4	753	-64.35	37.55	4.12
53	SLU 35	26	8	755	-64.6	37.71	0.48
53	SLU 36	30	1	754	-64.45	37.61	2.67
53	SLU 37	26	8	755	-64.6	37.71	0.48
53	SLU 38	30	1	754	-64.45	37.61	2.67
53	SLU 39	26	10	794	-67.84	37.14	0
53	SLU 40	30	2	792	-67.69	37.04	2.18
53	SLU 41	26	10	794	-67.84	37.14	0
53	SLU 42	30	2	792	-67.69	37.04	2.18
53	SLU 43	34	0	752	-64.53	51.85	3.14
53	SLU 44	41	-12	750	-64.28	51.69	6.78
53	SLU 45	34	0	752	-64.53	51.85	3.14
53	SLU 46	38	-7	751	-64.38	51.75	5.32
53	SLU 47	41	-12	750	-64.28	51.69	6.78
53	SLU 48	34	0	752	-64.53	51.85	3.14
53	SLU 49	38	-7	751	-64.38	51.75	5.32
53	SLU 50	34	0	752	-64.53	51.85	3.14
53	SLU 51	38	-7	751	-64.38	51.75	5.32
53	SLU 52	40	-7	839	-71.85	50.36	5.65
53	SLU 53	34	5	842	-72.1	50.52	2.01
53	SLU 54	38	-3	840	-71.95	50.42	4.2
53	SLU 55	40	-7	839	-71.85	50.36	5.65



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
53	SLU 56	34	5	842	-72.1	50.52	2.01
53	SLU 57	38	-3	840	-71.95	50.42	4.2
53	SLU 58	34	5	842	-72.1	50.52	2.01
53	SLU 59	38	-3	840	-71.95	50.42	4.2
53	SLU 60	33	6	880	-75.34	49.95	1.53
53	SLU 61	37	-1	879	-75.19	49.85	3.71
53	SLU 62	33	6	880	-75.34	49.95	1.53
53	SLU 63	37	-1	879	-75.19	49.85	3.71
53	SLU 64	34	3	821	-70.39	51.18	2.5
53	SLU 65	41	-9	819	-70.14	51.02	6.14
53	SLU 66	34	3	821	-70.39	51.18	2.5
53	SLU 67	38	-4	820	-70.24	51.08	4.69
53	SLU 68	41	-9	819	-70.14	51.02	6.14
53	SLU 69	34	3	821	-70.39	51.18	2.5
53	SLU 70	38	-4	820	-70.24	51.08	4.69
53	SLU 71	34	3	821	-70.39	51.18	2.5
53	SLU 72	38	-4	820	-70.24	51.08	4.69
53	SLU 73	41	-5	908	-77.7	49.69	5.01
53	SLU 74	34	7	911	-77.95	49.85	1.38
53	SLU 75	38	0	909	-77.8	49.76	3.56
53	SLU 76	41	-5	908	-77.7	49.69	5.01
53	SLU 77	34	7	911	-77.95	49.85	1.38
53	SLU 78	38	0	909	-77.8	49.76	3.56
53	SLU 79	34	7	911	-77.95	49.85	1.38
53	SLU 80	38	0	909	-77.8	49.76	3.56
53	SLU 81	34	9	949	-81.19	49.28	0.89
53	SLU 82	38	2	948	-81.04	49.19	3.08
53	SLU 83	34	9	949	-81.19	49.28	0.89
53	SLU 84	38	2	948	-81.04	49.19	3.08
53	SLE RA 1	26	2	617	-52.86	39.52	2.07
53	SLE RA 2	31	-6	615	-52.69	39.41	4.49
53	SLE RA 3	26	2	617	-52.86	39.52	2.07
53	SLE RA 4	29	-3	616	-52.76	39.45	3.52
53	SLE RA 5	31	-6	615	-52.69	39.41	4.49
53	SLE RA 6	26	2	617	-52.86	39.52	2.07
53	SLE RA 7	29	-3	616	-52.76	39.45	3.52
53	SLE RA 8	26	2	617	-52.86	39.52	2.07
53	SLE RA 9	29	-3	616	-52.76	39.45	3.52
53	SLE RA 10	30	-3	675	-57.73	38.52	3.74
53	SLE RA 11	26	4	676	-57.9	38.63	1.32
53	SLE RA 12	29	0	675	-57.8	38.57	2.77
53	SLE RA 13	30	-3	675	-57.73	38.52	3.74
53	SLE RA 14	26	4	676	-57.9	38.63	1.32
53	SLE RA 15	29	0	675	-57.8	38.57	2.77
53	SLE RA 16	26	4	676	-57.9	38.63	1.32
53	SLE RA 17	29	0	675	-57.8	38.57	2.77
53	SLE RA 18	26	6	702	-60.06	38.25	0.99
53	SLE RA 19	29	1	701	-59.96	38.19	2.45
53	SLE RA 20	26	6	702	-60.06	38.25	0.99
53	SLE RA 21	29	1	701	-59.96	38.19	2.45
53	SLE FR 1	26	2	617	-52.86	39.52	2.07
53	SLE FR 2	27	0	616	-52.82	39.49	2.55
53	SLE FR 3	26	2	617	-52.86	39.52	2.07
53	SLE FR 4	27	1	642	-54.98	39.12	2.23
53	SLE FR 5	26	3	642	-55.02	39.14	1.74
53	SLE FR 6	26	4	659	-56.46	38.88	1.53
53	SLE QP 1	26	2	617	-52.86	39.52	2.07
53	SLE QP 2	26	3	642	-55.02	39.14	1.74
53	SLD 1	90	-91	573	-48.93	46.95	30.98
53	SLD 2	79	-67	569	-48.6	46.37	23.99
53	SLD 3	154	-208	542	-45.95	43.63	66.42
53	SLD 4	143	-184	538	-45.62	43.04	59.43
53	SLD 5	-48	144	669	-57.83	46.73	-40.78
53	SLD 6	-60	168	666	-57.5	46.15	-47.77
53	SLD 7	166	-246	566	-47.89	35.64	77.34
53	SLD 8	155	-223	563	-47.57	35.06	70.35
53	SLD 9	-102	228	721	-62.47	43.21	-66.86
53	SLD 10	-114	252	718	-62.14	42.63	-73.85
53	SLD 11	112	-162	619	-52.54	32.12	51.26
53	SLD 12	100	-138	615	-52.21	31.54	44.27
53	SLD 13	-90	190	746	-64.41	35.23	-55.94
53	SLD 14	-102	213	742	-64.08	34.65	-62.93
53	SLD 15	-26	73	715	-61.43	31.9	-20.51
53	SLD 16	-38	96	712	-61.1	31.32	-27.49
53	SLV 1	171	-209	484	-41.16	57.14	67.84
53	SLV 2	145	-155	476	-40.42	55.81	51.97
53	SLV 3	319	-478	413	-34.36	49.4	149.39
53	SLV 4	292	-425	405	-33.61	48.08	133.52
53	SLV 5	-145	329	704	-61.44	56.73	-96.55
53	SLV 6	-171	383	696	-60.69	55.41	-112.42
53	SLV 7	347	-569	470	-38.77	30.95	175.27
53	SLV 8	321	-515	462	-38.02	29.63	159.4
53	SLV 9	-268	521	823	-72.01	48.65	-155.91
53	SLV 10	-295	574	815	-71.27	47.32	-171.78
53	SLV 11	224	-377	588	-49.35	22.87	115.91
53	SLV 12	197	-324	580	-48.6	21.55	100.04
53	SLV 13	-240	430	879	-76.42	30.19	-130.03
53	SLV 14	-266	484	871	-75.68	28.87	-145.9
53	SLV 15	-92	161	809	-69.62	22.46	-48.48



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
53	SLV 16	-119	214	800	-68.87	21.14	-64.35
53	CRTFP Ux+	0	0	0	0	0	0
53	CRTFP Ux-	0	0	0	0	0	0
53	CRTFP Uy+	0	0	0	0	0	0
53	CRTFP Uy-	0	0	0	0	0	0
55	SLU 1	25	-92	1897	24.04	-525.74	-32.34
55	SLU 2	25	-103	1880	23.88	-521.19	-36.48
55	SLU 3	25	-92	1897	24.04	-525.74	-32.34
55	SLU 4	25	-99	1887	23.94	-523.01	-34.82
55	SLU 5	25	-103	1880	23.88	-521.19	-36.48
55	SLU 6	25	-92	1897	24.04	-525.74	-32.34
55	SLU 7	25	-99	1887	23.94	-523.01	-34.82
55	SLU 8	25	-92	1897	24.04	-525.74	-32.34
55	SLU 9	25	-99	1887	23.94	-523.01	-34.82
55	SLU 10	31	-120	2195	27.97	-605.88	-42.48
55	SLU 11	31	-109	2211	28.13	-610.42	-38.34
55	SLU 12	31	-116	2201	28.03	-607.7	-40.83
55	SLU 13	31	-120	2195	27.97	-605.88	-42.48
55	SLU 14	31	-109	2211	28.13	-610.42	-38.34
55	SLU 15	31	-116	2201	28.03	-607.7	-40.83
55	SLU 16	31	-109	2211	28.13	-610.42	-38.34
55	SLU 17	31	-116	2201	28.03	-607.7	-40.83
55	SLU 18	34	-116	2346	29.88	-646.72	-40.91
55	SLU 19	34	-123	2336	29.78	-643.99	-43.4
55	SLU 20	34	-116	2346	29.88	-646.72	-40.91
55	SLU 21	34	-123	2336	29.78	-643.99	-43.4
55	SLU 22	29	-104	2124	26.98	-587.15	-36.87
55	SLU 23	30	-116	2108	26.81	-582.6	-41.01
55	SLU 24	29	-104	2124	26.98	-587.15	-36.87
55	SLU 25	30	-112	2114	26.88	-584.42	-39.36
55	SLU 26	30	-116	2108	26.81	-582.6	-41.01
55	SLU 27	29	-104	2124	26.98	-587.15	-36.87
55	SLU 28	30	-112	2114	26.88	-584.42	-39.36
55	SLU 29	29	-104	2124	26.98	-587.15	-36.87
55	SLU 30	30	-112	2114	26.88	-584.42	-39.36
55	SLU 31	36	-133	2422	30.9	-667.29	-47.02
55	SLU 32	36	-121	2439	31.07	-671.83	-42.87
55	SLU 33	36	-129	2429	30.97	-669.11	-45.36
55	SLU 34	36	-133	2422	30.9	-667.29	-47.02
55	SLU 35	36	-121	2439	31.07	-671.83	-42.87
55	SLU 36	36	-129	2429	30.97	-669.11	-45.36
55	SLU 37	36	-121	2439	31.07	-671.83	-42.87
55	SLU 38	36	-129	2429	30.97	-669.11	-45.36
55	SLU 39	38	-129	2573	32.82	-708.13	-45.45
55	SLU 40	38	-136	2564	32.72	-705.4	-47.93
55	SLU 41	38	-129	2573	32.82	-708.13	-45.45
55	SLU 42	38	-136	2564	32.72	-705.4	-47.93
55	SLU 43	31	-115	2387	30.25	-662.41	-40.48
55	SLU 44	31	-127	2371	30.08	-657.86	-44.63
55	SLU 45	31	-115	2387	30.25	-662.41	-40.48
55	SLU 46	31	-122	2378	30.15	-659.68	-42.97
55	SLU 47	31	-127	2371	30.08	-657.86	-44.63
55	SLU 48	31	-115	2387	30.25	-662.41	-40.48
55	SLU 49	31	-122	2378	30.15	-659.68	-42.97
55	SLU 50	31	-115	2387	30.25	-662.41	-40.48
55	SLU 51	31	-122	2378	30.15	-659.68	-42.97
55	SLU 52	37	-144	2686	34.17	-742.55	-50.63
55	SLU 53	37	-132	2702	34.34	-747.09	-46.49
55	SLU 54	37	-139	2692	34.24	-744.36	-48.97
55	SLU 55	37	-144	2686	34.17	-742.55	-50.63
55	SLU 56	37	-132	2702	34.34	-747.09	-46.49
55	SLU 57	37	-139	2692	34.24	-744.36	-48.97
55	SLU 58	37	-132	2702	34.34	-747.09	-46.49
55	SLU 59	37	-139	2692	34.24	-744.36	-48.97
55	SLU 60	40	-139	2837	36.09	-783.39	-49.06
55	SLU 61	40	-146	2827	35.99	-780.66	-51.55
55	SLU 62	40	-139	2837	36.09	-783.39	-49.06
55	SLU 63	40	-146	2827	35.99	-780.66	-51.55
55	SLU 64	35	-128	2615	33.18	-723.81	-45.02
55	SLU 65	36	-139	2599	33.02	-719.27	-49.16
55	SLU 66	35	-128	2615	33.18	-723.81	-45.02
55	SLU 67	36	-135	2605	33.09	-721.09	-47.5
55	SLU 68	36	-139	2599	33.02	-719.27	-49.16
55	SLU 69	35	-128	2615	33.18	-723.81	-45.02
55	SLU 70	36	-135	2605	33.09	-721.09	-47.5
55	SLU 71	35	-128	2615	33.18	-723.81	-45.02
55	SLU 72	36	-135	2605	33.09	-721.09	-47.5
55	SLU 73	42	-156	2913	37.11	-803.96	-55.16
55	SLU 74	42	-145	2930	37.27	-808.5	-51.02
55	SLU 75	42	-152	2920	37.17	-805.77	-53.51
55	SLU 76	42	-156	2913	37.11	-803.96	-55.16
55	SLU 77	42	-145	2930	37.27	-808.5	-51.02
55	SLU 78	42	-152	2920	37.17	-805.77	-53.51
55	SLU 79	42	-145	2930	37.27	-808.5	-51.02
55	SLU 80	42	-152	2920	37.17	-805.77	-53.51
55	SLU 81	44	-152	3064	39.02	-844.8	-53.59
55	SLU 82	44	-159	3054	38.93	-842.07	-56.08
55	SLU 83	44	-152	3064	39.02	-844.8	-53.59
55	SLU 84	44	-159	3054	38.93	-842.07	-56.08



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
55	SLE RA 1	26	-95	1962	24.88	-543.28	-33.63
55	SLE RA 2	26	-103	1951	24.77	-540.25	-36.39
55	SLE RA 3	26	-95	1962	24.88	-543.28	-33.63
55	SLE RA 4	26	-100	1955	24.82	-541.47	-35.29
55	SLE RA 5	26	-103	1951	24.77	-540.25	-36.39
55	SLE RA 6	26	-95	1962	24.88	-543.28	-33.63
55	SLE RA 7	26	-100	1955	24.82	-541.47	-35.29
55	SLE RA 8	26	-95	1962	24.88	-543.28	-33.63
55	SLE RA 9	26	-100	1955	24.82	-541.47	-35.29
55	SLE RA 10	31	-115	2160	27.5	-596.71	-40.4
55	SLE RA 11	30	-107	2171	27.61	-599.74	-37.63
55	SLE RA 12	30	-111	2165	27.54	-597.92	-39.29
55	SLE RA 13	31	-115	2160	27.5	-596.71	-40.4
55	SLE RA 14	30	-107	2171	27.61	-599.74	-37.63
55	SLE RA 15	30	-111	2165	27.54	-597.92	-39.29
55	SLE RA 16	30	-107	2171	27.61	-599.74	-37.63
55	SLE RA 17	30	-111	2165	27.54	-597.92	-39.29
55	SLE RA 18	32	-111	2261	28.77	-623.94	-39.35
55	SLE RA 19	32	-116	2255	28.71	-622.12	-41.01
55	SLE RA 20	32	-111	2261	28.77	-623.94	-39.35
55	SLE RA 21	32	-116	2255	28.71	-622.12	-41.01
55	SLE FR 1	26	-95	1962	24.88	-543.28	-33.63
55	SLE FR 2	26	-97	1959	24.86	-542.68	-34.18
55	SLE FR 3	26	-95	1962	24.88	-543.28	-33.63
55	SLE FR 4	28	-102	2049	26.03	-566.87	-35.9
55	SLE FR 5	28	-100	2051	26.05	-567.48	-35.35
55	SLE FR 6	29	-103	2111	26.83	-583.61	-36.49
55	SLE QP 1	26	-95	1962	24.88	-543.28	-33.63
55	SLE QP 2	28	-100	2051	26.05	-567.48	-35.35
55	SLD 1	50	96	2561	31.94	-702.31	33.34
55	SLD 2	54	70	2563	31.97	-702.75	23.94
55	SLD 3	58	-29	2322	29.37	-637.94	-10.55
55	SLD 4	62	-56	2324	29.39	-638.37	-19.95
55	SLD 5	21	158	2566	31.72	-705.41	55.11
55	SLD 6	25	131	2568	31.74	-705.85	45.72
55	SLD 7	48	-259	1770	23.13	-490.83	-91.18
55	SLD 8	51	-286	1772	23.15	-491.27	-100.58
55	SLD 9	5	86	2331	28.95	-643.69	29.89
55	SLD 10	8	59	2333	28.97	-644.13	20.49
55	SLD 11	31	-332	1535	20.36	-429.11	-116.41
55	SLD 12	35	-359	1537	20.38	-429.55	-125.81
55	SLD 13	-6	-145	1779	22.71	-496.59	-50.75
55	SLD 14	-2	-171	1781	22.73	-497.02	-60.15
55	SLD 15	2	-270	1540	20.13	-432.21	-94.64
55	SLD 16	6	-297	1542	20.16	-432.65	-104.04
55	SLV 1	78	354	3226	39.63	-878.47	123.48
55	SLV 2	87	293	3230	39.68	-879.47	102.14
55	SLV 3	96	63	2671	33.64	-728.84	21.6
55	SLV 4	105	2	2675	33.69	-729.84	0.26
55	SLV 5	13	499	3244	39.18	-887.36	174.29
55	SLV 6	21	438	3249	39.23	-888.36	152.95
55	SLV 7	73	-471	1393	19.24	-388.61	-165.31
55	SLV 8	81	-532	1398	19.29	-389.6	-186.65
55	SLV 9	-25	331	2705	32.81	-745.36	115.96
55	SLV 10	-17	271	2709	32.86	-746.35	94.62
55	SLV 11	35	-638	854	12.87	-246.6	-223.64
55	SLV 12	43	-699	859	12.92	-247.6	-244.98
55	SLV 13	-49	-203	1428	18.41	-405.12	-70.95
55	SLV 14	-40	-264	1432	18.46	-406.12	-92.29
55	SLV 15	-31	-494	872	12.42	-255.49	-172.83
55	SLV 16	-22	-554	877	12.47	-256.49	-194.17
55	CRTFP Ux+	0	0	0	0	0.01	0
55	CRTFP Ux-	0	0	0	0	-0.01	0
55	CRTFP Uy+	0	0	0	0	0	0
55	CRTFP Uy-	0	0	0	0	0	0
57	SLU 1	26	1	813	-28.93	74.26	1
57	SLU 2	32	-13	811	-28.82	74.15	4.85
57	SLU 3	26	1	813	-28.93	74.26	1
57	SLU 4	30	-7	812	-28.87	74.19	3.31
57	SLU 5	32	-13	811	-28.82	74.15	4.85
57	SLU 6	26	1	813	-28.93	74.26	1
57	SLU 7	30	-7	812	-28.87	74.19	3.31
57	SLU 8	26	1	813	-28.93	74.26	1
57	SLU 9	30	-7	812	-28.87	74.19	3.31
57	SLU 10	33	-8	938	-33.17	78.53	3.57
57	SLU 11	27	6	940	-33.28	78.64	-0.28
57	SLU 12	30	-2	939	-33.21	78.57	2.03
57	SLU 13	33	-8	938	-33.17	78.53	3.57
57	SLU 14	27	6	940	-33.28	78.64	-0.28
57	SLU 15	30	-2	939	-33.21	78.57	2.03
57	SLU 16	27	6	940	-33.28	78.64	-0.28
57	SLU 17	30	-2	939	-33.21	78.57	2.03
57	SLU 18	27	8	994	-35.15	80.51	-0.83
57	SLU 19	30	0	993	-35.08	80.45	1.48
57	SLU 20	27	8	994	-35.15	80.51	-0.83
57	SLU 21	30	0	993	-35.08	80.45	1.48
57	SLU 22	27	4	909	-32.28	77.67	0.24
57	SLU 23	33	-10	908	-32.16	77.57	4.09
57	SLU 24	27	4	909	-32.28	77.67	0.24



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
57	SLU 25	31	-4	908	-32.21	77.61	2.55
57	SLU 26	33	-10	908	-32.16	77.57	4.09
57	SLU 27	27	4	909	-32.28	77.67	0.24
57	SLU 28	31	-4	908	-32.21	77.61	2.55
57	SLU 29	27	4	909	-32.28	77.67	0.24
57	SLU 30	31	-4	908	-32.21	77.61	2.55
57	SLU 31	34	-5	1035	-36.51	81.94	2.81
57	SLU 32	27	9	1036	-36.62	82.05	-1.04
57	SLU 33	31	1	1035	-36.56	81.99	1.27
57	SLU 34	34	-5	1035	-36.51	81.94	2.81
57	SLU 35	27	9	1036	-36.62	82.05	-1.04
57	SLU 36	31	1	1035	-36.56	81.99	1.27
57	SLU 37	27	9	1036	-36.62	82.05	-1.04
57	SLU 38	31	1	1035	-36.56	81.99	1.27
57	SLU 39	28	11	1091	-38.49	83.93	-1.59
57	SLU 40	31	3	1090	-38.42	83.86	0.72
57	SLU 41	28	11	1091	-38.49	83.93	-1.59
57	SLU 42	31	3	1090	-38.42	83.86	0.72
57	SLU 43	34	0	1024	-36.47	95.36	1.56
57	SLU 44	40	-14	1022	-36.36	95.25	5.42
57	SLU 45	34	0	1024	-36.47	95.36	1.56
57	SLU 46	38	-8	1023	-36.4	95.3	3.87
57	SLU 47	40	-14	1022	-36.36	95.25	5.42
57	SLU 48	34	0	1024	-36.47	95.36	1.56
57	SLU 49	38	-8	1023	-36.4	95.3	3.87
57	SLU 50	34	0	1024	-36.47	95.36	1.56
57	SLU 51	38	-8	1023	-36.4	95.3	3.87
57	SLU 52	40	-9	1149	-40.7	99.63	4.13
57	SLU 53	34	5	1151	-40.82	99.74	0.28
57	SLU 54	38	-3	1150	-40.75	99.68	2.59
57	SLU 55	40	-9	1149	-40.7	99.63	4.13
57	SLU 56	34	5	1151	-40.82	99.74	0.28
57	SLU 57	38	-3	1150	-40.75	99.68	2.59
57	SLU 58	34	5	1151	-40.82	99.74	0.28
57	SLU 59	38	-3	1150	-40.75	99.68	2.59
57	SLU 60	34	8	1205	-42.68	101.62	-0.27
57	SLU 61	38	-1	1204	-42.61	101.55	2.04
57	SLU 62	34	8	1205	-42.68	101.62	-0.27
57	SLU 63	38	-1	1204	-42.61	101.55	2.04
57	SLU 64	35	3	1120	-39.81	98.78	0.8
57	SLU 65	41	-11	1119	-39.7	98.67	4.65
57	SLU 66	35	3	1120	-39.81	98.78	0.8
57	SLU 67	38	-5	1119	-39.74	98.71	3.11
57	SLU 68	41	-11	1119	-39.7	98.67	4.65
57	SLU 69	35	3	1120	-39.81	98.78	0.8
57	SLU 70	38	-5	1119	-39.74	98.71	3.11
57	SLU 71	35	3	1120	-39.81	98.78	0.8
57	SLU 72	38	-5	1119	-39.74	98.71	3.11
57	SLU 73	41	-6	1246	-44.05	103.05	3.37
57	SLU 74	35	8	1247	-44.16	103.16	-0.48
57	SLU 75	39	0	1246	-44.09	103.09	1.83
57	SLU 76	41	-6	1246	-44.05	103.05	3.37
57	SLU 77	35	8	1247	-44.16	103.16	-0.48
57	SLU 78	39	0	1246	-44.09	103.09	1.83
57	SLU 79	35	8	1247	-44.16	103.16	-0.48
57	SLU 80	39	0	1246	-44.09	103.09	1.83
57	SLU 81	35	11	1302	-46.02	105.03	-1.03
57	SLU 82	39	2	1301	-45.95	104.97	1.28
57	SLU 83	35	11	1302	-46.02	105.03	-1.03
57	SLU 84	39	2	1301	-45.95	104.97	1.28
57	SLE RA 1	27	2	841	-29.89	75.23	0.78
57	SLE RA 2	31	-7	840	-29.81	75.16	3.35
57	SLE RA 3	27	2	841	-29.89	75.23	0.78
57	SLE RA 4	29	-4	840	-29.84	75.19	2.32
57	SLE RA 5	31	-7	840	-29.81	75.16	3.35
57	SLE RA 6	27	2	841	-29.89	75.23	0.78
57	SLE RA 7	29	-4	840	-29.84	75.19	2.32
57	SLE RA 8	27	2	841	-29.89	75.23	0.78
57	SLE RA 9	29	-4	840	-29.84	75.19	2.32
57	SLE RA 10	31	-4	924	-32.71	78.08	2.5
57	SLE RA 11	27	5	925	-32.79	78.15	-0.07
57	SLE RA 12	29	0	925	-32.74	78.11	1.47
57	SLE RA 13	31	-4	924	-32.71	78.08	2.5
57	SLE RA 14	27	5	925	-32.79	78.15	-0.07
57	SLE RA 15	29	0	925	-32.74	78.11	1.47
57	SLE RA 16	27	5	925	-32.79	78.15	-0.07
57	SLE RA 17	29	0	925	-32.74	78.11	1.47
57	SLE RA 18	27	7	961	-34.03	79.4	-0.44
57	SLE RA 19	29	1	961	-33.98	79.36	1.1
57	SLE RA 20	27	7	961	-34.03	79.4	-0.44
57	SLE RA 21	29	1	961	-33.98	79.36	1.1
57	SLE FR 1	27	2	841	-29.89	75.23	0.78
57	SLE FR 2	27	0	840	-29.87	75.22	1.3
57	SLE FR 3	27	2	841	-29.89	75.23	0.78
57	SLE FR 4	27	2	877	-31.12	76.47	0.93
57	SLE FR 5	27	3	877	-31.13	76.48	0.42
57	SLE FR 6	27	4	901	-31.96	77.32	0.17
57	SLE QP 1	27	2	841	-29.89	75.23	0.78
57	SLE QP 2	27	3	877	-31.13	76.48	0.42



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
57	SLD 1	97	-107	788	-27.78	72.05	31.09
57	SLD 2	85	-79	784	-27.6	71.64	23.57
57	SLD 3	156	-246	756	-26.31	69.99	68.71
57	SLD 4	144	-218	753	-26.14	69.57	61.2
57	SLD 5	-38	170	899	-32.41	78.43	-44.82
57	SLD 6	-50	198	896	-32.24	78.02	-52.33
57	SLD 7	159	-291	794	-27.52	71.55	80.6
57	SLD 8	148	-263	790	-27.34	71.14	73.08
57	SLD 9	-94	270	963	-34.92	81.83	-72.25
57	SLD 10	-106	298	959	-34.75	81.42	-79.76
57	SLD 11	103	-191	858	-30.02	74.95	53.16
57	SLD 12	91	-164	854	-29.85	74.54	45.65
57	SLD 13	-91	225	1001	-36.13	83.39	-60.36
57	SLD 14	-103	252	997	-35.96	82.98	-67.87
57	SLD 15	-32	86	969	-34.66	81.33	-22.74
57	SLD 16	-43	114	965	-34.49	80.92	-30.25
57	SLV 1	185	-247	674	-23.48	66.16	69.74
57	SLV 2	159	-184	666	-23.09	65.22	52.68
57	SLV 3	321	-565	602	-20.13	61.36	156.33
57	SLV 4	294	-502	593	-19.74	60.42	139.27
57	SLV 5	-122	389	928	-34.06	81	-104.13
57	SLV 6	-149	453	920	-33.67	80.06	-121.2
57	SLV 7	330	-672	688	-22.89	64.99	184.48
57	SLV 8	304	-609	679	-22.5	64.05	167.42
57	SLV 9	-250	616	1074	-39.77	88.91	-166.59
57	SLV 10	-277	679	1065	-39.38	87.98	-183.65
57	SLV 11	202	-446	834	-28.6	72.91	122.03
57	SLV 12	176	-383	825	-28.21	71.97	104.97
57	SLV 13	-241	509	1160	-42.52	92.55	-138.43
57	SLV 14	-268	572	1151	-42.13	91.61	-155.49
57	SLV 15	-105	190	1088	-39.17	87.75	-51.85
57	SLV 16	-132	254	1079	-38.78	86.81	-68.91
57	CRTFP Ux+	0	0	0	0	0	0
57	CRTFP Ux-	0	0	0	0	0	0
57	CRTFP Uy+	0	0	0	0	0	0
57	CRTFP Uy-	0	0	0	0	0	0
59	SLU 1	27	-107	2155	-29.75	-539.84	-36.82
59	SLU 2	27	-121	2138	-29.45	-535.72	-41.63
59	SLU 3	27	-107	2155	-29.75	-539.84	-36.82
59	SLU 4	27	-115	2145	-29.57	-537.36	-39.71
59	SLU 5	27	-121	2138	-29.45	-535.72	-41.63
59	SLU 6	27	-107	2155	-29.75	-539.84	-36.82
59	SLU 7	27	-115	2145	-29.57	-537.36	-39.71
59	SLU 8	27	-107	2155	-29.75	-539.84	-36.82
59	SLU 9	27	-115	2145	-29.57	-537.36	-39.71
59	SLU 10	33	-141	2495	-34.18	-621.14	-48.42
59	SLU 11	33	-127	2511	-34.48	-625.26	-43.6
59	SLU 12	33	-135	2501	-34.3	-622.78	-46.49
59	SLU 13	33	-141	2495	-34.18	-621.14	-48.42
59	SLU 14	33	-127	2511	-34.48	-625.26	-43.6
59	SLU 15	33	-135	2501	-34.3	-622.78	-46.49
59	SLU 16	33	-127	2511	-34.48	-625.26	-43.6
59	SLU 17	33	-135	2501	-34.3	-622.78	-46.49
59	SLU 18	36	-135	2664	-36.51	-661.86	-46.51
59	SLU 19	36	-143	2654	-36.33	-659.39	-49.4
59	SLU 20	36	-135	2664	-36.51	-661.86	-46.51
59	SLU 21	36	-143	2654	-36.33	-659.39	-49.4
59	SLU 22	31	-122	2412	-33.2	-601.58	-41.95
59	SLU 23	31	-136	2395	-32.9	-597.46	-46.76
59	SLU 24	31	-122	2412	-33.2	-601.58	-41.95
59	SLU 25	31	-130	2402	-33.02	-599.11	-44.84
59	SLU 26	31	-136	2395	-32.9	-597.46	-46.76
59	SLU 27	31	-122	2412	-33.2	-601.58	-41.95
59	SLU 28	31	-130	2402	-33.02	-599.11	-44.84
59	SLU 29	31	-122	2412	-33.2	-601.58	-41.95
59	SLU 30	31	-130	2402	-33.02	-599.11	-44.84
59	SLU 31	38	-155	2752	-37.63	-682.88	-53.55
59	SLU 32	38	-142	2768	-37.93	-687	-48.73
59	SLU 33	38	-150	2758	-37.75	-684.53	-51.62
59	SLU 34	38	-155	2752	-37.63	-682.88	-53.55
59	SLU 35	38	-142	2768	-37.93	-687	-48.73
59	SLU 36	38	-150	2758	-37.75	-684.53	-51.62
59	SLU 37	38	-142	2768	-37.93	-687	-48.73
59	SLU 38	38	-150	2758	-37.75	-684.53	-51.62
59	SLU 39	41	-150	2921	-39.96	-723.61	-51.64
59	SLU 40	41	-158	2911	-39.78	-721.14	-54.53
59	SLU 41	41	-150	2921	-39.96	-723.61	-51.64
59	SLU 42	41	-158	2911	-39.78	-721.14	-54.53
59	SLU 43	33	-134	2713	-37.49	-680.62	-46.11
59	SLU 44	33	-148	2696	-37.19	-676.5	-50.92
59	SLU 45	33	-134	2713	-37.49	-680.62	-46.11
59	SLU 46	33	-142	2703	-37.31	-678.15	-49
59	SLU 47	33	-148	2696	-37.19	-676.5	-50.92
59	SLU 48	33	-134	2713	-37.49	-680.62	-46.11
59	SLU 49	33	-142	2703	-37.31	-678.15	-49
59	SLU 50	33	-134	2713	-37.49	-680.62	-46.11
59	SLU 51	33	-142	2703	-37.31	-678.15	-49
59	SLU 52	40	-167	3053	-41.93	-761.92	-57.71
59	SLU 53	40	-154	3070	-42.23	-766.04	-52.89



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
59	SLU 54	40	-162	3060	-42.05	-763.57	-55.78
59	SLU 55	40	-167	3053	-41.93	-761.92	-57.71
59	SLU 56	40	-154	3070	-42.23	-766.04	-52.89
59	SLU 57	40	-162	3060	-42.05	-763.57	-55.78
59	SLU 58	40	-154	3070	-42.23	-766.04	-52.89
59	SLU 59	40	-162	3060	-42.05	-763.57	-55.78
59	SLU 60	42	-162	3222	-44.26	-802.65	-55.8
59	SLU 61	42	-170	3212	-44.08	-800.17	-58.69
59	SLU 62	42	-162	3222	-44.26	-802.65	-55.8
59	SLU 63	42	-170	3212	-44.08	-800.17	-58.69
59	SLU 64	38	-149	2970	-40.94	-742.36	-51.24
59	SLU 65	38	-163	2954	-40.64	-738.24	-56.05
59	SLU 66	38	-149	2970	-40.94	-742.36	-51.24
59	SLU 67	38	-157	2960	-40.76	-739.89	-54.12
59	SLU 68	38	-163	2954	-40.64	-738.24	-56.05
59	SLU 69	38	-149	2970	-40.94	-742.36	-51.24
59	SLU 70	38	-157	2960	-40.76	-739.89	-54.12
59	SLU 71	38	-149	2970	-40.94	-742.36	-51.24
59	SLU 72	38	-157	2960	-40.76	-739.89	-54.12
59	SLU 73	44	-182	3310	-45.37	-823.66	-62.84
59	SLU 74	44	-169	3327	-45.67	-827.78	-58.02
59	SLU 75	44	-177	3317	-45.49	-825.31	-60.91
59	SLU 76	44	-182	3310	-45.37	-823.66	-62.84
59	SLU 77	44	-169	3327	-45.67	-827.78	-58.02
59	SLU 78	44	-177	3317	-45.49	-825.31	-60.91
59	SLU 79	44	-169	3327	-45.67	-827.78	-58.02
59	SLU 80	44	-177	3317	-45.49	-825.31	-60.91
59	SLU 81	47	-177	3479	-47.7	-864.39	-60.93
59	SLU 82	47	-185	3469	-47.52	-861.92	-63.82
59	SLU 83	47	-177	3479	-47.7	-864.39	-60.93
59	SLU 84	47	-185	3469	-47.52	-861.92	-63.82
59	SLE RA 1	28	-111	2228	-30.73	-557.48	-38.28
59	SLE RA 2	28	-120	2217	-30.53	-554.73	-41.49
59	SLE RA 3	28	-111	2228	-30.73	-557.48	-38.28
59	SLE RA 4	28	-117	2222	-30.61	-555.83	-40.21
59	SLE RA 5	28	-120	2217	-30.53	-554.73	-41.49
59	SLE RA 6	28	-111	2228	-30.73	-557.48	-38.28
59	SLE RA 7	28	-117	2222	-30.61	-555.83	-40.21
59	SLE RA 8	28	-111	2228	-30.73	-557.48	-38.28
59	SLE RA 9	28	-117	2222	-30.61	-555.83	-40.21
59	SLE RA 10	32	-134	2455	-33.69	-611.68	-46.02
59	SLE RA 11	32	-124	2466	-33.89	-614.42	-42.81
59	SLE RA 12	32	-130	2459	-33.77	-612.78	-44.73
59	SLE RA 13	32	-134	2455	-33.69	-611.68	-46.02
59	SLE RA 14	32	-124	2466	-33.89	-614.42	-42.81
59	SLE RA 15	32	-130	2459	-33.77	-612.78	-44.73
59	SLE RA 16	32	-124	2466	-33.89	-614.42	-42.81
59	SLE RA 17	32	-130	2459	-33.77	-612.78	-44.73
59	SLE RA 18	34	-130	2568	-35.24	-638.83	-44.75
59	SLE RA 19	34	-136	2561	-35.12	-637.18	-46.67
59	SLE RA 20	34	-130	2568	-35.24	-638.83	-44.75
59	SLE RA 21	34	-136	2561	-35.12	-637.18	-46.67
59	SLE FR 1	28	-111	2228	-30.73	-557.48	-38.28
59	SLE FR 2	28	-113	2226	-30.69	-556.93	-38.93
59	SLE FR 3	28	-111	2228	-30.73	-557.48	-38.28
59	SLE FR 4	30	-119	2328	-32.05	-581.33	-40.87
59	SLE FR 5	30	-117	2330	-32.09	-581.88	-40.22
59	SLE FR 6	31	-121	2398	-32.99	-598.15	-41.52
59	SLE QP 1	28	-111	2228	-30.73	-557.48	-38.28
59	SLE QP 2	30	-117	2330	-32.09	-581.88	-40.22
59	SLD 1	62	112	2868	-40.53	-708.13	39.94
59	SLD 2	64	81	2869	-40.56	-708.42	29.15
59	SLD 3	73	-34	2622	-36.37	-649.14	-11.17
59	SLD 4	76	-65	2623	-36.4	-649.43	-21.97
59	SLD 5	21	185	2864	-40.92	-709.12	65.13
59	SLD 6	23	153	2866	-40.95	-709.41	54.34
59	SLD 7	60	-303	2044	-27.04	-512.49	-105.26
59	SLD 8	62	-334	2046	-27.08	-512.78	-116.05
59	SLD 9	-3	100	2615	-37.09	-650.98	35.61
59	SLD 10	0	69	2616	-37.13	-651.28	24.81
59	SLD 11	36	-387	1795	-23.22	-454.35	-134.78
59	SLD 12	39	-418	1797	-23.25	-454.64	-145.58
59	SLD 13	-16	-169	2037	-27.77	-514.33	-58.48
59	SLD 14	-14	-200	2039	-27.8	-514.62	-69.27
59	SLD 15	-4	-315	1791	-23.61	-455.34	-109.59
59	SLD 16	-2	-346	1793	-23.64	-455.64	-120.39
59	SLV 1	102	413	3569	-51.57	-873.06	145.14
59	SLV 2	108	342	3573	-51.65	-873.72	120.62
59	SLV 3	129	73	2997	-41.9	-735.95	26.48
59	SLV 4	135	3	3002	-41.97	-736.61	1.96
59	SLV 5	9	582	3567	-52.58	-876.95	203.94
59	SLV 6	15	511	3572	-52.66	-877.61	179.42
59	SLV 7	98	-550	1662	-20.33	-419.93	-191.6
59	SLV 8	104	-621	1666	-20.4	-420.59	-216.12
59	SLV 9	-44	387	2994	-43.77	-743.18	135.67
59	SLV 10	-39	316	2998	-43.84	-743.84	111.15
59	SLV 11	45	-744	1089	-11.51	-286.15	-259.87
59	SLV 12	51	-815	1093	-11.59	-286.82	-284.39
59	SLV 13	-75	-236	1659	-22.2	-427.15	-82.41



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
59	SLV 14	-69	-307	1663	-22.28	-427.82	-106.93
59	SLV 15	-48	-576	1087	-12.52	-290.05	-201.07
59	SLV 16	-43	-647	1091	-12.6	-290.71	-225.59
59	CRTFP Ux+	0	0	0	0	0.01	0
59	CRTFP Ux-	0	0	0	0	-0.01	0
59	CRTFP Uy+	0	0	0	0	0	0
59	CRTFP Uy-	0	0	0	0	0	0
61	SLU 1	18	1	750	2.34	76.13	-0.07
61	SLU 2	21	-11	750	2.37	76.19	2.85
61	SLU 3	18	1	750	2.34	76.13	-0.07
61	SLU 4	20	-6	750	2.36	76.16	1.68
61	SLU 5	21	-11	750	2.37	76.19	2.85
61	SLU 6	18	1	750	2.34	76.13	-0.07
61	SLU 7	20	-6	750	2.36	76.16	1.68
61	SLU 8	18	1	750	2.34	76.13	-0.07
61	SLU 9	20	-6	750	2.36	76.16	1.68
61	SLU 10	22	-7	870	2.84	83.36	1.81
61	SLU 11	18	5	870	2.81	83.3	-1.11
61	SLU 12	21	-2	870	2.83	83.34	0.64
61	SLU 13	22	-7	870	2.84	83.36	1.81
61	SLU 14	18	5	870	2.81	83.3	-1.11
61	SLU 15	21	-2	870	2.83	83.34	0.64
61	SLU 16	18	5	870	2.81	83.3	-1.11
61	SLU 17	21	-2	870	2.83	83.34	0.64
61	SLU 18	19	7	922	3.01	86.38	-1.55
61	SLU 19	21	0	922	3.03	86.41	0.2
61	SLU 20	19	7	922	3.01	86.38	-1.55
61	SLU 21	21	0	922	3.03	86.41	0.2
61	SLU 22	19	3	840	2.68	81.42	-0.71
61	SLU 23	22	-8	840	2.7	81.48	2.21
61	SLU 24	19	3	840	2.68	81.42	-0.71
61	SLU 25	21	-4	840	2.69	81.45	1.04
61	SLU 26	22	-8	840	2.7	81.48	2.21
61	SLU 27	19	3	840	2.68	81.42	-0.71
61	SLU 28	21	-4	840	2.69	81.45	1.04
61	SLU 29	19	3	840	2.68	81.42	-0.71
61	SLU 30	21	-4	840	2.69	81.45	1.04
61	SLU 31	23	-4	961	3.17	88.65	1.17
61	SLU 32	19	7	961	3.14	88.59	-1.75
61	SLU 33	21	0	961	3.16	88.63	0
61	SLU 34	23	-4	961	3.17	88.65	1.17
61	SLU 35	19	7	961	3.14	88.59	-1.75
61	SLU 36	21	0	961	3.16	88.63	0
61	SLU 37	19	7	961	3.14	88.59	-1.75
61	SLU 38	21	0	961	3.16	88.63	0
61	SLU 39	20	9	1013	3.35	91.67	-2.19
61	SLU 40	22	2	1013	3.36	91.7	-0.44
61	SLU 41	20	9	1013	3.35	91.67	-2.19
61	SLU 42	22	2	1013	3.36	91.7	-0.44
61	SLU 43	23	0	944	2.93	97.15	0.13
61	SLU 44	26	-12	943	2.96	97.21	3.04
61	SLU 45	23	0	944	2.93	97.15	0.13
61	SLU 46	25	-7	943	2.95	97.19	1.88
61	SLU 47	26	-12	943	2.96	97.21	3.04
61	SLU 48	23	0	944	2.93	97.15	0.13
61	SLU 49	25	-7	943	2.95	97.19	1.88
61	SLU 50	23	0	944	2.93	97.15	0.13
61	SLU 51	25	-7	943	2.95	97.19	1.88
61	SLU 52	27	-7	1064	3.43	104.39	2.01
61	SLU 53	23	4	1064	3.4	104.33	-0.91
61	SLU 54	26	-3	1064	3.42	104.36	0.84
61	SLU 55	27	-7	1064	3.43	104.39	2.01
61	SLU 56	23	4	1064	3.4	104.33	-0.91
61	SLU 57	26	-3	1064	3.42	104.36	0.84
61	SLU 58	23	4	1064	3.4	104.33	-0.91
61	SLU 59	26	-3	1064	3.42	104.36	0.84
61	SLU 60	24	6	1116	3.61	107.4	-1.35
61	SLU 61	26	-1	1116	3.62	107.44	0.39
61	SLU 62	24	6	1116	3.61	107.4	-1.35
61	SLU 63	26	-1	1116	3.62	107.44	0.39
61	SLU 64	24	3	1034	3.27	102.44	-0.51
61	SLU 65	27	-9	1034	3.29	102.5	2.4
61	SLU 66	24	3	1034	3.27	102.44	-0.51
61	SLU 67	26	-4	1034	3.28	102.48	1.24
61	SLU 68	27	-9	1034	3.29	102.5	2.4
61	SLU 69	24	3	1034	3.27	102.44	-0.51
61	SLU 70	26	-4	1034	3.28	102.48	1.24
61	SLU 71	24	3	1034	3.27	102.44	-0.51
61	SLU 72	26	-4	1034	3.28	102.48	1.24
61	SLU 73	28	-5	1155	3.76	109.68	1.37
61	SLU 74	24	7	1155	3.73	109.62	-1.55
61	SLU 75	26	0	1155	3.75	109.65	0.2
61	SLU 76	28	-5	1155	3.76	109.68	1.37
61	SLU 77	24	7	1155	3.73	109.62	-1.55
61	SLU 78	26	0	1155	3.75	109.65	0.2
61	SLU 79	24	7	1155	3.73	109.62	-1.55
61	SLU 80	26	0	1155	3.75	109.65	0.2
61	SLU 81	25	8	1207	3.94	112.69	-1.99
61	SLU 82	27	1	1207	3.95	112.73	-0.24



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
61	SLU 83	25	8	1207	3.94	112.69	-1.99
61	SLU 84	27	1	1207	3.95	112.73	-0.24
61	SLE RA 1	18	1	776	2.44	77.64	-0.25
61	SLE RA 2	20	-6	775	2.46	77.68	1.69
61	SLE RA 3	18	1	776	2.44	77.64	-0.25
61	SLE RA 4	19	-3	776	2.45	77.66	0.91
61	SLE RA 5	20	-6	775	2.46	77.68	1.69
61	SLE RA 6	18	1	776	2.44	77.64	-0.25
61	SLE RA 7	19	-3	776	2.45	77.66	0.91
61	SLE RA 8	18	1	776	2.44	77.64	-0.25
61	SLE RA 9	19	-3	776	2.45	77.66	0.91
61	SLE RA 10	21	-4	856	2.77	82.46	1
61	SLE RA 11	18	4	856	2.75	82.42	-0.94
61	SLE RA 12	20	0	856	2.76	82.45	0.22
61	SLE RA 13	21	-4	856	2.77	82.46	1
61	SLE RA 14	18	4	856	2.75	82.42	-0.94
61	SLE RA 15	20	0	856	2.76	82.45	0.22
61	SLE RA 16	18	4	856	2.75	82.42	-0.94
61	SLE RA 17	20	0	856	2.76	82.45	0.22
61	SLE RA 18	19	5	891	2.89	84.47	-1.24
61	SLE RA 19	20	1	891	2.9	84.5	-0.07
61	SLE RA 20	19	5	891	2.89	84.47	-1.24
61	SLE RA 21	20	1	891	2.9	84.5	-0.07
61	SLE FR 1	18	1	776	2.44	77.64	-0.25
61	SLE FR 2	18	0	776	2.44	77.65	0.14
61	SLE FR 3	18	1	776	2.44	77.64	-0.25
61	SLE FR 4	19	1	810	2.58	79.7	-0.16
61	SLE FR 5	18	3	810	2.57	79.69	-0.55
61	SLE FR 6	18	3	833	2.66	81.05	-0.75
61	SLE QP 1	18	1	776	2.44	77.64	-0.25
61	SLE QP 2	18	3	810	2.57	79.69	-0.55
61	SLD 1	72	-88	734	2.11	74.36	22.1
61	SLD 2	64	-65	731	2.12	74.08	16.4
61	SLD 3	109	-200	706	2.43	73.58	50.6
61	SLD 4	101	-178	703	2.44	73.31	44.9
61	SLD 5	-18	139	830	1.94	79.37	-34.99
61	SLD 6	-26	161	827	1.95	79.09	-40.69
61	SLD 7	103	-237	738	3.02	76.77	60.02
61	SLD 8	95	-215	735	3.03	76.49	54.32
61	SLD 9	-59	220	885	2.12	82.88	-55.41
61	SLD 10	-67	242	882	2.12	82.61	-61.12
61	SLD 11	62	-156	793	3.2	80.28	39.59
61	SLD 12	54	-133	790	3.21	80.01	33.89
61	SLD 13	-64	183	917	2.7	86.07	-45.99
61	SLD 14	-72	206	914	2.71	85.8	-51.7
61	SLD 15	-28	70	889	3.03	85.29	-17.49
61	SLD 16	-36	93	886	3.04	85.02	-23.2
61	SLV 1	141	-201	636	1.5	67.22	50.65
61	SLV 2	122	-150	629	1.52	66.6	37.69
61	SLV 3	224	-461	572	2.25	65.42	116.25
61	SLV 4	206	-409	566	2.27	64.8	103.3
61	SLV 5	-65	317	857	1.1	78.9	-80.16
61	SLV 6	-83	368	850	1.12	78.28	-93.12
61	SLV 7	213	-548	645	3.62	72.89	138.53
61	SLV 8	194	-497	638	3.64	72.27	125.58
61	SLV 9	-158	502	982	1.51	87.1	-126.67
61	SLV 10	-176	553	976	1.53	86.48	-139.63
61	SLV 11	120	-363	770	4.03	81.1	92.02
61	SLV 12	101	-312	764	4.05	80.48	79.06
61	SLV 13	-169	414	1054	2.87	94.58	-104.4
61	SLV 14	-188	466	1048	2.89	93.95	-117.35
61	SLV 15	-86	155	991	3.63	92.77	-38.79
61	SLV 16	-105	206	984	3.65	92.15	-51.74
61	CRTFP Ux+	0	0	0	0	0	0
61	CRTFP Ux-	0	0	0	0	0	0
61	CRTFP Uy+	0	0	0	0	0	0
61	CRTFP Uy-	0	0	0	0	0	0
63	SLU 1	25	-107	2126	-26.13	-493.18	-36.87
63	SLU 2	25	-121	2111	-25.89	-490.09	-41.69
63	SLU 3	25	-107	2126	-26.13	-493.18	-36.87
63	SLU 4	25	-115	2117	-25.98	-491.32	-39.76
63	SLU 5	25	-121	2111	-25.89	-490.09	-41.69
63	SLU 6	25	-107	2126	-26.13	-493.18	-36.87
63	SLU 7	25	-115	2117	-25.98	-491.32	-39.76
63	SLU 8	25	-107	2126	-26.13	-493.18	-36.87
63	SLU 9	25	-115	2117	-25.98	-491.32	-39.76
63	SLU 10	32	-140	2463	-29.96	-567.23	-48.49
63	SLU 11	32	-127	2477	-30.19	-570.32	-43.66
63	SLU 12	32	-135	2469	-30.05	-568.47	-46.56
63	SLU 13	32	-140	2463	-29.96	-567.23	-48.49
63	SLU 14	32	-127	2477	-30.19	-570.32	-43.66
63	SLU 15	32	-135	2469	-30.05	-568.47	-46.56
63	SLU 16	32	-127	2477	-30.19	-570.32	-43.66
63	SLU 17	32	-135	2469	-30.05	-568.47	-46.56
63	SLU 18	34	-135	2628	-31.94	-603.38	-46.58
63	SLU 19	34	-143	2619	-31.8	-601.53	-49.47
63	SLU 20	34	-135	2628	-31.94	-603.38	-46.58
63	SLU 21	34	-143	2619	-31.8	-601.53	-49.47
63	SLU 22	30	-122	2378	-29.08	-548.69	-42



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
63	SLU 23	30	-136	2364	-28.84	-545.6	-46.83
63	SLU 24	30	-122	2378	-29.08	-548.69	-42
63	SLU 25	30	-130	2370	-28.94	-546.84	-44.9
63	SLU 26	30	-136	2364	-28.84	-545.6	-46.83
63	SLU 27	30	-122	2378	-29.08	-548.69	-42
63	SLU 28	30	-130	2370	-28.94	-546.84	-44.9
63	SLU 29	30	-122	2378	-29.08	-548.69	-42
63	SLU 30	30	-130	2370	-28.94	-546.84	-44.9
63	SLU 31	36	-155	2716	-32.91	-622.74	-53.62
63	SLU 32	36	-142	2730	-33.15	-625.84	-48.8
63	SLU 33	36	-150	2721	-33	-623.98	-51.7
63	SLU 34	36	-155	2716	-32.91	-622.74	-53.62
63	SLU 35	36	-142	2730	-33.15	-625.84	-48.8
63	SLU 36	36	-150	2721	-33	-623.98	-51.7
63	SLU 37	36	-142	2730	-33.15	-625.84	-48.8
63	SLU 38	36	-150	2721	-33	-623.98	-51.7
63	SLU 39	39	-150	2881	-34.89	-658.9	-51.71
63	SLU 40	39	-158	2872	-34.75	-657.04	-54.61
63	SLU 41	39	-150	2881	-34.89	-658.9	-51.71
63	SLU 42	39	-158	2872	-34.75	-657.04	-54.61
63	SLU 43	31	-134	2676	-32.95	-622.1	-46.17
63	SLU 44	31	-148	2662	-32.72	-619.01	-50.99
63	SLU 45	31	-134	2676	-32.95	-622.1	-46.17
63	SLU 46	31	-142	2668	-32.81	-620.24	-49.06
63	SLU 47	31	-148	2662	-32.72	-619.01	-50.99
63	SLU 48	31	-134	2676	-32.95	-622.1	-46.17
63	SLU 49	31	-142	2668	-32.81	-620.24	-49.06
63	SLU 50	31	-134	2676	-32.95	-622.1	-46.17
63	SLU 51	31	-142	2668	-32.81	-620.24	-49.06
63	SLU 52	37	-167	3014	-36.78	-696.15	-57.79
63	SLU 53	37	-154	3028	-37.02	-699.24	-52.96
63	SLU 54	37	-162	3019	-36.88	-697.39	-55.86
63	SLU 55	37	-167	3014	-36.78	-696.15	-57.79
63	SLU 56	37	-154	3028	-37.02	-699.24	-52.96
63	SLU 57	37	-162	3019	-36.88	-697.39	-55.86
63	SLU 58	37	-154	3028	-37.02	-699.24	-52.96
63	SLU 59	37	-162	3019	-36.88	-697.39	-55.86
63	SLU 60	40	-162	3179	-38.76	-732.3	-55.88
63	SLU 61	40	-170	3170	-38.62	-730.45	-58.77
63	SLU 62	40	-162	3179	-38.76	-732.3	-55.88
63	SLU 63	40	-170	3170	-38.62	-730.45	-58.77
63	SLU 64	36	-149	2929	-35.9	-677.61	-51.3
63	SLU 65	36	-163	2915	-35.67	-674.52	-56.13
63	SLU 66	36	-149	2929	-35.9	-677.61	-51.3
63	SLU 67	36	-157	2921	-35.76	-675.76	-54.2
63	SLU 68	36	-163	2915	-35.67	-674.52	-56.13
63	SLU 69	36	-149	2929	-35.9	-677.61	-51.3
63	SLU 70	36	-157	2921	-35.76	-675.76	-54.2
63	SLU 71	36	-149	2929	-35.9	-677.61	-51.3
63	SLU 72	36	-157	2921	-35.76	-675.76	-54.2
63	SLU 73	42	-182	3267	-39.74	-751.66	-62.92
63	SLU 74	42	-169	3281	-39.97	-754.76	-58.1
63	SLU 75	42	-177	3272	-39.83	-752.9	-60.99
63	SLU 76	42	-182	3267	-39.74	-751.66	-62.92
63	SLU 77	42	-169	3281	-39.97	-754.76	-58.1
63	SLU 78	42	-177	3272	-39.83	-752.9	-60.99
63	SLU 79	42	-169	3281	-39.97	-754.76	-58.1
63	SLU 80	42	-177	3272	-39.83	-752.9	-60.99
63	SLU 81	45	-177	3432	-41.71	-787.82	-61.01
63	SLU 82	45	-185	3423	-41.57	-785.96	-63.91
63	SLU 83	45	-177	3432	-41.71	-787.82	-61.01
63	SLU 84	45	-185	3423	-41.57	-785.96	-63.91
63	SLE RA 1	26	-111	2198	-26.97	-509.04	-38.34
63	SLE RA 2	26	-120	2188	-26.81	-506.98	-41.55
63	SLE RA 3	26	-111	2198	-26.97	-509.04	-38.34
63	SLE RA 4	26	-117	2192	-26.88	-507.8	-40.27
63	SLE RA 5	26	-120	2188	-26.81	-506.98	-41.55
63	SLE RA 6	26	-111	2198	-26.97	-509.04	-38.34
63	SLE RA 7	26	-117	2192	-26.88	-507.8	-40.27
63	SLE RA 8	26	-111	2198	-26.97	-509.04	-38.34
63	SLE RA 9	26	-117	2192	-26.88	-507.8	-40.27
63	SLE RA 10	31	-134	2423	-29.52	-558.41	-46.08
63	SLE RA 11	31	-124	2432	-29.68	-560.47	-42.87
63	SLE RA 12	31	-130	2426	-29.59	-559.23	-44.8
63	SLE RA 13	31	-134	2423	-29.52	-558.41	-46.08
63	SLE RA 14	31	-124	2432	-29.68	-560.47	-42.87
63	SLE RA 15	31	-130	2426	-29.59	-559.23	-44.8
63	SLE RA 16	31	-124	2432	-29.68	-560.47	-42.87
63	SLE RA 17	31	-130	2426	-29.59	-559.23	-44.8
63	SLE RA 18	33	-130	2533	-30.84	-582.51	-44.81
63	SLE RA 19	33	-136	2527	-30.75	-581.27	-46.74
63	SLE RA 20	33	-130	2533	-30.84	-582.51	-44.81
63	SLE RA 21	33	-136	2527	-30.75	-581.27	-46.74
63	SLE FR 1	26	-111	2198	-26.97	-509.04	-38.34
63	SLE FR 2	26	-113	2196	-26.94	-508.63	-38.98
63	SLE FR 3	26	-111	2198	-26.97	-509.04	-38.34
63	SLE FR 4	28	-119	2296	-28.1	-530.67	-40.92
63	SLE FR 5	28	-117	2298	-28.13	-531.08	-40.28
63	SLE FR 6	29	-121	2365	-28.91	-545.78	-41.57



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
63	SLE QP 1	26	-111	2198	-26.97	-509.04	-38.34
63	SLE QP 2	28	-117	2298	-28.13	-531.08	-40.28
63	SLD 1	67	112	2784	-34.93	-632.26	40.03
63	SLD 2	68	81	2785	-34.95	-632.34	29.22
63	SLD 3	81	-34	2569	-31.63	-586.84	-11.18
63	SLD 4	82	-65	2570	-31.65	-586.92	-21.99
63	SLD 5	18	185	2770	-35.18	-630.3	65.27
63	SLD 6	19	154	2771	-35.2	-630.38	54.46
63	SLD 7	66	-303	2053	-24.16	-478.89	-105.44
63	SLD 8	67	-334	2054	-24.18	-478.97	-116.25
63	SLD 9	-10	101	2542	-32.08	-583.19	35.69
63	SLD 10	-9	69	2544	-32.1	-583.28	24.88
63	SLD 11	38	-387	1825	-21.07	-431.78	-135.02
63	SLD 12	39	-418	1827	-21.09	-431.86	-145.83
63	SLD 13	-26	-168	2026	-24.61	-475.24	-58.57
63	SLD 14	-25	-200	2027	-24.64	-475.33	-69.38
63	SLD 15	-11	-315	1811	-21.31	-429.82	-109.78
63	SLD 16	-10	-346	1812	-21.33	-429.9	-120.59
63	SLV 1	116	413	3418	-43.83	-764.38	145.43
63	SLV 2	119	342	3420	-43.88	-764.57	120.88
63	SLV 3	150	73	2918	-36.14	-658.81	26.54
63	SLV 4	152	3	2921	-36.2	-659	1.99
63	SLV 5	4	582	3391	-44.47	-761.12	204.34
63	SLV 6	6	511	3394	-44.52	-761.31	179.79
63	SLV 7	114	-550	1725	-18.87	-409.22	-191.95
63	SLV 8	116	-621	1728	-18.92	-409.41	-216.5
63	SLV 9	-60	387	2869	-37.34	-652.75	135.95
63	SLV 10	-58	317	2871	-37.39	-652.94	111.4
63	SLV 11	51	-745	1203	-11.74	-300.85	-260.34
63	SLV 12	53	-816	1205	-11.79	-301.04	-284.89
63	SLV 13	-95	-236	1676	-20.07	-403.16	-82.54
63	SLV 14	-93	-307	1679	-20.12	-403.35	-107.1
63	SLV 15	-62	-576	1176	-12.39	-297.59	-201.43
63	SLV 16	-60	-646	1179	-12.44	-297.78	-225.98
63	CRTFP Ux+	0	0	0	0	0	0
63	CRTFP Ux-	0	0	0	0	0	0
63	CRTFP Uy+	0	0	0	0	0	0
63	CRTFP Uy-	0	0	0	0	0	0
65	SLU 1	15	0	831	2.44	93.11	0.01
65	SLU 2	17	-11	832	2.46	93.35	2.92
65	SLU 3	15	0	831	2.44	93.11	0.01
65	SLU 4	16	-7	831	2.45	93.25	1.76
65	SLU 5	17	-11	832	2.46	93.35	2.92
65	SLU 6	15	0	831	2.44	93.11	0.01
65	SLU 7	16	-7	831	2.45	93.25	1.76
65	SLU 8	15	0	831	2.44	93.11	0.01
65	SLU 9	16	-7	831	2.45	93.25	1.76
65	SLU 10	18	-7	969	2.96	104.47	1.9
65	SLU 11	16	4	968	2.93	104.23	-1.01
65	SLU 12	17	-3	969	2.95	104.37	0.73
65	SLU 13	18	-7	969	2.96	104.47	1.9
65	SLU 14	16	4	968	2.93	104.23	-1.01
65	SLU 15	17	-3	969	2.95	104.37	0.73
65	SLU 16	16	4	968	2.93	104.23	-1.01
65	SLU 17	17	-3	969	2.95	104.37	0.73
65	SLU 18	16	6	1027	3.14	109	-1.45
65	SLU 19	18	-1	1027	3.16	109.14	0.3
65	SLU 20	16	6	1027	3.14	109	-1.45
65	SLU 21	18	-1	1027	3.16	109.14	0.3
65	SLU 22	16	3	933	2.79	101.18	-0.62
65	SLU 23	18	-9	934	2.81	101.42	2.29
65	SLU 24	16	3	933	2.79	101.18	-0.62
65	SLU 25	17	-4	934	2.8	101.33	1.13
65	SLU 26	18	-9	934	2.81	101.42	2.29
65	SLU 27	16	3	933	2.79	101.18	-0.62
65	SLU 28	17	-4	934	2.8	101.33	1.13
65	SLU 29	16	3	933	2.79	101.18	-0.62
65	SLU 30	17	-4	934	2.8	101.33	1.13
65	SLU 31	19	-5	1071	3.31	112.54	1.27
65	SLU 32	17	7	1070	3.28	112.3	-1.64
65	SLU 33	18	0	1071	3.3	112.45	0.11
65	SLU 34	19	-5	1071	3.31	112.54	1.27
65	SLU 35	17	7	1070	3.28	112.3	-1.64
65	SLU 36	18	0	1071	3.3	112.45	0.11
65	SLU 37	17	7	1070	3.28	112.3	-1.64
65	SLU 38	18	0	1071	3.3	112.45	0.11
65	SLU 39	17	9	1129	3.5	117.07	-2.08
65	SLU 40	19	2	1130	3.51	117.22	-0.33
65	SLU 41	17	9	1129	3.5	117.07	-2.08
65	SLU 42	19	2	1130	3.51	117.22	-0.33
65	SLU 43	19	-1	1045	3.05	118.27	0.23
65	SLU 44	21	-12	1046	3.07	118.51	3.14
65	SLU 45	19	-1	1045	3.05	118.27	0.23
65	SLU 46	20	-7	1046	3.06	118.41	1.97
65	SLU 47	21	-12	1046	3.07	118.51	3.14
65	SLU 48	19	-1	1045	3.05	118.27	0.23
65	SLU 49	20	-7	1046	3.06	118.41	1.97
65	SLU 50	19	-1	1045	3.05	118.27	0.23
65	SLU 51	20	-7	1046	3.06	118.41	1.97



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
65	SLU 52	22	-8	1183	3.57	129.63	2.12
65	SLU 53	20	4	1182	3.54	129.39	-0.79
65	SLU 54	21	-3	1183	3.56	129.54	0.95
65	SLU 55	22	-8	1183	3.57	129.63	2.12
65	SLU 56	20	4	1182	3.54	129.39	-0.79
65	SLU 57	21	-3	1183	3.56	129.54	0.95
65	SLU 58	20	4	1182	3.54	129.39	-0.79
65	SLU 59	21	-3	1183	3.56	129.54	0.95
65	SLU 60	20	5	1241	3.76	134.16	-1.23
65	SLU 61	22	-2	1242	3.77	134.3	0.51
65	SLU 62	20	5	1241	3.76	134.16	-1.23
65	SLU 63	22	-2	1242	3.77	134.3	0.51
65	SLU 64	20	2	1147	3.4	126.35	-0.4
65	SLU 65	22	-10	1148	3.42	126.59	2.51
65	SLU 66	20	2	1147	3.4	126.35	-0.4
65	SLU 67	21	-5	1148	3.41	126.49	1.35
65	SLU 68	22	-10	1148	3.42	126.59	2.51
65	SLU 69	20	2	1147	3.4	126.35	-0.4
65	SLU 70	21	-5	1148	3.41	126.49	1.35
65	SLU 71	20	2	1147	3.4	126.35	-0.4
65	SLU 72	21	-5	1148	3.41	126.49	1.35
65	SLU 73	23	-5	1285	3.92	137.71	1.49
65	SLU 74	21	6	1285	3.89	137.47	-1.42
65	SLU 75	22	-1	1285	3.91	137.61	0.32
65	SLU 76	23	-5	1285	3.92	137.71	1.49
65	SLU 77	21	6	1285	3.89	137.47	-1.42
65	SLU 78	22	-1	1285	3.91	137.61	0.32
65	SLU 79	21	6	1285	3.89	137.47	-1.42
65	SLU 80	22	-1	1285	3.91	137.61	0.32
65	SLU 81	21	8	1343	4.11	142.24	-1.86
65	SLU 82	23	1	1344	4.12	142.38	-0.11
65	SLU 83	21	8	1343	4.11	142.24	-1.86
65	SLU 84	23	1	1344	4.12	142.38	-0.11
65	SLE RA 1	15	1	860	2.54	95.41	-0.17
65	SLE RA 2	17	-7	861	2.55	95.57	1.77
65	SLE RA 3	15	1	860	2.54	95.41	-0.17
65	SLE RA 4	16	-4	860	2.55	95.51	0.99
65	SLE RA 5	17	-7	861	2.55	95.57	1.77
65	SLE RA 6	15	1	860	2.54	95.41	-0.17
65	SLE RA 7	16	-4	860	2.55	95.51	0.99
65	SLE RA 8	15	1	860	2.54	95.41	-0.17
65	SLE RA 9	16	-4	860	2.55	95.51	0.99
65	SLE RA 10	17	-4	952	2.88	102.99	1.09
65	SLE RA 11	16	4	952	2.87	102.83	-0.85
65	SLE RA 12	17	-1	952	2.88	102.93	0.31
65	SLE RA 13	17	-4	952	2.88	102.99	1.09
65	SLE RA 14	16	4	952	2.87	102.83	-0.85
65	SLE RA 15	17	-1	952	2.88	102.93	0.31
65	SLE RA 16	16	4	952	2.87	102.83	-0.85
65	SLE RA 17	17	-1	952	2.88	102.93	0.31
65	SLE RA 18	16	5	991	3.01	106.01	-1.14
65	SLE RA 19	17	0	991	3.02	106.1	0.02
65	SLE RA 20	16	5	991	3.01	106.01	-1.14
65	SLE RA 21	17	0	991	3.02	106.1	0.02
65	SLE FR 1	15	1	860	2.54	95.41	-0.17
65	SLE FR 2	15	-1	860	2.54	95.45	0.22
65	SLE FR 3	15	1	860	2.54	95.41	-0.17
65	SLE FR 4	16	1	899	2.68	98.62	-0.07
65	SLE FR 5	15	2	899	2.68	98.59	-0.46
65	SLE FR 6	15	3	925	2.77	100.71	-0.66
65	SLE QP 1	15	1	860	2.54	95.41	-0.17
65	SLE QP 2	15	2	899	2.68	98.59	-0.46
65	SLD 1	68	-88	786	2.2	89.82	22.15
65	SLD 2	61	-65	784	2.21	89.54	16.46
65	SLD 3	96	-201	820	2.53	92.44	50.6
65	SLD 4	89	-178	817	2.54	92.17	44.9
65	SLD 5	-9	138	815	2.03	92.07	-34.82
65	SLD 6	-16	161	813	2.04	91.8	-40.52
65	SLD 7	84	-237	927	3.13	100.83	59.99
65	SLD 8	77	-215	925	3.14	100.55	54.3
65	SLD 9	-47	219	874	2.22	96.63	-55.22
65	SLD 10	-54	242	871	2.23	96.36	-60.91
65	SLD 11	46	-156	986	3.31	105.39	39.6
65	SLD 12	39	-134	984	3.32	105.11	33.9
65	SLD 13	-59	182	981	2.82	105.02	-45.82
65	SLD 14	-66	205	979	2.83	104.74	-51.52
65	SLD 15	-31	70	1015	3.15	107.64	-17.38
65	SLD 16	-38	92	1013	3.16	107.37	-23.07
65	SLV 1	136	-202	640	1.57	78.11	50.65
65	SLV 2	120	-150	634	1.59	77.49	37.72
65	SLV 3	199	-461	718	2.33	84.21	116.13
65	SLV 4	183	-410	712	2.35	83.58	103.2
65	SLV 5	-39	316	705	1.18	83.43	-79.9
65	SLV 6	-55	368	700	1.2	82.8	-92.83
65	SLV 7	172	-548	965	3.72	103.74	138.34
65	SLV 8	156	-497	959	3.74	103.11	125.41
65	SLV 9	-126	501	840	1.61	94.07	-126.34
65	SLV 10	-141	552	834	1.63	93.45	-139.27
65	SLV 11	85	-363	1099	4.15	114.39	91.91



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
65	SLV 12	70	-312	1093	4.17	113.76	78.98
65	SLV 13	-153	414	1087	3	113.61	-104.12
65	SLV 14	-169	465	1081	3.02	112.98	-117.05
65	SLV 15	-89	155	1165	3.76	119.7	-38.65
65	SLV 16	-105	206	1159	3.79	119.07	-51.57
65	CRTFP Ux+	0	0	0	0	0	0
65	CRTFP Ux-	0	0	0	0	0	0
65	CRTFP Uy+	0	0	0	0	0	0
65	CRTFP Uy-	0	0	0	0	0	0
67	SLU 1	25	-107	2135	-24.01	-477.19	-36.84
67	SLU 2	25	-120	2123	-23.83	-474.93	-41.67
67	SLU 3	25	-107	2135	-24.01	-477.19	-36.84
67	SLU 4	25	-115	2127	-23.9	-475.83	-39.73
67	SLU 5	25	-120	2123	-23.83	-474.93	-41.67
67	SLU 6	25	-107	2135	-24.01	-477.19	-36.84
67	SLU 7	25	-115	2127	-23.9	-475.83	-39.73
67	SLU 8	25	-107	2135	-24.01	-477.19	-36.84
67	SLU 9	25	-115	2127	-23.9	-475.83	-39.73
67	SLU 10	31	-140	2477	-27.51	-549.7	-48.46
67	SLU 11	31	-126	2489	-27.7	-551.96	-43.63
67	SLU 12	31	-135	2482	-27.59	-550.61	-46.53
67	SLU 13	31	-140	2477	-27.51	-549.7	-48.46
67	SLU 14	31	-126	2489	-27.7	-551.96	-43.63
67	SLU 15	31	-135	2482	-27.59	-550.61	-46.53
67	SLU 16	31	-126	2489	-27.7	-551.96	-43.63
67	SLU 17	31	-135	2482	-27.59	-550.61	-46.53
67	SLU 18	34	-135	2641	-29.28	-584	-46.54
67	SLU 19	34	-143	2634	-29.17	-582.65	-49.44
67	SLU 20	34	-135	2641	-29.28	-584	-46.54
67	SLU 21	34	-143	2634	-29.17	-582.65	-49.44
67	SLU 22	29	-122	2389	-26.67	-530.74	-41.97
67	SLU 23	30	-135	2377	-26.49	-528.48	-46.8
67	SLU 24	29	-122	2389	-26.67	-530.74	-41.97
67	SLU 25	29	-130	2382	-26.56	-529.38	-44.87
67	SLU 26	30	-135	2377	-26.49	-528.48	-46.8
67	SLU 27	29	-122	2389	-26.67	-530.74	-41.97
67	SLU 28	29	-130	2382	-26.56	-529.38	-44.87
67	SLU 29	29	-122	2389	-26.67	-530.74	-41.97
67	SLU 30	29	-130	2382	-26.56	-529.38	-44.87
67	SLU 31	36	-155	2731	-30.18	-603.25	-53.6
67	SLU 32	36	-141	2743	-30.36	-605.51	-48.77
67	SLU 33	36	-150	2736	-30.25	-604.15	-51.66
67	SLU 34	36	-155	2731	-30.18	-603.25	-53.6
67	SLU 35	36	-141	2743	-30.36	-605.51	-48.77
67	SLU 36	36	-150	2736	-30.25	-604.15	-51.66
67	SLU 37	36	-141	2743	-30.36	-605.51	-48.77
67	SLU 38	36	-150	2736	-30.25	-604.15	-51.66
67	SLU 39	39	-150	2895	-31.94	-637.55	-51.68
67	SLU 40	39	-158	2888	-31.83	-636.2	-54.58
67	SLU 41	39	-150	2895	-31.94	-637.55	-51.68
67	SLU 42	39	-158	2888	-31.83	-636.2	-54.58
67	SLU 43	31	-134	2688	-30.3	-601.98	-46.13
67	SLU 44	31	-147	2676	-30.12	-599.73	-50.96
67	SLU 45	31	-134	2688	-30.3	-601.98	-46.13
67	SLU 46	31	-142	2681	-30.19	-600.63	-49.02
67	SLU 47	31	-147	2676	-30.12	-599.73	-50.96
67	SLU 48	31	-134	2688	-30.3	-601.98	-46.13
67	SLU 49	31	-142	2681	-30.19	-600.63	-49.02
67	SLU 50	31	-134	2688	-30.3	-601.98	-46.13
67	SLU 51	31	-142	2681	-30.19	-600.63	-49.02
67	SLU 52	37	-167	3030	-33.8	-674.5	-57.75
67	SLU 53	37	-153	3042	-33.99	-676.76	-52.92
67	SLU 54	37	-162	3035	-33.88	-675.4	-55.82
67	SLU 55	37	-167	3030	-33.8	-674.5	-57.75
67	SLU 56	37	-153	3042	-33.99	-676.76	-52.92
67	SLU 57	37	-162	3035	-33.88	-675.4	-55.82
67	SLU 58	37	-153	3042	-33.99	-676.76	-52.92
67	SLU 59	37	-162	3035	-33.88	-675.4	-55.82
67	SLU 60	40	-162	3194	-35.57	-708.8	-55.83
67	SLU 61	40	-170	3187	-35.46	-707.45	-58.73
67	SLU 62	40	-162	3194	-35.57	-708.8	-55.83
67	SLU 63	40	-170	3187	-35.46	-707.45	-58.73
67	SLU 64	35	-148	2942	-32.96	-655.53	-51.26
67	SLU 65	35	-162	2930	-32.78	-653.28	-56.09
67	SLU 66	35	-148	2942	-32.96	-655.53	-51.26
67	SLU 67	35	-157	2935	-32.85	-654.18	-54.16
67	SLU 68	35	-162	2930	-32.78	-653.28	-56.09
67	SLU 69	35	-148	2942	-32.96	-655.53	-51.26
67	SLU 70	35	-157	2935	-32.85	-654.18	-54.16
67	SLU 71	35	-148	2942	-32.96	-655.53	-51.26
67	SLU 72	35	-157	2935	-32.85	-654.18	-54.16
67	SLU 73	42	-182	3285	-36.47	-728.05	-62.89
67	SLU 74	42	-168	3297	-36.65	-730.3	-58.06
67	SLU 75	42	-177	3289	-36.54	-728.95	-60.95
67	SLU 76	42	-182	3285	-36.47	-728.05	-62.89
67	SLU 77	42	-168	3297	-36.65	-730.3	-58.06
67	SLU 78	42	-177	3289	-36.54	-728.95	-60.95
67	SLU 79	42	-168	3297	-36.65	-730.3	-58.06
67	SLU 80	42	-177	3289	-36.54	-728.95	-60.95



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
67	SLU 81	45	-177	3448	-38.23	-762.35	-60.97
67	SLU 82	45	-185	3441	-38.12	-761	-63.87
67	SLU 83	45	-177	3448	-38.23	-762.35	-60.97
67	SLU 84	45	-185	3441	-38.12	-761	-63.87
67	SLE RA 1	26	-111	2207	-24.77	-492.49	-38.3
67	SLE RA 2	26	-120	2199	-24.65	-490.98	-41.52
67	SLE RA 3	26	-111	2207	-24.77	-492.49	-38.3
67	SLE RA 4	26	-116	2202	-24.7	-491.58	-40.23
67	SLE RA 5	26	-120	2199	-24.65	-490.98	-41.52
67	SLE RA 6	26	-111	2207	-24.77	-492.49	-38.3
67	SLE RA 7	26	-116	2202	-24.7	-491.58	-40.23
67	SLE RA 8	26	-111	2207	-24.77	-492.49	-38.3
67	SLE RA 9	26	-116	2202	-24.7	-491.58	-40.23
67	SLE RA 10	30	-133	2436	-27.11	-540.83	-46.05
67	SLE RA 11	30	-124	2444	-27.23	-542.33	-42.83
67	SLE RA 12	30	-130	2439	-27.16	-541.43	-44.77
67	SLE RA 13	30	-133	2436	-27.11	-540.83	-46.05
67	SLE RA 14	30	-124	2444	-27.23	-542.33	-42.83
67	SLE RA 15	30	-130	2439	-27.16	-541.43	-44.77
67	SLE RA 16	30	-124	2444	-27.23	-542.33	-42.83
67	SLE RA 17	30	-130	2439	-27.16	-541.43	-44.77
67	SLE RA 18	32	-130	2545	-28.28	-563.7	-44.78
67	SLE RA 19	32	-135	2540	-28.21	-562.8	-46.71
67	SLE RA 20	32	-130	2545	-28.28	-563.7	-44.78
67	SLE RA 21	32	-135	2540	-28.21	-562.8	-46.71
67	SLE FR 1	26	-111	2207	-24.77	-492.49	-38.3
67	SLE FR 2	26	-113	2206	-24.75	-492.19	-38.95
67	SLE FR 3	26	-111	2207	-24.77	-492.49	-38.3
67	SLE FR 4	28	-118	2307	-25.8	-513.55	-40.89
67	SLE FR 5	28	-117	2309	-25.82	-513.85	-40.24
67	SLE FR 6	29	-120	2376	-26.53	-528.09	-41.54
67	SLE QP 1	26	-111	2207	-24.77	-492.49	-38.3
67	SLE QP 2	28	-117	2309	-25.82	-513.85	-40.24
67	SLD 1	74	112	2754	-31.35	-597.4	40.17
67	SLD 2	73	81	2754	-31.36	-597.36	29.36
67	SLD 3	91	-34	2565	-28.74	-562.38	-11.11
67	SLD 4	91	-65	2565	-28.76	-562.33	-21.92
67	SLD 5	16	185	2729	-31.42	-592.06	65.44
67	SLD 6	15	154	2729	-31.44	-592.01	54.62
67	SLD 7	73	-303	2098	-22.75	-475.3	-105.49
67	SLD 8	73	-334	2099	-22.76	-475.26	-116.31
67	SLD 9	-17	101	2518	-28.89	-552.45	35.82
67	SLD 10	-17	70	2519	-28.9	-552.4	25
67	SLD 11	40	-387	1888	-20.21	-435.69	-135.11
67	SLD 12	40	-418	1889	-20.23	-435.64	-145.93
67	SLD 13	-35	-168	2052	-22.89	-465.37	-58.57
67	SLD 14	-35	-199	2053	-22.9	-465.32	-69.38
67	SLD 15	-18	-315	1863	-20.29	-430.34	-109.85
67	SLD 16	-18	-346	1863	-20.3	-430.3	-120.66
67	SLV 1	133	413	3334	-38.57	-706.4	145.71
67	SLV 2	132	342	3335	-38.6	-706.3	121.14
67	SLV 3	172	73	2894	-32.52	-625.01	26.67
67	SLV 4	171	3	2896	-32.55	-624.92	2.1
67	SLV 5	0	582	3282	-38.81	-695.08	204.68
67	SLV 6	-1	512	3283	-38.84	-694.99	180.12
67	SLV 7	131	-550	1817	-18.65	-423.8	-192.12
67	SLV 8	130	-621	1819	-18.68	-423.7	-216.68
67	SLV 9	-74	388	2798	-32.97	-604	136.19
67	SLV 10	-75	317	2800	-33	-603.9	111.63
67	SLV 11	57	-745	1334	-12.8	-332.72	-260.61
67	SLV 12	56	-816	1335	-12.84	-332.62	-285.17
67	SLV 13	-115	-236	1721	-19.1	-402.79	-82.59
67	SLV 14	-116	-306	1723	-19.13	-402.69	-107.15
67	SLV 15	-76	-576	1282	-13.05	-321.4	-201.63
67	SLV 16	-77	-646	1284	-13.08	-321.3	-226.19
67	CRTFP Ux+	0	0	0	0	0	0
67	CRTFP Ux-	0	0	0	0	0	0
67	CRTFP Uy+	0	0	0	0	0	0
67	CRTFP Uy-	0	0	0	0	0	0
69	SLU 1	13	0	916	2.55	112.99	0.13
69	SLU 2	14	-12	917	2.58	113.41	3.03
69	SLU 3	13	0	916	2.55	112.99	0.13
69	SLU 4	14	-7	917	2.57	113.24	1.87
69	SLU 5	14	-12	917	2.58	113.41	3.03
69	SLU 6	13	0	916	2.55	112.99	0.13
69	SLU 7	14	-7	917	2.57	113.24	1.87
69	SLU 8	13	0	916	2.55	112.99	0.13
69	SLU 9	14	-7	917	2.57	113.24	1.87
69	SLU 10	16	-8	1072	3.11	129.15	2.03
69	SLU 11	14	4	1070	3.09	128.72	-0.87
69	SLU 12	15	-3	1071	3.1	128.98	0.87
69	SLU 13	16	-8	1072	3.11	129.15	2.03
69	SLU 14	14	4	1070	3.09	128.72	-0.87
69	SLU 15	15	-3	1071	3.1	128.98	0.87
69	SLU 16	14	4	1070	3.09	128.72	-0.87
69	SLU 17	15	-3	1071	3.1	128.98	0.87
69	SLU 18	14	5	1137	3.31	135.47	-1.3
69	SLU 19	15	-2	1138	3.33	135.72	0.44
69	SLU 20	14	5	1137	3.31	135.47	-1.3



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
69	SLU 21	15	-2	1138	3.33	135.72	0.44
69	SLU 22	14	2	1030	2.93	124.34	-0.48
69	SLU 23	15	-9	1032	2.96	124.76	2.42
69	SLU 24	14	2	1030	2.93	124.34	-0.48
69	SLU 25	15	-5	1031	2.95	124.59	1.26
69	SLU 26	15	-9	1032	2.96	124.76	2.42
69	SLU 27	14	2	1030	2.93	124.34	-0.48
69	SLU 28	15	-5	1031	2.95	124.59	1.26
69	SLU 29	14	2	1030	2.93	124.34	-0.48
69	SLU 30	15	-5	1031	2.95	124.59	1.26
69	SLU 31	17	-5	1187	3.49	140.5	1.42
69	SLU 32	15	6	1185	3.46	140.07	-1.48
69	SLU 33	16	-1	1186	3.48	140.33	0.26
69	SLU 34	17	-5	1187	3.49	140.5	1.42
69	SLU 35	15	6	1185	3.46	140.07	-1.48
69	SLU 36	16	-1	1186	3.48	140.33	0.26
69	SLU 37	15	6	1185	3.46	140.07	-1.48
69	SLU 38	16	-1	1186	3.48	140.33	0.26
69	SLU 39	16	8	1251	3.69	146.82	-1.91
69	SLU 40	17	1	1252	3.71	147.07	-0.17
69	SLU 41	16	8	1251	3.69	146.82	-1.91
69	SLU 42	17	1	1252	3.71	147.07	-0.17
69	SLU 43	16	-1	1151	3.19	142.99	0.37
69	SLU 44	18	-13	1153	3.22	143.42	3.27
69	SLU 45	16	-1	1151	3.19	142.99	0.37
69	SLU 46	17	-8	1152	3.21	143.25	2.11
69	SLU 47	18	-13	1153	3.22	143.42	3.27
69	SLU 48	16	-1	1151	3.19	142.99	0.37
69	SLU 49	17	-8	1152	3.21	143.25	2.11
69	SLU 50	16	-1	1151	3.19	142.99	0.37
69	SLU 51	17	-8	1152	3.21	143.25	2.11
69	SLU 52	19	-9	1308	3.75	159.15	2.28
69	SLU 53	17	3	1306	3.72	158.73	-0.62
69	SLU 54	18	-4	1307	3.74	158.98	1.12
69	SLU 55	19	-9	1308	3.75	159.15	2.28
69	SLU 56	17	3	1306	3.72	158.73	-0.62
69	SLU 57	18	-4	1307	3.74	158.98	1.12
69	SLU 58	17	3	1306	3.72	158.73	-0.62
69	SLU 59	18	-4	1307	3.74	158.98	1.12
69	SLU 60	18	4	1372	3.95	165.47	-1.05
69	SLU 61	19	-3	1373	3.97	165.73	0.69
69	SLU 62	18	4	1372	3.95	165.47	-1.05
69	SLU 63	19	-3	1373	3.97	165.73	0.69
69	SLU 64	17	1	1266	3.57	154.34	-0.23
69	SLU 65	19	-10	1267	3.59	154.77	2.67
69	SLU 66	17	1	1266	3.57	154.34	-0.23
69	SLU 67	18	-6	1267	3.58	154.6	1.51
69	SLU 68	19	-10	1267	3.59	154.77	2.67
69	SLU 69	17	1	1266	3.57	154.34	-0.23
69	SLU 70	18	-6	1267	3.58	154.6	1.51
69	SLU 71	17	1	1266	3.57	154.34	-0.23
69	SLU 72	18	-6	1267	3.58	154.6	1.51
69	SLU 73	20	-6	1422	4.13	170.5	1.67
69	SLU 74	18	5	1420	4.1	170.08	-1.23
69	SLU 75	19	-2	1421	4.12	170.33	0.51
69	SLU 76	20	-6	1422	4.13	170.5	1.67
69	SLU 77	18	5	1420	4.1	170.08	-1.23
69	SLU 78	19	-2	1421	4.12	170.33	0.51
69	SLU 79	18	5	1420	4.1	170.08	-1.23
69	SLU 80	19	-2	1421	4.12	170.33	0.51
69	SLU 81	19	7	1487	4.33	176.82	-1.66
69	SLU 82	20	0	1488	4.34	177.08	0.08
69	SLU 83	19	7	1487	4.33	176.82	-1.66
69	SLU 84	20	0	1488	4.34	177.08	0.08
69	SLE RA 1	13	0	948	2.66	116.23	-0.05
69	SLE RA 2	14	-7	950	2.68	116.51	1.89
69	SLE RA 3	13	0	948	2.66	116.23	-0.05
69	SLE RA 4	14	-4	949	2.67	116.4	1.11
69	SLE RA 5	14	-7	950	2.68	116.51	1.89
69	SLE RA 6	13	0	948	2.66	116.23	-0.05
69	SLE RA 7	14	-4	949	2.67	116.4	1.11
69	SLE RA 8	13	0	948	2.66	116.23	-0.05
69	SLE RA 9	14	-4	949	2.67	116.4	1.11
69	SLE RA 10	15	-5	1053	3.03	127.01	1.22
69	SLE RA 11	14	3	1052	3.02	126.72	-0.71
69	SLE RA 12	14	-2	1052	3.03	126.89	0.45
69	SLE RA 13	15	-5	1053	3.03	127.01	1.22
69	SLE RA 14	14	3	1052	3.02	126.72	-0.71
69	SLE RA 15	14	-2	1052	3.03	126.89	0.45
69	SLE RA 16	14	3	1052	3.02	126.72	-0.71
69	SLE RA 17	14	-2	1052	3.03	126.89	0.45
69	SLE RA 18	14	4	1096	3.17	131.21	-1
69	SLE RA 19	15	0	1096	3.18	131.39	0.16
69	SLE RA 20	14	4	1096	3.17	131.21	-1
69	SLE RA 21	15	0	1096	3.18	131.39	0.16
69	SLE FR 1	13	0	948	2.66	116.23	-0.05
69	SLE FR 2	13	-1	949	2.66	116.29	0.34
69	SLE FR 3	13	0	948	2.66	116.23	-0.05
69	SLE FR 4	14	0	993	2.82	120.78	0.05



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
69	SLE FR 5	13	1	993	2.81	120.72	-0.33
69	SLE FR 6	14	2	1022	2.91	123.72	-0.52
69	SLE QP 1	13	0	948	2.66	116.23	-0.05
69	SLE QP 2	13	1	993	2.81	120.72	-0.33
69	SLD 1	67	-89	867	2.31	108.71	22.23
69	SLD 2	60	-66	865	2.32	108.45	16.55
69	SLD 3	88	-201	909	2.65	113.6	50.58
69	SLD 4	82	-178	907	2.66	113.34	44.9
69	SLD 5	-2	137	892	2.15	109.8	-34.58
69	SLD 6	-8	160	890	2.16	109.53	-40.26
69	SLD 7	71	-238	1032	3.27	126.1	59.93
69	SLD 8	65	-215	1030	3.28	125.83	54.26
69	SLD 9	-38	218	955	2.35	115.62	-54.92
69	SLD 10	-45	241	953	2.36	115.35	-60.6
69	SLD 11	34	-157	1096	3.47	131.92	39.6
69	SLD 12	28	-134	1094	3.48	131.65	33.92
69	SLD 13	-56	181	1078	2.97	128.11	-45.57
69	SLD 14	-62	204	1076	2.98	127.85	-51.24
69	SLD 15	-34	69	1120	3.31	133	-17.21
69	SLD 16	-40	92	1118	3.32	132.74	-22.89
69	SLV 1	135	-202	705	1.65	92.74	50.66
69	SLV 2	121	-151	700	1.67	92.14	37.76
69	SLV 3	184	-461	802	2.43	104.09	115.93
69	SLV 4	170	-410	797	2.45	103.49	103.03
69	SLV 5	-21	315	760	1.27	95.32	-79.51
69	SLV 6	-35	366	755	1.3	94.72	-92.41
69	SLV 7	145	-548	1086	3.87	133.16	138.05
69	SLV 8	131	-496	1081	3.89	132.56	125.16
69	SLV 9	-104	499	905	1.73	108.89	-125.82
69	SLV 10	-118	551	900	1.75	108.29	-138.71
69	SLV 11	61	-363	1231	4.33	146.73	91.74
69	SLV 12	47	-312	1226	4.35	146.13	78.85
69	SLV 13	-144	413	1188	3.18	137.96	-103.7
69	SLV 14	-158	464	1183	3.2	137.36	-116.59
69	SLV 15	-94	154	1286	3.96	149.31	-38.43
69	SLV 16	-108	205	1281	3.98	148.71	-51.32
69	CRTFP Ux+	0	0	0	0	0	0
69	CRTFP Ux-	0	0	0	0	0	0
69	CRTFP Uy+	0	0	0	0	0	0
69	CRTFP Uy-	0	0	0	0	0	0
71	SLU 1	25	-106	2184	-23.5	-491.63	-36.71
71	SLU 2	25	-120	2173	-23.36	-490.03	-41.54
71	SLU 3	25	-106	2184	-23.5	-491.63	-36.71
71	SLU 4	25	-115	2177	-23.41	-490.67	-39.61
71	SLU 5	25	-120	2173	-23.36	-490.03	-41.54
71	SLU 6	25	-106	2184	-23.5	-491.63	-36.71
71	SLU 7	25	-115	2177	-23.41	-490.67	-39.61
71	SLU 8	25	-106	2184	-23.5	-491.63	-36.71
71	SLU 9	25	-115	2177	-23.41	-490.67	-39.61
71	SLU 10	32	-140	2539	-26.97	-568.33	-48.33
71	SLU 11	32	-126	2549	-27.11	-569.92	-43.49
71	SLU 12	32	-134	2543	-27.03	-568.97	-46.39
71	SLU 13	32	-140	2539	-26.97	-568.33	-48.33
71	SLU 14	32	-126	2549	-27.11	-569.92	-43.49
71	SLU 15	32	-134	2543	-27.03	-568.97	-46.39
71	SLU 16	32	-126	2549	-27.11	-569.92	-43.49
71	SLU 17	32	-134	2543	-27.03	-568.97	-46.39
71	SLU 18	35	-134	2706	-28.66	-603.48	-46.4
71	SLU 19	35	-143	2700	-28.57	-602.52	-49.3
71	SLU 20	35	-134	2706	-28.66	-603.48	-46.4
71	SLU 21	35	-143	2700	-28.57	-602.52	-49.3
71	SLU 22	30	-121	2445	-26.1	-547.46	-41.83
71	SLU 23	30	-135	2435	-25.96	-545.87	-46.67
71	SLU 24	30	-121	2445	-26.1	-547.46	-41.83
71	SLU 25	30	-129	2439	-26.01	-546.5	-44.73
71	SLU 26	30	-135	2435	-25.96	-545.87	-46.67
71	SLU 27	30	-121	2445	-26.1	-547.46	-41.83
71	SLU 28	30	-129	2439	-26.01	-546.5	-44.73
71	SLU 29	30	-121	2445	-26.1	-547.46	-41.83
71	SLU 30	30	-129	2439	-26.01	-546.5	-44.73
71	SLU 31	37	-155	2800	-29.57	-624.16	-53.45
71	SLU 32	37	-141	2810	-29.71	-625.76	-48.61
71	SLU 33	37	-149	2804	-29.63	-624.8	-51.51
71	SLU 34	37	-155	2800	-29.57	-624.16	-53.45
71	SLU 35	37	-141	2810	-29.71	-625.76	-48.61
71	SLU 36	37	-149	2804	-29.63	-624.8	-51.51
71	SLU 37	37	-141	2810	-29.71	-625.76	-48.61
71	SLU 38	37	-149	2804	-29.63	-624.8	-51.51
71	SLU 39	40	-149	2967	-31.26	-659.31	-51.52
71	SLU 40	40	-158	2961	-31.17	-658.35	-54.42
71	SLU 41	40	-149	2967	-31.26	-659.31	-51.52
71	SLU 42	40	-158	2961	-31.17	-658.35	-54.42
71	SLU 43	31	-133	2749	-29.65	-619.98	-45.97
71	SLU 44	31	-147	2739	-29.52	-618.38	-50.8
71	SLU 45	31	-133	2749	-29.65	-619.98	-45.97
71	SLU 46	31	-141	2743	-29.57	-619.02	-48.87
71	SLU 47	31	-147	2739	-29.52	-618.38	-50.8
71	SLU 48	31	-133	2749	-29.65	-619.98	-45.97
71	SLU 49	31	-141	2743	-29.57	-619.02	-48.87



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
71	SLU 50	31	-133	2749	-29.65	-619.98	-45.97
71	SLU 51	31	-141	2743	-29.57	-619.02	-48.87
71	SLU 52	38	-167	3104	-33.13	-696.67	-57.58
71	SLU 53	38	-153	3115	-33.27	-698.27	-52.75
71	SLU 54	38	-161	3108	-33.18	-697.31	-55.65
71	SLU 55	38	-167	3104	-33.13	-696.67	-57.58
71	SLU 56	38	-153	3115	-33.27	-698.27	-52.75
71	SLU 57	38	-161	3108	-33.18	-697.31	-55.65
71	SLU 58	38	-153	3115	-33.27	-698.27	-52.75
71	SLU 59	38	-161	3108	-33.18	-697.31	-55.65
71	SLU 60	41	-161	3271	-34.82	-731.82	-55.66
71	SLU 61	41	-170	3265	-34.73	-730.87	-58.56
71	SLU 62	41	-161	3271	-34.82	-731.82	-55.66
71	SLU 63	41	-170	3265	-34.73	-730.87	-58.56
71	SLU 64	36	-148	3010	-32.25	-675.81	-51.09
71	SLU 65	36	-162	3000	-32.11	-674.21	-55.92
71	SLU 66	36	-148	3010	-32.25	-675.81	-51.09
71	SLU 67	36	-156	3004	-32.17	-674.85	-53.99
71	SLU 68	36	-162	3000	-32.11	-674.21	-55.92
71	SLU 69	36	-148	3010	-32.25	-675.81	-51.09
71	SLU 70	36	-156	3004	-32.17	-674.85	-53.99
71	SLU 71	36	-148	3010	-32.25	-675.81	-51.09
71	SLU 72	36	-156	3004	-32.17	-674.85	-53.99
71	SLU 73	43	-181	3366	-35.73	-752.51	-62.7
71	SLU 74	43	-168	3376	-35.87	-754.1	-57.87
71	SLU 75	43	-176	3370	-35.78	-753.14	-60.77
71	SLU 76	43	-181	3366	-35.73	-752.51	-62.7
71	SLU 77	43	-168	3376	-35.87	-754.1	-57.87
71	SLU 78	43	-176	3370	-35.78	-753.14	-60.77
71	SLU 79	43	-168	3376	-35.87	-754.1	-57.87
71	SLU 80	43	-176	3370	-35.78	-753.14	-60.77
71	SLU 81	46	-176	3532	-37.41	-787.66	-60.78
71	SLU 82	46	-184	3526	-37.33	-786.7	-63.68
71	SLU 83	46	-176	3532	-37.41	-787.66	-60.78
71	SLU 84	46	-184	3526	-37.33	-786.7	-63.68
71	SLE RA 1	27	-111	2258	-24.24	-507.58	-38.18
71	SLE RA 2	27	-120	2251	-24.15	-506.52	-41.4
71	SLE RA 3	27	-111	2258	-24.24	-507.58	-38.18
71	SLE RA 4	27	-116	2254	-24.18	-506.94	-40.11
71	SLE RA 5	27	-120	2251	-24.15	-506.52	-41.4
71	SLE RA 6	27	-111	2258	-24.24	-507.58	-38.18
71	SLE RA 7	27	-116	2254	-24.18	-506.94	-40.11
71	SLE RA 8	27	-111	2258	-24.24	-507.58	-38.18
71	SLE RA 9	27	-116	2254	-24.18	-506.94	-40.11
71	SLE RA 10	31	-133	2495	-26.56	-558.71	-45.92
71	SLE RA 11	31	-124	2502	-26.65	-559.78	-42.7
71	SLE RA 12	31	-129	2498	-26.59	-559.14	-44.63
71	SLE RA 13	31	-133	2495	-26.56	-558.71	-45.92
71	SLE RA 14	31	-124	2502	-26.65	-559.78	-42.7
71	SLE RA 15	31	-129	2498	-26.59	-559.14	-44.63
71	SLE RA 16	31	-124	2502	-26.65	-559.78	-42.7
71	SLE RA 17	31	-129	2498	-26.59	-559.14	-44.63
71	SLE RA 18	33	-129	2606	-27.68	-582.15	-44.63
71	SLE RA 19	33	-135	2602	-27.62	-581.51	-46.57
71	SLE RA 20	33	-129	2606	-27.68	-582.15	-44.63
71	SLE RA 21	33	-135	2602	-27.62	-581.51	-46.57
71	SLE FR 1	27	-111	2258	-24.24	-507.58	-38.18
71	SLE FR 2	27	-112	2257	-24.22	-507.37	-38.82
71	SLE FR 3	27	-111	2258	-24.24	-507.58	-38.18
71	SLE FR 4	29	-118	2361	-25.25	-529.74	-40.76
71	SLE FR 5	29	-116	2363	-25.27	-529.95	-40.11
71	SLE FR 6	30	-120	2432	-25.96	-544.86	-41.4
71	SLE QP 1	27	-111	2258	-24.24	-507.58	-38.18
71	SLE QP 2	29	-116	2363	-25.27	-529.95	-40.11
71	SLD 1	83	113	2778	-29.9	-603.21	40.37
71	SLD 2	81	82	2778	-29.91	-603.12	29.55
71	SLD 3	102	-34	2610	-27.84	-575.43	-10.94
71	SLD 4	101	-65	2610	-27.85	-575.34	-21.76
71	SLD 5	15	185	2742	-29.79	-594.1	65.64
71	SLD 6	13	154	2742	-29.8	-594.01	54.82
71	SLD 7	82	-303	2182	-22.91	-501.49	-105.4
71	SLD 8	80	-334	2182	-22.92	-501.4	-116.21
71	SLD 9	-22	101	2543	-27.63	-558.5	35.99
71	SLD 10	-24	70	2543	-27.64	-558.41	25.17
71	SLD 11	44	-387	1983	-20.74	-465.89	-135.05
71	SLD 12	42	-418	1983	-20.75	-465.81	-145.86
71	SLD 13	-43	-168	2115	-22.69	-484.56	-58.47
71	SLD 14	-45	-199	2115	-22.71	-484.47	-69.28
71	SLD 15	-23	-314	1947	-20.63	-456.78	-109.78
71	SLD 16	-25	-345	1947	-20.64	-456.69	-120.59
71	SLV 1	152	413	3319	-35.95	-698.6	145.98
71	SLV 2	147	343	3319	-35.98	-698.4	121.41
71	SLV 3	197	73	2928	-31.15	-634.1	26.87
71	SLV 4	193	3	2929	-31.18	-633.89	2.3
71	SLV 5	-2	583	3241	-35.75	-678.44	204.96
71	SLV 6	-6	512	3242	-35.77	-678.24	180.39
71	SLV 7	150	-550	1940	-19.75	-463.44	-192.07
71	SLV 8	145	-621	1941	-19.77	-463.23	-216.63
71	SLV 9	-88	388	2784	-30.77	-596.67	136.41



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
71	SLV 10	-93	318	2785	-30.79	-596.46	111.84
71	SLV 11	64	-745	1484	-14.77	-381.66	-260.62
71	SLV 12	59	-815	1484	-14.8	-381.46	-285.19
71	SLV 13	-136	-235	1796	-19.36	-426.01	-82.53
71	SLV 14	-140	-305	1797	-19.39	-425.81	-107.09
71	SLV 15	-90	-575	1406	-14.57	-361.51	-201.64
71	SLV 16	-94	-645	1407	-14.59	-361.3	-226.2
71	CRTFP Ux+	0	0	0	0	0	0
71	CRTFP Ux-	0	0	0	0	0	0
71	CRTFP Uy+	0	0	0	0	0	0
71	CRTFP Uy-	0	0	0	0	0	0
73	SLU 1	12	-1	1005	2.69	136.81	0.28
73	SLU 2	13	-13	1008	2.72	137.43	3.17
73	SLU 3	12	-1	1005	2.69	136.81	0.28
73	SLU 4	12	-8	1006	2.7	137.18	2.01
73	SLU 5	13	-13	1008	2.72	137.43	3.17
73	SLU 6	12	-1	1005	2.69	136.81	0.28
73	SLU 7	12	-8	1006	2.7	137.18	2.01
73	SLU 8	12	-1	1005	2.69	136.81	0.28
73	SLU 9	12	-8	1006	2.7	137.18	2.01
73	SLU 10	14	-9	1181	3.29	158.67	2.2
73	SLU 11	13	3	1178	3.26	158.05	-0.69
73	SLU 12	14	-4	1180	3.28	158.42	1.05
73	SLU 13	14	-9	1181	3.29	158.67	2.2
73	SLU 14	13	3	1178	3.26	158.05	-0.69
73	SLU 15	14	-4	1180	3.28	158.42	1.05
73	SLU 16	13	3	1178	3.26	158.05	-0.69
73	SLU 17	14	-4	1180	3.28	158.42	1.05
73	SLU 18	14	4	1253	3.5	167.16	-1.1
73	SLU 19	15	-3	1254	3.52	167.53	0.63
73	SLU 20	14	4	1253	3.5	167.16	-1.1
73	SLU 21	15	-3	1254	3.52	167.53	0.63
73	SLU 22	13	1	1133	3.09	152.09	-0.31
73	SLU 23	14	-10	1135	3.12	152.71	2.58
73	SLU 24	13	1	1133	3.09	152.09	-0.31
73	SLU 25	14	-6	1134	3.11	152.46	1.43
73	SLU 26	14	-10	1135	3.12	152.71	2.58
73	SLU 27	13	1	1133	3.09	152.09	-0.31
73	SLU 28	14	-6	1134	3.11	152.46	1.43
73	SLU 29	13	1	1133	3.09	152.09	-0.31
73	SLU 30	14	-6	1134	3.11	152.46	1.43
73	SLU 31	16	-6	1309	3.69	173.95	1.62
73	SLU 32	15	5	1306	3.66	173.33	-1.27
73	SLU 33	15	-2	1308	3.68	173.71	0.46
73	SLU 34	16	-6	1309	3.69	173.95	1.62
73	SLU 35	15	5	1306	3.66	173.33	-1.27
73	SLU 36	15	-2	1308	3.68	173.71	0.46
73	SLU 37	15	5	1306	3.66	173.33	-1.27
73	SLU 38	15	-2	1308	3.68	173.71	0.46
73	SLU 39	15	7	1381	3.91	182.44	-1.68
73	SLU 40	16	0	1382	3.92	182.81	0.05
73	SLU 41	15	7	1381	3.91	182.44	-1.68
73	SLU 42	16	0	1382	3.92	182.81	0.05
73	SLU 43	15	-2	1263	3.36	172.61	0.56
73	SLU 44	16	-14	1265	3.38	173.23	3.45
73	SLU 45	15	-2	1263	3.36	172.61	0.56
73	SLU 46	15	-9	1264	3.37	172.98	2.29
73	SLU 47	16	-14	1265	3.38	173.23	3.45
73	SLU 48	15	-2	1263	3.36	172.61	0.56
73	SLU 49	15	-9	1264	3.37	172.98	2.29
73	SLU 50	15	-2	1263	3.36	172.61	0.56
73	SLU 51	15	-9	1264	3.37	172.98	2.29
73	SLU 52	17	-10	1439	3.96	194.48	2.49
73	SLU 53	16	2	1436	3.93	193.86	-0.4
73	SLU 54	17	-5	1438	3.94	194.23	1.33
73	SLU 55	17	-10	1439	3.96	194.48	2.49
73	SLU 56	16	2	1436	3.93	193.86	-0.4
73	SLU 57	17	-5	1438	3.94	194.23	1.33
73	SLU 58	16	2	1436	3.93	193.86	-0.4
73	SLU 59	17	-5	1438	3.94	194.23	1.33
73	SLU 60	17	3	1510	4.17	202.96	-0.81
73	SLU 61	18	-4	1512	4.19	203.33	0.92
73	SLU 62	17	3	1510	4.17	202.96	-0.81
73	SLU 63	18	-4	1512	4.19	203.33	0.92
73	SLU 64	16	0	1390	3.76	187.89	-0.02
73	SLU 65	17	-11	1393	3.79	188.51	2.87
73	SLU 66	16	0	1390	3.76	187.89	-0.02
73	SLU 67	17	-7	1392	3.78	188.27	1.71
73	SLU 68	17	-11	1393	3.79	188.51	2.87
73	SLU 69	16	0	1390	3.76	187.89	-0.02
73	SLU 70	17	-7	1392	3.78	188.27	1.71
73	SLU 71	16	0	1390	3.76	187.89	-0.02
73	SLU 72	17	-7	1392	3.78	188.27	1.71
73	SLU 73	19	-8	1566	4.36	209.76	1.9
73	SLU 74	18	4	1564	4.33	209.14	-0.99
73	SLU 75	18	-3	1565	4.35	209.51	0.75
73	SLU 76	19	-8	1566	4.36	209.76	1.9
73	SLU 77	18	4	1564	4.33	209.14	-0.99
73	SLU 78	18	-3	1565	4.35	209.51	0.75



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
73	SLU 79	18	4	1564	4.33	209.14	-0.99
73	SLU 80	18	-3	1565	4.35	209.51	0.75
73	SLU 81	19	6	1638	4.58	218.24	-1.4
73	SLU 82	19	-1	1640	4.59	218.61	0.33
73	SLU 83	19	6	1638	4.58	218.24	-1.4
73	SLU 84	19	-1	1640	4.59	218.61	0.33
73	SLE RA 1	12	0	1041	2.8	141.17	0.11
73	SLE RA 2	13	-8	1043	2.82	141.59	2.04
73	SLE RA 3	12	0	1041	2.8	141.17	0.11
73	SLE RA 4	12	-5	1042	2.81	141.42	1.27
73	SLE RA 5	13	-8	1043	2.82	141.59	2.04
73	SLE RA 6	12	0	1041	2.8	141.17	0.11
73	SLE RA 7	12	-5	1042	2.81	141.42	1.27
73	SLE RA 8	12	0	1041	2.8	141.17	0.11
73	SLE RA 9	12	-5	1042	2.81	141.42	1.27
73	SLE RA 10	14	-6	1159	3.2	155.75	1.39
73	SLE RA 11	13	2	1157	3.18	155.34	-0.53
73	SLE RA 12	14	-2	1158	3.2	155.59	0.62
73	SLE RA 13	14	-6	1159	3.2	155.75	1.39
73	SLE RA 14	13	2	1157	3.18	155.34	-0.53
73	SLE RA 15	14	-2	1158	3.2	155.59	0.62
73	SLE RA 16	13	2	1157	3.18	155.34	-0.53
73	SLE RA 17	14	-2	1158	3.2	155.59	0.62
73	SLE RA 18	14	3	1207	3.35	161.41	-0.81
73	SLE RA 19	14	-1	1208	3.36	161.66	0.35
73	SLE RA 20	14	3	1207	3.35	161.41	-0.81
73	SLE RA 21	14	-1	1208	3.36	161.66	0.35
73	SLE FR 1	12	0	1041	2.8	141.17	0.11
73	SLE FR 2	12	-2	1042	2.81	141.26	0.5
73	SLE FR 3	12	0	1041	2.8	141.17	0.11
73	SLE FR 4	13	-1	1091	2.97	147.33	0.22
73	SLE FR 5	13	1	1091	2.97	147.24	-0.16
73	SLE FR 6	13	1	1124	3.08	151.29	-0.35
73	SLE QP 1	12	0	1041	2.8	141.17	0.11
73	SLE QP 2	13	1	1091	2.97	147.24	-0.16
73	SLD 1	67	-89	951	2.43	131.5	22.32
73	SLD 2	61	-67	949	2.44	131.28	16.66
73	SLD 3	86	-201	1003	2.78	138.82	50.56
73	SLD 4	81	-179	1001	2.79	138.6	44.9
73	SLD 5	1	136	970	2.28	131.5	-34.26
73	SLD 6	-5	158	969	2.29	131.28	-39.92
73	SLD 7	66	-238	1144	3.43	155.89	59.86
73	SLD 8	61	-215	1143	3.44	155.67	54.2
73	SLD 9	-36	217	1039	2.49	138.82	-54.53
73	SLD 10	-41	239	1037	2.5	138.59	-60.18
73	SLD 11	30	-157	1213	3.65	163.21	39.59
73	SLD 12	24	-134	1212	3.66	162.99	33.93
73	SLD 13	-56	180	1181	3.14	155.89	-45.23
73	SLD 14	-61	203	1179	3.15	155.67	-50.88
73	SLD 15	-36	68	1233	3.49	163.21	-16.99
73	SLD 16	-42	91	1231	3.5	162.99	-22.65
73	SLV 1	136	-203	769	1.73	110.63	50.66
73	SLV 2	124	-152	765	1.75	110.12	37.81
73	SLV 3	181	-461	890	2.54	127.63	115.65
73	SLV 4	168	-410	886	2.56	127.12	102.81
73	SLV 5	-14	313	812	1.37	110.65	-79
73	SLV 6	-26	364	808	1.39	110.15	-91.84
73	SLV 7	135	-547	1216	4.05	167.32	137.65
73	SLV 8	123	-496	1212	4.07	166.82	124.81
73	SLV 9	-98	497	970	1.86	127.67	-125.13
73	SLV 10	-110	548	966	1.88	127.17	-137.98
73	SLV 11	51	-363	1374	4.54	184.34	91.51
73	SLV 12	39	-312	1370	4.57	183.84	78.67
73	SLV 13	-143	411	1296	3.37	167.37	-103.14
73	SLV 14	-156	462	1292	3.4	166.86	-115.98
73	SLV 15	-98	153	1417	4.18	184.37	-38.14
73	SLV 16	-111	204	1413	4.2	183.86	-50.99
73	CRTFP Ux+	0	0	0	0	0	0
73	CRTFP Ux-	0	0	0	0	0	0
73	CRTFP Uy+	0	0	0	0	0	0
73	CRTFP Uy-	0	0	0	0	0	0
75	SLU 1	26	-106	2270	-24.56	-533.96	-36.5
75	SLU 2	27	-120	2262	-24.46	-532.84	-41.33
75	SLU 3	26	-106	2270	-24.56	-533.96	-36.5
75	SLU 4	27	-114	2265	-24.5	-533.29	-39.39
75	SLU 5	27	-120	2262	-24.46	-532.84	-41.33
75	SLU 6	26	-106	2270	-24.56	-533.96	-36.5
75	SLU 7	27	-114	2265	-24.5	-533.29	-39.39
75	SLU 8	26	-106	2270	-24.56	-533.96	-36.5
75	SLU 9	27	-114	2265	-24.5	-533.29	-39.39
75	SLU 10	34	-139	2646	-28.31	-620.1	-48.08
75	SLU 11	34	-125	2654	-28.41	-621.22	-43.25
75	SLU 12	34	-134	2649	-28.35	-620.55	-46.15
75	SLU 13	34	-139	2646	-28.31	-620.1	-48.08
75	SLU 14	34	-125	2654	-28.41	-621.22	-43.25
75	SLU 15	34	-134	2649	-28.35	-620.55	-46.15
75	SLU 16	34	-125	2654	-28.41	-621.22	-43.25
75	SLU 17	34	-134	2649	-28.35	-620.55	-46.15
75	SLU 18	37	-134	2819	-30.06	-658.61	-46.15



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
75	SLU 19	37	-142	2814	-30	-657.95	-49.04
75	SLU 20	37	-134	2819	-30.06	-658.61	-46.15
75	SLU 21	37	-142	2814	-30	-657.95	-49.04
75	SLU 22	32	-121	2544	-27.32	-595.99	-41.59
75	SLU 23	32	-134	2536	-27.21	-594.88	-46.42
75	SLU 24	32	-121	2544	-27.32	-595.99	-41.59
75	SLU 25	32	-129	2539	-27.26	-595.32	-44.49
75	SLU 26	32	-134	2536	-27.21	-594.88	-46.42
75	SLU 27	32	-121	2544	-27.32	-595.99	-41.59
75	SLU 28	32	-129	2539	-27.26	-595.32	-44.49
75	SLU 29	32	-121	2544	-27.32	-595.99	-41.59
75	SLU 30	32	-129	2539	-27.26	-595.32	-44.49
75	SLU 31	39	-154	2920	-31.07	-682.14	-53.18
75	SLU 32	39	-140	2928	-31.17	-683.25	-48.35
75	SLU 33	39	-148	2923	-31.11	-682.58	-51.25
75	SLU 34	39	-154	2920	-31.07	-682.14	-53.18
75	SLU 35	39	-140	2928	-31.17	-683.25	-48.35
75	SLU 36	39	-148	2923	-31.11	-682.58	-51.25
75	SLU 37	39	-140	2928	-31.17	-683.25	-48.35
75	SLU 38	39	-148	2923	-31.11	-682.58	-51.25
75	SLU 39	42	-149	3093	-32.82	-720.65	-51.24
75	SLU 40	42	-157	3088	-32.76	-719.98	-54.14
75	SLU 41	42	-149	3093	-32.82	-720.65	-51.24
75	SLU 42	42	-157	3088	-32.76	-719.98	-54.14
75	SLU 43	32	-132	2858	-30.99	-672.87	-45.7
75	SLU 44	33	-146	2849	-30.88	-671.76	-50.53
75	SLU 45	32	-132	2858	-30.99	-672.87	-45.7
75	SLU 46	33	-141	2852	-30.92	-672.21	-48.6
75	SLU 47	33	-146	2849	-30.88	-671.76	-50.53
75	SLU 48	32	-132	2858	-30.99	-672.87	-45.7
75	SLU 49	33	-141	2852	-30.92	-672.21	-48.6
75	SLU 50	32	-132	2858	-30.99	-672.87	-45.7
75	SLU 51	33	-141	2852	-30.92	-672.21	-48.6
75	SLU 52	40	-166	3233	-34.73	-759.02	-57.28
75	SLU 53	40	-152	3242	-34.84	-760.13	-52.45
75	SLU 54	40	-160	3236	-34.77	-759.47	-55.35
75	SLU 55	40	-166	3233	-34.73	-759.02	-57.28
75	SLU 56	40	-152	3242	-34.84	-760.13	-52.45
75	SLU 57	40	-160	3236	-34.77	-759.47	-55.35
75	SLU 58	40	-152	3242	-34.84	-760.13	-52.45
75	SLU 59	40	-160	3236	-34.77	-759.47	-55.35
75	SLU 60	43	-160	3406	-36.49	-797.53	-55.35
75	SLU 61	43	-169	3401	-36.42	-796.86	-58.24
75	SLU 62	43	-160	3406	-36.49	-797.53	-55.35
75	SLU 63	43	-169	3401	-36.42	-796.86	-58.24
75	SLU 64	38	-147	3131	-33.74	-734.91	-50.8
75	SLU 65	38	-161	3123	-33.64	-733.8	-55.63
75	SLU 66	38	-147	3131	-33.74	-734.91	-50.8
75	SLU 67	38	-155	3126	-33.68	-734.24	-53.69
75	SLU 68	38	-161	3123	-33.64	-733.8	-55.63
75	SLU 69	38	-147	3131	-33.74	-734.91	-50.8
75	SLU 70	38	-155	3126	-33.68	-734.24	-53.69
75	SLU 71	38	-147	3131	-33.74	-734.91	-50.8
75	SLU 72	38	-155	3126	-33.68	-734.24	-53.69
75	SLU 73	45	-181	3507	-37.49	-821.06	-62.38
75	SLU 74	45	-167	3515	-37.59	-822.17	-57.55
75	SLU 75	45	-175	3510	-37.53	-821.5	-60.45
75	SLU 76	45	-181	3507	-37.49	-821.06	-62.38
75	SLU 77	45	-167	3515	-37.59	-822.17	-57.55
75	SLU 78	45	-175	3510	-37.53	-821.5	-60.45
75	SLU 79	45	-167	3515	-37.59	-822.17	-57.55
75	SLU 80	45	-175	3510	-37.53	-821.5	-60.45
75	SLU 81	48	-175	3680	-39.24	-859.57	-60.45
75	SLU 82	49	-184	3675	-39.18	-858.9	-63.34
75	SLU 83	48	-175	3680	-39.24	-859.57	-60.45
75	SLU 84	49	-184	3675	-39.18	-858.9	-63.34
75	SLE RA 1	28	-110	2349	-25.35	-551.68	-37.95
75	SLE RA 2	28	-119	2343	-25.28	-550.94	-41.17
75	SLE RA 3	28	-110	2349	-25.35	-551.68	-37.95
75	SLE RA 4	28	-115	2345	-25.31	-551.24	-39.88
75	SLE RA 5	28	-119	2343	-25.28	-550.94	-41.17
75	SLE RA 6	28	-110	2349	-25.35	-551.68	-37.95
75	SLE RA 7	28	-115	2345	-25.31	-551.24	-39.88
75	SLE RA 8	28	-110	2349	-25.35	-551.68	-37.95
75	SLE RA 9	28	-115	2345	-25.31	-551.24	-39.88
75	SLE RA 10	33	-132	2599	-27.85	-609.11	-45.68
75	SLE RA 11	33	-123	2605	-27.92	-609.85	-42.46
75	SLE RA 12	33	-129	2601	-27.88	-609.41	-44.39
75	SLE RA 13	33	-132	2599	-27.85	-609.11	-45.68
75	SLE RA 14	33	-123	2605	-27.92	-609.85	-42.46
75	SLE RA 15	33	-129	2601	-27.88	-609.41	-44.39
75	SLE RA 16	33	-123	2605	-27.92	-609.85	-42.46
75	SLE RA 17	33	-129	2601	-27.88	-609.41	-44.39
75	SLE RA 18	35	-129	2714	-29.02	-634.79	-44.39
75	SLE RA 19	35	-134	2711	-28.98	-634.34	-46.32
75	SLE RA 20	35	-129	2714	-29.02	-634.79	-44.39
75	SLE RA 21	35	-134	2711	-28.98	-634.34	-46.32
75	SLE FR 1	28	-110	2349	-25.35	-551.68	-37.95
75	SLE FR 2	28	-112	2347	-25.34	-551.53	-38.6



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
75	SLE FR 3	28	-110	2349	-25.35	-551.68	-37.95
75	SLE FR 4	30	-117	2457	-26.44	-576.46	-40.53
75	SLE FR 5	30	-116	2458	-26.45	-576.61	-39.88
75	SLE FR 6	31	-119	2531	-27.18	-593.23	-41.17
75	SLE QP 1	28	-110	2349	-25.35	-551.68	-37.95
75	SLE QP 2	30	-116	2458	-26.45	-576.61	-39.88
75	SLD 1	92	113	2854	-30.58	-646.57	40.61
75	SLD 2	89	82	2854	-30.59	-646.47	29.8
75	SLD 3	115	-33	2703	-28.88	-622.82	-10.69
75	SLD 4	112	-64	2702	-28.89	-622.72	-21.5
75	SLD 5	15	186	2807	-30.26	-633.65	65.85
75	SLD 6	12	155	2807	-30.27	-633.55	55.04
75	SLD 7	91	-302	2302	-24.6	-554.49	-105.15
75	SLD 8	88	-333	2302	-24.61	-554.39	-115.96
75	SLD 9	-28	102	2615	-28.29	-598.83	36.19
75	SLD 10	-31	71	2615	-28.3	-598.74	25.38
75	SLD 11	48	-386	2110	-22.63	-519.67	-134.81
75	SLD 12	45	-417	2110	-22.64	-519.57	-145.62
75	SLD 13	-52	-167	2214	-24.01	-530.5	-58.27
75	SLD 14	-55	-198	2214	-24.02	-530.41	-69.07
75	SLD 15	-29	-313	2063	-22.31	-506.76	-109.56
75	SLD 16	-32	-344	2062	-22.32	-506.66	-120.37
75	SLV 1	172	413	3369	-35.97	-737.41	146.23
75	SLV 2	164	343	3368	-35.99	-737.18	121.68
75	SLV 3	224	73	3017	-32.02	-682.36	27.14
75	SLV 4	217	3	3017	-32.04	-682.13	2.6
75	SLV 5	-4	583	3265	-35.28	-708.42	205.16
75	SLV 6	-11	513	3265	-35.3	-708.19	180.61
75	SLV 7	170	-550	2092	-22.13	-524.93	-191.8
75	SLV 8	163	-620	2092	-22.15	-524.7	-216.34
75	SLV 9	-103	389	2825	-30.75	-628.52	136.58
75	SLV 10	-110	319	2824	-30.77	-628.3	112.03
75	SLV 11	71	-744	1652	-17.6	-445.03	-260.38
75	SLV 12	64	-814	1651	-17.62	-444.81	-284.92
75	SLV 13	-157	-234	1900	-20.86	-471.09	-82.36
75	SLV 14	-164	-304	1900	-20.88	-470.86	-106.91
75	SLV 15	-104	-574	1548	-16.92	-416.04	-201.45
75	SLV 16	-112	-644	1548	-16.93	-415.82	-226
75	CRTFP Ux+	0	0	0	0	0	0
75	CRTFP Ux-	0	0	0	0	0	0
75	CRTFP Uy+	0	0	0	0	0	0
75	CRTFP Uy-	0	0	0	0	0	0
77	SLU 1	12	-2	1099	2.82	165	0.46
77	SLU 2	12	-13	1102	2.84	165.81	3.33
77	SLU 3	12	-2	1099	2.82	165	0.46
77	SLU 4	12	-9	1101	2.83	165.49	2.18
77	SLU 5	12	-13	1102	2.84	165.81	3.33
77	SLU 6	12	-2	1099	2.82	165	0.46
77	SLU 7	12	-9	1101	2.83	165.49	2.18
77	SLU 8	12	-2	1099	2.82	165	0.46
77	SLU 9	12	-9	1101	2.83	165.49	2.18
77	SLU 10	14	-10	1296	3.45	193.54	2.41
77	SLU 11	14	2	1292	3.42	192.73	-0.46
77	SLU 12	14	-5	1294	3.44	193.21	1.26
77	SLU 13	14	-10	1296	3.45	193.54	2.41
77	SLU 14	14	2	1292	3.42	192.73	-0.46
77	SLU 15	14	-5	1294	3.44	193.21	1.26
77	SLU 16	14	2	1292	3.42	192.73	-0.46
77	SLU 17	14	-5	1294	3.44	193.21	1.26
77	SLU 18	15	3	1375	3.68	204.61	-0.86
77	SLU 19	15	-4	1377	3.7	205.1	0.87
77	SLU 20	15	3	1375	3.68	204.61	-0.86
77	SLU 21	15	-4	1377	3.7	205.1	0.87
77	SLU 22	14	0	1241	3.25	184.93	-0.1
77	SLU 23	14	-11	1244	3.27	185.74	2.78
77	SLU 24	14	0	1241	3.25	184.93	-0.1
77	SLU 25	14	-7	1243	3.26	185.41	1.63
77	SLU 26	14	-11	1244	3.27	185.74	2.78
77	SLU 27	14	0	1241	3.25	184.93	-0.1
77	SLU 28	14	-7	1243	3.26	185.41	1.63
77	SLU 29	14	0	1241	3.25	184.93	-0.1
77	SLU 30	14	-7	1243	3.26	185.41	1.63
77	SLU 31	16	-8	1438	3.88	213.46	1.85
77	SLU 32	16	4	1434	3.85	212.65	-1.02
77	SLU 33	16	-3	1436	3.87	213.14	0.71
77	SLU 34	16	-8	1438	3.88	213.46	1.85
77	SLU 35	16	4	1434	3.85	212.65	-1.02
77	SLU 36	16	-3	1436	3.87	213.14	0.71
77	SLU 37	16	4	1434	3.85	212.65	-1.02
77	SLU 38	16	-3	1436	3.87	213.14	0.71
77	SLU 39	17	5	1517	4.11	224.53	-1.41
77	SLU 40	17	-1	1519	4.13	225.02	0.31
77	SLU 41	17	5	1517	4.11	224.53	-1.41
77	SLU 42	17	-1	1519	4.13	225.02	0.31
77	SLU 43	15	-3	1380	3.51	207.67	0.79
77	SLU 44	16	-15	1383	3.54	208.48	3.66
77	SLU 45	15	-3	1380	3.51	207.67	0.79
77	SLU 46	15	-10	1382	3.53	208.16	2.51
77	SLU 47	16	-15	1383	3.54	208.48	3.66



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
77	SLU 48	15	-3	1380	3.51	207.67	0.79
77	SLU 49	15	-10	1382	3.53	208.16	2.51
77	SLU 50	15	-3	1380	3.51	207.67	0.79
77	SLU 51	15	-10	1382	3.53	208.16	2.51
77	SLU 52	18	-11	1577	4.15	236.21	2.74
77	SLU 53	17	0	1573	4.12	235.4	-0.13
77	SLU 54	18	-7	1575	4.14	235.88	1.59
77	SLU 55	18	-11	1577	4.15	236.21	2.74
77	SLU 56	17	0	1573	4.12	235.4	-0.13
77	SLU 57	18	-7	1575	4.14	235.88	1.59
77	SLU 58	17	0	1573	4.12	235.4	-0.13
77	SLU 59	18	-7	1575	4.14	235.88	1.59
77	SLU 60	18	2	1656	4.38	247.28	-0.53
77	SLU 61	18	-5	1658	4.4	247.76	1.19
77	SLU 62	18	2	1656	4.38	247.28	-0.53
77	SLU 63	18	-5	1658	4.4	247.76	1.19
77	SLU 64	17	-1	1522	3.94	227.6	0.23
77	SLU 65	17	-13	1525	3.97	228.41	3.11
77	SLU 66	17	-1	1522	3.94	227.6	0.23
77	SLU 67	17	-8	1524	3.96	228.08	1.96
77	SLU 68	17	-13	1525	3.97	228.41	3.11
77	SLU 69	17	-1	1522	3.94	227.6	0.23
77	SLU 70	17	-8	1524	3.96	228.08	1.96
77	SLU 71	17	-1	1522	3.94	227.6	0.23
77	SLU 72	17	-8	1524	3.96	228.08	1.96
77	SLU 73	19	-9	1719	4.58	256.13	2.18
77	SLU 74	19	2	1715	4.55	255.32	-0.69
77	SLU 75	19	-4	1717	4.57	255.81	1.03
77	SLU 76	19	-9	1719	4.58	256.13	2.18
77	SLU 77	19	2	1715	4.55	255.32	-0.69
77	SLU 78	19	-4	1717	4.57	255.81	1.03
77	SLU 79	19	2	1715	4.55	255.32	-0.69
77	SLU 80	19	-4	1717	4.57	255.81	1.03
77	SLU 81	20	4	1798	4.81	267.2	-1.08
77	SLU 82	20	-3	1800	4.83	267.69	0.64
77	SLU 83	20	4	1798	4.81	267.2	-1.08
77	SLU 84	20	-3	1800	4.83	267.69	0.64
77	SLE RA 1	13	-1	1139	2.94	170.69	0.3
77	SLE RA 2	13	-9	1142	2.96	171.23	2.22
77	SLE RA 3	13	-1	1139	2.94	170.69	0.3
77	SLE RA 4	13	-6	1141	2.95	171.02	1.45
77	SLE RA 5	13	-9	1142	2.96	171.23	2.22
77	SLE RA 6	13	-1	1139	2.94	170.69	0.3
77	SLE RA 7	13	-6	1141	2.95	171.02	1.45
77	SLE RA 8	13	-1	1139	2.94	170.69	0.3
77	SLE RA 9	13	-6	1141	2.95	171.02	1.45
77	SLE RA 10	14	-7	1271	3.36	189.72	1.6
77	SLE RA 11	14	1	1268	3.34	189.18	-0.31
77	SLE RA 12	14	-4	1270	3.36	189.5	0.84
77	SLE RA 13	14	-7	1271	3.36	189.72	1.6
77	SLE RA 14	14	1	1268	3.34	189.18	-0.31
77	SLE RA 15	14	-4	1270	3.36	189.5	0.84
77	SLE RA 16	14	1	1268	3.34	189.18	-0.31
77	SLE RA 17	14	-4	1270	3.36	189.5	0.84
77	SLE RA 18	15	2	1323	3.52	197.1	-0.58
77	SLE RA 19	15	-2	1325	3.53	197.42	0.57
77	SLE RA 20	15	2	1323	3.52	197.1	-0.58
77	SLE RA 21	15	-2	1325	3.53	197.42	0.57
77	SLE FR 1	13	-1	1139	2.94	170.69	0.3
77	SLE FR 2	13	-3	1140	2.94	170.8	0.68
77	SLE FR 3	13	-1	1139	2.94	170.69	0.3
77	SLE FR 4	13	-2	1195	3.12	178.72	0.42
77	SLE FR 5	13	0	1194	3.11	178.62	0.04
77	SLE FR 6	14	0	1231	3.23	183.9	-0.14
77	SLE QP 1	13	-1	1139	2.94	170.69	0.3
77	SLE QP 2	13	0	1194	3.11	178.62	0.04
77	SLD 1	90	-90	1038	2.55	158.49	22.44
77	SLD 2	85	-68	1036	2.56	158.34	16.8
77	SLD 3	69	-202	1101	2.9	168.41	50.52
77	SLD 4	64	-179	1099	2.91	168.25	44.89
77	SLD 5	70	134	1052	2.39	157.59	-33.87
77	SLD 6	64	157	1050	2.4	157.43	-39.51
77	SLD 7	0	-238	1263	3.59	190.65	59.76
77	SLD 8	-5	-216	1261	3.6	190.49	54.13
77	SLD 9	31	215	1128	2.62	166.74	-54.05
77	SLD 10	26	237	1126	2.63	166.58	-59.68
77	SLD 11	-38	-157	1338	3.82	199.8	39.58
77	SLD 12	-43	-135	1337	3.83	199.64	33.95
77	SLD 13	-37	179	1289	3.31	188.98	-44.82
77	SLD 14	-43	201	1288	3.32	188.82	-50.45
77	SLD 15	-58	67	1353	3.67	198.9	-16.73
77	SLD 16	-63	89	1351	3.68	198.74	-22.36
77	SLV 1	188	-203	834	1.8	131.91	50.67
77	SLV 2	176	-152	830	1.82	131.55	37.88
77	SLV 3	141	-460	981	2.63	154.96	115.32
77	SLV 4	129	-409	977	2.66	154.6	102.53
77	SLV 5	142	311	865	1.45	129.77	-78.36
77	SLV 6	130	362	861	1.47	129.42	-91.15
77	SLV 7	-16	-546	1354	4.23	206.6	137.16



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
77	SLV 8	-28	-495	1351	4.25	206.24	124.37
77	SLV 9	55	494	1038	1.98	150.99	-124.3
77	SLV 10	43	546	1035	2	150.63	-137.09
77	SLV 11	-104	-363	1528	4.76	227.81	91.22
77	SLV 12	-116	-311	1524	4.78	227.46	78.44
77	SLV 13	-102	409	1412	3.57	202.63	-102.46
77	SLV 14	-114	460	1408	3.59	202.28	-115.25
77	SLV 15	-150	152	1559	4.4	225.68	-37.8
77	SLV 16	-162	203	1555	4.42	225.32	-50.59
77	CRTFP Ux+	0	0	0	0	0	0
77	CRTFP Ux-	0	0	0	0	0	0
77	CRTFP Uy+	0	0	0	0	0	0
77	CRTFP Uy-	0	0	0	0	0	0
79	SLU 1	28	-105	2389	-27.1	-599.42	-36.19
79	SLU 2	28	-119	2382	-27.02	-598.61	-41.01
79	SLU 3	28	-105	2389	-27.1	-599.42	-36.19
79	SLU 4	28	-113	2385	-27.05	-598.93	-39.09
79	SLU 5	28	-119	2382	-27.02	-598.61	-41.01
79	SLU 6	28	-105	2389	-27.1	-599.42	-36.19
79	SLU 7	28	-113	2385	-27.05	-598.93	-39.09
79	SLU 8	28	-105	2389	-27.1	-599.42	-36.19
79	SLU 9	28	-113	2385	-27.05	-598.93	-39.09
79	SLU 10	36	-138	2791	-31.4	-699.38	-47.73
79	SLU 11	36	-124	2798	-31.48	-700.19	-42.91
79	SLU 12	36	-133	2794	-31.43	-699.71	-45.8
79	SLU 13	36	-138	2791	-31.4	-699.38	-47.73
79	SLU 14	36	-124	2798	-31.48	-700.19	-42.91
79	SLU 15	36	-133	2794	-31.43	-699.71	-45.8
79	SLU 16	36	-124	2798	-31.48	-700.19	-42.91
79	SLU 17	36	-133	2794	-31.43	-699.71	-45.8
79	SLU 18	39	-133	2973	-33.36	-743.38	-45.79
79	SLU 19	39	-141	2969	-33.31	-742.89	-48.68
79	SLU 20	39	-133	2973	-33.36	-743.38	-45.79
79	SLU 21	39	-141	2969	-33.31	-742.89	-48.68
79	SLU 22	34	-120	2680	-30.22	-670.93	-41.26
79	SLU 23	34	-133	2673	-30.14	-670.11	-46.08
79	SLU 24	34	-120	2680	-30.22	-670.93	-41.26
79	SLU 25	34	-128	2676	-30.17	-670.44	-44.15
79	SLU 26	34	-133	2673	-30.14	-670.11	-46.08
79	SLU 27	34	-120	2680	-30.22	-670.93	-41.26
79	SLU 28	34	-128	2676	-30.17	-670.44	-44.15
79	SLU 29	34	-120	2680	-30.22	-670.93	-41.26
79	SLU 30	34	-128	2676	-30.17	-670.44	-44.15
79	SLU 31	42	-153	3082	-34.52	-770.89	-52.8
79	SLU 32	42	-139	3089	-34.61	-771.7	-47.98
79	SLU 33	42	-148	3085	-34.56	-771.21	-50.87
79	SLU 34	42	-153	3082	-34.52	-770.89	-52.8
79	SLU 35	42	-139	3089	-34.61	-771.7	-47.98
79	SLU 36	42	-148	3085	-34.56	-771.21	-50.87
79	SLU 37	42	-139	3089	-34.61	-771.7	-47.98
79	SLU 38	42	-148	3085	-34.56	-771.21	-50.87
79	SLU 39	45	-148	3264	-36.48	-814.89	-50.85
79	SLU 40	45	-156	3260	-36.43	-814.4	-53.75
79	SLU 41	45	-148	3264	-36.48	-814.89	-50.85
79	SLU 42	45	-156	3260	-36.43	-814.4	-53.75
79	SLU 43	34	-131	3006	-34.16	-754.73	-45.31
79	SLU 44	34	-145	2999	-34.07	-753.92	-50.14
79	SLU 45	34	-131	3006	-34.16	-754.73	-45.31
79	SLU 46	34	-140	3002	-34.11	-754.24	-48.21
79	SLU 47	34	-145	2999	-34.07	-753.92	-50.14
79	SLU 48	34	-131	3006	-34.16	-754.73	-45.31
79	SLU 49	34	-140	3002	-34.11	-754.24	-48.21
79	SLU 50	34	-131	3006	-34.16	-754.73	-45.31
79	SLU 51	34	-140	3002	-34.11	-754.24	-48.21
79	SLU 52	42	-165	3408	-38.46	-854.69	-56.85
79	SLU 53	42	-151	3415	-38.54	-855.5	-52.03
79	SLU 54	42	-159	3411	-38.49	-855.02	-54.92
79	SLU 55	42	-165	3408	-38.46	-854.69	-56.85
79	SLU 56	42	-151	3415	-38.54	-855.5	-52.03
79	SLU 57	42	-159	3411	-38.49	-855.02	-54.92
79	SLU 58	42	-151	3415	-38.54	-855.5	-52.03
79	SLU 59	42	-159	3411	-38.49	-855.02	-54.92
79	SLU 60	46	-159	3590	-40.42	-898.69	-54.91
79	SLU 61	46	-168	3586	-40.37	-898.21	-57.8
79	SLU 62	46	-159	3590	-40.42	-898.69	-54.91
79	SLU 63	46	-168	3586	-40.37	-898.21	-57.8
79	SLU 64	40	-146	3297	-37.28	-826.24	-50.38
79	SLU 65	40	-160	3290	-37.2	-825.42	-55.2
79	SLU 66	40	-146	3297	-37.28	-826.24	-50.38
79	SLU 67	40	-154	3293	-37.23	-825.75	-53.27
79	SLU 68	40	-160	3290	-37.2	-825.42	-55.2
79	SLU 69	40	-146	3297	-37.28	-826.24	-50.38
79	SLU 70	40	-154	3293	-37.23	-825.75	-53.27
79	SLU 71	40	-146	3297	-37.28	-826.24	-50.38
79	SLU 72	40	-154	3293	-37.23	-825.75	-53.27
79	SLU 73	48	-179	3699	-41.58	-926.2	-61.92
79	SLU 74	48	-166	3706	-41.66	-927.01	-57.1
79	SLU 75	48	-174	3702	-41.61	-926.52	-59.99
79	SLU 76	48	-179	3699	-41.58	-926.2	-61.92



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
79	SLU 77	48	-166	3706	-41.66	-927.01	-57.1
79	SLU 78	48	-174	3702	-41.61	-926.52	-59.99
79	SLU 79	48	-166	3706	-41.66	-927.01	-57.1
79	SLU 80	48	-174	3702	-41.61	-926.52	-59.99
79	SLU 81	51	-174	3881	-43.54	-970.2	-59.97
79	SLU 82	52	-182	3877	-43.49	-969.71	-62.87
79	SLU 83	51	-174	3881	-43.54	-970.2	-59.97
79	SLU 84	52	-182	3877	-43.49	-969.71	-62.87
79	SLE RA 1	29	-109	2472	-27.99	-619.85	-37.64
79	SLE RA 2	30	-118	2467	-27.94	-619.31	-40.85
79	SLE RA 3	29	-109	2472	-27.99	-619.85	-37.64
79	SLE RA 4	30	-115	2469	-27.96	-619.53	-39.57
79	SLE RA 5	30	-118	2467	-27.94	-619.31	-40.85
79	SLE RA 6	29	-109	2472	-27.99	-619.85	-37.64
79	SLE RA 7	30	-115	2469	-27.96	-619.53	-39.57
79	SLE RA 8	29	-109	2472	-27.99	-619.85	-37.64
79	SLE RA 9	30	-115	2469	-27.96	-619.53	-39.57
79	SLE RA 10	35	-131	2740	-30.86	-686.49	-45.33
79	SLE RA 11	35	-122	2745	-30.91	-687.03	-42.12
79	SLE RA 12	35	-128	2742	-30.88	-686.71	-44.05
79	SLE RA 13	35	-131	2740	-30.86	-686.49	-45.33
79	SLE RA 14	35	-122	2745	-30.91	-687.03	-42.12
79	SLE RA 15	35	-128	2742	-30.88	-686.71	-44.05
79	SLE RA 16	35	-122	2745	-30.91	-687.03	-42.12
79	SLE RA 17	35	-128	2742	-30.88	-686.71	-44.05
79	SLE RA 18	37	-128	2862	-32.16	-715.83	-44.04
79	SLE RA 19	37	-133	2859	-32.13	-715.5	-45.97
79	SLE RA 20	37	-128	2862	-32.16	-715.83	-44.04
79	SLE RA 21	37	-133	2859	-32.13	-715.5	-45.97
79	SLE FR 1	29	-109	2472	-27.99	-619.85	-37.64
79	SLE FR 2	29	-111	2471	-27.98	-619.74	-38.28
79	SLE FR 3	29	-109	2472	-27.99	-619.85	-37.64
79	SLE FR 4	32	-117	2588	-29.23	-648.54	-40.2
79	SLE FR 5	32	-115	2589	-29.24	-648.64	-39.56
79	SLE FR 6	33	-118	2667	-30.08	-667.84	-40.84
79	SLE QP 1	29	-109	2472	-27.99	-619.85	-37.64
79	SLE QP 2	32	-115	2589	-29.24	-648.64	-39.56
79	SLD 1	103	114	2974	-33.25	-721.4	40.89
79	SLD 2	98	83	2974	-33.25	-721.27	30.1
79	SLD 3	129	-33	2835	-31.74	-698.68	-10.36
79	SLD 4	124	-63	2835	-31.75	-698.55	-21.15
79	SLD 5	15	186	2916	-32.73	-704.98	66.08
79	SLD 6	11	156	2916	-32.73	-704.85	55.29
79	SLD 7	102	-301	2452	-27.71	-629.24	-104.75
79	SLD 8	97	-332	2451	-27.71	-629.11	-115.54
79	SLD 9	-34	103	2727	-30.77	-668.18	36.42
79	SLD 10	-38	72	2726	-30.78	-668.05	25.63
79	SLD 11	53	-385	2263	-25.76	-592.44	-134.41
79	SLD 12	48	-416	2262	-25.76	-592.31	-145.2
79	SLD 13	-61	-166	2343	-26.74	-598.74	-57.97
79	SLD 14	-65	-197	2343	-26.74	-598.61	-68.76
79	SLD 15	-35	-312	2204	-25.23	-576.02	-109.22
79	SLD 16	-39	-343	2204	-25.24	-575.89	-120.01
79	SLV 1	193	413	3475	-38.46	-815.62	146.46
79	SLV 2	183	343	3473	-38.47	-815.32	121.95
79	SLV 3	253	74	3152	-34.97	-763.07	27.49
79	SLV 4	242	4	3150	-34.98	-762.78	2.98
79	SLV 5	-6	583	3345	-37.31	-778.53	205.26
79	SLV 6	-17	513	3344	-37.32	-778.24	180.75
79	SLV 7	192	-549	2268	-25.66	-603.38	-191.3
79	SLV 8	181	-619	2267	-25.67	-603.09	-215.81
79	SLV 9	-118	389	2911	-32.82	-694.2	136.69
79	SLV 10	-128	319	2910	-32.83	-693.91	112.18
79	SLV 11	80	-743	1834	-21.17	-519.05	-259.87
79	SLV 12	69	-812	1833	-21.18	-518.76	-284.38
79	SLV 13	-179	-233	2028	-23.51	-534.51	-82.1
79	SLV 14	-189	-303	2027	-23.52	-534.22	-106.61
79	SLV 15	-119	-573	1705	-20.01	-481.96	-201.07
79	SLV 16	-130	-643	1703	-20.03	-481.67	-225.58
79	CRTFP Ux+	0	0	0	0	0	0
79	CRTFP Ux-	0	0	0	0	0	0
79	CRTFP Uy+	0	0	0	0	0	0
79	CRTFP Uy-	0	0	0	0	0	0
81	SLU 1	14	-3	1196	2.9	197.34	0.67
81	SLU 2	14	-14	1201	2.93	198.34	3.52
81	SLU 3	14	-3	1196	2.9	197.34	0.67
81	SLU 4	14	-10	1199	2.92	197.94	2.38
81	SLU 5	14	-14	1201	2.93	198.34	3.52
81	SLU 6	14	-3	1196	2.9	197.34	0.67
81	SLU 7	14	-10	1199	2.92	197.94	2.38
81	SLU 8	14	-3	1196	2.9	197.34	0.67
81	SLU 9	14	-10	1199	2.92	197.94	2.38
81	SLU 10	16	-11	1415	3.56	233.43	2.65
81	SLU 11	17	0	1411	3.54	232.43	-0.21
81	SLU 12	17	-6	1413	3.55	233.03	1.51
81	SLU 13	16	-11	1415	3.56	233.43	2.65
81	SLU 14	17	0	1411	3.54	232.43	-0.21
81	SLU 15	17	-6	1413	3.55	233.03	1.51
81	SLU 16	17	0	1411	3.54	232.43	-0.21



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
81	SLU 17	17	-6	1413	3.55	233.03	1.51
81	SLU 18	18	2	1503	3.81	247.47	-0.58
81	SLU 19	18	-5	1505	3.82	248.07	1.13
81	SLU 20	18	2	1503	3.81	247.47	-0.58
81	SLU 21	18	-5	1505	3.82	248.07	1.13
81	SLU 22	16	-1	1353	3.35	222.56	0.15
81	SLU 23	16	-12	1358	3.38	223.55	3
81	SLU 24	16	-1	1353	3.35	222.56	0.15
81	SLU 25	16	-8	1356	3.37	223.15	1.86
81	SLU 26	16	-12	1358	3.38	223.55	3
81	SLU 27	16	-1	1353	3.35	222.56	0.15
81	SLU 28	16	-8	1356	3.37	223.15	1.86
81	SLU 29	16	-1	1353	3.35	222.56	0.15
81	SLU 30	16	-8	1356	3.37	223.15	1.86
81	SLU 31	18	-9	1572	4.01	258.64	2.13
81	SLU 32	19	2	1568	3.98	257.65	-0.73
81	SLU 33	18	-4	1570	4	258.24	0.99
81	SLU 34	18	-9	1572	4.01	258.64	2.13
81	SLU 35	19	2	1568	3.98	257.65	-0.73
81	SLU 36	18	-4	1570	4	258.24	0.99
81	SLU 37	19	2	1568	3.98	257.65	-0.73
81	SLU 38	18	-4	1570	4	258.24	0.99
81	SLU 39	20	4	1660	4.25	272.69	-1.1
81	SLU 40	20	-3	1662	4.27	273.28	0.61
81	SLU 41	20	4	1660	4.25	272.69	-1.1
81	SLU 42	20	-3	1662	4.27	273.28	0.61
81	SLU 43	18	-5	1501	3.62	247.9	1.05
81	SLU 44	17	-16	1506	3.65	248.89	3.9
81	SLU 45	18	-5	1501	3.62	247.9	1.05
81	SLU 46	18	-11	1504	3.64	248.5	2.76
81	SLU 47	17	-16	1506	3.65	248.89	3.9
81	SLU 48	18	-5	1501	3.62	247.9	1.05
81	SLU 49	18	-11	1504	3.64	248.5	2.76
81	SLU 50	18	-5	1501	3.62	247.9	1.05
81	SLU 51	18	-11	1504	3.64	248.5	2.76
81	SLU 52	20	-13	1720	4.28	283.99	3.03
81	SLU 53	20	-1	1716	4.25	282.99	0.17
81	SLU 54	20	-8	1719	4.27	283.59	1.89
81	SLU 55	20	-13	1720	4.28	283.99	3.03
81	SLU 56	20	-1	1716	4.25	282.99	0.17
81	SLU 57	20	-8	1719	4.27	283.59	1.89
81	SLU 58	20	-1	1716	4.25	282.99	0.17
81	SLU 59	20	-8	1719	4.27	283.59	1.89
81	SLU 60	21	0	1808	4.52	298.03	-0.2
81	SLU 61	21	-6	1811	4.54	298.63	1.51
81	SLU 62	21	0	1808	4.52	298.03	-0.2
81	SLU 63	21	-6	1811	4.54	298.63	1.51
81	SLU 64	20	-3	1658	4.07	273.11	0.53
81	SLU 65	19	-14	1663	4.1	274.11	3.38
81	SLU 66	20	-3	1658	4.07	273.11	0.53
81	SLU 67	19	-9	1661	4.09	273.71	2.24
81	SLU 68	19	-14	1663	4.1	274.11	3.38
81	SLU 69	20	-3	1658	4.07	273.11	0.53
81	SLU 70	19	-9	1661	4.09	273.71	2.24
81	SLU 71	20	-3	1658	4.07	273.11	0.53
81	SLU 72	19	-9	1661	4.09	273.71	2.24
81	SLU 73	22	-10	1877	4.73	309.2	2.51
81	SLU 74	22	1	1873	4.7	308.21	-0.35
81	SLU 75	22	-6	1875	4.72	308.8	1.37
81	SLU 76	22	-10	1877	4.73	309.2	2.51
81	SLU 77	22	1	1873	4.7	308.21	-0.35
81	SLU 78	22	-6	1875	4.72	308.8	1.37
81	SLU 79	22	1	1873	4.7	308.21	-0.35
81	SLU 80	22	-6	1875	4.72	308.8	1.37
81	SLU 81	23	2	1965	4.97	323.25	-0.72
81	SLU 82	23	-4	1967	4.99	323.84	0.99
81	SLU 83	23	2	1965	4.97	323.25	-0.72
81	SLU 84	23	-4	1967	4.99	323.84	0.99
81	SLE RA 1	15	-2	1241	3.03	204.55	0.52
81	SLE RA 2	15	-10	1244	3.05	205.21	2.42
81	SLE RA 3	15	-2	1241	3.03	204.55	0.52
81	SLE RA 4	15	-7	1243	3.04	204.94	1.66
81	SLE RA 5	15	-10	1244	3.05	205.21	2.42
81	SLE RA 6	15	-2	1241	3.03	204.55	0.52
81	SLE RA 7	15	-7	1243	3.04	204.94	1.66
81	SLE RA 8	15	-2	1241	3.03	204.55	0.52
81	SLE RA 9	15	-7	1243	3.04	204.94	1.66
81	SLE RA 10	16	-8	1387	3.47	228.6	1.84
81	SLE RA 11	16	0	1384	3.45	227.94	-0.06
81	SLE RA 12	16	-5	1386	3.46	228.34	1.08
81	SLE RA 13	16	-8	1387	3.47	228.6	1.84
81	SLE RA 14	16	0	1384	3.45	227.94	-0.06
81	SLE RA 15	16	-5	1386	3.46	228.34	1.08
81	SLE RA 16	16	0	1384	3.45	227.94	-0.06
81	SLE RA 17	16	-5	1386	3.46	228.34	1.08
81	SLE RA 18	17	1	1445	3.63	237.97	-0.31
81	SLE RA 19	17	-4	1447	3.64	238.36	0.83
81	SLE RA 20	17	1	1445	3.63	237.97	-0.31
81	SLE RA 21	17	-4	1447	3.64	238.36	0.83



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
81	SLE FR 1	15	-2	1241	3.03	204.55	0.52
81	SLE FR 2	15	-4	1242	3.04	204.68	0.9
81	SLE FR 3	15	-2	1241	3.03	204.55	0.52
81	SLE FR 4	15	-3	1303	3.22	214.71	0.65
81	SLE FR 5	15	-1	1302	3.21	214.57	0.27
81	SLE FR 6	16	-1	1343	3.33	221.26	0.1
81	SLE QP 1	15	-2	1241	3.03	204.55	0.52
81	SLE QP 2	15	-1	1302	3.21	214.57	0.27
81	SLD 1	98	-91	1127	2.62	189.35	22.57
81	SLD 2	92	-69	1126	2.63	189.28	16.97
81	SLD 3	74	-202	1202	2.99	202.02	50.49
81	SLD 4	69	-180	1201	3	201.95	44.88
81	SLD 5	78	133	1136	2.47	187.81	-33.42
81	SLD 6	73	155	1135	2.48	187.74	-39.02
81	SLD 7	-1	-238	1387	3.7	230.05	59.64
81	SLD 8	-6	-216	1385	3.71	229.98	54.03
81	SLD 9	37	213	1219	2.72	199.16	-53.49
81	SLD 10	32	235	1218	2.73	199.09	-59.1
81	SLD 11	-42	-158	1469	3.94	241.4	39.56
81	SLD 12	-47	-135	1468	3.95	241.33	33.96
81	SLD 13	-38	177	1403	3.43	227.19	-44.34
81	SLD 14	-43	199	1402	3.44	227.12	-49.95
81	SLD 15	-62	66	1478	3.79	239.86	-16.43
81	SLD 16	-67	88	1477	3.8	239.79	-22.03
81	SLV 1	204	-204	899	1.85	156.14	50.68
81	SLV 2	192	-153	896	1.87	155.98	37.96
81	SLV 3	149	-460	1074	2.7	185.6	114.94
81	SLV 4	137	-409	1071	2.72	185.44	102.21
81	SLV 5	159	308	918	1.5	152.43	-77.61
81	SLV 6	147	359	915	1.52	152.27	-90.34
81	SLV 7	-23	-545	1499	4.34	250.61	136.58
81	SLV 8	-35	-494	1496	4.37	250.45	123.86
81	SLV 9	66	491	1108	2.06	178.7	-123.32
81	SLV 10	54	542	1105	2.08	178.54	-136.04
81	SLV 11	-116	-362	1689	4.9	276.88	90.88
81	SLV 12	-128	-311	1687	4.92	276.72	78.15
81	SLV 13	-106	406	1534	3.7	243.71	-101.67
81	SLV 14	-118	457	1531	3.73	243.55	-114.4
81	SLV 15	-161	150	1708	4.56	273.16	-37.42
81	SLV 16	-173	201	1705	4.58	273	-50.14
81	CRTFP Ux+	0	0	0	0	0	0
81	CRTFP Ux-	0	0	0	0	0	0
81	CRTFP Uy+	0	0	0	0	0	0
81	CRTFP Uy-	0	0	0	0	0	0
83	SLU 1	29	-104	2529	-30.92	-681.17	-35.81
83	SLU 2	29	-118	2523	-30.85	-680.49	-40.62
83	SLU 3	29	-104	2529	-30.92	-681.17	-35.81
83	SLU 4	29	-112	2525	-30.88	-680.76	-38.69
83	SLU 5	29	-118	2523	-30.85	-680.49	-40.62
83	SLU 6	29	-104	2529	-30.92	-681.17	-35.81
83	SLU 7	29	-112	2525	-30.88	-680.76	-38.69
83	SLU 8	29	-104	2529	-30.92	-681.17	-35.81
83	SLU 9	29	-112	2525	-30.88	-680.76	-38.69
83	SLU 10	38	-137	2961	-36.02	-797.93	-47.29
83	SLU 11	37	-123	2967	-36.09	-798.61	-42.48
83	SLU 12	38	-132	2963	-36.05	-798.21	-45.36
83	SLU 13	38	-137	2961	-36.02	-797.93	-47.29
83	SLU 14	37	-123	2967	-36.09	-798.61	-42.48
83	SLU 15	38	-132	2963	-36.05	-798.21	-45.36
83	SLU 16	37	-123	2967	-36.09	-798.61	-42.48
83	SLU 17	38	-132	2963	-36.05	-798.21	-45.36
83	SLU 18	41	-132	3155	-38.31	-848.95	-45.33
83	SLU 19	41	-140	3151	-38.27	-848.54	-48.22
83	SLU 20	41	-132	3155	-38.31	-848.95	-45.33
83	SLU 21	41	-140	3151	-38.27	-848.54	-48.22
83	SLU 22	35	-119	2840	-34.6	-764.42	-40.83
83	SLU 23	36	-132	2834	-34.53	-763.74	-45.64
83	SLU 24	35	-119	2840	-34.6	-764.42	-40.83
83	SLU 25	35	-127	2837	-34.56	-764.01	-43.72
83	SLU 26	36	-132	2834	-34.53	-763.74	-45.64
83	SLU 27	35	-119	2840	-34.6	-764.42	-40.83
83	SLU 28	35	-127	2837	-34.56	-764.01	-43.72
83	SLU 29	35	-119	2840	-34.6	-764.42	-40.83
83	SLU 30	35	-127	2837	-34.56	-764.01	-43.72
83	SLU 31	44	-152	3272	-39.7	-881.18	-52.32
83	SLU 32	44	-138	3278	-39.77	-881.86	-47.5
83	SLU 33	44	-146	3275	-39.73	-881.45	-50.39
83	SLU 34	44	-152	3272	-39.7	-881.18	-52.32
83	SLU 35	44	-138	3278	-39.77	-881.86	-47.5
83	SLU 36	44	-146	3275	-39.73	-881.45	-50.39
83	SLU 37	44	-138	3278	-39.77	-881.86	-47.5
83	SLU 38	44	-146	3275	-39.73	-881.45	-50.39
83	SLU 39	47	-146	3466	-41.99	-932.19	-50.36
83	SLU 40	48	-155	3462	-41.94	-931.79	-53.25
83	SLU 41	47	-146	3466	-41.99	-932.19	-50.36
83	SLU 42	48	-155	3462	-41.94	-931.79	-53.25
83	SLU 43	35	-130	3181	-38.94	-856.98	-44.82
83	SLU 44	36	-144	3175	-38.87	-856.3	-49.64
83	SLU 45	35	-130	3181	-38.94	-856.98	-44.82



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
83	SLU 46	36	-138	3177	-38.9	-856.57	-47.71
83	SLU 47	36	-144	3175	-38.87	-856.3	-49.64
83	SLU 48	35	-130	3181	-38.94	-856.98	-44.82
83	SLU 49	36	-138	3177	-38.9	-856.57	-47.71
83	SLU 50	35	-130	3181	-38.94	-856.98	-44.82
83	SLU 51	36	-138	3177	-38.9	-856.57	-47.71
83	SLU 52	44	-163	3613	-44.04	-973.74	-56.31
83	SLU 53	44	-150	3619	-44.11	-974.42	-51.49
83	SLU 54	44	-158	3615	-44.07	-974.02	-54.38
83	SLU 55	44	-163	3613	-44.04	-973.74	-56.31
83	SLU 56	44	-150	3619	-44.11	-974.42	-51.49
83	SLU 57	44	-158	3615	-44.07	-974.02	-54.38
83	SLU 58	44	-150	3619	-44.11	-974.42	-51.49
83	SLU 59	44	-158	3615	-44.07	-974.02	-54.38
83	SLU 60	48	-158	3807	-46.32	-1024.76	-54.35
83	SLU 61	48	-166	3803	-46.28	-1024.35	-57.24
83	SLU 62	48	-158	3807	-46.32	-1024.76	-54.35
83	SLU 63	48	-166	3803	-46.28	-1024.35	-57.24
83	SLU 64	42	-145	3492	-42.62	-940.22	-49.85
83	SLU 65	42	-158	3486	-42.55	-939.55	-54.66
83	SLU 66	42	-145	3492	-42.62	-940.22	-49.85
83	SLU 67	42	-153	3489	-42.57	-939.82	-52.74
83	SLU 68	42	-158	3486	-42.55	-939.55	-54.66
83	SLU 69	42	-145	3492	-42.62	-940.22	-49.85
83	SLU 70	42	-153	3489	-42.57	-939.82	-52.74
83	SLU 71	42	-145	3492	-42.62	-940.22	-49.85
83	SLU 72	42	-153	3489	-42.57	-939.82	-52.74
83	SLU 73	51	-178	3924	-47.72	-1056.99	-61.33
83	SLU 74	50	-164	3930	-47.79	-1057.67	-56.52
83	SLU 75	50	-172	3927	-47.74	-1057.26	-59.41
83	SLU 76	51	-178	3924	-47.72	-1056.99	-61.33
83	SLU 77	50	-164	3930	-47.79	-1057.67	-56.52
83	SLU 78	50	-172	3927	-47.74	-1057.26	-59.41
83	SLU 79	50	-164	3930	-47.79	-1057.67	-56.52
83	SLU 80	50	-172	3927	-47.74	-1057.26	-59.41
83	SLU 81	54	-173	4118	-50	-1108	-59.38
83	SLU 82	54	-181	4114	-49.96	-1107.59	-62.27
83	SLU 83	54	-173	4118	-50	-1108	-59.38
83	SLU 84	54	-181	4114	-49.96	-1107.59	-62.27
83	SLE RA 1	31	-108	2618	-31.97	-704.95	-37.24
83	SLE RA 2	31	-117	2614	-31.93	-704.5	-40.45
83	SLE RA 3	31	-108	2618	-31.97	-704.95	-37.24
83	SLE RA 4	31	-114	2615	-31.95	-704.68	-39.17
83	SLE RA 5	31	-117	2614	-31.93	-704.5	-40.45
83	SLE RA 6	31	-108	2618	-31.97	-704.95	-37.24
83	SLE RA 7	31	-114	2615	-31.95	-704.68	-39.17
83	SLE RA 8	31	-108	2618	-31.97	-704.95	-37.24
83	SLE RA 9	31	-114	2615	-31.95	-704.68	-39.17
83	SLE RA 10	37	-130	2906	-35.37	-782.8	-44.9
83	SLE RA 11	36	-121	2910	-35.42	-783.25	-41.69
83	SLE RA 12	37	-127	2908	-35.39	-782.98	-43.61
83	SLE RA 13	37	-130	2906	-35.37	-782.8	-44.9
83	SLE RA 14	36	-121	2910	-35.42	-783.25	-41.69
83	SLE RA 15	37	-127	2908	-35.39	-782.98	-43.61
83	SLE RA 16	36	-121	2910	-35.42	-783.25	-41.69
83	SLE RA 17	37	-127	2908	-35.39	-782.98	-43.61
83	SLE RA 18	39	-127	3035	-36.9	-816.81	-43.59
83	SLE RA 19	39	-132	3033	-36.87	-816.53	-45.52
83	SLE RA 20	39	-127	3035	-36.9	-816.81	-43.59
83	SLE RA 21	39	-132	3033	-36.87	-816.53	-45.52
83	SLE FR 1	31	-108	2618	-31.97	-704.95	-37.24
83	SLE FR 2	31	-110	2617	-31.96	-704.86	-37.88
83	SLE FR 3	31	-108	2618	-31.97	-704.95	-37.24
83	SLE FR 4	33	-115	2742	-33.44	-738.42	-39.79
83	SLE FR 5	33	-114	2743	-33.45	-738.51	-39.15
83	SLE FR 6	35	-117	2826	-34.44	-760.88	-40.42
83	SLE QP 1	31	-108	2618	-31.97	-704.95	-37.24
83	SLE QP 2	33	-114	2743	-33.45	-738.51	-39.15
83	SLD 1	113	114	3125	-37.67	-818.59	41.22
83	SLD 2	107	83	3124	-37.66	-818.4	30.45
83	SLD 3	142	-32	2994	-36.19	-794.62	-9.94
83	SLD 4	136	-63	2993	-36.19	-794.43	-20.71
83	SLD 5	15	187	3055	-36.95	-798.96	66.32
83	SLD 6	9	156	3055	-36.95	-798.76	55.55
83	SLD 7	112	-300	2621	-32.04	-719.06	-104.21
83	SLD 8	106	-331	2620	-32.04	-718.87	-114.98
83	SLD 9	-40	103	2866	-34.86	-758.15	36.68
83	SLD 10	-46	73	2865	-34.86	-757.96	25.91
83	SLD 11	57	-384	2431	-29.95	-678.26	-133.85
83	SLD 12	51	-414	2431	-29.95	-678.06	-144.62
83	SLD 13	-70	-165	2493	-30.71	-682.59	-57.58
83	SLD 14	-76	-195	2492	-30.71	-682.39	-68.35
83	SLD 15	-41	-311	2362	-29.24	-658.62	-108.74
83	SLD 16	-47	-341	2361	-29.24	-658.43	-119.51
83	SLV 1	215	413	3619	-43.14	-922.09	146.67
83	SLV 2	201	343	3617	-43.13	-921.65	122.21
83	SLV 3	282	74	3317	-39.72	-866.76	27.91
83	SLV 4	268	4	3315	-39.72	-866.32	3.45
83	SLV 5	-9	583	3464	-41.53	-877.66	205.28



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
83	SLV 6	-23	513	3462	-41.53	-877.21	180.82
83	SLV 7	214	-547	2458	-30.16	-693.22	-190.59
83	SLV 8	200	-617	2456	-30.15	-692.78	-215.05
83	SLV 9	-134	389	3030	-36.75	-784.24	136.76
83	SLV 10	-148	320	3028	-36.75	-783.8	112.3
83	SLV 11	89	-741	2024	-25.37	-599.81	-259.12
83	SLV 12	75	-810	2022	-25.37	-599.36	-283.58
83	SLV 13	-202	-232	2171	-27.18	-610.7	-81.74
83	SLV 14	-216	-301	2169	-27.18	-610.26	-106.2
83	SLV 15	-135	-571	1869	-23.77	-555.37	-200.51
83	SLV 16	-149	-640	1867	-23.77	-554.93	-224.97
83	CRTFP Ux+	0	0	0	0	0	0
83	CRTFP Ux-	0	0	0	0	0	0
83	CRTFP Uy+	0	0	0	0	0	0
83	CRTFP Uy-	0	0	0	0	0	0
85	SLU 1	17	-4	1295	2.9	232.87	0.9
85	SLU 2	17	-15	1301	2.92	234.03	3.73
85	SLU 3	17	-4	1295	2.9	232.87	0.9
85	SLU 4	17	-11	1298	2.91	233.57	2.6
85	SLU 5	17	-15	1301	2.92	234.03	3.73
85	SLU 6	17	-4	1295	2.9	232.87	0.9
85	SLU 7	17	-11	1298	2.91	233.57	2.6
85	SLU 8	17	-4	1295	2.9	232.87	0.9
85	SLU 9	17	-11	1298	2.91	233.57	2.6
85	SLU 10	20	-12	1537	3.55	277.08	2.92
85	SLU 11	20	-1	1531	3.53	275.92	0.08
85	SLU 12	20	-8	1535	3.54	276.62	1.78
85	SLU 13	20	-12	1537	3.55	277.08	2.92
85	SLU 14	20	-1	1531	3.53	275.92	0.08
85	SLU 15	20	-8	1535	3.54	276.62	1.78
85	SLU 16	20	-1	1531	3.53	275.92	0.08
85	SLU 17	20	-8	1535	3.54	276.62	1.78
85	SLU 18	22	1	1633	3.8	294.37	-0.27
85	SLU 19	21	-6	1636	3.81	295.07	1.43
85	SLU 20	22	1	1633	3.8	294.37	-0.27
85	SLU 21	21	-6	1636	3.81	295.07	1.43
85	SLU 22	20	-2	1467	3.34	263.81	0.42
85	SLU 23	19	-13	1473	3.37	264.98	3.26
85	SLU 24	20	-2	1467	3.34	263.81	0.42
85	SLU 25	19	-9	1471	3.36	264.51	2.12
85	SLU 26	19	-13	1473	3.37	264.98	3.26
85	SLU 27	20	-2	1467	3.34	263.81	0.42
85	SLU 28	19	-9	1471	3.36	264.51	2.12
85	SLU 29	20	-2	1467	3.34	263.81	0.42
85	SLU 30	19	-9	1471	3.36	264.51	2.12
85	SLU 31	22	-10	1709	4	308.02	2.44
85	SLU 32	23	1	1703	3.97	306.86	-0.4
85	SLU 33	22	-6	1707	3.99	307.56	1.3
85	SLU 34	22	-10	1709	4	308.02	2.44
85	SLU 35	23	1	1703	3.97	306.86	-0.4
85	SLU 36	22	-6	1707	3.99	307.56	1.3
85	SLU 37	23	1	1703	3.97	306.86	-0.4
85	SLU 38	22	-6	1707	3.99	307.56	1.3
85	SLU 39	24	2	1805	4.24	325.31	-0.75
85	SLU 40	24	-4	1808	4.26	326.01	0.95
85	SLU 41	24	2	1805	4.24	325.31	-0.75
85	SLU 42	24	-4	1808	4.26	326.01	0.95
85	SLU 43	22	-6	1625	3.61	292.13	1.34
85	SLU 44	21	-17	1630	3.64	293.29	4.17
85	SLU 45	22	-6	1625	3.61	292.13	1.34
85	SLU 46	21	-13	1628	3.63	292.82	3.04
85	SLU 47	21	-17	1630	3.64	293.29	4.17
85	SLU 48	22	-6	1625	3.61	292.13	1.34
85	SLU 49	21	-13	1628	3.63	292.82	3.04
85	SLU 50	22	-6	1625	3.61	292.13	1.34
85	SLU 51	21	-13	1628	3.63	292.82	3.04
85	SLU 52	24	-14	1866	4.27	336.33	3.35
85	SLU 53	25	-3	1861	4.24	335.17	0.52
85	SLU 54	24	-9	1864	4.26	335.87	2.22
85	SLU 55	24	-14	1866	4.27	336.33	3.35
85	SLU 56	25	-3	1861	4.24	335.17	0.52
85	SLU 57	24	-9	1864	4.26	335.87	2.22
85	SLU 58	25	-3	1861	4.24	335.17	0.52
85	SLU 59	24	-9	1864	4.26	335.87	2.22
85	SLU 60	26	-1	1962	4.51	353.62	0.17
85	SLU 61	26	-8	1965	4.53	354.32	1.87
85	SLU 62	26	-1	1962	4.51	353.62	0.17
85	SLU 63	26	-8	1965	4.53	354.32	1.87
85	SLU 64	24	-4	1797	4.06	323.07	0.86
85	SLU 65	24	-15	1802	4.09	324.23	3.69
85	SLU 66	24	-4	1797	4.06	323.07	0.86
85	SLU 67	24	-11	1800	4.08	323.76	2.56
85	SLU 68	24	-15	1802	4.09	324.23	3.69
85	SLU 69	24	-4	1797	4.06	323.07	0.86
85	SLU 70	24	-11	1800	4.08	323.76	2.56
85	SLU 71	24	-4	1797	4.06	323.07	0.86
85	SLU 72	24	-11	1800	4.08	323.76	2.56
85	SLU 73	27	-12	2038	4.72	367.28	2.87
85	SLU 74	27	-1	2033	4.69	366.12	0.04



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
85	SLU 75	27	-8	2036	4.71	366.81	1.74
85	SLU 76	27	-12	2038	4.72	367.28	2.87
85	SLU 77	27	-1	2033	4.69	366.12	0.04
85	SLU 78	27	-8	2036	4.71	366.81	1.74
85	SLU 79	27	-1	2033	4.69	366.12	0.04
85	SLU 80	27	-8	2036	4.71	366.81	1.74
85	SLU 81	29	1	2134	4.96	384.57	-0.31
85	SLU 82	28	-6	2137	4.98	385.26	1.39
85	SLU 83	29	1	2134	4.96	384.57	-0.31
85	SLU 84	28	-6	2137	4.98	385.26	1.39
85	SLE RA 1	18	-4	1344	3.02	241.71	0.76
85	SLE RA 2	18	-11	1348	3.04	242.49	2.65
85	SLE RA 3	18	-4	1344	3.02	241.71	0.76
85	SLE RA 4	18	-8	1346	3.04	242.18	1.9
85	SLE RA 5	18	-11	1348	3.04	242.49	2.65
85	SLE RA 6	18	-4	1344	3.02	241.71	0.76
85	SLE RA 7	18	-8	1346	3.04	242.18	1.9
85	SLE RA 8	18	-4	1344	3.02	241.71	0.76
85	SLE RA 9	18	-8	1346	3.04	242.18	1.9
85	SLE RA 10	20	-9	1505	3.46	271.19	2.11
85	SLE RA 11	20	-1	1502	3.45	270.41	0.22
85	SLE RA 12	20	-6	1504	3.46	270.88	1.35
85	SLE RA 13	20	-9	1505	3.46	271.19	2.11
85	SLE RA 14	20	-1	1502	3.45	270.41	0.22
85	SLE RA 15	20	-6	1504	3.46	270.88	1.35
85	SLE RA 16	20	-1	1502	3.45	270.41	0.22
85	SLE RA 17	20	-6	1504	3.46	270.88	1.35
85	SLE RA 18	21	0	1569	3.63	282.71	-0.02
85	SLE RA 19	21	-5	1571	3.64	283.18	1.12
85	SLE RA 20	21	0	1569	3.63	282.71	-0.02
85	SLE RA 21	21	-5	1571	3.64	283.18	1.12
85	SLE FR 1	18	-4	1344	3.02	241.71	0.76
85	SLE FR 2	18	-5	1345	3.03	241.87	1.14
85	SLE FR 3	18	-4	1344	3.02	241.71	0.76
85	SLE FR 4	19	-4	1413	3.21	254.17	0.91
85	SLE FR 5	19	-3	1412	3.2	254.01	0.53
85	SLE FR 6	20	-2	1457	3.32	262.21	0.37
85	SLE QP 1	18	-4	1344	3.02	241.71	0.76
85	SLE QP 2	19	-3	1412	3.2	254.01	0.53
85	SLD 1	108	-92	1218	2.61	223.13	22.72
85	SLD 2	103	-70	1217	2.62	223.17	17.15
85	SLD 3	82	-203	1305	2.98	238.61	50.44
85	SLD 4	76	-180	1304	2.99	238.64	44.87
85	SLD 5	88	131	1222	2.47	221.27	-32.9
85	SLD 6	83	153	1221	2.48	221.3	-38.47
85	SLD 7	-1	-238	1512	3.69	272.85	59.5
85	SLD 8	-6	-216	1511	3.7	272.88	53.93
85	SLD 9	44	211	1312	2.71	235.14	-52.87
85	SLD 10	39	233	1311	2.72	235.18	-58.44
85	SLD 11	-45	-158	1603	3.93	286.73	39.53
85	SLD 12	-50	-136	1602	3.94	286.76	33.96
85	SLD 13	-38	175	1520	3.42	269.38	-43.81
85	SLD 14	-44	197	1519	3.43	269.42	-49.38
85	SLD 15	-65	64	1607	3.79	284.86	-16.1
85	SLD 16	-71	87	1606	3.8	284.89	-21.66
85	SLV 1	224	-204	964	1.83	182.59	50.7
85	SLV 2	211	-154	962	1.85	182.67	38.05
85	SLV 3	162	-459	1167	2.68	218.57	114.5
85	SLV 4	149	-408	1165	2.7	218.64	101.85
85	SLV 5	178	305	971	1.5	178	-76.76
85	SLV 6	166	356	969	1.52	178.08	-89.41
85	SLV 7	-27	-544	1646	4.33	297.91	135.92
85	SLV 8	-40	-493	1644	4.35	297.98	123.27
85	SLV 9	78	488	1179	2.06	210.04	-122.21
85	SLV 10	65	538	1177	2.08	210.12	-134.86
85	SLV 11	-128	-361	1854	4.89	329.95	90.47
85	SLV 12	-141	-311	1853	4.91	330.02	77.82
85	SLV 13	-111	403	1659	3.71	289.39	-100.8
85	SLV 14	-124	454	1657	3.73	289.46	-113.44
85	SLV 15	-173	148	1861	4.56	325.36	-36.99
85	SLV 16	-186	199	1859	4.58	325.43	-49.64
85	CRTFP Ux+	0	0	0	0	0	0
85	CRTFP Ux-	0	0	0	0	0	0
85	CRTFP Uy+	0	0	0	0	0	0
85	CRTFP Uy-	0	0	0	0	0	0
87	SLU 1	29	-103	2673	-35.78	-769.69	-35.33
87	SLU 2	30	-116	2668	-35.71	-769.02	-40.13
87	SLU 3	29	-103	2673	-35.78	-769.69	-35.33
87	SLU 4	29	-111	2670	-35.74	-769.29	-38.21
87	SLU 5	30	-116	2668	-35.71	-769.02	-40.13
87	SLU 6	29	-103	2673	-35.78	-769.69	-35.33
87	SLU 7	29	-111	2670	-35.74	-769.29	-38.21
87	SLU 8	29	-103	2673	-35.78	-769.69	-35.33
87	SLU 9	29	-111	2670	-35.74	-769.29	-38.21
87	SLU 10	39	-136	3136	-41.87	-904.29	-46.74
87	SLU 11	38	-122	3141	-41.94	-904.96	-41.94
87	SLU 12	38	-130	3138	-41.9	-904.56	-44.82
87	SLU 13	39	-136	3136	-41.87	-904.29	-46.74
87	SLU 14	38	-122	3141	-41.94	-904.96	-41.94



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
87	SLU 15	38	-130	3138	-41.9	-904.56	-44.82
87	SLU 16	38	-122	3141	-41.94	-904.96	-41.94
87	SLU 17	38	-130	3138	-41.9	-904.56	-44.82
87	SLU 18	42	-130	3341	-44.58	-962.94	-44.78
87	SLU 19	42	-139	3338	-44.54	-962.53	-47.65
87	SLU 20	42	-130	3341	-44.58	-962.94	-44.78
87	SLU 21	42	-139	3338	-44.54	-962.53	-47.65
87	SLU 22	36	-117	3005	-40.15	-865.53	-40.31
87	SLU 23	36	-131	3000	-40.08	-864.85	-45.11
87	SLU 24	36	-117	3005	-40.15	-865.53	-40.31
87	SLU 25	36	-125	3002	-40.11	-865.12	-43.19
87	SLU 26	36	-131	3000	-40.08	-864.85	-45.11
87	SLU 27	36	-117	3005	-40.15	-865.53	-40.31
87	SLU 28	36	-125	3002	-40.11	-865.12	-43.19
87	SLU 29	36	-117	3005	-40.15	-865.53	-40.31
87	SLU 30	36	-125	3002	-40.11	-865.12	-43.19
87	SLU 31	45	-150	3468	-46.24	-1000.12	-51.72
87	SLU 32	45	-137	3473	-46.31	-1000.8	-46.92
87	SLU 33	45	-145	3470	-46.27	-1000.39	-49.8
87	SLU 34	45	-150	3468	-46.24	-1000.12	-51.72
87	SLU 35	45	-137	3473	-46.31	-1000.8	-46.92
87	SLU 36	45	-145	3470	-46.27	-1000.39	-49.8
87	SLU 37	45	-137	3473	-46.31	-1000.8	-46.92
87	SLU 38	45	-145	3470	-46.27	-1000.39	-49.8
87	SLU 39	49	-145	3673	-48.95	-1058.77	-49.76
87	SLU 40	49	-153	3670	-48.91	-1058.36	-52.63
87	SLU 41	49	-145	3673	-48.95	-1058.77	-49.76
87	SLU 42	49	-153	3670	-48.91	-1058.36	-52.63
87	SLU 43	36	-128	3361	-45.01	-967.75	-44.22
87	SLU 44	36	-142	3356	-44.94	-967.07	-49.02
87	SLU 45	36	-128	3361	-45.01	-967.75	-44.22
87	SLU 46	36	-137	3358	-44.97	-967.34	-47.1
87	SLU 47	36	-142	3356	-44.94	-967.07	-49.02
87	SLU 48	36	-128	3361	-45.01	-967.75	-44.22
87	SLU 49	36	-137	3358	-44.97	-967.34	-47.1
87	SLU 50	36	-128	3361	-45.01	-967.75	-44.22
87	SLU 51	36	-137	3358	-44.97	-967.34	-47.1
87	SLU 52	45	-162	3824	-51.1	-1102.34	-55.63
87	SLU 53	45	-148	3829	-51.17	-1103.02	-50.83
87	SLU 54	45	-156	3826	-51.13	-1102.61	-53.71
87	SLU 55	45	-162	3824	-51.1	-1102.34	-55.63
87	SLU 56	45	-148	3829	-51.17	-1103.02	-50.83
87	SLU 57	45	-156	3826	-51.13	-1102.61	-53.71
87	SLU 58	45	-148	3829	-51.17	-1103.02	-50.83
87	SLU 59	45	-156	3826	-51.13	-1102.61	-53.71
87	SLU 60	49	-156	4029	-53.81	-1160.99	-53.67
87	SLU 61	49	-164	4026	-53.77	-1160.58	-56.55
87	SLU 62	49	-156	4029	-53.81	-1160.99	-53.67
87	SLU 63	49	-164	4026	-53.77	-1160.58	-56.55
87	SLU 64	42	-143	3693	-49.39	-1063.58	-49.2
87	SLU 65	43	-157	3688	-49.32	-1062.9	-54
87	SLU 66	42	-143	3693	-49.39	-1063.58	-49.2
87	SLU 67	42	-151	3690	-49.34	-1063.17	-52.08
87	SLU 68	43	-157	3688	-49.32	-1062.9	-54
87	SLU 69	42	-143	3693	-49.39	-1063.58	-49.2
87	SLU 70	42	-151	3690	-49.34	-1063.17	-52.08
87	SLU 71	42	-143	3693	-49.39	-1063.58	-49.2
87	SLU 72	42	-151	3690	-49.34	-1063.17	-52.08
87	SLU 73	52	-176	4156	-55.48	-1198.17	-60.61
87	SLU 74	51	-162	4161	-55.54	-1198.85	-55.81
87	SLU 75	51	-171	4158	-55.5	-1198.44	-58.69
87	SLU 76	52	-176	4156	-55.48	-1198.17	-60.61
87	SLU 77	51	-162	4161	-55.54	-1198.85	-55.81
87	SLU 78	51	-171	4158	-55.5	-1198.44	-58.69
87	SLU 79	51	-162	4161	-55.54	-1198.85	-55.81
87	SLU 80	51	-171	4158	-55.5	-1198.44	-58.69
87	SLU 81	55	-171	4361	-58.18	-1256.82	-58.65
87	SLU 82	55	-179	4358	-58.14	-1256.42	-61.53
87	SLU 83	55	-171	4361	-58.18	-1256.82	-58.65
87	SLU 84	55	-179	4358	-58.14	-1256.42	-61.53
87	SLE RA 1	31	-107	2768	-37.03	-797.08	-36.75
87	SLE RA 2	31	-116	2764	-36.98	-796.63	-39.95
87	SLE RA 3	31	-107	2768	-37.03	-797.08	-36.75
87	SLE RA 4	31	-112	2766	-37	-796.81	-38.67
87	SLE RA 5	31	-116	2764	-36.98	-796.63	-39.95
87	SLE RA 6	31	-107	2768	-37.03	-797.08	-36.75
87	SLE RA 7	31	-112	2766	-37	-796.81	-38.67
87	SLE RA 8	31	-107	2768	-37.03	-797.08	-36.75
87	SLE RA 9	31	-112	2766	-37	-796.81	-38.67
87	SLE RA 10	37	-129	3076	-41.09	-886.81	-44.36
87	SLE RA 11	37	-120	3079	-41.13	-887.25	-41.16
87	SLE RA 12	37	-125	3077	-41.11	-886.98	-43.08
87	SLE RA 13	37	-129	3076	-41.09	-886.81	-44.36
87	SLE RA 14	37	-120	3079	-41.13	-887.25	-41.16
87	SLE RA 15	37	-125	3077	-41.11	-886.98	-43.08
87	SLE RA 16	37	-120	3079	-41.13	-887.25	-41.16
87	SLE RA 17	37	-125	3077	-41.11	-886.98	-43.08
87	SLE RA 18	40	-125	3213	-42.89	-925.9	-43.05
87	SLE RA 19	40	-131	3211	-42.87	-925.63	-44.97



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
87	SLE RA 20	40	-125	3213	-42.89	-925.9	-43.05
87	SLE RA 21	40	-131	3211	-42.81	-925.63	-44.97
87	SLE FR 1	31	-107	2768	-37.03	-797.08	-36.75
87	SLE FR 2	31	-109	2767	-37.02	-796.99	-37.39
87	SLE FR 3	31	-107	2768	-37.03	-797.08	-36.75
87	SLE FR 4	34	-114	2901	-38.78	-835.63	-39.28
87	SLE FR 5	34	-112	2901	-38.79	-835.72	-38.64
87	SLE FR 6	35	-116	2990	-39.96	-861.49	-39.9
87	SLE QP 1	31	-107	2768	-37.03	-797.08	-36.75
87	SLE QP 2	34	-112	2901	-38.79	-835.72	-38.64
87	SLD 1	123	115	3282	-43.47	-925.53	41.59
87	SLD 2	115	84	3281	-43.46	-925.26	30.85
87	SLD 3	155	-31	3159	-41.91	-899.06	-9.44
87	SLD 4	147	-61	3158	-41.9	-898.79	-20.18
87	SLD 5	14	187	3203	-42.56	-902.91	66.59
87	SLD 6	6	157	3202	-42.55	-902.64	55.85
87	SLD 7	122	-298	2792	-37.36	-814.67	-103.52
87	SLD 8	115	-329	2790	-37.35	-814.4	-114.27
87	SLD 9	-47	104	3012	-40.22	-857.04	36.98
87	SLD 10	-55	74	3011	-40.21	-856.78	26.24
87	SLD 11	62	-382	2600	-35.02	-768.81	-133.13
87	SLD 12	54	-412	2599	-35.01	-768.54	-143.87
87	SLD 13	-80	-163	2645	-35.67	-772.65	-57.1
87	SLD 14	-88	-194	2644	-35.67	-772.39	-67.84
87	SLD 15	-47	-309	2521	-34.11	-746.18	-108.14
87	SLD 16	-55	-339	2520	-34.11	-745.91	-118.88
87	SLV 1	236	413	3776	-49.53	-1041.47	146.88
87	SLV 2	218	344	3773	-49.51	-1040.86	122.49
87	SLV 3	311	75	3490	-45.92	-980.41	28.41
87	SLV 4	293	5	3487	-45.9	-979.8	4.01
87	SLV 5	-13	582	3598	-47.49	-990.26	205.24
87	SLV 6	-31	513	3596	-47.48	-989.65	180.85
87	SLV 7	237	-545	2645	-35.45	-786.75	-189.67
87	SLV 8	219	-614	2642	-35.44	-786.14	-214.07
87	SLV 9	-152	389	3160	-42.14	-885.31	136.79
87	SLV 10	-169	320	3158	-42.12	-884.7	112.39
87	SLV 11	98	-738	2207	-30.1	-681.8	-258.13
87	SLV 12	80	-807	2204	-30.08	-681.19	-282.52
87	SLV 13	-226	-230	2316	-31.67	-691.64	-81.3
87	SLV 14	-244	-299	2313	-31.65	-691.03	-105.69
87	SLV 15	-151	-568	2030	-28.06	-630.59	-199.77
87	SLV 16	-169	-637	2027	-28.04	-629.98	-224.17
87	CRTFP Ux+	0	0	0	0	0	0
87	CRTFP Ux-	0	0	0	0	0	0
87	CRTFP Uy+	0	0	0	0	0	0
87	CRTFP Uy-	0	0	0	0	0	0
89	SLU 1	22	-5	1391	2.72	269.48	1.15
89	SLU 2	21	-16	1398	2.75	270.77	3.96
89	SLU 3	22	-5	1391	2.72	269.48	1.15
89	SLU 4	21	-12	1395	2.74	270.25	2.84
89	SLU 5	21	-16	1398	2.75	270.77	3.96
89	SLU 6	22	-5	1391	2.72	269.48	1.15
89	SLU 7	21	-12	1395	2.74	270.25	2.84
89	SLU 8	22	-5	1391	2.72	269.48	1.15
89	SLU 9	21	-12	1395	2.74	270.25	2.84
89	SLU 10	25	-13	1655	3.33	321.78	3.21
89	SLU 11	25	-2	1648	3.31	320.49	0.4
89	SLU 12	25	-9	1652	3.32	321.26	2.08
89	SLU 13	25	-13	1655	3.33	321.78	3.21
89	SLU 14	25	-2	1648	3.31	320.49	0.4
89	SLU 15	25	-9	1652	3.32	321.26	2.08
89	SLU 16	25	-2	1648	3.31	320.49	0.4
89	SLU 17	25	-9	1652	3.32	321.26	2.08
89	SLU 18	27	-1	1758	3.56	342.35	0.07
89	SLU 19	26	-8	1762	3.57	343.12	1.76
89	SLU 20	27	-1	1758	3.56	342.35	0.07
89	SLU 21	26	-8	1762	3.57	343.12	1.76
89	SLU 22	24	-3	1578	3.13	306.16	0.72
89	SLU 23	24	-15	1584	3.16	307.46	3.53
89	SLU 24	24	-3	1578	3.13	306.16	0.72
89	SLU 25	24	-10	1582	3.15	306.94	2.4
89	SLU 26	24	-15	1584	3.16	307.46	3.53
89	SLU 27	24	-3	1578	3.13	306.16	0.72
89	SLU 28	24	-10	1582	3.15	306.94	2.4
89	SLU 29	24	-3	1578	3.13	306.16	0.72
89	SLU 30	24	-10	1582	3.15	306.94	2.4
89	SLU 31	27	-12	1841	3.74	358.47	2.77
89	SLU 32	28	-1	1835	3.72	357.17	-0.04
89	SLU 33	28	-7	1839	3.73	357.95	1.65
89	SLU 34	27	-12	1841	3.74	358.47	2.77
89	SLU 35	28	-1	1835	3.72	357.17	-0.04
89	SLU 36	28	-7	1839	3.73	357.95	1.65
89	SLU 37	28	-1	1835	3.72	357.17	-0.04
89	SLU 38	28	-7	1839	3.73	357.95	1.65
89	SLU 39	30	1	1945	3.97	379.03	-0.36
89	SLU 40	29	-6	1949	3.98	379.81	1.33
89	SLU 41	30	1	1945	3.97	379.03	-0.36
89	SLU 42	29	-6	1949	3.98	379.81	1.33
89	SLU 43	27	-7	1745	3.4	337.74	1.65



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
89	SLU 44	26	-19	1751	3.42	339.04	4.46
89	SLU 45	27	-7	1745	3.4	337.74	1.65
89	SLU 46	27	-14	1748	3.41	338.52	3.33
89	SLU 47	26	-19	1751	3.42	339.04	4.46
89	SLU 48	27	-7	1745	3.4	337.74	1.65
89	SLU 49	27	-14	1748	3.41	338.52	3.33
89	SLU 50	27	-7	1745	3.4	337.74	1.65
89	SLU 51	27	-14	1748	3.41	338.52	3.33
89	SLU 52	30	-16	2008	4.01	390.04	3.7
89	SLU 53	31	-4	2001	3.98	388.75	0.89
89	SLU 54	30	-11	2005	4	389.53	2.58
89	SLU 55	30	-16	2008	4.01	390.04	3.7
89	SLU 56	31	-4	2001	3.98	388.75	0.89
89	SLU 57	30	-11	2005	4	389.53	2.58
89	SLU 58	31	-4	2001	3.98	388.75	0.89
89	SLU 59	30	-11	2005	4	389.53	2.58
89	SLU 60	32	-3	2112	4.23	410.61	0.57
89	SLU 61	32	-10	2115	4.25	411.39	2.26
89	SLU 62	32	-3	2112	4.23	410.61	0.57
89	SLU 63	32	-10	2115	4.25	411.39	2.26
89	SLU 64	30	-6	1931	3.81	374.43	1.21
89	SLU 65	29	-17	1938	3.83	375.72	4.02
89	SLU 66	30	-6	1931	3.81	374.43	1.21
89	SLU 67	29	-12	1935	3.82	375.21	2.9
89	SLU 68	29	-17	1938	3.83	375.72	4.02
89	SLU 69	30	-6	1931	3.81	374.43	1.21
89	SLU 70	29	-12	1935	3.82	375.21	2.9
89	SLU 71	30	-6	1931	3.81	374.43	1.21
89	SLU 72	29	-12	1935	3.82	375.21	2.9
89	SLU 73	33	-14	2195	4.42	426.73	3.27
89	SLU 74	34	-3	2188	4.39	425.44	0.46
89	SLU 75	33	-9	2192	4.41	426.21	2.14
89	SLU 76	33	-14	2195	4.42	426.73	3.27
89	SLU 77	34	-3	2188	4.39	425.44	0.46
89	SLU 78	33	-9	2192	4.41	426.21	2.14
89	SLU 79	34	-3	2188	4.39	425.44	0.46
89	SLU 80	33	-9	2192	4.41	426.21	2.14
89	SLU 81	35	-1	2298	4.64	447.3	0.13
89	SLU 82	35	-8	2302	4.66	448.08	1.82
89	SLU 83	35	-1	2298	4.64	447.3	0.13
89	SLU 84	35	-8	2302	4.66	448.08	1.82
89	SLE RA 1	22	-5	1445	2.84	279.96	1.03
89	SLE RA 2	22	-12	1449	2.86	280.82	2.9
89	SLE RA 3	22	-5	1445	2.84	279.96	1.03
89	SLE RA 4	22	-9	1447	2.85	280.48	2.15
89	SLE RA 5	22	-12	1449	2.86	280.82	2.9
89	SLE RA 6	22	-5	1445	2.84	279.96	1.03
89	SLE RA 7	22	-9	1447	2.85	280.48	2.15
89	SLE RA 8	22	-5	1445	2.84	279.96	1.03
89	SLE RA 9	22	-9	1447	2.85	280.48	2.15
89	SLE RA 10	24	-10	1620	3.25	314.83	2.4
89	SLE RA 11	25	-3	1616	3.23	313.97	0.52
89	SLE RA 12	25	-7	1618	3.24	314.48	1.65
89	SLE RA 13	24	-10	1620	3.25	314.83	2.4
89	SLE RA 14	25	-3	1616	3.23	313.97	0.52
89	SLE RA 15	25	-7	1618	3.24	314.48	1.65
89	SLE RA 16	25	-3	1616	3.23	313.97	0.52
89	SLE RA 17	25	-7	1618	3.24	314.48	1.65
89	SLE RA 18	26	-2	1689	3.4	328.54	0.31
89	SLE RA 19	26	-6	1692	3.41	329.06	1.43
89	SLE RA 20	26	-2	1689	3.4	328.54	0.31
89	SLE RA 21	26	-6	1692	3.41	329.06	1.43
89	SLE FR 1	22	-5	1445	2.84	279.96	1.03
89	SLE FR 2	22	-6	1445	2.84	280.13	1.4
89	SLE FR 3	22	-5	1445	2.84	279.96	1.03
89	SLE FR 4	23	-5	1519	3.01	294.71	1.19
89	SLE FR 5	23	-4	1518	3.01	294.53	0.81
89	SLE FR 6	24	-3	1567	3.12	304.25	0.67
89	SLE QP 1	22	-5	1445	2.84	279.96	1.03
89	SLE QP 2	23	-4	1518	3.01	294.53	0.81
89	SLD 1	121	-93	1305	2.45	257.9	22.9
89	SLD 2	115	-71	1304	2.46	258.04	17.36
89	SLD 3	92	-203	1404	2.79	276.01	50.4
89	SLD 4	85	-181	1403	2.8	276.16	44.86
89	SLD 5	99	129	1304	2.31	256.02	-32.33
89	SLD 6	93	151	1304	2.32	256.16	-37.87
89	SLD 7	2	-238	1634	3.46	316.4	59.33
89	SLD 8	-5	-216	1634	3.47	316.54	53.8
89	SLD 9	51	208	1402	2.54	272.52	-52.17
89	SLD 10	45	231	1402	2.55	272.67	-57.71
89	SLD 11	-46	-158	1732	3.69	332.9	39.49
89	SLD 12	-52	-136	1732	3.7	333.05	33.96
89	SLD 13	-38	173	1633	3.21	312.91	-43.24
89	SLD 14	-45	195	1632	3.22	313.05	-48.77
89	SLD 15	-68	63	1732	3.55	331.02	-15.74
89	SLD 16	-74	85	1731	3.56	331.17	-21.27
89	SLV 1	246	-205	1027	1.72	209.92	50.74
89	SLV 2	232	-154	1026	1.74	210.24	38.17
89	SLV 3	179	-458	1257	2.52	252.03	114.03



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
89	SLV 4	165	-408	1256	2.54	252.35	101.46
89	SLV 5	198	302	1022	1.4	205.18	-75.81
89	SLV 6	183	353	1021	1.42	205.5	-88.38
89	SLV 7	-27	-542	1789	4.07	345.53	135.17
89	SLV 8	-42	-491	1788	4.09	345.85	122.6
89	SLV 9	89	484	1248	1.93	243.21	-120.98
89	SLV 10	74	534	1247	1.95	243.54	-133.55
89	SLV 11	-136	-360	2015	4.59	383.57	90
89	SLV 12	-151	-310	2014	4.61	383.89	77.43
89	SLV 13	-118	400	1780	3.47	336.72	-99.83
89	SLV 14	-132	450	1779	3.49	337.04	-112.41
89	SLV 15	-185	147	2010	4.27	378.82	-36.54
89	SLV 16	-200	197	2009	4.29	379.15	-49.11
89	CRTFP Ux+	0	0	0	0	0	0
89	CRTFP Ux-	0	0	0	0	0	0
89	CRTFP Uy+	0	0	0	0	0	0
89	CRTFP Uy-	0	0	0	0	0	0
91	SLU 1	25	-6	1436	-4.92	301.84	1.5
91	SLU 2	25	-17	1443	-4.93	303.22	4.21
91	SLU 3	25	-6	1436	-4.92	301.84	1.5
91	SLU 4	25	-13	1440	-4.93	302.67	3.13
91	SLU 5	25	-17	1443	-4.93	303.22	4.21
91	SLU 6	25	-6	1436	-4.92	301.84	1.5
91	SLU 7	25	-13	1440	-4.93	302.67	3.13
91	SLU 8	25	-6	1436	-4.92	301.84	1.5
91	SLU 9	25	-13	1440	-4.93	302.67	3.13
91	SLU 10	29	-14	1710	-5.81	360.85	3.56
91	SLU 11	30	-3	1703	-5.79	359.47	0.86
91	SLU 12	29	-10	1707	-5.8	360.3	2.48
91	SLU 13	29	-14	1710	-5.81	360.85	3.56
91	SLU 14	30	-3	1703	-5.79	359.47	0.86
91	SLU 15	29	-10	1707	-5.8	360.3	2.48
91	SLU 16	30	-3	1703	-5.79	359.47	0.86
91	SLU 17	29	-10	1707	-5.8	360.3	2.48
91	SLU 18	31	-2	1818	-6.17	384.17	0.58
91	SLU 19	31	-9	1822	-6.18	385	2.2
91	SLU 20	31	-2	1818	-6.17	384.17	0.58
91	SLU 21	31	-9	1822	-6.18	385	2.2
91	SLU 22	29	-5	1630	-5.56	343.35	1.14
91	SLU 23	28	-15	1637	-5.58	344.73	3.85
91	SLU 24	29	-5	1630	-5.56	343.35	1.14
91	SLU 25	28	-11	1634	-5.57	344.18	2.77
91	SLU 26	28	-15	1637	-5.58	344.73	3.85
91	SLU 27	29	-5	1630	-5.56	343.35	1.14
91	SLU 28	28	-11	1634	-5.57	344.18	2.77
91	SLU 29	29	-5	1630	-5.56	343.35	1.14
91	SLU 30	28	-11	1634	-5.57	344.18	2.77
91	SLU 31	32	-13	1904	-6.45	402.36	3.2
91	SLU 32	33	-2	1897	-6.44	400.98	0.49
91	SLU 33	33	-8	1901	-6.44	401.81	2.12
91	SLU 34	32	-13	1904	-6.45	402.36	3.2
91	SLU 35	33	-2	1897	-6.44	400.98	0.49
91	SLU 36	33	-8	1901	-6.44	401.81	2.12
91	SLU 37	33	-2	1897	-6.44	400.98	0.49
91	SLU 38	33	-8	1901	-6.44	401.81	2.12
91	SLU 39	35	-1	2012	-6.81	425.68	0.22
91	SLU 40	34	-7	2016	-6.82	426.51	1.84
91	SLU 41	35	-1	2012	-6.81	425.68	0.22
91	SLU 42	34	-7	2016	-6.82	426.51	1.84
91	SLU 43	32	-8	1800	-6.17	378.16	2.08
91	SLU 44	31	-19	1807	-6.19	379.54	4.79
91	SLU 45	32	-8	1800	-6.17	378.16	2.08
91	SLU 46	32	-15	1804	-6.18	378.99	3.7
91	SLU 47	31	-19	1807	-6.19	379.54	4.79
91	SLU 48	32	-8	1800	-6.17	378.16	2.08
91	SLU 49	32	-15	1804	-6.18	378.99	3.7
91	SLU 50	32	-8	1800	-6.17	378.16	2.08
91	SLU 51	32	-15	1804	-6.18	378.99	3.7
91	SLU 52	36	-17	2074	-7.06	437.17	4.14
91	SLU 53	36	-6	2067	-7.05	435.8	1.43
91	SLU 54	36	-12	2071	-7.06	436.62	3.05
91	SLU 55	36	-17	2074	-7.06	437.17	4.14
91	SLU 56	36	-6	2067	-7.05	435.8	1.43
91	SLU 57	36	-12	2071	-7.06	436.62	3.05
91	SLU 58	36	-6	2067	-7.05	435.8	1.43
91	SLU 59	36	-12	2071	-7.06	436.62	3.05
91	SLU 60	38	-5	2182	-7.42	460.5	1.15
91	SLU 61	38	-11	2186	-7.43	461.32	2.78
91	SLU 62	38	-5	2182	-7.42	460.5	1.15
91	SLU 63	38	-11	2186	-7.43	461.32	2.78
91	SLU 64	35	-7	1994	-6.82	419.67	1.72
91	SLU 65	35	-18	2001	-6.83	421.05	4.43
91	SLU 66	35	-7	1994	-6.82	419.67	1.72
91	SLU 67	35	-13	1998	-6.82	420.5	3.34
91	SLU 68	35	-18	2001	-6.83	421.05	4.43
91	SLU 69	35	-7	1994	-6.82	419.67	1.72
91	SLU 70	35	-13	1998	-6.82	420.5	3.34
91	SLU 71	35	-7	1994	-6.82	419.67	1.72
91	SLU 72	35	-13	1998	-6.82	420.5	3.34



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
91	SLU 73	39	-15	2268	-7.71	478.68	3.78
91	SLU 74	39	-4	2261	-7.69	477.3	1.07
91	SLU 75	39	-11	2265	-7.7	478.13	2.69
91	SLU 76	39	-15	2268	-7.71	478.68	3.78
91	SLU 77	39	-4	2261	-7.69	477.3	1.07
91	SLU 78	39	-11	2265	-7.7	478.13	2.69
91	SLU 79	39	-4	2261	-7.69	477.3	1.07
91	SLU 80	39	-11	2265	-7.7	478.13	2.69
91	SLU 81	41	-3	2376	-8.07	502	0.79
91	SLU 82	41	-10	2380	-8.07	502.83	2.42
91	SLU 83	41	-3	2376	-8.07	502	0.79
91	SLU 84	41	-10	2380	-8.07	502.83	2.42
91	SLE RA 1	26	-6	1491	-5.1	313.7	1.4
91	SLE RA 2	26	-13	1496	-5.11	314.62	3.21
91	SLE RA 3	26	-6	1491	-5.1	313.7	1.4
91	SLE RA 4	26	-10	1494	-5.11	314.25	2.48
91	SLE RA 5	26	-13	1496	-5.11	314.62	3.21
91	SLE RA 6	26	-6	1491	-5.1	313.7	1.4
91	SLE RA 7	26	-10	1494	-5.11	314.25	2.48
91	SLE RA 8	26	-6	1491	-5.1	313.7	1.4
91	SLE RA 9	26	-10	1494	-5.11	314.25	2.48
91	SLE RA 10	29	-11	1674	-5.69	353.04	2.77
91	SLE RA 11	29	-4	1669	-5.68	352.12	0.97
91	SLE RA 12	29	-8	1672	-5.69	352.67	2.05
91	SLE RA 13	29	-11	1674	-5.69	353.04	2.77
91	SLE RA 14	29	-4	1669	-5.68	352.12	0.97
91	SLE RA 15	29	-8	1672	-5.69	352.67	2.05
91	SLE RA 16	29	-4	1669	-5.68	352.12	0.97
91	SLE RA 17	29	-8	1672	-5.69	352.67	2.05
91	SLE RA 18	30	-3	1746	-5.93	368.59	0.78
91	SLE RA 19	30	-7	1749	-5.94	369.14	1.87
91	SLE RA 20	30	-3	1746	-5.93	368.59	0.78
91	SLE RA 21	30	-7	1749	-5.94	369.14	1.87
91	SLE FR 1	26	-6	1491	-5.1	313.7	1.4
91	SLE FR 2	26	-7	1492	-5.1	313.89	1.76
91	SLE FR 3	26	-6	1491	-5.1	313.7	1.4
91	SLE FR 4	28	-6	1568	-5.35	330.35	1.58
91	SLE FR 5	28	-5	1568	-5.35	330.17	1.22
91	SLE FR 6	28	-4	1618	-5.52	341.15	1.09
91	SLE QP 1	26	-6	1491	-5.1	313.7	1.4
91	SLE QP 2	28	-5	1568	-5.35	330.17	1.22
91	SLD 1	130	-91	1344	-4.66	288.78	22.91
91	SLD 2	123	-70	1344	-4.65	288.97	17.52
91	SLD 3	100	-197	1451	-4.92	309.04	49.4
91	SLD 4	93	-176	1450	-4.91	309.23	44.01
91	SLD 5	106	123	1339	-4.75	286.96	-30.57
91	SLD 6	99	145	1339	-4.75	287.15	-35.96
91	SLD 7	7	-232	1694	-5.62	354.49	57.74
91	SLD 8	-1	-210	1694	-5.61	354.68	52.35
91	SLD 9	56	200	1441	-5.09	305.66	-49.92
91	SLD 10	49	222	1441	-5.09	305.85	-55.31
91	SLD 11	-44	-154	1796	-5.96	373.19	38.39
91	SLD 12	-51	-133	1796	-5.95	373.38	33
91	SLD 13	-38	166	1685	-5.79	351.11	-41.58
91	SLD 14	-45	188	1684	-5.78	351.3	-46.97
91	SLD 15	-68	60	1791	-6.05	371.37	-15.09
91	SLD 16	-75	81	1791	-6.04	371.56	-20.48
91	SLV 1	262	-200	1052	-3.76	234.65	50.26
91	SLV 2	246	-151	1052	-3.74	235.08	38.02
91	SLV 3	193	-445	1300	-4.36	281.74	111.22
91	SLV 4	177	-396	1300	-4.34	282.17	98.99
91	SLV 5	208	291	1037	-3.97	229.94	-72.26
91	SLV 6	192	340	1037	-3.95	230.38	-84.49
91	SLV 7	-22	-525	1863	-5.97	386.91	130.97
91	SLV 8	-38	-476	1863	-5.95	387.34	118.73
91	SLV 9	93	467	1272	-4.75	272.99	-116.3
91	SLV 10	77	516	1272	-4.73	273.43	-128.54
91	SLV 11	-137	-350	2098	-6.75	429.96	86.92
91	SLV 12	-153	-301	2098	-6.73	430.4	74.69
91	SLV 13	-122	386	1835	-6.36	378.16	-96.56
91	SLV 14	-138	435	1835	-6.34	378.6	-108.79
91	SLV 15	-191	141	2083	-6.96	425.25	-35.59
91	SLV 16	-207	190	2083	-6.94	425.69	-47.83
91	CRTFP Ux+	0	0	0	0	0	0
91	CRTFP Ux-	0	0	0	0	0	0
91	CRTFP Uy+	0	0	0	0	0	0
91	CRTFP Uy-	0	0	0	0	0	0
93	SLU 1	26	-94	2591	-75.05	-788.08	-31.83
93	SLU 2	27	-107	2587	-74.94	-787.38	-36.25
93	SLU 3	26	-94	2591	-75.05	-788.08	-31.83
93	SLU 4	26	-101	2589	-74.98	-787.66	-34.48
93	SLU 5	27	-107	2587	-74.94	-787.38	-36.25
93	SLU 6	26	-94	2591	-75.05	-788.08	-31.83
93	SLU 7	26	-101	2589	-74.98	-787.66	-34.48
93	SLU 8	26	-94	2591	-75.05	-788.08	-31.83
93	SLU 9	26	-101	2589	-74.98	-787.66	-34.48
93	SLU 10	35	-124	3044	-88.16	-927.51	-42.2
93	SLU 11	35	-112	3048	-88.27	-928.21	-37.77
93	SLU 12	35	-119	3046	-88.21	-927.79	-40.43



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
93	SLU 13	35	-124	3044	-88.16	-927.51	-42.2
93	SLU 14	35	-112	3048	-88.21	-928.21	-37.77
93	SLU 15	35	-119	3046	-88.21	-927.79	-40.43
93	SLU 16	35	-112	3048	-88.27	-928.21	-37.77
93	SLU 17	35	-119	3046	-88.21	-927.79	-40.43
93	SLU 18	38	-119	3244	-93.94	-988.27	-40.32
93	SLU 19	38	-127	3241	-93.88	-987.85	-42.97
93	SLU 20	38	-119	3244	-93.94	-988.27	-40.32
93	SLU 21	38	-127	3241	-93.88	-987.85	-42.97
93	SLU 22	32	-107	2915	-84.43	-887.34	-36.3
93	SLU 23	33	-120	2911	-84.32	-886.65	-40.73
93	SLU 24	32	-107	2915	-84.43	-887.34	-36.3
93	SLU 25	33	-115	2913	-84.36	-886.92	-38.96
93	SLU 26	33	-120	2911	-84.32	-886.65	-40.73
93	SLU 27	32	-107	2915	-84.43	-887.34	-36.3
93	SLU 28	33	-115	2913	-84.36	-886.92	-38.96
93	SLU 29	32	-107	2915	-84.43	-887.34	-36.3
93	SLU 30	33	-115	2913	-84.36	-886.92	-38.96
93	SLU 31	41	-138	3368	-97.54	-1026.78	-46.67
93	SLU 32	41	-125	3372	-97.65	-1027.48	-42.24
93	SLU 33	41	-133	3369	-97.59	-1027.06	-44.9
93	SLU 34	41	-138	3368	-97.54	-1026.78	-46.67
93	SLU 35	41	-125	3372	-97.65	-1027.48	-42.24
93	SLU 36	41	-133	3369	-97.59	-1027.06	-44.9
93	SLU 37	41	-125	3372	-97.65	-1027.48	-42.24
93	SLU 38	41	-133	3369	-97.59	-1027.06	-44.9
93	SLU 39	44	-133	3567	-103.32	-1087.53	-44.79
93	SLU 40	44	-140	3565	-103.25	-1087.12	-47.45
93	SLU 41	44	-133	3567	-103.32	-1087.53	-44.79
93	SLU 42	44	-140	3565	-103.25	-1087.12	-47.45
93	SLU 43	32	-117	3258	-94.35	-990.47	-39.84
93	SLU 44	32	-130	3254	-94.23	-989.77	-44.27
93	SLU 45	32	-117	3258	-94.35	-990.47	-39.84
93	SLU 46	32	-125	3255	-94.28	-990.05	-42.5
93	SLU 47	32	-130	3254	-94.23	-989.77	-44.27
93	SLU 48	32	-117	3258	-94.35	-990.47	-39.84
93	SLU 49	32	-125	3255	-94.28	-990.05	-42.5
93	SLU 50	32	-117	3258	-94.35	-990.47	-39.84
93	SLU 51	32	-125	3255	-94.28	-990.05	-42.5
93	SLU 52	41	-148	3710	-107.46	-1129.9	-50.21
93	SLU 53	40	-135	3714	-107.57	-1130.6	-45.79
93	SLU 54	41	-143	3712	-107.51	-1130.18	-48.44
93	SLU 55	41	-148	3710	-107.46	-1129.9	-50.21
93	SLU 56	40	-135	3714	-107.57	-1130.6	-45.79
93	SLU 57	41	-143	3712	-107.51	-1130.18	-48.44
93	SLU 58	40	-135	3714	-107.57	-1130.6	-45.79
93	SLU 59	41	-143	3712	-107.51	-1130.18	-48.44
93	SLU 60	44	-143	3910	-113.24	-1190.66	-48.33
93	SLU 61	44	-150	3908	-113.17	-1190.24	-50.99
93	SLU 62	44	-143	3910	-113.24	-1190.66	-48.33
93	SLU 63	44	-150	3908	-113.17	-1190.24	-50.99
93	SLU 64	38	-131	3581	-103.73	-1089.73	-44.32
93	SLU 65	38	-143	3578	-103.61	-1089.03	-48.74
93	SLU 66	38	-131	3581	-103.73	-1089.73	-44.32
93	SLU 67	38	-138	3579	-103.66	-1089.31	-46.97
93	SLU 68	38	-143	3578	-103.61	-1089.03	-48.74
93	SLU 69	38	-131	3581	-103.73	-1089.73	-44.32
93	SLU 70	38	-138	3579	-103.66	-1089.31	-46.97
93	SLU 71	38	-131	3581	-103.73	-1089.73	-44.32
93	SLU 72	38	-138	3579	-103.66	-1089.31	-46.97
93	SLU 73	47	-161	4034	-116.84	-1229.17	-54.68
93	SLU 74	47	-149	4038	-116.95	-1229.87	-50.26
93	SLU 75	47	-156	4036	-116.89	-1229.45	-52.91
93	SLU 76	47	-161	4034	-116.84	-1229.17	-54.68
93	SLU 77	47	-149	4038	-116.95	-1229.87	-50.26
93	SLU 78	47	-156	4036	-116.89	-1229.45	-52.91
93	SLU 79	47	-149	4038	-116.95	-1229.87	-50.26
93	SLU 80	47	-156	4036	-116.89	-1229.45	-52.91
93	SLU 81	50	-156	4234	-122.62	-1289.92	-52.81
93	SLU 82	50	-164	4231	-122.55	-1289.5	-55.46
93	SLU 83	50	-156	4234	-122.62	-1289.92	-52.81
93	SLU 84	50	-164	4231	-122.55	-1289.5	-55.46
93	SLE RA 1	28	-98	2684	-77.73	-816.44	-33.11
93	SLE RA 2	28	-106	2681	-77.65	-815.97	-36.06
93	SLE RA 3	28	-98	2684	-77.73	-816.44	-33.11
93	SLE RA 4	28	-103	2682	-77.68	-816.16	-34.88
93	SLE RA 5	28	-106	2681	-77.65	-815.97	-36.06
93	SLE RA 6	28	-98	2684	-77.73	-816.44	-33.11
93	SLE RA 7	28	-103	2682	-77.68	-816.16	-34.88
93	SLE RA 8	28	-98	2684	-77.73	-816.44	-33.11
93	SLE RA 9	28	-103	2682	-77.68	-816.16	-34.88
93	SLE RA 10	34	-118	2986	-86.47	-909.4	-40.02
93	SLE RA 11	34	-110	2988	-86.55	-909.86	-37.07
93	SLE RA 12	34	-115	2987	-86.5	-909.58	-38.84
93	SLE RA 13	34	-118	2986	-86.47	-909.4	-40.02
93	SLE RA 14	34	-110	2988	-86.55	-909.86	-37.07
93	SLE RA 15	34	-115	2987	-86.5	-909.58	-38.84
93	SLE RA 16	34	-110	2988	-86.55	-909.86	-37.07
93	SLE RA 17	34	-115	2987	-86.5	-909.58	-38.84



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
93	SLE RA 18	36	-115	3119	-90.32	-949.9	-38.77
93	SLE RA 19	36	-120	3117	-90.28	-949.62	-40.54
93	SLE RA 20	36	-115	3119	-90.32	-949.9	-38.77
93	SLE RA 21	36	-120	3117	-90.28	-949.62	-40.54
93	SLE FR 1	28	-98	2684	-77.73	-816.44	-33.11
93	SLE FR 2	28	-99	2683	-77.71	-816.35	-33.7
93	SLE FR 3	28	-98	2684	-77.73	-816.44	-33.11
93	SLE FR 4	30	-104	2814	-81.49	-856.38	-35.39
93	SLE FR 5	30	-103	2814	-81.51	-856.48	-34.8
93	SLE FR 6	32	-106	2901	-84.03	-883.17	-35.94
93	SLE QP 1	28	-98	2684	-77.73	-816.44	-33.11
93	SLE QP 2	30	-103	2814	-81.51	-856.48	-34.8
93	SLD 1	121	107	3167	-91.37	-948.49	40.41
93	SLD 2	112	79	3166	-91.34	-948.21	30.36
93	SLD 3	155	-27	3058	-88.26	-921.44	-6.93
93	SLD 4	146	-56	3056	-88.23	-921.16	-16.99
93	SLD 5	10	175	3086	-89.19	-925.21	63.08
93	SLD 6	1	146	3085	-89.16	-924.93	53.03
93	SLD 7	122	-275	2722	-78.83	-835.03	-94.73
93	SLD 8	113	-303	2721	-78.8	-834.75	-104.78
93	SLD 9	-52	97	2908	-84.21	-878.2	35.17
93	SLD 10	-61	69	2907	-84.18	-877.92	25.12
93	SLD 11	60	-352	2543	-73.86	-788.02	-122.64
93	SLD 12	51	-380	2542	-73.83	-787.74	-132.69
93	SLD 13	-85	-150	2572	-74.78	-791.79	-52.62
93	SLD 14	-94	-178	2571	-74.76	-791.51	-62.68
93	SLD 15	-51	-285	2463	-71.68	-764.74	-99.97
93	SLD 16	-60	-313	2462	-71.65	-764.46	-110.02
93	SLV 1	237	383	3623	-104.11	-1067.22	139.1
93	SLV 2	216	319	3620	-104.04	-1066.58	116.26
93	SLV 3	314	70	3370	-96.93	-1004.83	29.18
93	SLV 4	293	6	3367	-96.86	-1004.2	6.35
93	SLV 5	-18	540	3441	-99.2	-1014.54	192.06
93	SLV 6	-38	476	3438	-99.14	-1013.9	169.23
93	SLV 7	240	-503	2599	-75.26	-806.59	-174.32
93	SLV 8	219	-567	2596	-75.2	-805.95	-197.16
93	SLV 9	-158	361	3033	-87.82	-907	127.55
93	SLV 10	-179	298	3030	-87.75	-906.37	104.72
93	SLV 11	99	-681	2190	-63.88	-699.05	-238.84
93	SLV 12	78	-745	2188	-63.81	-698.41	-261.67
93	SLV 13	-232	-212	2261	-66.15	-708.76	-75.96
93	SLV 14	-253	-276	2259	-66.09	-708.12	-98.79
93	SLV 15	-155	-524	2009	-58.97	-646.37	-185.87
93	SLV 16	-176	-588	2006	-58.91	-645.74	-208.7
93	CRTFP Ux+	0	0	0	0	0	0
93	CRTFP Ux-	0	0	0	0	0	0
93	CRTFP Uy+	0	0	0	0	0	0
93	CRTFP Uy-	0	0	0	0	0	0
118	SLU 1	60	-227	6627	-26.14	-1505.75	-53.94
118	SLU 2	60	-258	6620	-25.66	-1504.27	-61.42
118	SLU 3	60	-227	6627	-26.14	-1505.75	-53.94
118	SLU 4	60	-246	6623	-25.85	-1504.86	-58.43
118	SLU 5	60	-258	6620	-25.66	-1504.27	-61.42
118	SLU 6	60	-227	6627	-26.14	-1505.75	-53.94
118	SLU 7	60	-246	6623	-25.85	-1504.86	-58.43
118	SLU 8	60	-227	6627	-26.14	-1505.75	-53.94
118	SLU 9	60	-246	6623	-25.85	-1504.86	-58.43
118	SLU 10	79	-302	7787	-30.45	-1772.48	-71.66
118	SLU 11	80	-270	7794	-30.93	-1773.97	-64.18
118	SLU 12	80	-289	7790	-30.64	-1773.08	-68.67
118	SLU 13	79	-302	7787	-30.45	-1772.48	-71.66
118	SLU 14	80	-270	7794	-30.93	-1773.97	-64.18
118	SLU 15	80	-289	7790	-30.64	-1773.08	-68.67
118	SLU 16	80	-270	7794	-30.93	-1773.97	-64.18
118	SLU 17	80	-289	7790	-30.64	-1773.08	-68.67
118	SLU 18	88	-289	8294	-32.98	-1888.91	-68.57
118	SLU 19	88	-308	8290	-32.7	-1888.02	-73.05
118	SLU 20	88	-289	8294	-32.98	-1888.91	-68.57
118	SLU 21	88	-308	8290	-32.7	-1888.02	-73.05
118	SLU 22	75	-259	7454	-29.63	-1695.77	-61.63
118	SLU 23	74	-291	7447	-29.15	-1694.29	-69.11
118	SLU 24	75	-259	7454	-29.63	-1695.77	-61.63
118	SLU 25	74	-278	7450	-29.34	-1694.88	-66.12
118	SLU 26	74	-291	7447	-29.15	-1694.29	-69.11
118	SLU 27	75	-259	7454	-29.63	-1695.77	-61.63
118	SLU 28	74	-278	7450	-29.34	-1694.88	-66.12
118	SLU 29	75	-259	7454	-29.63	-1695.77	-61.63
118	SLU 30	74	-278	7450	-29.34	-1694.88	-66.12
118	SLU 31	94	-334	8613	-33.95	-1962.5	-79.35
118	SLU 32	94	-303	8621	-34.43	-1963.98	-71.87
118	SLU 33	94	-322	8616	-34.14	-1963.09	-76.36
118	SLU 34	94	-334	8613	-33.95	-1962.5	-79.35
118	SLU 35	94	-303	8621	-34.43	-1963.98	-71.87
118	SLU 36	94	-322	8616	-34.14	-1963.09	-76.36
118	SLU 37	94	-303	8621	-34.43	-1963.98	-71.87
118	SLU 38	94	-322	8616	-34.14	-1963.09	-76.36
118	SLU 39	103	-321	9121	-36.48	-2078.93	-76.26
118	SLU 40	102	-340	9116	-36.19	-2078.04	-80.75
118	SLU 41	103	-321	9121	-36.48	-2078.93	-76.26



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
118	SLU 42	102	-340	9116	-36.19	-2078.04	-80.75
118	SLU 43	73	-284	8332	-32.78	-1892.33	-67.48
118	SLU 44	73	-315	8325	-32.3	-1890.85	-74.96
118	SLU 45	73	-284	8332	-32.78	-1892.33	-67.48
118	SLU 46	73	-302	8328	-32.49	-1891.44	-71.97
118	SLU 47	73	-315	8325	-32.3	-1890.85	-74.96
118	SLU 48	73	-284	8332	-32.78	-1892.33	-67.48
118	SLU 49	73	-302	8328	-32.49	-1891.44	-71.97
118	SLU 50	73	-284	8332	-32.78	-1892.33	-67.48
118	SLU 51	73	-302	8328	-32.49	-1891.44	-71.97
118	SLU 52	93	-358	9491	-37.1	-2159.06	-85.2
118	SLU 53	93	-327	9499	-37.57	-2160.54	-77.72
118	SLU 54	93	-346	9494	-37.29	-2159.65	-82.21
118	SLU 55	93	-358	9491	-37.1	-2159.06	-85.2
118	SLU 56	93	-327	9499	-37.57	-2160.54	-77.72
118	SLU 57	93	-346	9494	-37.29	-2159.65	-82.21
118	SLU 58	93	-327	9499	-37.57	-2160.54	-77.72
118	SLU 59	93	-346	9494	-37.29	-2159.65	-82.21
118	SLU 60	101	-346	9999	-39.63	-2275.49	-82.11
118	SLU 61	101	-365	9994	-39.34	-2274.6	-86.6
118	SLU 62	101	-346	9999	-39.63	-2275.49	-82.11
118	SLU 63	101	-365	9994	-39.34	-2274.6	-86.6
118	SLU 64	88	-316	9159	-36.27	-2082.35	-75.18
118	SLU 65	87	-348	9151	-35.8	-2080.86	-82.66
118	SLU 66	88	-316	9159	-36.27	-2082.35	-75.18
118	SLU 67	87	-335	9154	-35.99	-2081.46	-79.67
118	SLU 68	87	-348	9151	-35.8	-2080.86	-82.66
118	SLU 69	88	-316	9159	-36.27	-2082.35	-75.18
118	SLU 70	87	-335	9154	-35.99	-2081.46	-79.67
118	SLU 71	88	-316	9159	-36.27	-2082.35	-75.18
118	SLU 72	87	-335	9154	-35.99	-2081.46	-79.67
118	SLU 73	107	-391	10318	-40.59	-2349.08	-92.9
118	SLU 74	107	-360	10326	-41.07	-2350.56	-85.42
118	SLU 75	107	-379	10321	-40.78	-2349.67	-89.91
118	SLU 76	107	-391	10318	-40.59	-2349.08	-92.9
118	SLU 77	107	-360	10326	-41.07	-2350.56	-85.42
118	SLU 78	107	-379	10321	-40.78	-2349.67	-89.91
118	SLU 79	107	-360	10326	-41.07	-2350.56	-85.42
118	SLU 80	107	-379	10321	-40.78	-2349.67	-89.91
118	SLU 81	116	-378	10826	-43.12	-2465.51	-89.81
118	SLU 82	115	-397	10821	-42.84	-2464.62	-94.29
118	SLU 83	116	-378	10826	-43.12	-2465.51	-89.81
118	SLU 84	115	-397	10821	-42.84	-2464.62	-94.29
118	SLE RA 1	64	-236	6864	-27.14	-1560.04	-56.14
118	SLE RA 2	64	-257	6859	-26.82	-1559.05	-61.12
118	SLE RA 3	64	-236	6864	-27.14	-1560.04	-56.14
118	SLE RA 4	64	-249	6861	-26.94	-1559.45	-59.13
118	SLE RA 5	64	-257	6859	-26.82	-1559.05	-61.12
118	SLE RA 6	64	-236	6864	-27.14	-1560.04	-56.14
118	SLE RA 7	64	-249	6861	-26.94	-1559.45	-59.13
118	SLE RA 8	64	-236	6864	-27.14	-1560.04	-56.14
118	SLE RA 9	64	-249	6861	-26.94	-1559.45	-59.13
118	SLE RA 10	77	-286	7636	-30.01	-1737.86	-67.95
118	SLE RA 11	77	-265	7641	-30.33	-1738.85	-62.96
118	SLE RA 12	77	-278	7638	-30.14	-1738.26	-65.96
118	SLE RA 13	77	-286	7636	-30.01	-1737.86	-67.95
118	SLE RA 14	77	-265	7641	-30.33	-1738.85	-62.96
118	SLE RA 15	77	-278	7638	-30.14	-1738.26	-65.96
118	SLE RA 16	77	-265	7641	-30.33	-1738.85	-62.96
118	SLE RA 17	77	-278	7638	-30.14	-1738.26	-65.96
118	SLE RA 18	83	-277	7975	-31.7	-1815.48	-65.89
118	SLE RA 19	83	-290	7972	-31.51	-1814.89	-68.88
118	SLE RA 20	83	-277	7975	-31.7	-1815.48	-65.89
118	SLE RA 21	83	-290	7972	-31.51	-1814.89	-68.88
118	SLE FR 1	64	-236	6864	-27.14	-1560.04	-56.14
118	SLE FR 2	64	-240	6863	-27.07	-1559.85	-57.14
118	SLE FR 3	64	-236	6864	-27.14	-1560.04	-56.14
118	SLE FR 4	70	-253	7196	-28.44	-1636.48	-60.06
118	SLE FR 5	70	-249	7197	-28.51	-1636.68	-59.06
118	SLE FR 6	74	-257	7419	-29.42	-1687.76	-61.01
118	SLE QP 1	64	-236	6864	-27.14	-1560.04	-56.14
118	SLE QP 2	70	-249	7197	-28.51	-1636.68	-59.06
118	SLD 1	404	272	8079	-40.68	-1820.04	64.93
118	SLD 2	377	202	8076	-40.66	-1819.48	48.44
118	SLD 3	312	-61	7817	-33.82	-1766.04	-14.39
118	SLD 4	284	-131	7814	-33.8	-1765.48	-30.88
118	SLD 5	320	437	7861	-42.56	-1773.78	104.21
118	SLD 6	293	367	7858	-42.54	-1773.22	87.72
118	SLD 7	12	-672	6986	-19.71	-1593.78	-160.19
118	SLD 8	-16	-742	6983	-19.69	-1593.23	-176.69
118	SLD 9	156	245	7411	-37.32	-1680.12	58.56
118	SLD 10	128	175	7408	-37.3	-1679.57	42.07
118	SLD 11	-153	-864	6536	-14.47	-1500.13	-205.85
118	SLD 12	-180	-934	6533	-14.45	-1499.57	-222.34
118	SLD 13	-144	-366	6580	-23.21	-1507.31	-87.24
118	SLD 14	-172	-436	6577	-23.19	-1507.31	-103.74
118	SLD 15	-237	-699	6318	-16.35	-1453.87	-166.56
118	SLD 16	-264	-769	6315	-16.33	-1453.31	-183.06
118	SLV 1	833	955	9218	-56.64	-2056.57	227.65



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
118	SLV 2	772	796	9211	-56.6	-2055.31	190.19
118	SLV 3	621	183	8612	-40.72	-1932.04	43.52
118	SLV 4	559	24	8605	-40.67	-1930.78	6.06
118	SLV 5	643	1339	8725	-61.12	-1951.96	319.33
118	SLV 6	582	1180	8717	-61.07	-1950.7	281.87
118	SLV 7	-66	-1235	6705	-8.03	-1536.86	-294.44
118	SLV 8	-128	-1394	6698	-7.98	-1535.59	-331.9
118	SLV 9	268	896	7696	-49.03	-1737.76	213.77
118	SLV 10	206	738	7689	-48.98	-1736.49	176.31
118	SLV 11	-442	-1678	5677	4.06	-1322.65	-399.99
118	SLV 12	-504	-1836	5669	4.11	-1321.39	-437.45
118	SLV 13	-419	-521	5789	-16.34	-1342.57	-124.19
118	SLV 14	-481	-680	5782	-16.29	-1341.31	-161.65
118	SLV 15	-632	-1293	5183	-0.41	-1218.04	-308.32
118	SLV 16	-694	-1452	5176	-0.37	-1216.78	-345.78
118	CRTFP Ux+	0	0	0	0	0.01	0
118	CRTFP Ux-	0	0	0	0	-0.01	0
118	CRTFP Uy+	0	0	0	0	0	0
118	CRTFP Uy-	0	0	0	0	0	0
120	SLU 1	39	-142	4139	6.87	-110.97	-2.77
120	SLU 2	39	-161	4134	7.39	-110.87	-3.16
120	SLU 3	39	-142	4139	6.87	-110.97	-2.77
120	SLU 4	39	-154	4136	7.19	-110.91	-3
120	SLU 5	39	-161	4134	7.39	-110.87	-3.16
120	SLU 6	39	-142	4139	6.87	-110.97	-2.77
120	SLU 7	39	-154	4136	7.19	-110.91	-3
120	SLU 8	39	-142	4139	6.87	-110.97	-2.77
120	SLU 9	39	-154	4136	7.19	-110.91	-3
120	SLU 10	51	-189	4868	8.45	-130.82	-3.64
120	SLU 11	51	-169	4872	7.93	-130.92	-3.25
120	SLU 12	51	-181	4870	8.24	-130.86	-3.49
120	SLU 13	51	-189	4868	8.45	-130.82	-3.64
120	SLU 14	51	-169	4872	7.93	-130.92	-3.25
120	SLU 15	51	-181	4870	8.24	-130.86	-3.49
120	SLU 16	51	-169	4872	7.93	-130.92	-3.25
120	SLU 17	51	-181	4870	8.24	-130.86	-3.49
120	SLU 18	57	-181	5187	8.38	-139.47	-3.46
120	SLU 19	57	-192	5184	8.69	-139.41	-3.7
120	SLU 20	57	-181	5187	8.38	-139.47	-3.46
120	SLU 21	57	-192	5184	8.69	-139.41	-3.7
120	SLU 22	48	-162	4659	7.51	-125.1	-3.14
120	SLU 23	48	-182	4654	8.03	-125.01	-3.53
120	SLU 24	48	-162	4659	7.51	-125.1	-3.14
120	SLU 25	48	-174	4656	7.82	-125.04	-3.37
120	SLU 26	48	-182	4654	8.03	-125.01	-3.53
120	SLU 27	48	-162	4659	7.51	-125.1	-3.14
120	SLU 28	48	-174	4656	7.82	-125.04	-3.37
120	SLU 29	48	-162	4659	7.51	-125.1	-3.14
120	SLU 30	48	-174	4656	7.82	-125.04	-3.37
120	SLU 31	60	-209	5388	9.08	-144.95	-4.01
120	SLU 32	61	-189	5392	8.56	-145.05	-3.62
120	SLU 33	60	-201	5390	8.87	-144.99	-3.86
120	SLU 34	60	-209	5388	9.08	-144.95	-4.01
120	SLU 35	61	-189	5392	8.56	-145.05	-3.62
120	SLU 36	60	-201	5390	8.87	-144.99	-3.86
120	SLU 37	61	-189	5392	8.56	-145.05	-3.62
120	SLU 38	60	-201	5390	8.87	-144.99	-3.86
120	SLU 39	66	-201	5707	9.01	-153.6	-3.83
120	SLU 40	66	-213	5704	9.33	-153.54	-4.06
120	SLU 41	66	-201	5707	9.01	-153.6	-3.83
120	SLU 42	66	-213	5704	9.33	-153.54	-4.06
120	SLU 43	47	-177	5202	8.72	-139.42	-3.48
120	SLU 44	47	-197	5198	9.24	-139.32	-3.87
120	SLU 45	47	-177	5202	8.72	-139.42	-3.48
120	SLU 46	47	-189	5199	9.03	-139.36	-3.71
120	SLU 47	47	-197	5198	9.24	-139.32	-3.87
120	SLU 48	47	-177	5202	8.72	-139.42	-3.48
120	SLU 49	47	-189	5199	9.03	-139.36	-3.71
120	SLU 50	47	-177	5202	8.72	-139.42	-3.48
120	SLU 51	47	-189	5199	9.03	-139.36	-3.71
120	SLU 52	60	-224	5931	10.29	-159.27	-4.35
120	SLU 53	60	-205	5936	9.77	-159.37	-3.96
120	SLU 54	60	-216	5933	10.09	-159.31	-4.19
120	SLU 55	60	-224	5931	10.29	-159.27	-4.35
120	SLU 56	60	-205	5936	9.77	-159.37	-3.96
120	SLU 57	60	-216	5933	10.09	-159.31	-4.19
120	SLU 58	60	-205	5936	9.77	-159.37	-3.96
120	SLU 59	60	-216	5933	10.09	-159.31	-4.19
120	SLU 60	65	-216	6250	10.23	-167.92	-4.17
120	SLU 61	65	-228	6248	10.54	-167.86	-4.4
120	SLU 62	65	-216	6250	10.23	-167.92	-4.17
120	SLU 63	65	-228	6248	10.54	-167.86	-4.4
120	SLU 64	57	-198	5722	9.35	-153.55	-3.84
120	SLU 65	56	-217	5717	9.87	-153.45	-4.23
120	SLU 66	57	-198	5722	9.35	-153.55	-3.84
120	SLU 67	56	-210	5719	9.66	-153.49	-4.08
120	SLU 68	56	-217	5717	9.87	-153.45	-4.23
120	SLU 69	57	-198	5722	9.35	-153.55	-3.84
120	SLU 70	56	-210	5719	9.66	-153.49	-4.08



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
120	SLU 71	57	-198	5722	9.35	-153.55	-3.84
120	SLU 72	56	-210	5719	9.66	-153.49	-4.08
120	SLU 73	69	-245	6451	10.93	-173.4	-4.72
120	SLU 74	69	-225	6456	10.41	-173.5	-4.33
120	SLU 75	69	-237	6453	10.72	-173.44	-4.56
120	SLU 76	69	-245	6451	10.93	-173.4	-4.72
120	SLU 77	69	-225	6456	10.41	-173.5	-4.33
120	SLU 78	69	-237	6453	10.72	-173.44	-4.56
120	SLU 79	69	-225	6456	10.41	-173.5	-4.33
120	SLU 80	69	-237	6453	10.72	-173.44	-4.56
120	SLU 81	74	-237	6770	10.86	-182.05	-4.54
120	SLU 82	74	-248	6767	11.17	-181.99	-4.77
120	SLU 83	74	-237	6770	10.86	-182.05	-4.54
120	SLU 84	74	-248	6767	11.17	-181.99	-4.77
120	SLE RA 1	41	-148	4287	7.05	-115.01	-2.88
120	SLE RA 2	41	-161	4284	7.4	-114.94	-3.14
120	SLE RA 3	41	-148	4287	7.05	-115.01	-2.88
120	SLE RA 4	41	-156	4285	7.26	-114.97	-3.03
120	SLE RA 5	41	-161	4284	7.4	-114.94	-3.14
120	SLE RA 6	41	-148	4287	7.05	-115.01	-2.88
120	SLE RA 7	41	-156	4285	7.26	-114.97	-3.03
120	SLE RA 8	41	-148	4287	7.05	-115.01	-2.88
120	SLE RA 9	41	-156	4285	7.26	-114.97	-3.03
120	SLE RA 10	50	-179	4773	8.1	-128.24	-3.46
120	SLE RA 11	50	-166	4776	7.76	-128.31	-3.2
120	SLE RA 12	50	-174	4775	7.97	-128.27	-3.35
120	SLE RA 13	50	-179	4773	8.1	-128.24	-3.46
120	SLE RA 14	50	-166	4776	7.76	-128.31	-3.2
120	SLE RA 15	50	-174	4775	7.97	-128.27	-3.35
120	SLE RA 16	50	-166	4776	7.76	-128.31	-3.2
120	SLE RA 17	50	-174	4775	7.97	-128.27	-3.35
120	SLE RA 18	53	-174	4986	8.06	-134.01	-3.34
120	SLE RA 19	53	-181	4984	8.27	-133.97	-3.49
120	SLE RA 20	53	-174	4986	8.06	-134.01	-3.34
120	SLE RA 21	53	-181	4984	8.27	-133.97	-3.49
120	SLE FR 1	41	-148	4287	7.05	-115.01	-2.88
120	SLE FR 2	41	-150	4287	7.12	-115	-2.93
120	SLE FR 3	41	-148	4287	7.05	-115.01	-2.88
120	SLE FR 4	45	-158	4496	7.43	-120.7	-3.07
120	SLE FR 5	45	-155	4497	7.36	-120.71	-3.01
120	SLE FR 6	47	-161	4637	7.56	-124.51	-3.11
120	SLE QP 1	41	-148	4287	7.05	-115.01	-2.88
120	SLE QP 2	45	-155	4497	7.36	-120.71	-3.01
120	SLD 1	258	166	5025	-3.25	-133.66	2.68
120	SLD 2	241	123	5024	-3.24	-133.62	2.07
120	SLD 3	199	-41	4869	3.8	-129.88	-1.25
120	SLD 4	182	-84	4867	3.81	-129.85	-1.87
120	SLD 5	205	270	4893	-6.53	-130.33	4.88
120	SLD 6	187	227	4891	-6.52	-130.3	4.27
120	SLD 7	8	-420	4372	16.99	-117.74	-8.24
120	SLD 8	-10	-463	4370	17	-117.71	-8.86
120	SLD 9	100	152	4624	-2.29	-123.71	2.83
120	SLD 10	82	109	4622	-2.28	-123.67	2.21
120	SLD 11	-97	-538	4102	21.23	-111.12	-10.29
120	SLD 12	-115	-581	4100	21.25	-111.09	-10.91
120	SLD 13	-92	-227	4126	10.9	-111.57	-4.16
120	SLD 14	-109	-270	4125	10.91	-111.54	-4.77
120	SLD 15	-151	-434	3970	17.96	-107.8	-8.09
120	SLD 16	-168	-477	3968	17.97	-107.76	-8.71
120	SLV 1	533	588	5707	-17.23	-150.35	10.17
120	SLV 2	493	491	5703	-17.21	-150.27	8.76
120	SLV 3	397	108	5346	-0.85	-141.65	1.03
120	SLV 4	357	11	5342	-0.82	-141.57	-0.37
120	SLV 5	411	830	5409	-24.88	-142.83	15.28
120	SLV 6	372	733	5405	-24.85	-142.75	13.88
120	SLV 7	-42	-771	4206	29.73	-113.81	-15.16
120	SLV 8	-81	-868	4202	29.76	-113.74	-16.56
120	SLV 9	171	557	4792	-15.05	-127.68	10.53
120	SLV 10	132	460	4788	-15.02	-127.6	9.13
120	SLV 11	-282	-1044	3589	39.57	-98.66	-19.91
120	SLV 12	-321	-1141	3585	39.59	-98.59	-21.31
120	SLV 13	-267	-322	3651	15.54	-99.85	-5.66
120	SLV 14	-307	-419	3647	15.56	-99.77	-7.06
120	SLV 15	-403	-802	3290	31.92	-91.14	-14.79
120	SLV 16	-443	-899	3286	31.95	-91.07	-16.2
120	CRTFP Ux+	0	0	0	0	0	0
120	CRTFP Ux-	0	0	0	0	0	0
120	CRTFP Uy+	0	0	0	0	0	0
120	CRTFP Uy-	0	0	0	0	0	0
121	SLU 1	46	-158	4656	31.61	5.05	1.7
121	SLU 2	46	-180	4652	32.17	5.01	1.94
121	SLU 3	46	-158	4656	31.61	5.05	1.7
121	SLU 4	46	-171	4654	31.95	5.03	1.84
121	SLU 5	46	-180	4652	32.17	5.01	1.94
121	SLU 6	46	-158	4656	31.61	5.05	1.7
121	SLU 7	46	-171	4654	31.95	5.03	1.84
121	SLU 8	46	-158	4656	31.61	5.05	1.7
121	SLU 9	46	-171	4654	31.95	5.03	1.84
121	SLU 10	61	-210	5491	37.57	5.44	2.28



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
121	SLU 11	61	-188	5495	37	5.47	2.05
121	SLU 12	61	-201	5493	37.34	5.45	2.19
121	SLU 13	61	-210	5491	37.57	5.44	2.28
121	SLU 14	61	-188	5495	37	5.47	2.05
121	SLU 15	61	-201	5493	37.34	5.45	2.19
121	SLU 16	61	-188	5495	37	5.47	2.05
121	SLU 17	61	-201	5493	37.34	5.45	2.19
121	SLU 18	67	-201	5855	39.31	5.66	2.2
121	SLU 19	67	-214	5852	39.65	5.64	2.34
121	SLU 20	67	-201	5855	39.31	5.66	2.2
121	SLU 21	67	-214	5852	39.65	5.64	2.34
121	SLU 22	57	-181	5251	35.3	5.35	1.96
121	SLU 23	57	-203	5247	35.86	5.32	2.19
121	SLU 24	57	-181	5251	35.3	5.35	1.96
121	SLU 25	57	-194	5248	35.64	5.33	2.1
121	SLU 26	57	-203	5247	35.86	5.32	2.19
121	SLU 27	57	-181	5251	35.3	5.35	1.96
121	SLU 28	57	-194	5248	35.64	5.33	2.1
121	SLU 29	57	-181	5251	35.3	5.35	1.96
121	SLU 30	57	-194	5248	35.64	5.33	2.1
121	SLU 31	71	-233	6085	41.26	5.75	2.54
121	SLU 32	72	-211	6089	40.69	5.78	2.3
121	SLU 33	71	-224	6087	41.03	5.76	2.45
121	SLU 34	71	-233	6085	41.26	5.75	2.54
121	SLU 35	72	-211	6089	40.69	5.78	2.3
121	SLU 36	71	-224	6087	41.03	5.76	2.45
121	SLU 37	72	-211	6089	40.69	5.78	2.3
121	SLU 38	71	-224	6087	41.03	5.76	2.45
121	SLU 39	78	-224	6449	43	5.96	2.45
121	SLU 40	78	-237	6446	43.34	5.94	2.59
121	SLU 41	78	-224	6449	43	5.96	2.45
121	SLU 42	78	-237	6446	43.34	5.94	2.59
121	SLU 43	56	-198	5850	39.82	6.45	2.12
121	SLU 44	56	-220	5846	40.39	6.42	2.36
121	SLU 45	56	-198	5850	39.82	6.45	2.12
121	SLU 46	56	-211	5847	40.16	6.43	2.26
121	SLU 47	56	-220	5846	40.39	6.42	2.36
121	SLU 48	56	-198	5850	39.82	6.45	2.12
121	SLU 49	56	-211	5847	40.16	6.43	2.26
121	SLU 50	56	-198	5850	39.82	6.45	2.12
121	SLU 51	56	-211	5847	40.16	6.43	2.26
121	SLU 52	71	-250	6684	45.78	6.85	2.7
121	SLU 53	71	-228	6688	45.22	6.88	2.47
121	SLU 54	71	-241	6686	45.56	6.86	2.61
121	SLU 55	71	-250	6684	45.78	6.85	2.7
121	SLU 56	71	-228	6688	45.22	6.88	2.47
121	SLU 57	71	-241	6686	45.56	6.86	2.61
121	SLU 58	71	-228	6688	45.22	6.88	2.47
121	SLU 59	71	-241	6686	45.56	6.86	2.61
121	SLU 60	77	-241	7048	47.53	7.07	2.62
121	SLU 61	77	-254	7045	47.87	7.05	2.76
121	SLU 62	77	-241	7048	47.53	7.07	2.62
121	SLU 63	77	-254	7045	47.87	7.05	2.76
121	SLU 64	67	-220	6444	43.51	6.76	2.38
121	SLU 65	67	-242	6440	44.08	6.73	2.61
121	SLU 66	67	-220	6444	43.51	6.76	2.38
121	SLU 67	67	-234	6441	43.85	6.74	2.52
121	SLU 68	67	-242	6440	44.08	6.73	2.61
121	SLU 69	67	-220	6444	43.51	6.76	2.38
121	SLU 70	67	-234	6441	43.85	6.74	2.52
121	SLU 71	67	-220	6444	43.51	6.76	2.38
121	SLU 72	67	-234	6441	43.85	6.74	2.52
121	SLU 73	82	-272	7278	49.47	7.16	2.96
121	SLU 74	82	-251	7283	48.91	7.19	2.73
121	SLU 75	82	-264	7280	49.25	7.17	2.87
121	SLU 76	82	-272	7278	49.47	7.16	2.96
121	SLU 77	82	-251	7283	48.91	7.19	2.73
121	SLU 78	82	-264	7280	49.25	7.17	2.87
121	SLU 79	82	-251	7283	48.91	7.19	2.73
121	SLU 80	82	-264	7280	49.25	7.17	2.87
121	SLU 81	88	-264	7642	51.22	7.37	2.87
121	SLU 82	88	-277	7640	51.56	7.35	3.02
121	SLU 83	88	-264	7642	51.22	7.37	2.87
121	SLU 84	88	-277	7640	51.56	7.35	3.02
121	SLE RA 1	49	-165	4826	32.66	5.13	1.77
121	SLE RA 2	49	-179	4824	33.04	5.11	1.93
121	SLE RA 3	49	-165	4826	32.66	5.13	1.77
121	SLE RA 4	49	-173	4825	32.89	5.12	1.87
121	SLE RA 5	49	-179	4824	33.04	5.11	1.93
121	SLE RA 6	49	-165	4826	32.66	5.13	1.77
121	SLE RA 7	49	-173	4825	32.89	5.12	1.87
121	SLE RA 8	49	-165	4826	32.66	5.13	1.77
121	SLE RA 9	49	-173	4825	32.89	5.12	1.87
121	SLE RA 10	59	-199	5383	36.63	5.4	2.16
121	SLE RA 11	59	-185	5385	36.26	5.42	2
121	SLE RA 12	59	-193	5384	36.48	5.41	2.1
121	SLE RA 13	59	-199	5383	36.63	5.4	2.16
121	SLE RA 14	59	-185	5385	36.26	5.42	2
121	SLE RA 15	59	-193	5384	36.48	5.41	2.1



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
121	SLE RA 16	59	-185	5385	36.26	5.42	2
121	SLE RA 17	59	-193	5384	36.48	5.41	2.1
121	SLE RA 18	63	-193	5625	37.8	5.54	2.1
121	SLE RA 19	63	-202	5623	38.02	5.53	2.2
121	SLE RA 20	63	-193	5625	37.8	5.54	2.1
121	SLE RA 21	63	-202	5623	38.02	5.53	2.2
121	SLE FR 1	49	-165	4826	32.66	5.13	1.77
121	SLE FR 2	49	-168	4826	32.74	5.13	1.81
121	SLE FR 3	49	-165	4826	32.66	5.13	1.77
121	SLE FR 4	53	-176	5065	34.28	5.25	1.9
121	SLE FR 5	53	-173	5066	34.2	5.26	1.87
121	SLE FR 6	56	-179	5226	35.23	5.34	1.94
121	SLE QP 1	49	-165	4826	32.66	5.13	1.77
121	SLE QP 2	53	-173	5066	34.2	5.26	1.87
121	SLD 1	303	177	5607	24.02	7.74	-3.61
121	SLD 2	283	131	5605	24.02	7.72	-2.75
121	SLD 3	234	-51	5449	31.53	6.93	-0.76
121	SLD 4	214	-97	5447	31.53	6.9	0.09
121	SLD 5	240	294	5468	19.76	7.25	-4.38
121	SLD 6	220	248	5467	19.76	7.22	-3.52
121	SLD 7	10	-467	4942	44.79	4.53	5.09
121	SLD 8	-10	-513	4940	44.79	4.5	5.95
121	SLD 9	117	166	5192	23.61	6.01	-2.2
121	SLD 10	97	120	5190	23.62	5.98	-1.35
121	SLD 11	-113	-595	4665	48.64	3.29	7.27
121	SLD 12	-133	-641	4663	48.65	3.26	8.13
121	SLD 13	-107	-250	4684	36.87	3.61	3.65
121	SLD 14	-127	-295	4683	36.88	3.58	4.51
121	SLD 15	-176	-478	4526	44.38	2.79	6.49
121	SLD 16	-196	-524	4525	44.39	2.77	7.35
121	SLV 1	624	637	6304	10.59	10.96	-10.76
121	SLV 2	578	533	6301	10.6	10.91	-8.82
121	SLV 3	465	108	5940	28.01	9.07	-4.16
121	SLV 4	419	3	5937	28.02	9.02	-2.21
121	SLV 5	482	910	5991	0.69	9.85	-12.62
121	SLV 6	436	806	5988	0.71	9.8	-10.67
121	SLV 7	-48	-856	4777	58.76	3.56	9.4
121	SLV 8	-94	-960	4774	58.77	3.5	11.35
121	SLV 9	201	614	5358	9.63	7.01	-7.61
121	SLV 10	155	510	5355	9.64	6.96	-5.66
121	SLV 11	-329	-1152	4144	67.7	0.72	14.42
121	SLV 12	-375	-1256	4141	67.71	0.66	16.37
121	SLV 13	-312	-350	4195	40.38	1.5	5.95
121	SLV 14	-358	-454	4192	40.4	1.44	7.9
121	SLV 15	-471	-879	3831	57.8	-0.39	12.56
121	SLV 16	-517	-984	3828	57.82	-0.45	14.51
121	CRTFP Ux+	0	0	0	0	0	0
121	CRTFP Ux-	0	0	0	0	0	0
121	CRTFP Uy+	0	0	0	0	0	0
121	CRTFP Uy-	0	0	0	0	0	0
122	SLU 1	47	-148	4520	31.65	3.81	2.09
122	SLU 2	47	-168	4517	32.21	3.77	2.35
122	SLU 3	47	-148	4520	31.65	3.81	2.09
122	SLU 4	47	-160	4518	31.99	3.79	2.24
122	SLU 5	47	-168	4517	32.21	3.77	2.35
122	SLU 6	47	-148	4520	31.65	3.81	2.09
122	SLU 7	47	-160	4518	31.99	3.79	2.24
122	SLU 8	47	-148	4520	31.65	3.81	2.09
122	SLU 9	47	-160	4518	31.99	3.79	2.24
122	SLU 10	62	-196	5346	37.62	3.98	2.77
122	SLU 11	62	-176	5349	37.07	4.01	2.5
122	SLU 12	62	-188	5347	37.4	4	2.66
122	SLU 13	62	-196	5346	37.62	3.98	2.77
122	SLU 14	62	-176	5349	37.07	4.01	2.5
122	SLU 15	62	-188	5347	37.4	4	2.66
122	SLU 16	62	-176	5349	37.07	4.01	2.5
122	SLU 17	62	-188	5347	37.4	4	2.66
122	SLU 18	68	-188	5705	39.39	4.1	2.68
122	SLU 19	68	-200	5703	39.72	4.08	2.84
122	SLU 20	68	-188	5705	39.39	4.1	2.68
122	SLU 21	68	-200	5703	39.72	4.08	2.84
122	SLU 22	58	-169	5107	35.36	3.96	2.4
122	SLU 23	58	-189	5104	35.92	3.92	2.66
122	SLU 24	58	-169	5107	35.36	3.96	2.4
122	SLU 25	58	-181	5106	35.7	3.94	2.55
122	SLU 26	58	-189	5104	35.92	3.92	2.66
122	SLU 27	58	-169	5107	35.36	3.96	2.4
122	SLU 28	58	-181	5106	35.7	3.94	2.55
122	SLU 29	58	-169	5107	35.36	3.96	2.4
122	SLU 30	58	-181	5106	35.7	3.94	2.55
122	SLU 31	73	-218	5933	41.33	4.13	3.08
122	SLU 32	73	-197	5937	40.77	4.16	2.81
122	SLU 33	73	-209	5935	41.11	4.15	2.97
122	SLU 34	73	-218	5933	41.33	4.13	3.08
122	SLU 35	73	-197	5937	40.77	4.16	2.81
122	SLU 36	73	-209	5935	41.11	4.15	2.97
122	SLU 37	73	-197	5937	40.77	4.16	2.81
122	SLU 38	73	-209	5935	41.11	4.15	2.97
122	SLU 39	79	-209	6292	43.09	4.25	2.99



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
122	SLU 40	79	-221	6290	43.43	4.23	3.15
122	SLU 41	79	-209	6292	43.09	4.25	2.99
122	SLU 42	79	-221	6290	43.43	4.23	3.15
122	SLU 43	58	-185	5675	39.88	4.9	2.6
122	SLU 44	58	-205	5672	40.44	4.86	2.87
122	SLU 45	58	-185	5675	39.88	4.9	2.6
122	SLU 46	58	-197	5673	40.21	4.88	2.76
122	SLU 47	58	-205	5672	40.44	4.86	2.87
122	SLU 48	58	-185	5675	39.88	4.9	2.6
122	SLU 49	58	-197	5673	40.21	4.88	2.76
122	SLU 50	58	-185	5675	39.88	4.9	2.6
122	SLU 51	58	-197	5673	40.21	4.88	2.76
122	SLU 52	72	-234	6501	45.85	5.07	3.29
122	SLU 53	73	-213	6504	45.29	5.1	3.02
122	SLU 54	72	-225	6502	45.63	5.09	3.18
122	SLU 55	72	-234	6501	45.85	5.07	3.29
122	SLU 56	73	-213	6504	45.29	5.1	3.02
122	SLU 57	72	-225	6502	45.63	5.09	3.18
122	SLU 58	73	-213	6504	45.29	5.1	3.02
122	SLU 59	72	-225	6502	45.63	5.09	3.18
122	SLU 60	79	-225	6859	47.61	5.19	3.2
122	SLU 61	79	-237	6857	47.94	5.17	3.36
122	SLU 62	79	-225	6859	47.61	5.19	3.2
122	SLU 63	79	-237	6857	47.94	5.17	3.36
122	SLU 64	69	-206	6262	43.59	5.05	2.92
122	SLU 65	68	-227	6259	44.14	5.02	3.18
122	SLU 66	69	-206	6262	43.59	5.05	2.92
122	SLU 67	69	-218	6260	43.92	5.03	3.07
122	SLU 68	68	-227	6259	44.14	5.02	3.18
122	SLU 69	69	-206	6262	43.59	5.05	2.92
122	SLU 70	69	-218	6260	43.92	5.03	3.07
122	SLU 71	69	-206	6262	43.59	5.05	2.92
122	SLU 72	69	-218	6260	43.92	5.03	3.07
122	SLU 73	83	-255	7088	49.56	5.22	3.6
122	SLU 74	83	-234	7091	49	5.25	3.33
122	SLU 75	83	-247	7089	49.33	5.24	3.49
122	SLU 76	83	-255	7088	49.56	5.22	3.6
122	SLU 77	83	-234	7091	49	5.25	3.33
122	SLU 78	83	-247	7089	49.33	5.24	3.49
122	SLU 79	83	-234	7091	49	5.25	3.33
122	SLU 80	83	-247	7089	49.33	5.24	3.49
122	SLU 81	90	-246	7447	51.32	5.34	3.51
122	SLU 82	90	-259	7445	51.65	5.33	3.67
122	SLU 83	90	-246	7447	51.32	5.34	3.51
122	SLU 84	90	-259	7445	51.65	5.33	3.67
122	SLE RA 1	50	-154	4688	32.71	3.85	2.17
122	SLE RA 2	50	-168	4686	33.08	3.83	2.35
122	SLE RA 3	50	-154	4688	32.71	3.85	2.17
122	SLE RA 4	50	-162	4687	32.94	3.84	2.28
122	SLE RA 5	50	-168	4686	33.08	3.83	2.35
122	SLE RA 6	50	-154	4688	32.71	3.85	2.17
122	SLE RA 7	50	-162	4687	32.94	3.84	2.28
122	SLE RA 8	50	-154	4688	32.71	3.85	2.17
122	SLE RA 9	50	-162	4687	32.94	3.84	2.28
122	SLE RA 10	60	-186	5239	36.69	3.97	2.63
122	SLE RA 11	60	-173	5241	36.32	3.99	2.45
122	SLE RA 12	60	-181	5239	36.54	3.98	2.56
122	SLE RA 13	60	-186	5239	36.69	3.97	2.63
122	SLE RA 14	60	-173	5241	36.32	3.99	2.45
122	SLE RA 15	60	-181	5239	36.54	3.98	2.56
122	SLE RA 16	60	-173	5241	36.32	3.99	2.45
122	SLE RA 17	60	-181	5239	36.54	3.98	2.56
122	SLE RA 18	64	-181	5478	37.87	4.05	2.57
122	SLE RA 19	64	-189	5476	38.09	4.03	2.68
122	SLE RA 20	64	-181	5478	37.87	4.05	2.57
122	SLE RA 21	64	-189	5476	38.09	4.03	2.68
122	SLE FR 1	50	-154	4688	32.71	3.85	2.17
122	SLE FR 2	50	-157	4688	32.79	3.84	2.21
122	SLE FR 3	50	-154	4688	32.71	3.85	2.17
122	SLE FR 4	55	-165	4924	34.33	3.9	2.33
122	SLE FR 5	55	-162	4925	34.26	3.91	2.29
122	SLE FR 6	57	-167	5083	35.29	3.95	2.37
122	SLE QP 1	50	-154	4688	32.71	3.85	2.17
122	SLE QP 2	55	-162	4925	34.26	3.91	2.29
122	SLD 1	305	160	5392	24.18	6.19	-3.4
122	SLD 2	285	119	5392	24.2	6.17	-2.51
122	SLD 3	236	-53	5258	31.63	5.43	-0.33
122	SLD 4	215	-94	5257	31.64	5.41	0.56
122	SLD 5	242	272	5269	19.94	5.75	-4.39
122	SLD 6	222	230	5268	19.96	5.73	-3.5
122	SLD 7	11	-437	4821	44.75	3.23	5.86
122	SLD 8	-9	-478	4821	44.77	3.2	6.75
122	SLD 9	119	154	5029	23.75	4.61	-2.16
122	SLD 10	98	113	5028	23.76	4.59	-1.27
122	SLD 11	-112	-554	4581	48.56	2.09	8.09
122	SLD 12	-133	-596	4581	48.57	2.07	8.98
122	SLD 13	-106	-230	4592	36.88	2.41	4.03
122	SLD 14	-126	-271	4592	36.89	2.38	4.92
122	SLD 15	-175	-443	4458	44.32	1.65	7.1



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
122	SLD 16	-196	-484	4458	44.33	1.63	7.99
122	SLV 1	627	583	5995	10.9	9.15	-10.86
122	SLV 2	580	489	5993	10.92	9.09	-8.84
122	SLV 3	467	90	5685	28.16	7.39	-3.71
122	SLV 4	421	-4	5684	28.19	7.34	-1.69
122	SLV 5	484	842	5715	1.05	8.16	-13.2
122	SLV 6	438	749	5714	1.08	8.1	-11.18
122	SLV 7	-47	-802	4684	58.61	2.32	10.62
122	SLV 8	-93	-896	4683	58.64	2.26	12.65
122	SLV 9	203	572	5167	9.88	5.56	-8.06
122	SLV 10	156	478	5166	9.91	5.5	-6.04
122	SLV 11	-329	-1073	4136	67.44	-0.29	15.76
122	SLV 12	-375	-1167	4134	67.47	-0.34	17.79
122	SLV 13	-312	-320	4166	40.33	0.48	6.28
122	SLV 14	-358	-414	4165	40.36	0.42	8.3
122	SLV 15	-471	-813	3857	57.6	-1.27	13.42
122	SLV 16	-517	-907	3855	57.62	-1.33	15.45
122	CRTFP Ux+	0	0	0	0	0	0
122	CRTFP Ux-	0	0	0	0	0	0
122	CRTFP Uy+	0	0	0	0	0	0
122	CRTFP Uy-	0	0	0	0	0	0
123	SLU 1	49	-136	4412	31.75	3.18	2.35
123	SLU 2	48	-155	4410	32.29	3.15	2.62
123	SLU 3	49	-136	4412	31.75	3.18	2.35
123	SLU 4	48	-147	4411	32.08	3.16	2.51
123	SLU 5	48	-155	4410	32.29	3.15	2.62
123	SLU 6	49	-136	4412	31.75	3.18	2.35
123	SLU 7	48	-147	4411	32.08	3.16	2.51
123	SLU 8	49	-136	4412	31.75	3.18	2.35
123	SLU 9	48	-147	4411	32.08	3.16	2.51
123	SLU 10	63	-181	5234	37.73	3.28	3.09
123	SLU 11	63	-162	5236	37.18	3.31	2.81
123	SLU 12	63	-173	5235	37.51	3.29	2.98
123	SLU 13	63	-181	5234	37.73	3.28	3.09
123	SLU 14	63	-162	5236	37.18	3.31	2.81
123	SLU 15	63	-173	5235	37.51	3.29	2.98
123	SLU 16	63	-162	5236	37.18	3.31	2.81
123	SLU 17	63	-173	5235	37.51	3.29	2.98
123	SLU 18	70	-173	5590	39.51	3.36	3.01
123	SLU 19	69	-184	5588	39.84	3.34	3.18
123	SLU 20	70	-173	5590	39.51	3.36	3.01
123	SLU 21	69	-184	5588	39.84	3.34	3.18
123	SLU 22	59	-155	4996	35.48	3.27	2.69
123	SLU 23	59	-174	4994	36.02	3.24	2.97
123	SLU 24	59	-155	4996	35.48	3.27	2.69
123	SLU 25	59	-167	4995	35.81	3.26	2.86
123	SLU 26	59	-174	4994	36.02	3.24	2.97
123	SLU 27	59	-155	4996	35.48	3.27	2.69
123	SLU 28	59	-167	4995	35.81	3.26	2.86
123	SLU 29	59	-155	4996	35.48	3.27	2.69
123	SLU 30	59	-167	4995	35.81	3.26	2.86
123	SLU 31	74	-200	5818	41.46	3.37	3.44
123	SLU 32	74	-181	5820	40.91	3.4	3.16
123	SLU 33	74	-193	5819	41.24	3.38	3.33
123	SLU 34	74	-200	5818	41.46	3.37	3.44
123	SLU 35	74	-181	5820	40.91	3.4	3.16
123	SLU 36	74	-193	5819	41.24	3.38	3.33
123	SLU 37	74	-181	5820	40.91	3.4	3.16
123	SLU 38	74	-193	5819	41.24	3.38	3.33
123	SLU 39	80	-192	6173	43.24	3.45	3.36
123	SLU 40	80	-204	6172	43.57	3.43	3.53
123	SLU 41	80	-192	6173	43.24	3.45	3.36
123	SLU 42	80	-204	6172	43.57	3.43	3.53
123	SLU 43	60	-170	5536	39.99	4.11	2.93
123	SLU 44	59	-189	5534	40.54	4.08	3.21
123	SLU 45	60	-170	5536	39.99	4.11	2.93
123	SLU 46	59	-182	5535	40.32	4.09	3.1
123	SLU 47	59	-189	5534	40.54	4.08	3.21
123	SLU 48	60	-170	5536	39.99	4.11	2.93
123	SLU 49	59	-182	5535	40.32	4.09	3.1
123	SLU 50	60	-170	5536	39.99	4.11	2.93
123	SLU 51	59	-182	5535	40.32	4.09	3.1
123	SLU 52	74	-215	6358	45.98	4.2	3.67
123	SLU 53	74	-196	6360	45.43	4.23	3.4
123	SLU 54	74	-207	6359	45.76	4.21	3.56
123	SLU 55	74	-215	6358	45.98	4.2	3.67
123	SLU 56	74	-196	6360	45.43	4.23	3.4
123	SLU 57	74	-207	6359	45.76	4.21	3.56
123	SLU 58	74	-196	6360	45.43	4.23	3.4
123	SLU 59	74	-207	6359	45.76	4.21	3.56
123	SLU 60	80	-207	6713	47.76	4.28	3.6
123	SLU 61	80	-218	6712	48.09	4.27	3.76
123	SLU 62	80	-207	6713	47.76	4.28	3.6
123	SLU 63	80	-218	6712	48.09	4.27	3.76
123	SLU 64	70	-190	6120	43.72	4.2	3.28
123	SLU 65	70	-209	6117	44.27	4.17	3.55
123	SLU 66	70	-190	6120	43.72	4.2	3.28
123	SLU 67	70	-201	6118	44.05	4.18	3.44
123	SLU 68	70	-209	6117	44.27	4.17	3.55



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
123	SLU 69	70	-190	6120	43.72	4.2	3.28
123	SLU 70	70	-201	6118	44.05	4.18	3.44
123	SLU 71	70	-190	6120	43.72	4.2	3.28
123	SLU 72	70	-201	6118	44.05	4.18	3.44
123	SLU 73	85	-234	6942	49.71	4.29	4.02
123	SLU 74	85	-215	6944	49.16	4.32	3.75
123	SLU 75	85	-227	6942	49.49	4.3	3.91
123	SLU 76	85	-234	6942	49.71	4.29	4.02
123	SLU 77	85	-215	6944	49.16	4.32	3.75
123	SLU 78	85	-227	6942	49.49	4.3	3.91
123	SLU 79	85	-215	6944	49.16	4.32	3.75
123	SLU 80	85	-227	6942	49.49	4.3	3.91
123	SLU 81	91	-226	7297	51.49	4.38	3.95
123	SLU 82	91	-238	7296	51.82	4.36	4.11
123	SLU 83	91	-226	7297	51.49	4.38	3.95
123	SLU 84	91	-238	7296	51.82	4.36	4.11
123	SLE RA 1	52	-142	4579	32.81	3.21	2.45
123	SLE RA 2	51	-154	4578	33.18	3.19	2.63
123	SLE RA 3	52	-142	4579	32.81	3.21	2.45
123	SLE RA 4	52	-149	4578	33.03	3.2	2.56
123	SLE RA 5	51	-154	4578	33.18	3.19	2.63
123	SLE RA 6	52	-142	4579	32.81	3.21	2.45
123	SLE RA 7	52	-149	4578	33.03	3.2	2.56
123	SLE RA 8	52	-142	4579	32.81	3.21	2.45
123	SLE RA 9	52	-149	4578	33.03	3.2	2.56
123	SLE RA 10	61	-171	5127	36.8	3.27	2.94
123	SLE RA 11	61	-159	5129	36.44	3.29	2.76
123	SLE RA 12	61	-166	5128	36.66	3.28	2.87
123	SLE RA 13	61	-171	5127	36.8	3.27	2.94
123	SLE RA 14	61	-159	5129	36.44	3.29	2.76
123	SLE RA 15	61	-166	5128	36.66	3.28	2.87
123	SLE RA 16	61	-159	5129	36.44	3.29	2.76
123	SLE RA 17	61	-166	5128	36.66	3.28	2.87
123	SLE RA 18	66	-166	5364	37.99	3.33	2.89
123	SLE RA 19	66	-174	5363	38.21	3.32	3
123	SLE RA 20	66	-166	5364	37.99	3.33	2.89
123	SLE RA 21	66	-174	5363	38.21	3.32	3
123	SLE FR 1	52	-142	4579	32.81	3.21	2.45
123	SLE FR 2	52	-144	4579	32.88	3.21	2.48
123	SLE FR 3	52	-142	4579	32.81	3.21	2.45
123	SLE FR 4	56	-152	4814	34.44	3.24	2.62
123	SLE FR 5	56	-149	4815	34.36	3.24	2.58
123	SLE FR 6	59	-154	4972	35.4	3.27	2.67
123	SLE QP 1	52	-142	4579	32.81	3.21	2.45
123	SLE QP 2	56	-149	4815	34.36	3.24	2.58
123	SLD 1	307	144	5214	24.39	5.4	-3.15
123	SLD 2	286	107	5214	24.4	5.38	-2.25
123	SLD 3	237	-52	5101	31.77	4.68	-0.01
123	SLD 4	217	-89	5101	31.79	4.66	0.89
123	SLD 5	244	249	5105	20.16	4.99	-4.22
123	SLD 6	223	213	5105	20.18	4.97	-3.32
123	SLD 7	12	-405	4730	44.78	2.59	6.25
123	SLD 8	-8	-441	4730	44.8	2.57	7.16
123	SLD 9	120	143	4899	23.93	3.92	-2
123	SLD 10	100	107	4899	23.95	3.9	-1.09
123	SLD 11	-111	-511	4524	48.55	1.52	8.48
123	SLD 12	-132	-547	4524	48.57	1.5	9.38
123	SLD 13	-105	-209	4528	36.94	1.83	4.27
123	SLD 14	-126	-246	4528	36.96	1.81	5.17
123	SLD 15	-175	-405	4415	44.33	1.11	7.41
123	SLD 16	-195	-442	4415	44.34	1.09	8.31
123	SLV 1	629	529	5728	11.23	8.19	-10.66
123	SLV 2	583	446	5728	11.26	8.14	-8.61
123	SLV 3	469	74	5469	28.36	6.52	-3.35
123	SLV 4	423	-9	5470	28.4	6.47	-1.3
123	SLV 5	486	774	5481	1.42	7.28	-13.19
123	SLV 6	440	691	5481	1.46	7.23	-11.14
123	SLV 7	-46	-743	4619	58.54	1.72	11.16
123	SLV 8	-92	-826	4619	58.58	1.66	13.22
123	SLV 9	204	528	5010	10.15	4.83	-8.06
123	SLV 10	158	445	5011	10.19	4.77	-6
123	SLV 11	-328	-989	4148	67.27	-0.74	16.3
123	SLV 12	-374	-1072	4148	67.31	-0.79	18.35
123	SLV 13	-311	-289	4160	40.33	0.02	6.46
123	SLV 14	-358	-372	4160	40.37	-0.04	8.51
123	SLV 15	-471	-744	3901	57.47	-1.65	13.77
123	SLV 16	-517	-827	3901	57.5	-1.7	15.82
123	CRTFP Ux+	0	0	0	0	0	0
123	CRTFP Ux-	0	0	0	0	0	0
123	CRTFP Uy+	0	0	0	0	0	0
123	CRTFP Uy-	0	0	0	0	0	0
124	SLU 1	50	-123	4317	31.88	2.95	2.5
124	SLU 2	50	-141	4316	32.42	2.92	2.77
124	SLU 3	50	-123	4317	31.88	2.95	2.5
124	SLU 4	50	-134	4317	32.21	2.93	2.67
124	SLU 5	50	-141	4316	32.42	2.92	2.77
124	SLU 6	50	-123	4317	31.88	2.95	2.5
124	SLU 7	50	-134	4317	32.21	2.93	2.67
124	SLU 8	50	-123	4317	31.88	2.95	2.5



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
124	SLU 9	50	-134	4317	32.21	2.93	2.67
124	SLU 10	64	-164	5137	37.89	3.04	3.27
124	SLU 11	64	-146	5138	37.35	3.07	3
124	SLU 12	64	-157	5137	37.68	3.06	3.16
124	SLU 13	64	-164	5137	37.89	3.04	3.27
124	SLU 14	64	-146	5138	37.35	3.07	3
124	SLU 15	64	-157	5137	37.68	3.06	3.16
124	SLU 16	64	-146	5138	37.35	3.07	3
124	SLU 17	64	-157	5137	37.68	3.06	3.16
124	SLU 18	71	-156	5489	39.7	3.13	3.21
124	SLU 19	70	-167	5489	40.02	3.11	3.38
124	SLU 20	71	-156	5489	39.7	3.13	3.21
124	SLU 21	70	-167	5489	40.02	3.11	3.38
124	SLU 22	61	-141	4898	35.64	3.04	2.87
124	SLU 23	60	-158	4897	36.18	3.01	3.14
124	SLU 24	61	-141	4898	35.64	3.04	2.87
124	SLU 25	60	-151	4898	35.96	3.02	3.03
124	SLU 26	60	-158	4897	36.18	3.01	3.14
124	SLU 27	61	-141	4898	35.64	3.04	2.87
124	SLU 28	60	-151	4898	35.96	3.02	3.03
124	SLU 29	61	-141	4898	35.64	3.04	2.87
124	SLU 30	60	-151	4898	35.96	3.02	3.03
124	SLU 31	75	-181	5718	41.65	3.14	3.64
124	SLU 32	75	-164	5719	41.11	3.17	3.37
124	SLU 33	75	-174	5718	41.43	3.15	3.53
124	SLU 34	75	-181	5718	41.65	3.14	3.64
124	SLU 35	75	-164	5719	41.11	3.17	3.37
124	SLU 36	75	-174	5718	41.43	3.15	3.53
124	SLU 37	75	-164	5719	41.11	3.17	3.37
124	SLU 38	75	-174	5718	41.43	3.15	3.53
124	SLU 39	81	-174	6070	43.45	3.22	3.58
124	SLU 40	81	-184	6070	43.78	3.2	3.75
124	SLU 41	81	-174	6070	43.45	3.22	3.58
124	SLU 42	81	-184	6070	43.78	3.2	3.75
124	SLU 43	61	-154	5414	40.16	3.8	3.13
124	SLU 44	61	-172	5412	40.7	3.77	3.4
124	SLU 45	61	-154	5414	40.16	3.8	3.13
124	SLU 46	61	-165	5413	40.48	3.78	3.29
124	SLU 47	61	-172	5412	40.7	3.77	3.4
124	SLU 48	61	-154	5414	40.16	3.8	3.13
124	SLU 49	61	-165	5413	40.48	3.78	3.29
124	SLU 50	61	-154	5414	40.16	3.8	3.13
124	SLU 51	61	-165	5413	40.48	3.78	3.29
124	SLU 52	75	-195	6233	46.17	3.9	3.89
124	SLU 53	76	-177	6234	45.63	3.93	3.62
124	SLU 54	76	-188	6233	45.95	3.91	3.79
124	SLU 55	75	-195	6233	46.17	3.9	3.89
124	SLU 56	76	-177	6234	45.63	3.93	3.62
124	SLU 57	76	-188	6233	45.95	3.91	3.79
124	SLU 58	76	-177	6234	45.63	3.93	3.62
124	SLU 59	76	-188	6233	45.95	3.91	3.79
124	SLU 60	82	-187	6586	47.97	3.98	3.84
124	SLU 61	82	-198	6585	48.3	3.96	4
124	SLU 62	82	-187	6586	47.97	3.98	3.84
124	SLU 63	82	-198	6585	48.3	3.96	4
124	SLU 64	72	-172	5994	43.91	3.89	3.5
124	SLU 65	71	-189	5993	44.46	3.86	3.77
124	SLU 66	72	-172	5994	43.91	3.89	3.5
124	SLU 67	72	-182	5994	44.24	3.87	3.66
124	SLU 68	71	-189	5993	44.46	3.86	3.77
124	SLU 69	72	-172	5994	43.91	3.89	3.5
124	SLU 70	72	-182	5994	44.24	3.87	3.66
124	SLU 71	72	-172	5994	43.91	3.89	3.5
124	SLU 72	72	-182	5994	44.24	3.87	3.66
124	SLU 73	86	-212	6814	49.93	3.99	4.26
124	SLU 74	86	-195	6815	49.39	4.02	3.99
124	SLU 75	86	-205	6814	49.71	4	4.16
124	SLU 76	86	-212	6814	49.93	3.99	4.26
124	SLU 77	86	-195	6815	49.39	4.02	3.99
124	SLU 78	86	-205	6814	49.71	4	4.16
124	SLU 79	86	-195	6815	49.39	4.02	3.99
124	SLU 80	86	-205	6814	49.71	4	4.16
124	SLU 81	93	-205	7166	51.73	4.07	4.21
124	SLU 82	92	-215	7166	52.06	4.06	4.37
124	SLU 83	93	-205	7166	51.73	4.07	4.21
124	SLU 84	92	-215	7166	52.06	4.06	4.37
124	SLE RA 1	53	-128	4483	32.96	2.97	2.61
124	SLE RA 2	53	-140	4483	33.32	2.95	2.79
124	SLE RA 3	53	-128	4483	32.96	2.97	2.61
124	SLE RA 4	53	-135	4483	33.17	2.96	2.72
124	SLE RA 5	53	-140	4483	33.32	2.95	2.79
124	SLE RA 6	53	-128	4483	32.96	2.97	2.61
124	SLE RA 7	53	-135	4483	33.17	2.96	2.72
124	SLE RA 8	53	-128	4483	32.96	2.97	2.61
124	SLE RA 9	53	-135	4483	33.17	2.96	2.72
124	SLE RA 10	62	-155	5030	36.96	3.04	3.12
124	SLE RA 11	63	-144	5030	36.6	3.06	2.94
124	SLE RA 12	62	-151	5030	36.82	3.05	3.05
124	SLE RA 13	62	-155	5030	36.96	3.04	3.12



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
124	SLE RA 14	63	-144	5030	36.6	3.06	2.94
124	SLE RA 15	62	-151	5030	36.82	3.05	3.05
124	SLE RA 16	63	-144	5030	36.6	3.06	2.94
124	SLE RA 17	62	-151	5030	36.82	3.05	3.05
124	SLE RA 18	67	-150	5265	38.17	3.09	3.08
124	SLE RA 19	67	-157	5264	38.38	3.08	3.19
124	SLE RA 20	67	-150	5265	38.17	3.09	3.08
124	SLE RA 21	67	-157	5264	38.38	3.08	3.19
124	SLE FR 1	53	-128	4483	32.96	2.97	2.61
124	SLE FR 2	53	-131	4483	33.03	2.97	2.64
124	SLE FR 3	53	-128	4483	32.96	2.97	2.61
124	SLE FR 4	57	-137	4718	34.59	3	2.79
124	SLE FR 5	57	-135	4718	34.52	3.01	2.75
124	SLE FR 6	60	-139	4874	35.56	3.03	2.85
124	SLE QP 1	53	-128	4483	32.96	2.97	2.61
124	SLE QP 2	57	-135	4718	34.52	3.01	2.75
124	SLD 1	308	130	4961	24.63	5.08	-2.87
124	SLD 2	288	98	4961	24.65	5.06	-1.96
124	SLD 3	239	-50	5053	31.96	4.38	0.21
124	SLD 4	218	-82	5053	31.98	4.36	1.11
124	SLD 5	245	228	4651	20.42	4.69	-3.91
124	SLD 6	225	197	4652	20.44	4.67	-3.01
124	SLD 7	13	-371	4958	44.87	2.37	6.33
124	SLD 8	-7	-403	4958	44.89	2.35	7.23
124	SLD 9	121	133	4477	24.15	3.67	-1.73
124	SLD 10	101	101	4478	24.17	3.64	-0.83
124	SLD 11	-111	-466	4784	48.6	1.35	8.51
124	SLD 12	-131	-498	4785	48.62	1.32	9.41
124	SLD 13	-104	-188	4382	37.05	1.66	4.39
124	SLD 14	-125	-219	4383	37.07	1.63	5.29
124	SLD 15	-174	-367	4474	44.39	0.96	7.46
124	SLD 16	-194	-399	4475	44.41	0.94	8.37
124	SLV 1	631	477	5272	11.58	7.76	-10.21
124	SLV 2	585	404	5274	11.63	7.71	-8.16
124	SLV 3	471	60	5483	28.6	6.15	-3.07
124	SLV 4	425	-13	5485	28.65	6.1	-1.02
124	SLV 5	488	706	4563	1.8	6.9	-12.69
124	SLV 6	442	634	4565	1.85	6.85	-10.64
124	SLV 7	-45	-684	5267	58.54	1.52	11.12
124	SLV 8	-91	-756	5269	58.59	1.47	13.17
124	SLV 9	205	486	4166	10.45	4.55	-7.67
124	SLV 10	159	414	4168	10.5	4.49	-5.62
124	SLV 11	-328	-904	4871	67.18	-0.83	16.14
124	SLV 12	-374	-976	4873	67.23	-0.88	18.19
124	SLV 13	-311	-257	3950	40.39	-0.08	6.52
124	SLV 14	-357	-329	3952	40.44	-0.13	8.57
124	SLV 15	-471	-674	4162	57.41	-1.69	13.66
124	SLV 16	-517	-746	4164	57.46	-1.75	15.71
124	CRTFP Ux+	0	0	0	0	0	0
124	CRTFP Ux-	0	0	0	0	0	0
124	CRTFP Uy+	0	0	0	0	0	0
124	CRTFP Uy-	0	0	0	0	0	0
125	SLU 1	51	-110	4226	32.06	2.93	2.57
125	SLU 2	51	-126	4226	32.6	2.9	2.82
125	SLU 3	51	-110	4226	32.06	2.93	2.57
125	SLU 4	51	-119	4226	32.38	2.91	2.72
125	SLU 5	51	-126	4226	32.6	2.9	2.82
125	SLU 6	51	-110	4226	32.06	2.93	2.57
125	SLU 7	51	-119	4226	32.38	2.91	2.72
125	SLU 8	51	-110	4226	32.06	2.93	2.57
125	SLU 9	51	-119	4226	32.38	2.91	2.72
125	SLU 10	65	-146	5042	38.11	3.09	3.34
125	SLU 11	65	-130	5042	37.58	3.12	3.08
125	SLU 12	65	-140	5042	37.9	3.1	3.23
125	SLU 13	65	-146	5042	38.11	3.09	3.34
125	SLU 14	65	-130	5042	37.58	3.12	3.08
125	SLU 15	65	-140	5042	37.9	3.1	3.23
125	SLU 16	65	-130	5042	37.58	3.12	3.08
125	SLU 17	65	-140	5042	37.9	3.1	3.23
125	SLU 18	72	-139	5391	39.94	3.2	3.3
125	SLU 19	71	-149	5391	40.26	3.18	3.45
125	SLU 20	72	-139	5391	39.94	3.2	3.3
125	SLU 21	71	-149	5391	40.26	3.18	3.45
125	SLU 22	62	-125	4804	35.85	3.06	2.95
125	SLU 23	61	-141	4803	36.39	3.03	3.2
125	SLU 24	62	-125	4804	35.85	3.06	2.95
125	SLU 25	61	-135	4804	36.17	3.05	3.1
125	SLU 26	61	-141	4803	36.39	3.03	3.2
125	SLU 27	62	-125	4804	35.85	3.06	2.95
125	SLU 28	61	-135	4804	36.17	3.05	3.1
125	SLU 29	62	-125	4804	35.85	3.06	2.95
125	SLU 30	61	-135	4804	36.17	3.05	3.1
125	SLU 31	76	-162	5619	41.9	3.22	3.72
125	SLU 32	76	-146	5619	41.36	3.25	3.46
125	SLU 33	76	-155	5619	41.68	3.23	3.61
125	SLU 34	76	-162	5619	41.9	3.22	3.72
125	SLU 35	76	-146	5619	41.36	3.25	3.46
125	SLU 36	76	-155	5619	41.68	3.23	3.61
125	SLU 37	76	-146	5619	41.36	3.25	3.46



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
125	SLU 38	76	-155	5619	41.68	3.23	3.61
125	SLU 39	82	-154	5969	43.73	3.33	3.68
125	SLU 40	82	-164	5969	44.05	3.31	3.83
125	SLU 41	82	-154	5969	43.73	3.33	3.68
125	SLU 42	82	-164	5969	44.05	3.31	3.83
125	SLU 43	63	-137	5296	40.38	3.77	3.21
125	SLU 44	62	-153	5296	40.92	3.74	3.46
125	SLU 45	63	-137	5296	40.38	3.77	3.21
125	SLU 46	63	-147	5296	40.7	3.75	3.36
125	SLU 47	62	-153	5296	40.92	3.74	3.46
125	SLU 48	63	-137	5296	40.38	3.77	3.21
125	SLU 49	63	-147	5296	40.7	3.75	3.36
125	SLU 50	63	-137	5296	40.38	3.77	3.21
125	SLU 51	63	-147	5296	40.7	3.75	3.36
125	SLU 52	77	-174	6111	46.43	3.92	3.98
125	SLU 53	77	-158	6112	45.9	3.95	3.72
125	SLU 54	77	-167	6112	46.22	3.93	3.87
125	SLU 55	77	-174	6111	46.43	3.92	3.98
125	SLU 56	77	-158	6112	45.9	3.95	3.72
125	SLU 57	77	-167	6112	46.22	3.93	3.87
125	SLU 58	77	-158	6112	45.9	3.95	3.72
125	SLU 59	77	-167	6112	46.22	3.93	3.87
125	SLU 60	83	-167	6461	48.26	4.03	3.94
125	SLU 61	83	-176	6461	48.58	4.01	4.09
125	SLU 62	83	-167	6461	48.26	4.03	3.94
125	SLU 63	83	-176	6461	48.58	4.01	4.09
125	SLU 64	73	-153	5874	44.17	3.9	3.59
125	SLU 65	73	-169	5873	44.71	3.87	3.84
125	SLU 66	73	-153	5874	44.17	3.9	3.59
125	SLU 67	73	-162	5873	44.49	3.88	3.74
125	SLU 68	73	-169	5873	44.71	3.87	3.84
125	SLU 69	73	-153	5874	44.17	3.9	3.59
125	SLU 70	73	-162	5873	44.49	3.88	3.74
125	SLU 71	73	-153	5874	44.17	3.9	3.59
125	SLU 72	73	-162	5873	44.49	3.88	3.74
125	SLU 73	87	-189	6689	50.22	4.05	4.36
125	SLU 74	88	-173	6689	49.68	4.08	4.1
125	SLU 75	87	-183	6689	50	4.07	4.26
125	SLU 76	87	-189	6689	50.22	4.05	4.36
125	SLU 77	88	-173	6689	49.68	4.08	4.1
125	SLU 78	87	-183	6689	50	4.07	4.26
125	SLU 79	88	-173	6689	49.68	4.08	4.1
125	SLU 80	87	-183	6689	50	4.07	4.26
125	SLU 81	94	-182	7039	52.05	4.16	4.32
125	SLU 82	94	-192	7039	52.37	4.15	4.47
125	SLU 83	94	-182	7039	52.05	4.16	4.32
125	SLU 84	94	-192	7039	52.37	4.15	4.47
125	SLE RA 1	54	-114	4391	33.15	2.97	2.68
125	SLE RA 2	54	-125	4391	33.5	2.95	2.85
125	SLE RA 3	54	-114	4391	33.15	2.97	2.68
125	SLE RA 4	54	-121	4391	33.36	2.96	2.78
125	SLE RA 5	54	-125	4391	33.5	2.95	2.85
125	SLE RA 6	54	-114	4391	33.15	2.97	2.68
125	SLE RA 7	54	-121	4391	33.36	2.96	2.78
125	SLE RA 8	54	-114	4391	33.15	2.97	2.68
125	SLE RA 9	54	-121	4391	33.36	2.96	2.78
125	SLE RA 10	63	-139	4935	37.18	3.07	3.19
125	SLE RA 11	64	-128	4935	36.82	3.09	3.02
125	SLE RA 12	64	-134	4935	37.03	3.08	3.12
125	SLE RA 13	63	-139	4935	37.18	3.07	3.19
125	SLE RA 14	64	-128	4935	36.82	3.09	3.02
125	SLE RA 15	64	-134	4935	37.03	3.08	3.12
125	SLE RA 16	64	-128	4935	36.82	3.09	3.02
125	SLE RA 17	64	-134	4935	37.03	3.08	3.12
125	SLE RA 18	68	-134	5168	38.39	3.15	3.17
125	SLE RA 19	68	-140	5168	38.61	3.13	3.27
125	SLE RA 20	68	-134	5168	38.39	3.15	3.17
125	SLE RA 21	68	-140	5168	38.61	3.13	3.27
125	SLE FR 1	54	-114	4391	33.15	2.97	2.68
125	SLE FR 2	54	-116	4391	33.22	2.97	2.71
125	SLE FR 3	54	-114	4391	33.15	2.97	2.68
125	SLE FR 4	58	-122	4624	34.79	3.02	2.86
125	SLE FR 5	58	-120	4624	34.72	3.02	2.82
125	SLE FR 6	61	-124	4780	35.77	3.06	2.92
125	SLE QP 1	54	-114	4391	33.15	2.97	2.68
125	SLE QP 2	58	-120	4624	34.72	3.02	2.82
125	SLD 1	310	117	4824	24.9	5.01	-2.55
125	SLD 2	290	90	4826	24.93	4.99	-1.66
125	SLD 3	240	-47	4898	32.2	4.34	0.33
125	SLD 4	220	-74	4899	32.22	4.32	1.23
125	SLD 5	246	210	4573	20.71	4.65	-3.48
125	SLD 6	226	183	4574	20.73	4.63	-2.58
125	SLD 7	14	-338	4817	45.01	2.4	6.14
125	SLD 8	-6	-365	4819	45.04	2.38	7.03
125	SLD 9	122	125	4430	24.4	3.66	-1.39
125	SLD 10	102	98	4432	24.43	3.64	-0.49
125	SLD 11	-110	-423	4674	48.71	1.42	8.23
125	SLD 12	-130	-450	4676	48.73	1.4	9.13
125	SLD 13	-104	-166	4349	37.22	1.73	4.42



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
125	SLD 14	-124	-193	4351	37.24	1.7	5.31
125	SLD 15	-173	-330	4423	44.51	1.05	7.3
125	SLD 16	-194	-357	4424	44.54	1.03	8.2
125	SLV 1	633	429	5081	11.95	7.59	-9.58
125	SLV 2	587	367	5085	12.01	7.54	-7.55
125	SLV 3	473	48	5249	28.87	6.03	-2.87
125	SLV 4	427	-14	5253	28.93	5.98	-0.84
125	SLV 5	490	644	4505	2.2	6.78	-11.78
125	SLV 6	443	582	4509	2.27	6.73	-9.75
125	SLV 7	-44	-626	5065	58.61	1.58	10.58
125	SLV 8	-90	-687	5069	58.67	1.53	12.61
125	SLV 9	207	447	4180	10.77	4.52	-6.96
125	SLV 10	160	386	4183	10.83	4.47	-4.93
125	SLV 11	-327	-822	4740	67.17	-0.68	15.4
125	SLV 12	-373	-884	4743	67.24	-0.73	17.43
125	SLV 13	-311	-226	3996	40.51	0.06	6.49
125	SLV 14	-357	-288	4000	40.57	0.01	8.52
125	SLV 15	-471	-607	4164	57.43	-1.5	13.2
125	SLV 16	-517	-669	4167	57.49	-1.55	15.23
125	CRTFP Ux+	0	0	0	0	0	0
125	CRTFP Ux-	0	0	0	0	0	0
125	CRTFP Uy+	0	0	0	0	0	0
125	CRTFP Uy-	0	0	0	0	0	0
126	SLU 1	52	-96	4134	32.29	3.02	2.56
126	SLU 2	52	-111	4134	32.82	2.99	2.79
126	SLU 3	52	-96	4134	32.29	3.02	2.56
126	SLU 4	52	-105	4134	32.61	3.01	2.7
126	SLU 5	52	-111	4134	32.82	2.99	2.79
126	SLU 6	52	-96	4134	32.29	3.02	2.56
126	SLU 7	52	-105	4134	32.61	3.01	2.7
126	SLU 8	52	-96	4134	32.29	3.02	2.56
126	SLU 9	52	-105	4134	32.61	3.01	2.7
126	SLU 10	66	-129	4943	38.38	3.27	3.3
126	SLU 11	66	-114	4942	37.85	3.3	3.08
126	SLU 12	66	-123	4942	38.17	3.28	3.21
126	SLU 13	66	-129	4943	38.38	3.27	3.3
126	SLU 14	66	-114	4942	37.85	3.3	3.08
126	SLU 15	66	-123	4942	38.17	3.28	3.21
126	SLU 16	66	-114	4942	37.85	3.3	3.08
126	SLU 17	66	-123	4942	38.17	3.28	3.21
126	SLU 18	72	-122	5289	40.23	3.41	3.3
126	SLU 19	72	-130	5289	40.55	3.4	3.43
126	SLU 20	72	-122	5289	40.23	3.41	3.3
126	SLU 21	72	-130	5289	40.55	3.4	3.43
126	SLU 22	63	-110	4706	36.11	3.21	2.94
126	SLU 23	62	-124	4707	36.64	3.19	3.17
126	SLU 24	63	-110	4706	36.11	3.21	2.94
126	SLU 25	62	-119	4706	36.43	3.2	3.08
126	SLU 26	62	-124	4707	36.64	3.19	3.17
126	SLU 27	63	-110	4706	36.11	3.21	2.94
126	SLU 28	62	-119	4706	36.43	3.2	3.08
126	SLU 29	63	-110	4706	36.11	3.21	2.94
126	SLU 30	62	-119	4706	36.43	3.2	3.08
126	SLU 31	77	-142	5515	42.2	3.46	3.68
126	SLU 32	77	-127	5515	41.67	3.49	3.46
126	SLU 33	77	-136	5515	41.99	3.47	3.59
126	SLU 34	77	-142	5515	42.2	3.46	3.68
126	SLU 35	77	-127	5515	41.67	3.49	3.46
126	SLU 36	77	-136	5515	41.99	3.47	3.59
126	SLU 37	77	-127	5515	41.67	3.49	3.46
126	SLU 38	77	-136	5515	41.99	3.47	3.59
126	SLU 39	83	-135	5861	44.06	3.6	3.68
126	SLU 40	83	-144	5861	44.37	3.59	3.81
126	SLU 41	83	-135	5861	44.06	3.6	3.68
126	SLU 42	83	-144	5861	44.37	3.59	3.81
126	SLU 43	64	-120	5177	40.66	3.86	3.2
126	SLU 44	64	-135	5178	41.19	3.84	3.43
126	SLU 45	64	-120	5177	40.66	3.86	3.2
126	SLU 46	64	-129	5178	40.98	3.85	3.33
126	SLU 47	64	-135	5178	41.19	3.84	3.43
126	SLU 48	64	-120	5177	40.66	3.86	3.2
126	SLU 49	64	-129	5178	40.98	3.85	3.33
126	SLU 50	64	-120	5177	40.66	3.86	3.2
126	SLU 51	64	-129	5178	40.98	3.85	3.33
126	SLU 52	78	-153	5987	46.75	4.11	3.94
126	SLU 53	78	-138	5986	46.22	4.14	3.71
126	SLU 54	78	-147	5986	46.54	4.12	3.85
126	SLU 55	78	-153	5987	46.75	4.11	3.94
126	SLU 56	78	-138	5986	46.22	4.14	3.71
126	SLU 57	78	-147	5986	46.54	4.12	3.85
126	SLU 58	78	-138	5986	46.22	4.14	3.71
126	SLU 59	78	-147	5986	46.54	4.12	3.85
126	SLU 60	85	-146	6332	48.61	4.25	3.93
126	SLU 61	84	-155	6333	48.92	4.24	4.07
126	SLU 62	85	-146	6332	48.61	4.25	3.93
126	SLU 63	84	-155	6333	48.92	4.24	4.07
126	SLU 64	75	-134	5750	44.49	4.05	3.58
126	SLU 65	74	-149	5751	45.02	4.03	3.81
126	SLU 66	75	-134	5750	44.49	4.05	3.58



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
126	SLU 67	75	-143	5750	44.81	4.04	3.72
126	SLU 68	74	-149	5751	45.02	4.03	3.81
126	SLU 69	75	-134	5750	44.49	4.05	3.58
126	SLU 70	75	-143	5750	44.81	4.04	3.72
126	SLU 71	75	-134	5750	44.49	4.05	3.58
126	SLU 72	75	-143	5750	44.81	4.04	3.72
126	SLU 73	89	-166	6559	50.58	4.3	4.32
126	SLU 74	89	-152	6558	50.05	4.33	4.1
126	SLU 75	89	-161	6559	50.37	4.31	4.23
126	SLU 76	89	-166	6559	50.58	4.3	4.32
126	SLU 77	89	-152	6558	50.05	4.33	4.1
126	SLU 78	89	-161	6559	50.37	4.31	4.23
126	SLU 79	89	-152	6558	50.05	4.33	4.1
126	SLU 80	89	-161	6559	50.37	4.31	4.23
126	SLU 81	95	-159	6905	52.43	4.44	4.32
126	SLU 82	95	-168	6905	52.75	4.43	4.45
126	SLU 83	95	-159	6905	52.43	4.44	4.32
126	SLU 84	95	-168	6905	52.75	4.43	4.45
126	SLE RA 1	55	-100	4297	33.38	3.08	2.67
126	SLE RA 2	55	-110	4298	33.73	3.06	2.82
126	SLE RA 3	55	-100	4297	33.38	3.08	2.67
126	SLE RA 4	55	-106	4297	33.59	3.07	2.76
126	SLE RA 5	55	-110	4298	33.73	3.06	2.82
126	SLE RA 6	55	-100	4297	33.38	3.08	2.67
126	SLE RA 7	55	-106	4297	33.59	3.07	2.76
126	SLE RA 8	55	-100	4297	33.38	3.08	2.67
126	SLE RA 9	55	-106	4297	33.59	3.07	2.76
126	SLE RA 10	64	-122	4837	37.44	3.24	3.16
126	SLE RA 11	65	-112	4836	37.09	3.26	3.01
126	SLE RA 12	65	-118	4836	37.3	3.25	3.1
126	SLE RA 13	64	-122	4837	37.44	3.24	3.16
126	SLE RA 14	65	-112	4836	37.09	3.26	3.01
126	SLE RA 15	65	-118	4836	37.3	3.25	3.1
126	SLE RA 16	65	-112	4836	37.09	3.26	3.01
126	SLE RA 17	65	-118	4836	37.3	3.25	3.1
126	SLE RA 18	69	-117	5067	38.68	3.34	3.16
126	SLE RA 19	69	-123	5067	38.89	3.33	3.25
126	SLE RA 20	69	-117	5067	38.68	3.34	3.16
126	SLE RA 21	69	-123	5067	38.89	3.33	3.25
126	SLE FR 1	55	-100	4297	33.38	3.08	2.67
126	SLE FR 2	55	-102	4297	33.45	3.07	2.7
126	SLE FR 3	55	-100	4297	33.38	3.08	2.67
126	SLE FR 4	59	-107	4528	35.04	3.15	2.85
126	SLE FR 5	59	-105	4528	34.97	3.15	2.82
126	SLE FR 6	62	-108	4682	36.03	3.21	2.92
126	SLE QP 1	55	-100	4297	33.38	3.08	2.67
126	SLE QP 2	59	-105	4528	34.97	3.15	2.82
126	SLD 1	311	107	4687	25.22	5.04	-2.23
126	SLD 2	291	85	4690	25.25	5.02	-1.35
126	SLD 3	242	-43	4744	32.47	4.39	0.37
126	SLD 4	221	-65	4747	32.51	4.38	1.25
126	SLD 5	248	194	4488	21.03	4.7	-2.95
126	SLD 6	227	171	4491	21.06	4.68	-2.07
126	SLD 7	15	-306	4679	45.21	2.56	5.72
126	SLD 8	-5	-328	4681	45.25	2.54	6.61
126	SLD 9	123	118	4375	24.69	3.77	-0.97
126	SLD 10	103	96	4377	24.73	3.75	-0.09
126	SLD 11	-109	-382	4566	48.88	1.63	7.71
126	SLD 12	-129	-404	4568	48.91	1.61	8.59
126	SLD 13	-103	-145	4310	37.43	1.93	4.38
126	SLD 14	-123	-167	4312	37.47	1.92	5.26
126	SLD 15	-172	-295	4367	44.69	1.29	6.98
126	SLD 16	-193	-317	4369	44.72	1.27	7.87
126	SLV 1	635	386	4891	12.35	7.47	-8.83
126	SLV 2	589	335	4897	12.43	7.43	-6.83
126	SLV 3	475	38	5022	29.19	5.98	-2.77
126	SLV 4	429	-13	5027	29.26	5.94	-0.77
126	SLV 5	491	587	4438	2.63	6.72	-10.56
126	SLV 6	445	536	4443	2.7	6.68	-8.56
126	SLV 7	-43	-571	4872	58.74	1.76	9.62
126	SLV 8	-89	-622	4877	58.82	1.72	11.62
126	SLV 9	208	412	4179	11.12	4.59	-5.99
126	SLV 10	161	361	4184	11.2	4.54	-3.99
126	SLV 11	-327	-746	4614	67.24	-0.37	14.19
126	SLV 12	-373	-797	4619	67.32	-0.41	16.19
126	SLV 13	-310	-197	4029	40.68	0.37	6.41
126	SLV 14	-356	-248	4034	40.75	0.33	8.41
126	SLV 15	-470	-545	4160	57.52	-1.12	12.46
126	SLV 16	-517	-596	4165	57.59	-1.16	14.46
126	CRTFP Ux+	0	0	0	0	0	0
126	CRTFP Ux-	0	0	0	0	0	0
126	CRTFP Uy+	0	0	0	0	0	0
126	CRTFP Uy-	0	0	0	0	0	0
127	SLU 1	53	-83	4038	32.56	3.12	2.49
127	SLU 2	53	-97	4039	33.08	3.09	2.68
127	SLU 3	53	-83	4038	32.56	3.12	2.49
127	SLU 4	53	-91	4039	32.87	3.1	2.61
127	SLU 5	53	-97	4039	33.08	3.09	2.68
127	SLU 6	53	-83	4038	32.56	3.12	2.49



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
127	SLU 7	53	-91	4039	32.87	3.1	2.61
127	SLU 8	53	-83	4038	32.56	3.12	2.49
127	SLU 9	53	-91	4039	32.87	3.1	2.61
127	SLU 10	67	-112	4838	38.7	3.46	3.19
127	SLU 11	67	-98	4836	38.18	3.49	3
127	SLU 12	67	-106	4837	38.49	3.47	3.11
127	SLU 13	67	-112	4838	38.7	3.46	3.19
127	SLU 14	67	-98	4836	38.18	3.49	3
127	SLU 15	67	-106	4837	38.49	3.47	3.11
127	SLU 16	67	-98	4836	38.18	3.49	3
127	SLU 17	67	-106	4837	38.49	3.47	3.11
127	SLU 18	73	-104	5179	40.58	3.65	3.22
127	SLU 19	73	-113	5179	40.9	3.63	3.33
127	SLU 20	73	-104	5179	40.58	3.65	3.22
127	SLU 21	73	-113	5179	40.9	3.63	3.33
127	SLU 22	64	-94	4603	36.43	3.37	2.87
127	SLU 23	63	-108	4605	36.95	3.35	3.06
127	SLU 24	64	-94	4603	36.43	3.37	2.87
127	SLU 25	64	-102	4604	36.74	3.36	2.98
127	SLU 26	63	-108	4605	36.95	3.35	3.06
127	SLU 27	64	-94	4603	36.43	3.37	2.87
127	SLU 28	64	-102	4604	36.74	3.36	2.98
127	SLU 29	64	-94	4603	36.43	3.37	2.87
127	SLU 30	64	-102	4604	36.74	3.36	2.98
127	SLU 31	77	-123	5403	42.57	3.72	3.57
127	SLU 32	78	-109	5402	42.04	3.74	3.38
127	SLU 33	77	-118	5403	42.36	3.73	3.49
127	SLU 34	77	-123	5403	42.57	3.72	3.57
127	SLU 35	78	-109	5402	42.04	3.74	3.38
127	SLU 36	77	-118	5403	42.36	3.73	3.49
127	SLU 37	78	-109	5402	42.04	3.74	3.38
127	SLU 38	77	-118	5403	42.36	3.73	3.49
127	SLU 39	84	-116	5744	44.45	3.9	3.59
127	SLU 40	83	-124	5745	44.77	3.89	3.71
127	SLU 41	84	-116	5744	44.45	3.9	3.59
127	SLU 42	83	-124	5745	44.77	3.89	3.71
127	SLU 43	66	-104	5055	41	3.97	3.11
127	SLU 44	66	-117	5057	41.52	3.94	3.3
127	SLU 45	66	-104	5055	41	3.97	3.11
127	SLU 46	66	-112	5056	41.31	3.95	3.23
127	SLU 47	66	-117	5057	41.52	3.94	3.3
127	SLU 48	66	-104	5055	41	3.97	3.11
127	SLU 49	66	-112	5056	41.31	3.95	3.23
127	SLU 50	66	-104	5055	41	3.97	3.11
127	SLU 51	66	-112	5056	41.31	3.95	3.23
127	SLU 52	80	-132	5855	47.14	4.31	3.81
127	SLU 53	80	-119	5854	46.62	4.33	3.62
127	SLU 54	80	-127	5855	46.93	4.32	3.73
127	SLU 55	80	-132	5855	47.14	4.31	3.81
127	SLU 56	80	-119	5854	46.62	4.33	3.62
127	SLU 57	80	-127	5855	46.93	4.32	3.73
127	SLU 58	80	-119	5854	46.62	4.33	3.62
127	SLU 59	80	-127	5855	46.93	4.32	3.73
127	SLU 60	86	-125	6196	49.03	4.49	3.84
127	SLU 61	86	-133	6197	49.34	4.48	3.95
127	SLU 62	86	-125	6196	49.03	4.49	3.84
127	SLU 63	86	-133	6197	49.34	4.48	3.95
127	SLU 64	76	-115	5621	44.87	4.22	3.49
127	SLU 65	76	-129	5622	45.39	4.2	3.68
127	SLU 66	76	-115	5621	44.87	4.22	3.49
127	SLU 67	76	-123	5622	45.18	4.21	3.6
127	SLU 68	76	-129	5622	45.39	4.2	3.68
127	SLU 69	76	-115	5621	44.87	4.22	3.49
127	SLU 70	76	-123	5622	45.18	4.21	3.6
127	SLU 71	76	-115	5621	44.87	4.22	3.49
127	SLU 72	76	-123	5622	45.18	4.21	3.6
127	SLU 73	90	-144	6421	51.01	4.56	4.18
127	SLU 74	90	-130	6419	50.49	4.59	3.99
127	SLU 75	90	-138	6420	50.8	4.58	4.11
127	SLU 76	90	-144	6421	51.01	4.56	4.18
127	SLU 77	90	-130	6419	50.49	4.59	3.99
127	SLU 78	90	-138	6420	50.8	4.58	4.11
127	SLU 79	90	-130	6419	50.49	4.59	3.99
127	SLU 80	90	-138	6420	50.8	4.58	4.11
127	SLU 81	96	-137	6762	52.89	4.75	4.21
127	SLU 82	96	-145	6762	53.21	4.73	4.33
127	SLU 83	96	-137	6762	52.89	4.75	4.21
127	SLU 84	96	-145	6762	53.21	4.73	4.33
127	SLE RA 1	56	-86	4200	33.66	3.19	2.6
127	SLE RA 2	56	-95	4200	34.01	3.17	2.73
127	SLE RA 3	56	-86	4200	33.66	3.19	2.6
127	SLE RA 4	56	-92	4200	33.87	3.18	2.68
127	SLE RA 5	56	-95	4200	34.01	3.17	2.73
127	SLE RA 6	56	-86	4200	33.66	3.19	2.6
127	SLE RA 7	56	-92	4200	33.87	3.18	2.68
127	SLE RA 8	56	-86	4200	33.66	3.19	2.6
127	SLE RA 9	56	-92	4200	33.87	3.18	2.68
127	SLE RA 10	65	-105	4733	37.76	3.42	3.07
127	SLE RA 11	66	-96	4732	37.41	3.44	2.94



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
127	SLE RA 12	66	-102	4732	37.62	3.43	3.01
127	SLE RA 13	65	-105	4733	37.76	3.42	3.07
127	SLE RA 14	66	-96	4732	37.41	3.44	2.94
127	SLE RA 15	66	-102	4732	37.62	3.43	3.01
127	SLE RA 16	66	-96	4732	37.41	3.44	2.94
127	SLE RA 17	66	-102	4732	37.62	3.43	3.01
127	SLE RA 18	70	-100	4960	39.01	3.54	3.08
127	SLE RA 19	70	-106	4961	39.22	3.53	3.16
127	SLE RA 20	70	-100	4960	39.01	3.54	3.08
127	SLE RA 21	70	-106	4961	39.22	3.53	3.16
127	SLE FR 1	56	-86	4200	33.66	3.19	2.6
127	SLE FR 2	56	-88	4200	33.73	3.19	2.63
127	SLE FR 3	56	-86	4200	33.66	3.19	2.6
127	SLE FR 4	60	-92	4428	35.34	3.29	2.77
127	SLE FR 5	60	-90	4428	35.27	3.3	2.75
127	SLE FR 6	63	-93	4580	36.34	3.37	2.84
127	SLE QP 1	56	-86	4200	33.66	3.19	2.6
127	SLE QP 2	60	-90	4428	35.27	3.3	2.75
127	SLD 1	313	100	4548	25.57	5	-1.93
127	SLD 2	292	82	4551	25.61	4.99	-1.06
127	SLD 3	243	-38	4594	32.8	4.41	0.32
127	SLD 4	223	-55	4596	32.83	4.39	1.19
127	SLD 5	249	181	4394	21.39	4.71	-2.37
127	SLD 6	229	164	4396	21.43	4.69	-1.51
127	SLD 7	16	-277	4546	45.47	2.74	5.13
127	SLD 8	-4	-295	4548	45.51	2.73	6
127	SLD 9	125	114	4307	25.03	3.87	-0.51
127	SLD 10	104	96	4310	25.07	3.86	0.36
127	SLD 11	-108	-344	4459	49.11	1.9	7
127	SLD 12	-128	-362	4462	49.14	1.89	7.86
127	SLD 13	-102	-125	4259	37.7	2.2	4.3
127	SLD 14	-122	-143	4262	37.74	2.19	5.17
127	SLD 15	-172	-263	4305	44.93	1.61	6.55
127	SLD 16	-192	-281	4307	44.96	1.6	7.42
127	SLV 1	637	350	4702	12.78	7.2	-8.02
127	SLV 2	591	309	4708	12.86	7.17	-6.06
127	SLV 3	476	31	4806	29.54	5.83	-2.79
127	SLV 4	430	-9	4812	29.62	5.8	-0.82
127	SLV 5	493	539	4350	3.07	6.55	-9.12
127	SLV 6	446	498	4357	3.16	6.53	-7.15
127	SLV 7	-42	-523	4696	58.94	1.99	8.34
127	SLV 8	-88	-563	4703	59.03	1.96	10.3
127	SLV 9	209	383	4153	11.51	4.63	-4.81
127	SLV 10	163	342	4159	11.6	4.6	-2.85
127	SLV 11	-326	-679	4499	67.38	0.07	12.64
127	SLV 12	-372	-720	4505	67.47	0.04	14.61
127	SLV 13	-310	-171	4043	40.92	0.79	6.31
127	SLV 14	-356	-212	4049	41	0.76	8.28
127	SLV 15	-470	-490	4147	57.67	-0.58	11.55
127	SLV 16	-516	-530	4153	57.76	-0.6	13.51
127	CRTFP Ux+	0	0	0	0	0	0
127	CRTFP Ux-	0	0	0	0	0	0
127	CRTFP Uy+	0	0	0	0	0	0
127	CRTFP Uy-	0	0	0	0	0	0
128	SLU 1	55	-70	3941	32.88	3.11	2.38
128	SLU 2	54	-83	3943	33.39	3.09	2.52
128	SLU 3	55	-70	3941	32.88	3.11	2.38
128	SLU 4	55	-78	3942	33.19	3.1	2.46
128	SLU 5	54	-83	3943	33.39	3.09	2.52
128	SLU 6	55	-70	3941	32.88	3.11	2.38
128	SLU 7	55	-78	3942	33.19	3.1	2.46
128	SLU 8	55	-70	3941	32.88	3.11	2.38
128	SLU 9	55	-78	3942	33.19	3.1	2.46
128	SLU 10	68	-95	4728	39.07	3.54	3.01
128	SLU 11	68	-82	4726	38.56	3.56	2.87
128	SLU 12	68	-90	4728	38.87	3.55	2.95
128	SLU 13	68	-95	4728	39.07	3.54	3.01
128	SLU 14	68	-82	4726	38.56	3.56	2.87
128	SLU 15	68	-90	4728	38.87	3.55	2.95
128	SLU 16	68	-82	4726	38.56	3.56	2.87
128	SLU 17	68	-90	4728	38.87	3.55	2.95
128	SLU 18	74	-88	5063	40.99	3.76	3.08
128	SLU 19	74	-95	5064	41.3	3.74	3.17
128	SLU 20	74	-88	5063	40.99	3.76	3.08
128	SLU 21	74	-95	5064	41.3	3.74	3.17
128	SLU 22	65	-79	4497	36.79	3.42	2.74
128	SLU 23	65	-92	4499	37.31	3.4	2.88
128	SLU 24	65	-79	4497	36.79	3.42	2.74
128	SLU 25	65	-87	4499	37.1	3.41	2.83
128	SLU 26	65	-92	4499	37.31	3.4	2.88
128	SLU 27	65	-79	4497	36.79	3.42	2.74
128	SLU 28	65	-87	4499	37.1	3.41	2.83
128	SLU 29	65	-79	4497	36.79	3.42	2.74
128	SLU 30	65	-87	4499	37.1	3.41	2.83
128	SLU 31	78	-105	5285	42.99	3.85	3.38
128	SLU 32	78	-92	5283	42.47	3.87	3.23
128	SLU 33	78	-100	5284	42.78	3.86	3.32
128	SLU 34	78	-105	5285	42.99	3.85	3.38
128	SLU 35	78	-92	5283	42.47	3.87	3.23



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
128	SLU 36	78	-100	5284	42.78	3.86	3.32
128	SLU 37	78	-92	5283	42.47	3.87	3.23
128	SLU 38	78	-100	5284	42.78	3.86	3.32
128	SLU 39	84	-97	5620	44.91	4.07	3.44
128	SLU 40	84	-105	5621	45.22	4.05	3.53
128	SLU 41	84	-97	5620	44.91	4.07	3.44
128	SLU 42	84	-105	5621	45.22	4.05	3.53
128	SLU 43	68	-88	4932	41.4	3.94	2.96
128	SLU 44	67	-100	4934	41.91	3.92	3.11
128	SLU 45	68	-88	4932	41.4	3.94	2.96
128	SLU 46	67	-95	4933	41.71	3.93	3.05
128	SLU 47	67	-100	4934	41.91	3.92	3.11
128	SLU 48	68	-88	4932	41.4	3.94	2.96
128	SLU 49	67	-95	4933	41.71	3.93	3.05
128	SLU 50	68	-88	4932	41.4	3.94	2.96
128	SLU 51	67	-95	4933	41.71	3.93	3.05
128	SLU 52	81	-113	5720	47.59	4.37	3.6
128	SLU 53	81	-100	5718	47.08	4.39	3.45
128	SLU 54	81	-108	5719	47.39	4.38	3.54
128	SLU 55	81	-113	5720	47.59	4.37	3.6
128	SLU 56	81	-100	5718	47.08	4.39	3.45
128	SLU 57	81	-108	5719	47.39	4.38	3.54
128	SLU 58	81	-100	5718	47.08	4.39	3.45
128	SLU 59	81	-108	5719	47.39	4.38	3.54
128	SLU 60	87	-105	6054	49.51	4.58	3.67
128	SLU 61	87	-113	6056	49.82	4.57	3.75
128	SLU 62	87	-105	6054	49.51	4.58	3.67
128	SLU 63	87	-113	6056	49.82	4.57	3.75
128	SLU 64	78	-97	5489	45.31	4.25	3.33
128	SLU 65	77	-110	5491	45.83	4.23	3.47
128	SLU 66	78	-97	5489	45.31	4.25	3.33
128	SLU 67	78	-105	5490	45.62	4.24	3.41
128	SLU 68	77	-110	5491	45.83	4.23	3.47
128	SLU 69	78	-97	5489	45.31	4.25	3.33
128	SLU 70	78	-105	5490	45.62	4.24	3.41
128	SLU 71	78	-97	5489	45.31	4.25	3.33
128	SLU 72	78	-105	5490	45.62	4.24	3.41
128	SLU 73	91	-122	6276	51.51	4.68	3.96
128	SLU 74	91	-110	6274	50.99	4.7	3.82
128	SLU 75	91	-117	6276	51.3	4.69	3.91
128	SLU 76	91	-122	6276	51.51	4.68	3.96
128	SLU 77	91	-110	6274	50.99	4.7	3.82
128	SLU 78	91	-117	6276	51.3	4.69	3.91
128	SLU 79	91	-110	6274	50.99	4.7	3.82
128	SLU 80	91	-117	6276	51.3	4.69	3.91
128	SLU 81	97	-115	6611	53.43	4.89	4.03
128	SLU 82	97	-123	6612	53.74	4.88	4.12
128	SLU 83	97	-115	6611	53.43	4.89	4.03
128	SLU 84	97	-123	6612	53.74	4.88	4.12
128	SLE RA 1	58	-73	4100	33.99	3.2	2.48
128	SLE RA 2	57	-81	4101	34.34	3.18	2.58
128	SLE RA 3	58	-73	4100	33.99	3.2	2.48
128	SLE RA 4	57	-78	4100	34.2	3.19	2.54
128	SLE RA 5	57	-81	4101	34.34	3.18	2.58
128	SLE RA 6	58	-73	4100	33.99	3.2	2.48
128	SLE RA 7	57	-78	4100	34.2	3.19	2.54
128	SLE RA 8	58	-73	4100	33.99	3.2	2.48
128	SLE RA 9	57	-78	4100	34.2	3.19	2.54
128	SLE RA 10	67	-89	4625	38.13	3.48	2.9
128	SLE RA 11	67	-81	4623	37.78	3.5	2.81
128	SLE RA 12	67	-86	4624	37.99	3.49	2.87
128	SLE RA 13	67	-89	4625	38.13	3.48	2.9
128	SLE RA 14	67	-81	4623	37.78	3.5	2.81
128	SLE RA 15	67	-86	4624	37.99	3.49	2.87
128	SLE RA 16	67	-81	4623	37.78	3.5	2.81
128	SLE RA 17	67	-86	4624	37.99	3.49	2.87
128	SLE RA 18	71	-85	4848	39.41	3.63	2.95
128	SLE RA 19	71	-90	4849	39.61	3.62	3.01
128	SLE RA 20	71	-85	4848	39.41	3.63	2.95
128	SLE RA 21	71	-90	4849	39.61	3.62	3.01
128	SLE FR 1	58	-73	4100	33.99	3.2	2.48
128	SLE FR 2	58	-74	4100	34.06	3.2	2.5
128	SLE FR 3	58	-73	4100	33.99	3.2	2.48
128	SLE FR 4	61	-78	4324	35.69	3.33	2.64
128	SLE FR 5	62	-76	4324	35.62	3.33	2.62
128	SLE FR 6	64	-79	4474	36.7	3.42	2.71
128	SLE QP 1	58	-73	4100	33.99	3.2	2.48
128	SLE QP 2	62	-76	4324	35.62	3.33	2.62
128	SLD 1	314	96	4409	25.97	4.75	-1.67
128	SLD 2	294	83	4412	26.01	4.75	-0.82
128	SLD 3	244	-31	4451	33.16	4.24	0.18
128	SLD 4	224	-45	4454	33.21	4.24	1.03
128	SLD 5	250	173	4286	21.8	4.53	-1.78
128	SLD 6	230	160	4289	21.84	4.53	-0.93
128	SLD 7	18	-251	4423	45.77	2.82	4.4
128	SLD 8	-3	-264	4426	45.82	2.82	5.25
128	SLD 9	126	112	4222	25.42	3.84	-0.01
128	SLD 10	105	99	4225	25.46	3.84	0.84
128	SLD 11	-107	-312	4359	49.39	2.13	6.16



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
128	SLD 12	-127	-326	4362	49.44	2.13	7.01
128	SLD 13	-101	-108	4195	38.03	2.42	4.21
128	SLD 14	-121	-121	4197	38.07	2.42	5.06
128	SLD 15	-171	-235	4236	45.22	1.91	6.06
128	SLD 16	-191	-249	4239	45.27	1.91	6.91
128	SLV 1	638	322	4519	13.23	6.59	-7.26
128	SLV 2	592	292	4525	13.33	6.59	-5.33
128	SLV 3	478	27	4613	29.92	5.4	-2.94
128	SLV 4	432	-3	4619	30.02	5.4	-1.02
128	SLV 5	494	501	4238	3.55	6.11	-7.56
128	SLV 6	448	471	4244	3.65	6.11	-5.63
128	SLV 7	-41	-482	4551	59.19	2.15	6.81
128	SLV 8	-87	-512	4557	59.29	2.15	8.74
128	SLV 9	210	360	4091	11.94	4.51	-3.5
128	SLV 10	164	329	4098	12.04	4.52	-1.58
128	SLV 11	-325	-623	4404	67.59	0.55	10.87
128	SLV 12	-371	-653	4410	67.69	0.55	12.79
128	SLV 13	-309	-149	4029	41.21	1.26	6.25
128	SLV 14	-355	-180	4036	41.31	1.26	8.18
128	SLV 15	-469	-444	4123	57.91	0.07	10.56
128	SLV 16	-515	-474	4129	58	0.07	12.49
128	CRTFP Ux+	0	0	0	0	0	0
128	CRTFP Ux-	0	0	0	0	0	0
128	CRTFP Uy+	0	0	0	0	0	0
128	CRTFP Uy-	0	0	0	0	0	0
129	SLU 1	56	-58	3847	33.24	2.88	2.22
129	SLU 2	56	-70	3850	33.75	2.86	2.32
129	SLU 3	56	-58	3847	33.24	2.88	2.22
129	SLU 4	56	-65	3848	33.55	2.86	2.28
129	SLU 5	56	-70	3850	33.75	2.86	2.32
129	SLU 6	56	-58	3847	33.24	2.88	2.22
129	SLU 7	56	-65	3848	33.55	2.86	2.28
129	SLU 8	56	-58	3847	33.24	2.88	2.22
129	SLU 9	56	-65	3848	33.55	2.86	2.28
129	SLU 10	69	-80	4621	39.5	3.34	2.79
129	SLU 11	70	-68	4618	38.99	3.36	2.69
129	SLU 12	69	-75	4619	39.3	3.35	2.75
129	SLU 13	69	-80	4621	39.5	3.34	2.79
129	SLU 14	70	-68	4618	38.99	3.36	2.69
129	SLU 15	69	-75	4619	39.3	3.35	2.75
129	SLU 16	70	-68	4618	38.99	3.36	2.69
129	SLU 17	69	-75	4619	39.3	3.35	2.75
129	SLU 18	75	-72	4948	41.46	3.57	2.89
129	SLU 19	75	-79	4950	41.77	3.55	2.95
129	SLU 20	75	-72	4948	41.46	3.57	2.89
129	SLU 21	75	-79	4950	41.77	3.55	2.95
129	SLU 22	66	-65	4393	37.21	3.21	2.56
129	SLU 23	66	-78	4396	37.72	3.18	2.66
129	SLU 24	66	-65	4393	37.21	3.21	2.56
129	SLU 25	66	-73	4395	37.51	3.19	2.62
129	SLU 26	66	-78	4396	37.72	3.18	2.66
129	SLU 27	66	-65	4393	37.21	3.21	2.56
129	SLU 28	66	-73	4395	37.51	3.19	2.62
129	SLU 29	66	-65	4393	37.21	3.21	2.56
129	SLU 30	66	-73	4395	37.51	3.19	2.62
129	SLU 31	79	-88	5167	43.47	3.67	3.13
129	SLU 32	80	-75	5164	42.96	3.69	3.03
129	SLU 33	79	-83	5166	43.27	3.68	3.09
129	SLU 34	79	-88	5167	43.47	3.67	3.13
129	SLU 35	80	-75	5164	42.96	3.69	3.03
129	SLU 36	79	-83	5166	43.27	3.68	3.09
129	SLU 37	80	-75	5164	42.96	3.69	3.03
129	SLU 38	79	-83	5166	43.27	3.68	3.09
129	SLU 39	85	-80	5495	45.43	3.9	3.23
129	SLU 40	85	-87	5496	45.73	3.88	3.29
129	SLU 41	85	-80	5495	45.43	3.9	3.23
129	SLU 42	85	-87	5496	45.73	3.88	3.29
129	SLU 43	70	-73	4813	41.85	3.63	2.76
129	SLU 44	69	-85	4816	42.36	3.61	2.86
129	SLU 45	70	-73	4813	41.85	3.63	2.76
129	SLU 46	69	-80	4815	42.16	3.62	2.82
129	SLU 47	69	-85	4816	42.36	3.61	2.86
129	SLU 48	70	-73	4813	41.85	3.63	2.76
129	SLU 49	69	-80	4815	42.16	3.62	2.82
129	SLU 50	70	-73	4813	41.85	3.63	2.76
129	SLU 51	69	-80	4815	42.16	3.62	2.82
129	SLU 52	83	-95	5587	48.12	4.09	3.33
129	SLU 53	83	-82	5584	47.6	4.11	3.23
129	SLU 54	83	-90	5586	47.91	4.1	3.29
129	SLU 55	83	-95	5587	48.12	4.09	3.33
129	SLU 56	83	-82	5584	47.6	4.11	3.23
129	SLU 57	83	-90	5586	47.91	4.1	3.29
129	SLU 58	83	-82	5584	47.6	4.11	3.23
129	SLU 59	83	-90	5586	47.91	4.1	3.29
129	SLU 60	89	-87	5915	50.07	4.32	3.43
129	SLU 61	89	-94	5916	50.38	4.31	3.49
129	SLU 62	89	-87	5915	50.07	4.32	3.43
129	SLU 63	89	-94	5916	50.38	4.31	3.49
129	SLU 64	80	-80	5360	45.82	3.96	3.11



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
129	SLU 65	79	-92	5363	46.33	3.93	3.21
129	SLU 66	80	-80	5360	45.82	3.96	3.11
129	SLU 67	79	-88	5362	46.13	3.94	3.17
129	SLU 68	79	-92	5363	46.33	3.93	3.21
129	SLU 69	80	-80	5360	45.82	3.96	3.11
129	SLU 70	79	-88	5362	46.13	3.94	3.17
129	SLU 71	80	-80	5360	45.82	3.96	3.11
129	SLU 72	79	-88	5362	46.13	3.94	3.17
129	SLU 73	93	-102	6134	52.08	4.42	3.68
129	SLU 74	93	-90	6131	51.57	4.44	3.58
129	SLU 75	93	-97	6133	51.88	4.43	3.64
129	SLU 76	93	-102	6134	52.08	4.42	3.68
129	SLU 77	93	-90	6131	51.57	4.44	3.58
129	SLU 78	93	-97	6133	51.88	4.43	3.64
129	SLU 79	93	-90	6131	51.57	4.44	3.58
129	SLU 80	93	-97	6133	51.88	4.43	3.64
129	SLU 81	99	-94	6461	54.04	4.65	3.78
129	SLU 82	99	-102	6463	54.34	4.63	3.84
129	SLU 83	99	-94	6461	54.04	4.65	3.78
129	SLU 84	99	-102	6463	54.34	4.63	3.84
129	SLE RA 1	59	-60	4003	34.37	2.97	2.32
129	SLE RA 2	59	-68	4005	34.71	2.96	2.38
129	SLE RA 3	59	-60	4003	34.37	2.97	2.32
129	SLE RA 4	59	-65	4004	34.58	2.96	2.36
129	SLE RA 5	59	-68	4005	34.71	2.96	2.38
129	SLE RA 6	59	-60	4003	34.37	2.97	2.32
129	SLE RA 7	59	-65	4004	34.58	2.96	2.36
129	SLE RA 8	59	-60	4003	34.37	2.97	2.32
129	SLE RA 9	59	-65	4004	34.58	2.96	2.36
129	SLE RA 10	68	-75	4519	38.55	3.28	2.7
129	SLE RA 11	68	-67	4517	38.21	3.29	2.63
129	SLE RA 12	68	-71	4518	38.41	3.28	2.67
129	SLE RA 13	68	-75	4519	38.55	3.28	2.7
129	SLE RA 14	68	-67	4517	38.21	3.29	2.63
129	SLE RA 15	68	-71	4518	38.41	3.28	2.67
129	SLE RA 16	68	-67	4517	38.21	3.29	2.63
129	SLE RA 17	68	-71	4518	38.41	3.28	2.67
129	SLE RA 18	72	-69	4737	39.85	3.43	2.76
129	SLE RA 19	72	-74	4738	40.06	3.42	2.8
129	SLE RA 20	72	-69	4737	39.85	3.43	2.76
129	SLE RA 21	72	-74	4738	40.06	3.42	2.8
129	SLE FR 1	59	-60	4003	34.37	2.97	2.32
129	SLE FR 2	59	-62	4003	34.44	2.97	2.33
129	SLE FR 3	59	-60	4003	34.37	2.97	2.32
129	SLE FR 4	63	-64	4223	36.08	3.11	2.46
129	SLE FR 5	63	-63	4223	36.02	3.11	2.45
129	SLE FR 6	65	-65	4370	37.11	3.2	2.54
129	SLE QP 1	59	-60	4003	34.37	2.97	2.32
129	SLE QP 2	63	-63	4223	36.02	3.11	2.45
129	SLD 1	315	96	4281	26.4	4.15	-1.5
129	SLD 2	295	87	4284	26.45	4.17	-0.66
129	SLD 3	246	-23	4325	33.57	3.73	-0.06
129	SLD 4	225	-32	4327	33.62	3.75	0.78
129	SLD 5	252	169	4173	22.25	4.04	-1.21
129	SLD 6	231	160	4176	22.29	4.06	-0.38
129	SLD 7	19	-229	4319	46.14	2.67	3.59
129	SLD 8	-1	-238	4322	46.18	2.69	4.43
129	SLD 9	127	112	4125	25.85	3.53	0.47
129	SLD 10	107	104	4127	25.9	3.55	1.31
129	SLD 11	-106	-286	4270	49.74	2.16	5.28
129	SLD 12	-126	-295	4273	49.79	2.18	6.11
129	SLD 13	-100	-93	4119	38.41	2.47	4.12
129	SLD 14	-120	-102	4121	38.46	2.49	4.96
129	SLD 15	-170	-213	4162	45.58	2.05	5.56
129	SLD 16	-190	-222	4165	45.63	2.07	6.4
129	SLV 1	640	304	4355	13.71	5.49	-6.62
129	SLV 2	594	284	4361	13.82	5.54	-4.72
129	SLV 3	480	28	4455	30.35	4.54	-3.27
129	SLV 4	433	7	4461	30.46	4.58	-1.37
129	SLV 5	495	474	4109	4.06	5.26	-6.02
129	SLV 6	449	454	4114	4.17	5.3	-4.12
129	SLV 7	-39	-448	4443	59.51	2.07	5.15
129	SLV 8	-85	-469	4448	59.62	2.12	7.05
129	SLV 9	211	343	3998	12.42	4.1	-2.15
129	SLV 10	165	323	4004	12.53	4.15	-0.25
129	SLV 11	-324	-580	4332	67.86	0.92	9.02
129	SLV 12	-370	-600	4337	67.98	0.96	10.92
129	SLV 13	-308	-133	3985	41.57	1.64	6.27
129	SLV 14	-354	-153	3991	41.69	1.68	8.17
129	SLV 15	-468	-410	4085	58.21	0.68	9.62
129	SLV 16	-514	-430	4091	58.32	0.73	11.52
129	CRTFP Ux+	0	0	0	0	0	0
129	CRTFP Ux-	0	0	0	0	0	0
129	CRTFP Uy+	0	0	0	0	0	0
129	CRTFP Uy-	0	0	0	0	0	0
130	SLU 1	103	-76	6621	56.44	-984.74	-6.67
130	SLU 2	103	-96	6628	57.26	-985.91	-9.71
130	SLU 3	103	-76	6621	56.44	-984.74	-6.67
130	SLU 4	103	-88	6625	56.94	-985.44	-8.49



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
130	SLU 5	103	-96	6628	57.26	-985.91	-9.71
130	SLU 6	103	-76	6621	56.44	-984.74	-6.67
130	SLU 7	103	-88	6625	56.94	-985.44	-8.49
130	SLU 8	103	-76	6621	56.44	-984.74	-6.67
130	SLU 9	103	-88	6625	56.94	-985.44	-8.49
130	SLU 10	126	-108	7958	67.08	-1183.93	-10.44
130	SLU 11	127	-87	7951	66.26	-1182.75	-7.4
130	SLU 12	126	-100	7955	66.75	-1183.46	-9.23
130	SLU 13	126	-108	7958	67.08	-1183.93	-10.44
130	SLU 14	127	-87	7951	66.26	-1182.75	-7.4
130	SLU 15	126	-100	7955	66.75	-1183.46	-9.23
130	SLU 16	127	-87	7951	66.26	-1182.75	-7.4
130	SLU 17	126	-100	7955	66.75	-1183.46	-9.23
130	SLU 18	137	-92	8522	70.47	-1267.62	-7.71
130	SLU 19	136	-105	8526	70.96	-1268.32	-9.54
130	SLU 20	137	-92	8522	70.47	-1267.62	-7.71
130	SLU 21	136	-105	8526	70.96	-1268.32	-9.54
130	SLU 22	121	-85	7565	63.23	-1125.42	-7.31
130	SLU 23	120	-106	7572	64.05	-1126.6	-10.36
130	SLU 24	121	-85	7565	63.23	-1125.42	-7.31
130	SLU 25	120	-97	7569	63.73	-1126.13	-9.14
130	SLU 26	120	-106	7572	64.05	-1126.6	-10.36
130	SLU 27	121	-85	7565	63.23	-1125.42	-7.31
130	SLU 28	120	-97	7569	63.73	-1126.13	-9.14
130	SLU 29	121	-85	7565	63.23	-1125.42	-7.31
130	SLU 30	120	-97	7569	63.73	-1126.13	-9.14
130	SLU 31	144	-117	8903	73.87	-1324.62	-11.09
130	SLU 32	144	-97	8896	73.05	-1323.44	-8.04
130	SLU 33	144	-109	8900	73.54	-1324.15	-9.87
130	SLU 34	144	-117	8903	73.87	-1324.62	-11.09
130	SLU 35	144	-97	8896	73.05	-1323.44	-8.04
130	SLU 36	144	-109	8900	73.54	-1324.15	-9.87
130	SLU 37	144	-97	8896	73.05	-1323.44	-8.04
130	SLU 38	144	-109	8900	73.54	-1324.15	-9.87
130	SLU 39	154	-102	9466	77.26	-1408.3	-8.36
130	SLU 40	154	-114	9470	77.75	-1409.01	-10.18
130	SLU 41	154	-102	9466	77.26	-1408.3	-8.36
130	SLU 42	154	-114	9470	77.75	-1409.01	-10.18
130	SLU 43	129	-95	8283	71.05	-1231.92	-8.45
130	SLU 44	128	-116	8290	71.87	-1233.1	-11.49
130	SLU 45	129	-95	8283	71.05	-1231.92	-8.45
130	SLU 46	128	-107	8287	71.54	-1232.63	-10.27
130	SLU 47	128	-116	8290	71.87	-1233.1	-11.49
130	SLU 48	129	-95	8283	71.05	-1231.92	-8.45
130	SLU 49	128	-107	8287	71.54	-1232.63	-10.27
130	SLU 50	129	-95	8283	71.05	-1231.92	-8.45
130	SLU 51	128	-107	8287	71.54	-1232.63	-10.27
130	SLU 52	151	-127	9621	81.69	-1431.12	-12.22
130	SLU 53	152	-107	9614	80.87	-1429.94	-9.18
130	SLU 54	151	-119	9618	81.36	-1430.65	-11
130	SLU 55	151	-127	9621	81.69	-1431.12	-12.22
130	SLU 56	152	-107	9614	80.87	-1429.94	-9.18
130	SLU 57	151	-119	9618	81.36	-1430.65	-11
130	SLU 58	152	-107	9614	80.87	-1429.94	-9.18
130	SLU 59	151	-119	9618	81.36	-1430.65	-11
130	SLU 60	162	-112	10184	85.07	-1514.8	-9.49
130	SLU 61	161	-124	10188	85.57	-1515.51	-11.32
130	SLU 62	162	-112	10184	85.07	-1514.8	-9.49
130	SLU 63	161	-124	10188	85.57	-1515.51	-11.32
130	SLU 64	146	-104	9228	77.84	-1372.61	-9.09
130	SLU 65	145	-125	9235	78.66	-1373.79	-12.14
130	SLU 66	146	-104	9228	77.84	-1372.61	-9.09
130	SLU 67	146	-117	9232	78.33	-1373.32	-10.92
130	SLU 68	145	-125	9235	78.66	-1373.79	-12.14
130	SLU 69	146	-104	9228	77.84	-1372.61	-9.09
130	SLU 70	146	-117	9232	78.33	-1373.32	-10.92
130	SLU 71	146	-104	9228	77.84	-1372.61	-9.09
130	SLU 72	146	-117	9232	78.33	-1373.32	-10.92
130	SLU 73	169	-137	10565	88.48	-1571.8	-12.87
130	SLU 74	169	-116	10558	87.66	-1570.63	-9.82
130	SLU 75	169	-128	10562	88.15	-1571.33	-11.65
130	SLU 76	169	-137	10565	88.48	-1571.8	-12.87
130	SLU 77	169	-116	10558	87.66	-1570.63	-9.82
130	SLU 78	169	-128	10562	88.15	-1571.33	-11.65
130	SLU 79	169	-116	10558	87.66	-1570.63	-9.82
130	SLU 80	169	-128	10562	88.15	-1571.33	-11.65
130	SLU 81	179	-121	11128	91.86	-1655.49	-10.14
130	SLU 82	179	-133	11133	92.36	-1656.2	-11.96
130	SLU 83	179	-121	11128	91.86	-1655.49	-10.14
130	SLU 84	179	-133	11133	92.36	-1656.2	-11.96
130	SLE RA 1	108	-78	6890	58.38	-1024.93	-6.85
130	SLE RA 2	108	-92	6895	58.93	-1025.72	-8.88
130	SLE RA 3	108	-78	6890	58.38	-1024.93	-6.85
130	SLE RA 4	108	-86	6893	58.71	-1025.4	-8.07
130	SLE RA 5	108	-92	6895	58.93	-1025.72	-8.88
130	SLE RA 6	108	-78	6890	58.38	-1024.93	-6.85
130	SLE RA 7	108	-86	6893	58.71	-1025.4	-8.07
130	SLE RA 8	108	-78	6890	58.38	-1024.93	-6.85
130	SLE RA 9	108	-86	6893	58.71	-1025.4	-8.07



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
130	SLE RA 10	124	-100	7782	65.48	-1157.73	-9.37
130	SLE RA 11	124	-86	7778	64.93	-1156.94	-7.34
130	SLE RA 12	124	-94	7780	65.26	-1157.42	-8.56
130	SLE RA 13	124	-100	7782	65.48	-1157.73	-9.37
130	SLE RA 14	124	-86	7778	64.93	-1156.94	-7.34
130	SLE RA 15	124	-94	7780	65.26	-1157.42	-8.56
130	SLE RA 16	124	-86	7778	64.93	-1156.94	-7.34
130	SLE RA 17	124	-94	7780	65.26	-1157.42	-8.56
130	SLE RA 18	131	-89	8158	67.73	-1213.52	-7.55
130	SLE RA 19	130	-98	8161	68.06	-1213.99	-8.77
130	SLE RA 20	131	-89	8158	67.73	-1213.52	-7.55
130	SLE RA 21	130	-98	8161	68.06	-1213.99	-8.77
130	SLE FR 1	108	-78	6890	58.38	-1024.93	-6.85
130	SLE FR 2	108	-81	6891	58.49	-1025.09	-7.26
130	SLE FR 3	108	-78	6890	58.38	-1024.93	-6.85
130	SLE FR 4	115	-84	7272	61.3	-1081.67	-7.47
130	SLE FR 5	115	-82	7271	61.19	-1081.51	-7.06
130	SLE FR 6	119	-84	7524	63.06	-1119.23	-7.2
130	SLE QP 1	108	-78	6890	58.38	-1024.93	-6.85
130	SLE QP 2	115	-82	7271	61.19	-1081.51	-7.06
130	SLD 1	562	184	7340	45.6	-1090.68	-18.72
130	SLD 2	526	179	7341	45.71	-1090.72	-17.53
130	SLD 3	439	-17	7433	57.19	-1106.06	-47.99
130	SLD 4	403	-22	7435	57.3	-1106.1	-46.79
130	SLD 5	449	305	7149	38.89	-1060.91	33.41
130	SLD 6	413	300	7151	39	-1060.96	34.61
130	SLD 7	38	-366	7460	77.54	-1112.19	-64.15
130	SLD 8	2	-371	7462	77.64	-1112.23	-62.95
130	SLD 9	228	208	7079	44.73	-1050.79	48.83
130	SLD 10	193	203	7081	44.84	-1050.83	50.02
130	SLD 11	-183	-463	7390	83.38	-1102.06	-48.73
130	SLD 12	-219	-468	7392	83.49	-1102.11	-47.54
130	SLD 13	-173	-141	7106	65.07	-1056.92	32.67
130	SLD 14	-209	-146	7108	65.18	-1056.96	33.86
130	SLD 15	-296	-342	7200	76.67	-1072.3	3.4
130	SLD 16	-332	-347	7202	76.78	-1072.34	4.6
130	SLV 1	1136	531	7427	25.02	-1102.25	-33.45
130	SLV 2	1055	519	7431	25.27	-1102.35	-30.74
130	SLV 3	853	66	7642	51.93	-1137.73	-101.05
130	SLV 4	771	54	7646	52.18	-1137.83	-98.34
130	SLV 5	880	812	6990	9.44	-1033.89	86.6
130	SLV 6	799	801	6994	9.69	-1033.98	89.31
130	SLV 7	-65	-739	7707	99.13	-1152.15	-138.73
130	SLV 8	-147	-751	7711	99.38	-1152.25	-136.02
130	SLV 9	377	588	6830	23	-1010.77	121.9
130	SLV 10	295	576	6835	23.24	-1010.87	124.61
130	SLV 11	-569	-964	7547	112.69	-1129.04	-103.43
130	SLV 12	-650	-975	7552	112.94	-1129.13	-100.72
130	SLV 13	-541	-217	6895	70.2	-1025.19	84.21
130	SLV 14	-623	-229	6900	70.45	-1025.29	86.93
130	SLV 15	-825	-682	7110	97.11	-1060.67	16.61
130	SLV 16	-906	-694	7115	97.36	-1060.77	19.33
130	CRTFP Ux+	0	0	0	0	0	0
130	CRTFP Ux-	0	0	0	0	0	0
130	CRTFP Uy+	0	0	0	0	0	0
130	CRTFP Uy-	0	0	0	0	0	0
131	SLU 1	109	-46	6503	65.78	985.38	10.67
131	SLU 2	109	-67	6512	66.55	986.65	13.68
131	SLU 3	109	-46	6503	65.78	985.38	10.67
131	SLU 4	109	-59	6508	66.25	986.14	12.47
131	SLU 5	109	-67	6512	66.55	986.65	13.68
131	SLU 6	109	-46	6503	65.78	985.38	10.67
131	SLU 7	109	-59	6508	66.25	986.14	12.47
131	SLU 8	109	-46	6503	65.78	985.38	10.67
131	SLU 9	109	-59	6508	66.25	986.14	12.47
131	SLU 10	131	-72	7819	78.17	1184.73	15.33
131	SLU 11	132	-51	7809	77.4	1183.47	12.32
131	SLU 12	131	-64	7815	77.86	1184.23	14.12
131	SLU 13	131	-72	7819	78.17	1184.73	15.33
131	SLU 14	132	-51	7809	77.4	1183.47	12.32
131	SLU 15	131	-64	7815	77.86	1184.23	14.12
131	SLU 16	132	-51	7809	77.4	1183.47	12.32
131	SLU 17	131	-64	7815	77.86	1184.23	14.12
131	SLU 18	141	-53	8369	82.38	1268.36	13.02
131	SLU 19	141	-66	8375	82.84	1269.12	14.83
131	SLU 20	141	-53	8369	82.38	1268.36	13.02
131	SLU 21	141	-66	8375	82.84	1269.12	14.83
131	SLU 22	126	-51	7433	73.89	1126.21	11.98
131	SLU 23	126	-71	7442	74.66	1127.48	14.99
131	SLU 24	126	-51	7433	73.89	1126.21	11.98
131	SLU 25	126	-63	7438	74.35	1126.97	13.78
131	SLU 26	126	-71	7442	74.66	1127.48	14.99
131	SLU 27	126	-51	7433	73.89	1126.21	11.98
131	SLU 28	126	-63	7438	74.35	1126.97	13.78
131	SLU 29	126	-51	7433	73.89	1126.21	11.98
131	SLU 30	126	-63	7438	74.35	1126.97	13.78
131	SLU 31	148	-77	8748	86.27	1325.56	16.64
131	SLU 32	149	-56	8739	85.51	1324.29	13.63
131	SLU 33	148	-68	8745	85.97	1325.05	15.43



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
131	SLU 34	148	-77	8748	86.27	1325.56	16.64
131	SLU 35	149	-56	8739	85.51	1324.29	13.63
131	SLU 36	148	-68	8745	85.97	1325.05	15.43
131	SLU 37	149	-56	8739	85.51	1324.29	13.63
131	SLU 38	148	-68	8745	85.97	1325.05	15.43
131	SLU 39	158	-58	9299	90.48	1409.19	14.33
131	SLU 40	158	-70	9305	90.95	1409.95	16.14
131	SLU 41	158	-58	9299	90.48	1409.19	14.33
131	SLU 42	158	-70	9305	90.95	1409.95	16.14
131	SLU 43	136	-58	8135	82.74	1232.71	13.42
131	SLU 44	135	-79	8144	83.51	1233.98	16.43
131	SLU 45	136	-58	8135	82.74	1232.71	13.42
131	SLU 46	136	-71	8140	83.2	1233.47	15.22
131	SLU 47	135	-79	8144	83.51	1233.98	16.43
131	SLU 48	136	-58	8135	82.74	1232.71	13.42
131	SLU 49	136	-71	8140	83.2	1233.47	15.22
131	SLU 50	136	-58	8135	82.74	1232.71	13.42
131	SLU 51	136	-71	8140	83.2	1233.47	15.22
131	SLU 52	158	-84	9451	95.13	1432.06	18.08
131	SLU 53	159	-63	9441	94.36	1430.8	15.07
131	SLU 54	158	-76	9447	94.82	1431.56	16.87
131	SLU 55	158	-84	9451	95.13	1432.06	18.08
131	SLU 56	159	-63	9441	94.36	1430.8	15.07
131	SLU 57	158	-76	9447	94.82	1431.56	16.87
131	SLU 58	159	-63	9441	94.36	1430.8	15.07
131	SLU 59	158	-76	9447	94.82	1431.56	16.87
131	SLU 60	168	-66	10001	99.34	1515.69	15.77
131	SLU 61	168	-78	10007	99.8	1516.45	17.58
131	SLU 62	168	-66	10001	99.34	1515.69	15.77
131	SLU 63	168	-78	10007	99.8	1516.45	17.58
131	SLU 64	153	-63	9065	90.84	1373.54	14.73
131	SLU 65	152	-84	9074	91.61	1374.81	17.74
131	SLU 66	153	-63	9065	90.84	1373.54	14.73
131	SLU 67	153	-75	9070	91.3	1374.3	16.53
131	SLU 68	152	-84	9074	91.61	1374.81	17.74
131	SLU 69	153	-63	9065	90.84	1373.54	14.73
131	SLU 70	153	-75	9070	91.3	1374.3	16.53
131	SLU 71	153	-63	9065	90.84	1373.54	14.73
131	SLU 72	153	-75	9070	91.3	1374.3	16.53
131	SLU 73	175	-89	10380	103.23	1572.89	19.39
131	SLU 74	176	-68	10371	102.46	1571.63	16.38
131	SLU 75	175	-80	10377	102.92	1572.38	18.18
131	SLU 76	175	-89	10380	103.23	1572.89	19.39
131	SLU 77	176	-68	10371	102.46	1571.63	16.38
131	SLU 78	175	-80	10377	102.92	1572.38	18.18
131	SLU 79	176	-68	10371	102.46	1571.63	16.38
131	SLU 80	175	-80	10377	102.92	1572.38	18.18
131	SLU 81	185	-70	10931	107.44	1656.52	17.08
131	SLU 82	185	-83	10937	107.9	1657.28	18.89
131	SLU 83	185	-70	10931	107.44	1656.52	17.08
131	SLU 84	185	-83	10937	107.9	1657.28	18.89
131	SLE RA 1	114	-47	6768	68.1	1025.62	11.04
131	SLE RA 2	114	-61	6775	68.61	1026.46	13.05
131	SLE RA 3	114	-47	6768	68.1	1025.62	11.04
131	SLE RA 4	114	-56	6772	68.41	1026.12	12.25
131	SLE RA 5	114	-61	6775	68.61	1026.46	13.05
131	SLE RA 6	114	-47	6768	68.1	1025.62	11.04
131	SLE RA 7	114	-56	6772	68.41	1026.12	12.25
131	SLE RA 8	114	-47	6768	68.1	1025.62	11.04
131	SLE RA 9	114	-56	6772	68.41	1026.12	12.25
131	SLE RA 10	129	-65	7646	76.36	1158.52	14.15
131	SLE RA 11	129	-51	7639	75.84	1157.67	12.14
131	SLE RA 12	129	-59	7643	76.15	1158.18	13.34
131	SLE RA 13	129	-65	7646	76.36	1158.52	14.15
131	SLE RA 14	129	-51	7639	75.84	1157.67	12.14
131	SLE RA 15	129	-59	7643	76.15	1158.18	13.34
131	SLE RA 16	129	-51	7639	75.84	1157.67	12.14
131	SLE RA 17	129	-59	7643	76.15	1158.18	13.34
131	SLE RA 18	135	-52	8013	79.16	1214.27	12.61
131	SLE RA 19	135	-61	8016	79.47	1214.78	13.82
131	SLE RA 20	135	-52	8013	79.16	1214.27	12.61
131	SLE RA 21	135	-61	8016	79.47	1214.78	13.82
131	SLE FR 1	114	-47	6768	68.1	1025.62	11.04
131	SLE FR 2	114	-50	6770	68.2	1025.79	11.44
131	SLE FR 3	114	-47	6768	68.1	1025.62	11.04
131	SLE FR 4	120	-52	7143	71.52	1082.38	11.91
131	SLE FR 5	120	-49	7142	71.42	1082.21	11.51
131	SLE FR 6	125	-50	7391	73.63	1119.94	11.83
131	SLE QP 1	114	-47	6768	68.1	1025.62	11.04
131	SLE QP 2	120	-49	7142	71.42	1082.21	11.51
131	SLD 1	566	-129	7198	55.91	1091.31	-27.11
131	SLD 2	531	-121	7195	56.13	1091.13	-26.38
131	SLD 3	443	-331	7317	67.27	1107.7	2.14
131	SLD 4	408	-322	7314	67.49	1107.53	2.87
131	SLD 5	453	230	6979	49.47	1060.14	-44.69
131	SLD 6	418	238	6976	49.69	1059.97	-43.96
131	SLD 7	43	-442	7376	87.31	1114.78	52.8
131	SLD 8	7	-434	7373	87.53	1114.61	53.53
131	SLD 9	233	336	6910	55.3	1049.81	-30.51



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
131	SLD 10	198	345	6908	55.52	1049.64	-29.78
131	SLD 11	-177	-336	7307	93.15	1104.46	66.98
131	SLD 12	-213	-328	7305	93.37	1104.29	67.71
131	SLD 13	-167	225	6970	75.35	1056.9	20.16
131	SLD 14	-203	233	6967	75.57	1056.73	20.88
131	SLD 15	-290	23	7089	86.7	1073.29	49.4
131	SLD 16	-326	31	7086	86.92	1073.12	50.13
131	SLV 1	1139	-230	7268	35.45	1102.78	-77.48
131	SLV 2	1058	-212	7262	35.95	1102.39	-75.82
131	SLV 3	857	-696	7543	61.8	1140.61	-9.83
131	SLV 4	775	-677	7537	62.29	1140.22	-8.18
131	SLV 5	883	597	6765	20.49	1031.14	-118.35
131	SLV 6	802	615	6758	20.99	1030.76	-116.7
131	SLV 7	-59	-956	7682	108.32	1157.25	107.12
131	SLV 8	-140	-937	7675	108.82	1156.86	108.77
131	SLV 9	381	840	6608	34.02	1007.57	-85.75
131	SLV 10	300	858	6602	34.52	1007.18	-84.09
131	SLV 11	-561	-713	7525	121.85	1133.67	139.72
131	SLV 12	-643	-694	7519	122.35	1133.28	141.38
131	SLV 13	-535	580	6746	80.54	1024.2	31.21
131	SLV 14	-616	598	6740	81.04	1023.82	32.86
131	SLV 15	-817	114	7022	106.89	1062.03	98.85
131	SLV 16	-899	132	7015	107.39	1061.65	100.5
131	CRTFP Ux+	0	0	0	0	0	0
131	CRTFP Ux-	0	0	0	0	0	0
131	CRTFP Uy+	0	0	0	0	0	0
131	CRTFP Uy-	0	0	0	0	0	0
132	SLU 1	63	-16	3647	41.71	0	1.18
132	SLU 2	63	-28	3654	42.17	-0.03	1.04
132	SLU 3	63	-16	3647	41.71	0	1.18
132	SLU 4	63	-23	3651	41.99	-0.02	1.1
132	SLU 5	63	-28	3654	42.17	-0.03	1.04
132	SLU 6	63	-16	3647	41.71	0	1.18
132	SLU 7	63	-23	3651	41.99	-0.02	1.1
132	SLU 8	63	-16	3647	41.71	0	1.18
132	SLU 9	63	-23	3651	41.99	-0.02	1.1
132	SLU 10	76	-29	4386	49.56	0	1.36
132	SLU 11	76	-16	4379	49.1	0.03	1.5
132	SLU 12	76	-24	4383	49.38	0.01	1.41
132	SLU 13	76	-29	4386	49.56	0	1.36
132	SLU 14	76	-16	4379	49.1	0.03	1.5
132	SLU 15	76	-24	4383	49.38	0.01	1.41
132	SLU 16	76	-16	4379	49.1	0.03	1.5
132	SLU 17	76	-24	4383	49.38	0.01	1.41
132	SLU 18	81	-16	4693	52.27	0.04	1.63
132	SLU 19	81	-24	4697	52.54	0.03	1.55
132	SLU 20	81	-16	4693	52.27	0.04	1.63
132	SLU 21	81	-24	4697	52.54	0.03	1.55
132	SLU 22	73	-17	4169	46.87	0	1.4
132	SLU 23	72	-29	4176	47.33	-0.03	1.27
132	SLU 24	73	-17	4169	46.87	0	1.4
132	SLU 25	73	-24	4173	47.15	-0.02	1.32
132	SLU 26	72	-29	4176	47.33	-0.03	1.27
132	SLU 27	73	-17	4169	46.87	0	1.4
132	SLU 28	73	-24	4173	47.15	-0.02	1.32
132	SLU 29	73	-17	4169	46.87	0	1.4
132	SLU 30	73	-24	4173	47.15	-0.02	1.32
132	SLU 31	85	-29	4907	54.72	0	1.58
132	SLU 32	85	-17	4901	54.26	0.03	1.72
132	SLU 33	85	-24	4905	54.54	0.01	1.64
132	SLU 34	85	-29	4907	54.72	0	1.58
132	SLU 35	85	-17	4901	54.26	0.03	1.72
132	SLU 36	85	-24	4905	54.54	0.01	1.64
132	SLU 37	85	-17	4901	54.26	0.03	1.72
132	SLU 38	85	-24	4905	54.54	0.01	1.64
132	SLU 39	91	-17	5215	57.43	0.04	1.86
132	SLU 40	90	-25	5219	57.71	0.02	1.77
132	SLU 41	91	-17	5215	57.43	0.04	1.86
132	SLU 42	90	-25	5219	57.71	0.02	1.77
132	SLU 43	79	-20	4563	52.45	0	1.46
132	SLU 44	79	-33	4569	52.91	-0.03	1.32
132	SLU 45	79	-20	4563	52.45	0	1.46
132	SLU 46	79	-28	4566	52.73	-0.02	1.38
132	SLU 47	79	-33	4569	52.91	-0.03	1.32
132	SLU 48	79	-20	4563	52.45	0	1.46
132	SLU 49	79	-28	4566	52.73	-0.02	1.38
132	SLU 50	79	-20	4563	52.45	0	1.46
132	SLU 51	79	-28	4566	52.73	-0.02	1.38
132	SLU 52	91	-33	5301	60.3	0	1.64
132	SLU 53	92	-21	5294	59.84	0.03	1.77
132	SLU 54	91	-28	5298	60.12	0.01	1.69
132	SLU 55	91	-33	5301	60.3	0	1.64
132	SLU 56	92	-21	5294	59.84	0.03	1.77
132	SLU 57	91	-28	5298	60.12	0.01	1.69
132	SLU 58	92	-21	5294	59.84	0.03	1.77
132	SLU 59	91	-28	5298	60.12	0.01	1.69
132	SLU 60	97	-21	5608	63.01	0.04	1.91
132	SLU 61	97	-28	5612	63.29	0.03	1.83
132	SLU 62	97	-21	5608	63.01	0.04	1.91



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
132	SLU 63	97	-28	5612	63.29	0.03	1.83
132	SLU 64	89	-21	5084	57.61	0	1.68
132	SLU 65	88	-34	5091	58.08	-0.03	1.55
132	SLU 66	89	-21	5084	57.61	0	1.68
132	SLU 67	88	-29	5088	57.89	-0.02	1.6
132	SLU 68	88	-34	5091	58.08	-0.03	1.55
132	SLU 69	89	-21	5084	57.61	0	1.68
132	SLU 70	88	-29	5088	57.89	-0.02	1.6
132	SLU 71	89	-21	5084	57.61	0	1.68
132	SLU 72	88	-29	5088	57.89	-0.02	1.6
132	SLU 73	101	-34	5823	65.47	0	1.86
132	SLU 74	101	-21	5816	65	0.03	2
132	SLU 75	101	-29	5820	65.28	0.01	1.92
132	SLU 76	101	-34	5823	65.47	0	1.86
132	SLU 77	101	-21	5816	65	0.03	2
132	SLU 78	101	-29	5820	65.28	0.01	1.92
132	SLU 79	101	-21	5816	65	0.03	2
132	SLU 80	101	-29	5820	65.28	0.01	1.92
132	SLU 81	106	-22	6130	68.17	0.04	2.13
132	SLU 82	106	-29	6134	68.45	0.02	2.05
132	SLU 83	106	-22	6130	68.17	0.04	2.13
132	SLU 84	106	-29	6134	68.45	0.02	2.05
132	SLE RA 1	66	-16	3796	43.18	0	1.24
132	SLE RA 2	66	-24	3801	43.49	-0.02	1.15
132	SLE RA 3	66	-16	3796	43.18	0	1.24
132	SLE RA 4	66	-21	3799	43.37	-0.01	1.19
132	SLE RA 5	66	-24	3801	43.49	-0.02	1.15
132	SLE RA 6	66	-16	3796	43.18	0	1.24
132	SLE RA 7	66	-21	3799	43.37	-0.01	1.19
132	SLE RA 8	66	-16	3796	43.18	0	1.24
132	SLE RA 9	66	-21	3799	43.37	-0.01	1.19
132	SLE RA 10	74	-25	4289	48.42	0	1.36
132	SLE RA 11	74	-16	4284	48.11	0.02	1.46
132	SLE RA 12	74	-21	4287	48.29	0.01	1.4
132	SLE RA 13	74	-25	4289	48.42	0	1.36
132	SLE RA 14	74	-16	4284	48.11	0.02	1.46
132	SLE RA 15	74	-21	4287	48.29	0.01	1.4
132	SLE RA 16	74	-16	4284	48.11	0.02	1.46
132	SLE RA 17	74	-21	4287	48.29	0.01	1.4
132	SLE RA 18	78	-16	4493	50.22	0.03	1.55
132	SLE RA 19	78	-21	4496	50.41	0.02	1.49
132	SLE RA 20	78	-16	4493	50.22	0.03	1.55
132	SLE RA 21	78	-21	4496	50.41	0.02	1.49
132	SLE FR 1	66	-16	3796	43.18	0	1.24
132	SLE FR 2	66	-18	3797	43.24	-0.01	1.23
132	SLE FR 3	66	-16	3796	43.18	0	1.24
132	SLE FR 4	70	-18	4006	45.36	0	1.32
132	SLE FR 5	70	-16	4006	45.29	0.01	1.34
132	SLE FR 6	72	-16	4145	46.7	0.01	1.4
132	SLE QP 1	66	-16	3796	43.18	0	1.24
132	SLE QP 2	70	-16	4006	45.29	0.01	1.34
132	SLD 1	320	-76	3899	35.81	1.02	-1.53
132	SLD 2	300	-65	3896	35.96	1.04	-0.71
132	SLD 3	251	-195	3980	42.72	0.56	-3.05
132	SLD 4	231	-185	3977	42.87	0.58	-2.22
132	SLD 5	256	144	3851	31.92	0.99	2.49
132	SLD 6	236	154	3848	32.07	1.01	3.31
132	SLD 7	26	-255	4122	54.94	-0.52	-2.57
132	SLD 8	6	-245	4119	55.09	-0.5	-1.74
132	SLD 9	133	212	3892	35.5	0.52	4.41
132	SLD 10	113	223	3889	35.65	0.54	5.24
132	SLD 11	-97	-187	4163	58.51	-1	-0.64
132	SLD 12	-117	-176	4160	58.67	-0.98	0.18
132	SLD 13	-92	152	4034	47.72	-0.57	4.89
132	SLD 14	-112	163	4031	47.87	-0.55	5.72
132	SLD 15	-161	33	4115	54.63	-1.02	3.38
132	SLD 16	-181	43	4112	54.78	-1	4.2
132	SLV 1	642	-150	3759	23.29	2.33	-5.18
132	SLV 2	596	-127	3753	23.64	2.38	-3.31
132	SLV 3	483	-427	3948	39.32	1.28	-8.64
132	SLV 4	438	-403	3941	39.67	1.32	-6.77
132	SLV 5	498	354	3648	14.26	2.29	3.98
132	SLV 6	452	378	3641	14.61	2.34	5.85
132	SLV 7	-31	-567	4276	67.69	-1.23	-7.56
132	SLV 8	-77	-543	4270	68.03	-1.19	-5.69
132	SLV 9	216	510	3742	22.55	1.2	8.36
132	SLV 10	170	534	3735	22.9	1.24	10.23
132	SLV 11	-313	-410	4370	75.98	-2.32	-3.18
132	SLV 12	-359	-387	4363	76.32	-2.28	-1.31
132	SLV 13	-298	371	4070	50.92	-1.3	9.44
132	SLV 14	-344	394	4063	51.27	-1.26	11.31
132	SLV 15	-457	94	4259	66.95	-2.36	5.98
132	SLV 16	-503	118	4252	67.3	-2.32	7.85
132	CRTFP Ux+	0	0	0	0	0	0
132	CRTFP Ux-	0	0	0	0	0	0
132	CRTFP Uy+	0	0	0	0	0	0
132	CRTFP Uy-	0	0	0	0	0	0
133	SLU 1	65	-10	3642	42.32	0.35	0.92
133	SLU 2	64	-24	3649	42.78	0.32	0.74



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
133	SLU 3	65	-10	3642	42.32	0.35	0.92
133	SLU 4	64	-18	3647	42.6	0.33	0.81
133	SLU 5	64	-24	3649	42.78	0.32	0.74
133	SLU 6	65	-10	3642	42.32	0.35	0.92
133	SLU 7	64	-18	3647	42.6	0.33	0.81
133	SLU 8	65	-10	3642	42.32	0.35	0.92
133	SLU 9	64	-18	3647	42.6	0.33	0.81
133	SLU 10	76	-23	4379	50.29	0.44	1.01
133	SLU 11	77	-9	4372	49.83	0.48	1.2
133	SLU 12	77	-17	4376	50.1	0.46	1.09
133	SLU 13	76	-23	4379	50.29	0.44	1.01
133	SLU 14	77	-9	4372	49.83	0.48	1.2
133	SLU 15	77	-17	4376	50.1	0.46	1.09
133	SLU 16	77	-9	4372	49.83	0.48	1.2
133	SLU 17	77	-17	4376	50.1	0.46	1.09
133	SLU 18	82	-9	4684	53.04	0.53	1.32
133	SLU 19	82	-17	4689	53.32	0.51	1.21
133	SLU 20	82	-9	4684	53.04	0.53	1.32
133	SLU 21	82	-17	4689	53.32	0.51	1.21
133	SLU 22	74	-10	4163	47.57	0.41	1.11
133	SLU 23	73	-23	4170	48.03	0.38	0.93
133	SLU 24	74	-10	4163	47.57	0.41	1.11
133	SLU 25	74	-18	4168	47.84	0.4	1
133	SLU 26	73	-23	4170	48.03	0.38	0.93
133	SLU 27	74	-10	4163	47.57	0.41	1.11
133	SLU 28	74	-18	4168	47.84	0.4	1
133	SLU 29	74	-10	4163	47.57	0.41	1.11
133	SLU 30	74	-18	4168	47.84	0.4	1
133	SLU 31	86	-22	4900	55.53	0.51	1.21
133	SLU 32	86	-9	4893	55.07	0.54	1.39
133	SLU 33	86	-17	4897	55.35	0.52	1.28
133	SLU 34	86	-22	4900	55.53	0.51	1.21
133	SLU 35	86	-9	4893	55.07	0.54	1.39
133	SLU 36	86	-17	4897	55.35	0.52	1.28
133	SLU 37	86	-9	4893	55.07	0.54	1.39
133	SLU 38	86	-17	4897	55.35	0.52	1.28
133	SLU 39	91	-8	5205	58.29	0.6	1.51
133	SLU 40	91	-16	5210	58.57	0.58	1.4
133	SLU 41	91	-8	5205	58.29	0.6	1.51
133	SLU 42	91	-16	5210	58.57	0.58	1.4
133	SLU 43	81	-14	4556	53.22	0.43	1.13
133	SLU 44	80	-27	4563	53.68	0.4	0.95
133	SLU 45	81	-14	4556	53.22	0.43	1.13
133	SLU 46	81	-22	4561	53.5	0.41	1.02
133	SLU 47	80	-27	4563	53.68	0.4	0.95
133	SLU 48	81	-14	4556	53.22	0.43	1.13
133	SLU 49	81	-22	4561	53.5	0.41	1.02
133	SLU 50	81	-14	4556	53.22	0.43	1.13
133	SLU 51	81	-22	4561	53.5	0.41	1.02
133	SLU 52	93	-26	5293	61.19	0.53	1.22
133	SLU 53	93	-12	5286	60.73	0.56	1.41
133	SLU 54	93	-20	5290	61	0.54	1.3
133	SLU 55	93	-26	5293	61.19	0.53	1.22
133	SLU 56	93	-12	5286	60.73	0.56	1.41
133	SLU 57	93	-20	5290	61	0.54	1.3
133	SLU 58	93	-12	5286	60.73	0.56	1.41
133	SLU 59	93	-20	5290	61	0.54	1.3
133	SLU 60	98	-12	5598	63.94	0.61	1.53
133	SLU 61	98	-20	5603	64.22	0.59	1.42
133	SLU 62	98	-12	5598	63.94	0.61	1.53
133	SLU 63	98	-20	5603	64.22	0.59	1.42
133	SLU 64	90	-13	5077	58.46	0.5	1.32
133	SLU 65	90	-27	5085	58.93	0.47	1.14
133	SLU 66	90	-13	5077	58.46	0.5	1.32
133	SLU 67	90	-21	5082	58.74	0.48	1.21
133	SLU 68	90	-27	5085	58.93	0.47	1.14
133	SLU 69	90	-13	5077	58.46	0.5	1.32
133	SLU 70	90	-21	5082	58.74	0.48	1.21
133	SLU 71	90	-13	5077	58.46	0.5	1.32
133	SLU 72	90	-21	5082	58.74	0.48	1.21
133	SLU 73	102	-25	5814	66.43	0.59	1.42
133	SLU 74	102	-12	5807	65.97	0.62	1.6
133	SLU 75	102	-20	5811	66.25	0.6	1.49
133	SLU 76	102	-25	5814	66.43	0.59	1.42
133	SLU 77	102	-12	5807	65.97	0.62	1.6
133	SLU 78	102	-20	5811	66.25	0.6	1.49
133	SLU 79	102	-12	5807	65.97	0.62	1.6
133	SLU 80	102	-20	5811	66.25	0.6	1.49
133	SLU 81	107	-12	6119	69.19	0.68	1.72
133	SLU 82	107	-20	6124	69.46	0.66	1.61
133	SLU 83	107	-12	6119	69.19	0.68	1.72
133	SLU 84	107	-20	6124	69.46	0.66	1.61
133	SLE RA 1	67	-10	3791	43.82	0.37	0.98
133	SLE RA 2	67	-19	3796	44.13	0.35	0.85
133	SLE RA 3	67	-10	3791	43.82	0.37	0.98
133	SLE RA 4	67	-16	3794	44	0.36	0.9
133	SLE RA 5	67	-19	3796	44.13	0.35	0.85
133	SLE RA 6	67	-10	3791	43.82	0.37	0.98
133	SLE RA 7	67	-16	3794	44	0.36	0.9



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
133	SLE RA 8	67	-10	3791	43.82	0.37	0.98
133	SLE RA 9	67	-16	3794	44	0.36	0.9
133	SLE RA 10	75	-18	4282	49.13	0.43	1.04
133	SLE RA 11	75	-9	4277	48.82	0.45	1.16
133	SLE RA 12	75	-15	4280	49.01	0.44	1.09
133	SLE RA 13	75	-18	4282	49.13	0.43	1.04
133	SLE RA 14	75	-9	4277	48.82	0.45	1.16
133	SLE RA 15	75	-15	4280	49.01	0.44	1.09
133	SLE RA 16	75	-9	4277	48.82	0.45	1.16
133	SLE RA 17	75	-15	4280	49.01	0.44	1.09
133	SLE RA 18	79	-9	4486	50.97	0.49	1.24
133	SLE RA 19	79	-14	4489	51.15	0.48	1.17
133	SLE RA 20	79	-9	4486	50.97	0.49	1.24
133	SLE RA 21	79	-14	4489	51.15	0.48	1.17
133	SLE FR 1	67	-10	3791	43.82	0.37	0.98
133	SLE FR 2	67	-12	3792	43.88	0.36	0.95
133	SLE FR 3	67	-10	3791	43.82	0.37	0.98
133	SLE FR 4	71	-12	4000	46.03	0.4	1.03
133	SLE FR 5	71	-10	3999	45.96	0.4	1.06
133	SLE FR 6	73	-10	4138	47.39	0.43	1.11
133	SLE QP 1	67	-10	3791	43.82	0.37	0.98
133	SLE QP 2	71	-10	3999	45.96	0.4	1.06
133	SLD 1	321	-82	3875	36.45	1.78	-1.88
133	SLD 2	301	-67	3872	36.61	1.78	-1.05
133	SLD 3	252	-210	3970	43.36	1.22	-3.81
133	SLD 4	232	-195	3967	43.52	1.22	-2.97
133	SLD 5	258	157	3819	32.57	1.66	2.8
133	SLD 6	237	172	3816	32.73	1.66	3.63
133	SLD 7	27	-269	4136	55.61	-0.19	-3.61
133	SLD 8	7	-254	4133	55.77	-0.19	-2.78
133	SLD 9	134	234	3866	36.16	1	4.89
133	SLD 10	114	249	3863	36.32	1	5.72
133	SLD 11	-96	-192	4183	59.2	-0.85	-1.52
133	SLD 12	-116	-177	4179	59.36	-0.85	-0.69
133	SLD 13	-91	175	4032	48.41	-0.42	5.08
133	SLD 14	-111	190	4029	48.57	-0.41	5.92
133	SLD 15	-160	47	4127	55.32	-0.97	3.16
133	SLD 16	-180	62	4124	55.48	-0.97	3.99
133	SLV 1	643	-173	3712	23.89	3.56	-5.61
133	SLV 2	597	-139	3705	24.25	3.57	-3.72
133	SLV 3	484	-468	3932	39.93	2.27	-10.02
133	SLV 4	439	-434	3925	40.29	2.28	-8.12
133	SLV 5	499	377	3582	14.89	3.31	5.07
133	SLV 6	453	410	3575	15.25	3.31	6.97
133	SLV 7	-30	-606	4316	68.36	-0.99	-9.61
133	SLV 8	-75	-573	4308	68.71	-0.99	-7.71
133	SLV 9	217	553	3691	23.22	1.8	9.82
133	SLV 10	171	586	3683	23.57	1.8	11.72
133	SLV 11	-312	-430	4424	76.68	-2.5	-4.86
133	SLV 12	-358	-396	4417	77.04	-2.5	-2.96
133	SLV 13	-298	414	4074	51.64	-1.47	10.23
133	SLV 14	-343	448	4067	52	-1.47	12.13
133	SLV 15	-456	119	4294	67.68	-2.76	5.83
133	SLV 16	-502	153	4287	68.04	-2.75	7.72
133	CRTFP Ux+	0	0	0	0	0	0
133	CRTFP Ux-	0	0	0	0	0	0
133	CRTFP Uy+	0	0	0	0	0	0
133	CRTFP Uy-	0	0	0	0	0	0
134	SLU 1	65	-6	3624	42.99	0.78	0.65
134	SLU 2	65	-21	3633	43.45	0.74	0.43
134	SLU 3	65	-6	3624	42.99	0.78	0.65
134	SLU 4	65	-15	3629	43.27	0.76	0.52
134	SLU 5	65	-21	3633	43.45	0.74	0.43
134	SLU 6	65	-6	3624	42.99	0.78	0.65
134	SLU 7	65	-15	3629	43.27	0.76	0.52
134	SLU 8	65	-6	3624	42.99	0.78	0.65
134	SLU 9	65	-15	3629	43.27	0.76	0.52
134	SLU 10	77	-18	4356	51.08	0.99	0.66
134	SLU 11	77	-4	4348	50.62	1.03	0.89
134	SLU 12	77	-12	4353	50.9	1.01	0.75
134	SLU 13	77	-18	4356	51.08	0.99	0.66
134	SLU 14	77	-4	4348	50.62	1.03	0.89
134	SLU 15	77	-12	4353	50.9	1.01	0.75
134	SLU 16	77	-4	4348	50.62	1.03	0.89
134	SLU 17	77	-12	4353	50.9	1.01	0.75
134	SLU 18	82	-3	4658	53.89	1.14	0.99
134	SLU 19	82	-11	4663	54.17	1.12	0.85
134	SLU 20	82	-3	4658	53.89	1.14	0.99
134	SLU 21	82	-11	4663	54.17	1.12	0.85
134	SLU 22	74	-5	4142	48.33	0.93	0.81
134	SLU 23	74	-19	4150	48.79	0.9	0.59
134	SLU 24	74	-5	4142	48.33	0.93	0.81
134	SLU 25	74	-14	4147	48.6	0.91	0.68
134	SLU 26	74	-19	4150	48.79	0.9	0.59
134	SLU 27	74	-5	4142	48.33	0.93	0.81
134	SLU 28	74	-14	4147	48.6	0.91	0.68
134	SLU 29	74	-5	4142	48.33	0.93	0.81
134	SLU 30	74	-14	4147	48.6	0.91	0.68
134	SLU 31	86	-17	4874	56.42	1.15	0.82



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
134	SLU 32	86	-2	4866	55.96	1.18	1.05
134	SLU 33	86	-11	4871	56.24	1.16	0.91
134	SLU 34	86	-17	4874	56.42	1.15	0.82
134	SLU 35	86	-2	4866	55.96	1.18	1.05
134	SLU 36	86	-11	4871	56.24	1.16	0.91
134	SLU 37	86	-2	4866	55.96	1.18	1.05
134	SLU 38	86	-11	4871	56.24	1.16	0.91
134	SLU 39	91	-1	5176	59.23	1.29	1.15
134	SLU 40	91	-10	5181	59.51	1.27	1.02
134	SLU 41	91	-1	5176	59.23	1.29	1.15
134	SLU 42	91	-10	5181	59.51	1.27	1.02
134	SLU 43	82	-9	4534	54.06	0.96	0.79
134	SLU 44	82	-23	4543	54.52	0.92	0.57
134	SLU 45	82	-9	4534	54.06	0.96	0.79
134	SLU 46	82	-17	4539	54.34	0.94	0.66
134	SLU 47	82	-23	4543	54.52	0.92	0.57
134	SLU 48	82	-9	4534	54.06	0.96	0.79
134	SLU 49	82	-17	4539	54.34	0.94	0.66
134	SLU 50	82	-9	4534	54.06	0.96	0.79
134	SLU 51	82	-17	4539	54.34	0.94	0.66
134	SLU 52	93	-20	5266	62.15	1.17	0.8
134	SLU 53	94	-6	5258	61.69	1.21	1.03
134	SLU 54	94	-15	5263	61.97	1.19	0.89
134	SLU 55	93	-20	5266	62.15	1.17	0.8
134	SLU 56	94	-6	5258	61.69	1.21	1.03
134	SLU 57	94	-15	5263	61.97	1.19	0.89
134	SLU 58	94	-6	5258	61.69	1.21	1.03
134	SLU 59	94	-15	5263	61.97	1.19	0.89
134	SLU 60	99	-5	5568	64.96	1.32	1.13
134	SLU 61	99	-14	5573	65.24	1.3	0.99
134	SLU 62	99	-5	5568	64.96	1.32	1.13
134	SLU 63	99	-14	5573	65.24	1.3	0.99
134	SLU 64	91	-7	5052	59.4	1.11	0.95
134	SLU 65	91	-22	5060	59.86	1.08	0.73
134	SLU 66	91	-7	5052	59.4	1.11	0.95
134	SLU 67	91	-16	5057	59.67	1.09	0.82
134	SLU 68	91	-22	5060	59.86	1.08	0.73
134	SLU 69	91	-7	5052	59.4	1.11	0.95
134	SLU 70	91	-16	5057	59.67	1.09	0.82
134	SLU 71	91	-7	5052	59.4	1.11	0.95
134	SLU 72	91	-16	5057	59.67	1.09	0.82
134	SLU 73	102	-19	5784	67.49	1.33	0.96
134	SLU 74	103	-5	5775	67.03	1.36	1.19
134	SLU 75	103	-13	5780	67.3	1.34	1.05
134	SLU 76	102	-19	5784	67.49	1.33	0.96
134	SLU 77	103	-5	5775	67.03	1.36	1.19
134	SLU 78	103	-13	5780	67.3	1.34	1.05
134	SLU 79	103	-5	5775	67.03	1.36	1.19
134	SLU 80	103	-13	5780	67.3	1.34	1.05
134	SLU 81	108	-4	6086	70.3	1.47	1.29
134	SLU 82	108	-12	6091	70.58	1.45	1.16
134	SLU 83	108	-4	6086	70.3	1.47	1.29
134	SLU 84	108	-12	6091	70.58	1.45	1.16
134	SLE RA 1	68	-6	3772	44.52	0.82	0.7
134	SLE RA 2	68	-16	3778	44.82	0.8	0.55
134	SLE RA 3	68	-6	3772	44.52	0.82	0.7
134	SLE RA 4	68	-12	3776	44.7	0.81	0.61
134	SLE RA 5	68	-16	3778	44.82	0.8	0.55
134	SLE RA 6	68	-6	3772	44.52	0.82	0.7
134	SLE RA 7	68	-12	3776	44.7	0.81	0.61
134	SLE RA 8	68	-6	3772	44.52	0.82	0.7
134	SLE RA 9	68	-12	3776	44.7	0.81	0.61
134	SLE RA 10	76	-14	4260	49.91	0.97	0.7
134	SLE RA 11	76	-4	4255	49.6	0.99	0.86
134	SLE RA 12	76	-10	4258	49.79	0.97	0.76
134	SLE RA 13	76	-14	4260	49.91	0.97	0.7
134	SLE RA 14	76	-4	4255	49.6	0.99	0.86
134	SLE RA 15	76	-10	4258	49.79	0.97	0.76
134	SLE RA 16	76	-4	4255	49.6	0.99	0.86
134	SLE RA 17	76	-10	4258	49.79	0.97	0.76
134	SLE RA 18	79	-3	4461	51.78	1.06	0.92
134	SLE RA 19	79	-9	4465	51.97	1.05	0.83
134	SLE RA 20	79	-3	4461	51.78	1.06	0.92
134	SLE RA 21	79	-9	4465	51.97	1.05	0.83
134	SLE FR 1	68	-6	3772	44.52	0.82	0.7
134	SLE FR 2	68	-8	3773	44.58	0.82	0.67
134	SLE FR 3	68	-6	3772	44.52	0.82	0.7
134	SLE FR 4	71	-7	3980	46.76	0.89	0.74
134	SLE FR 5	71	-5	3979	46.7	0.89	0.77
134	SLE FR 6	74	-5	4117	48.15	0.94	0.81
134	SLE QP 1	68	-6	3772	44.52	0.82	0.7
134	SLE QP 2	71	-5	3979	46.7	0.89	0.77
134	SLD 1	322	-91	3823	37.14	2.54	-2.27
134	SLD 2	302	-72	3820	37.3	2.53	-1.42
134	SLD 3	253	-230	3934	44.06	1.9	-4.58
134	SLD 4	233	-211	3931	44.22	1.89	-3.73
134	SLD 5	258	172	3765	33.27	2.35	3.07
134	SLD 6	238	191	3762	33.44	2.34	3.91
134	SLD 7	28	-289	4135	56.34	0.24	-4.64



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
134	SLD 8	8	-270	4132	56.51	0.23	-3.79
134	SLD 9	135	260	3826	36.89	1.56	5.32
134	SLD 10	114	279	3823	37.05	1.55	6.17
134	SLD 11	-95	-202	4196	59.95	-0.55	-2.38
134	SLD 12	-116	-183	4193	60.12	-0.57	-1.54
134	SLD 13	-90	200	4028	49.17	-0.11	5.26
134	SLD 14	-110	219	4024	49.34	-0.12	6.11
134	SLD 15	-159	62	4139	56.09	-0.74	2.95
134	SLD 16	-179	81	4135	56.26	-0.75	3.8
134	SLV 1	644	-200	3617	24.52	4.67	-6.11
134	SLV 2	598	-156	3610	24.89	4.65	-4.18
134	SLV 3	485	-519	3875	40.58	3.2	-11.41
134	SLV 4	440	-475	3867	40.95	3.18	-9.48
134	SLV 5	499	405	3482	15.55	4.26	6.07
134	SLV 6	454	448	3475	15.93	4.24	8
134	SLV 7	-29	-658	4341	69.09	-0.63	-11.6
134	SLV 8	-75	-615	4334	69.46	-0.66	-9.68
134	SLV 9	217	604	3624	23.93	2.44	11.21
134	SLV 10	172	648	3617	24.3	2.42	13.13
134	SLV 11	-311	-459	4483	77.47	-2.46	-6.47
134	SLV 12	-357	-415	4476	77.84	-2.48	-4.54
134	SLV 13	-297	465	4091	52.44	-1.4	11.01
134	SLV 14	-342	508	4084	52.81	-1.42	12.94
134	SLV 15	-455	146	4348	68.5	-2.87	5.71
134	SLV 16	-501	189	4341	68.87	-2.89	7.64
134	CRTFP Ux+	0	0	0	0	0	0
134	CRTFP Ux-	0	0	0	0	0	0
134	CRTFP Uy+	0	0	0	0	0	0
134	CRTFP Uy-	0	0	0	0	0	0
135	SLU 1	66	-4	3594	43.72	1.17	0.37
135	SLU 2	66	-19	3603	44.18	1.13	0.11
135	SLU 3	66	-4	3594	43.72	1.17	0.37
135	SLU 4	66	-13	3599	44	1.15	0.22
135	SLU 5	66	-19	3603	44.18	1.13	0.11
135	SLU 6	66	-4	3594	43.72	1.17	0.37
135	SLU 7	66	-13	3599	44	1.15	0.22
135	SLU 8	66	-4	3594	43.72	1.17	0.37
135	SLU 9	66	-13	3599	44	1.15	0.22
135	SLU 10	77	-16	4317	51.95	1.51	0.3
135	SLU 11	77	0	4307	51.49	1.54	0.57
135	SLU 12	77	-9	4313	51.76	1.52	0.41
135	SLU 13	77	-16	4317	51.95	1.51	0.3
135	SLU 14	77	0	4307	51.49	1.54	0.57
135	SLU 15	77	-9	4313	51.76	1.52	0.41
135	SLU 16	77	0	4307	51.49	1.54	0.57
135	SLU 17	77	-9	4313	51.76	1.52	0.41
135	SLU 18	82	2	4613	54.82	1.7	0.65
135	SLU 19	82	-8	4619	55.09	1.68	0.49
135	SLU 20	82	2	4613	54.82	1.7	0.65
135	SLU 21	82	-8	4619	55.09	1.68	0.49
135	SLU 22	75	-2	4105	49.15	1.41	0.5
135	SLU 23	74	-17	4114	49.62	1.37	0.24
135	SLU 24	75	-2	4105	49.15	1.41	0.5
135	SLU 25	75	-11	4111	49.43	1.39	0.35
135	SLU 26	74	-17	4114	49.62	1.37	0.24
135	SLU 27	75	-2	4105	49.15	1.41	0.5
135	SLU 28	75	-11	4111	49.43	1.39	0.35
135	SLU 29	75	-2	4105	49.15	1.41	0.5
135	SLU 30	75	-11	4111	49.43	1.39	0.35
135	SLU 31	86	-14	4828	57.38	1.75	0.43
135	SLU 32	86	2	4819	56.92	1.78	0.7
135	SLU 33	86	-7	4824	57.2	1.76	0.54
135	SLU 34	86	-14	4828	57.38	1.75	0.43
135	SLU 35	86	2	4819	56.92	1.78	0.7
135	SLU 36	86	-7	4824	57.2	1.76	0.54
135	SLU 37	86	2	4819	56.92	1.78	0.7
135	SLU 38	86	-7	4824	57.2	1.76	0.54
135	SLU 39	91	4	5125	60.25	1.94	0.78
135	SLU 40	91	-6	5130	60.53	1.92	0.62
135	SLU 41	91	4	5125	60.25	1.94	0.78
135	SLU 42	91	-6	5130	60.53	1.92	0.62
135	SLU 43	83	-5	4496	54.97	1.44	0.44
135	SLU 44	82	-21	4506	55.43	1.4	0.18
135	SLU 45	83	-5	4496	54.97	1.44	0.44
135	SLU 46	83	-15	4502	55.25	1.42	0.28
135	SLU 47	82	-21	4506	55.43	1.4	0.18
135	SLU 48	83	-5	4496	54.97	1.44	0.44
135	SLU 49	83	-15	4502	55.25	1.42	0.28
135	SLU 50	83	-5	4496	54.97	1.44	0.44
135	SLU 51	83	-15	4502	55.25	1.42	0.28
135	SLU 52	94	-17	5220	63.2	1.78	0.37
135	SLU 53	94	-2	5210	62.74	1.81	0.63
135	SLU 54	94	-11	5216	63.02	1.79	0.48
135	SLU 55	94	-17	5220	63.2	1.78	0.37
135	SLU 56	94	-2	5210	62.74	1.81	0.63
135	SLU 57	94	-11	5216	63.02	1.79	0.48
135	SLU 58	94	-2	5210	62.74	1.81	0.63
135	SLU 59	94	-11	5216	63.02	1.79	0.48
135	SLU 60	99	0	5516	66.07	1.97	0.72



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
135	SLU 61	99	-10	5522	66.35	1.95	0.56
135	SLU 62	99	0	5516	66.07	1.97	0.72
135	SLU 63	99	-10	5522	66.35	1.95	0.56
135	SLU 64	91	-3	5008	60.41	1.68	0.57
135	SLU 65	91	-19	5017	60.87	1.64	0.31
135	SLU 66	91	-3	5008	60.41	1.68	0.57
135	SLU 67	91	-13	5013	60.68	1.66	0.41
135	SLU 68	91	-19	5017	60.87	1.64	0.31
135	SLU 69	91	-3	5008	60.41	1.68	0.57
135	SLU 70	91	-13	5013	60.68	1.66	0.41
135	SLU 71	91	-3	5008	60.41	1.68	0.57
135	SLU 72	91	-13	5013	60.68	1.66	0.41
135	SLU 73	103	-15	5731	68.64	2.02	0.5
135	SLU 74	103	0	5722	68.17	2.05	0.76
135	SLU 75	103	-9	5727	68.45	2.03	0.61
135	SLU 76	103	-15	5731	68.64	2.02	0.5
135	SLU 77	103	0	5722	68.17	2.05	0.76
135	SLU 78	103	-9	5727	68.45	2.03	0.61
135	SLU 79	103	0	5722	68.17	2.05	0.76
135	SLU 80	103	-9	5727	68.45	2.03	0.61
135	SLU 81	108	2	6027	71.5	2.21	0.85
135	SLU 82	108	-7	6033	71.78	2.19	0.69
135	SLU 83	108	2	6027	71.5	2.21	0.85
135	SLU 84	108	-7	6033	71.78	2.19	0.69
135	SLE RA 1	68	-3	3740	45.27	1.24	0.41
135	SLE RA 2	68	-13	3746	45.58	1.21	0.24
135	SLE RA 3	68	-3	3740	45.27	1.24	0.41
135	SLE RA 4	68	-9	3744	45.46	1.22	0.31
135	SLE RA 5	68	-13	3746	45.58	1.21	0.24
135	SLE RA 6	68	-3	3740	45.27	1.24	0.41
135	SLE RA 7	68	-9	3744	45.46	1.22	0.31
135	SLE RA 8	68	-3	3740	45.27	1.24	0.41
135	SLE RA 9	68	-9	3744	45.46	1.22	0.31
135	SLE RA 10	76	-11	4222	50.76	1.46	0.36
135	SLE RA 11	76	-1	4216	50.45	1.49	0.54
135	SLE RA 12	76	-7	4219	50.64	1.47	0.43
135	SLE RA 13	76	-11	4222	50.76	1.46	0.36
135	SLE RA 14	76	-1	4216	50.45	1.49	0.54
135	SLE RA 15	76	-7	4219	50.64	1.47	0.43
135	SLE RA 16	76	-1	4216	50.45	1.49	0.54
135	SLE RA 17	76	-7	4219	50.64	1.47	0.43
135	SLE RA 18	79	0	4420	52.67	1.59	0.59
135	SLE RA 19	79	-6	4423	52.85	1.58	0.49
135	SLE RA 20	79	0	4420	52.67	1.59	0.59
135	SLE RA 21	79	-6	4423	52.85	1.58	0.49
135	SLE FR 1	68	-3	3740	45.27	1.24	0.41
135	SLE FR 2	68	-5	3741	45.33	1.23	0.38
135	SLE FR 3	68	-3	3740	45.27	1.24	0.41
135	SLE FR 4	72	-4	3945	47.55	1.34	0.43
135	SLE FR 5	72	-2	3944	47.49	1.34	0.47
135	SLE FR 6	74	-1	4080	48.97	1.42	0.5
135	SLE QP 1	68	-3	3740	45.27	1.24	0.41
135	SLE QP 2	72	-2	3944	47.49	1.34	0.47
135	SLD 1	322	-103	3742	37.88	3.17	-2.67
135	SLD 2	302	-80	3740	38.05	3.15	-1.8
135	SLD 3	253	-254	3872	44.81	2.48	-5.32
135	SLD 4	233	-231	3869	44.98	2.46	-4.46
135	SLD 5	258	188	3688	34.03	2.94	3.25
135	SLD 6	238	212	3685	34.2	2.92	4.11
135	SLD 7	29	-315	4120	57.14	0.65	-5.59
135	SLD 8	9	-291	4117	57.31	0.63	-4.73
135	SLD 9	135	288	3771	37.67	2.06	5.66
135	SLD 10	115	311	3768	37.84	2.04	6.52
135	SLD 11	-95	-216	4202	60.78	-0.23	-3.18
135	SLD 12	-115	-192	4200	60.95	-0.25	-2.32
135	SLD 13	-90	227	4018	50	0.23	5.39
135	SLD 14	-110	250	4015	50.17	0.21	6.25
135	SLD 15	-159	76	4148	56.94	-0.46	2.74
135	SLD 16	-179	99	4145	57.11	-0.48	3.6
135	SLV 1	644	-231	3478	25.19	5.53	-6.63
135	SLV 2	598	-177	3472	25.57	5.49	-4.67
135	SLV 3	485	-579	3779	41.28	3.93	-12.72
135	SLV 4	440	-525	3773	41.67	3.89	-10.76
135	SLV 5	500	438	3350	16.26	5.04	6.89
135	SLV 6	454	492	3344	16.65	5	8.84
135	SLV 7	-29	-722	4352	69.9	-0.29	-13.41
135	SLV 8	-74	-668	4346	70.29	-0.33	-11.45
135	SLV 9	218	664	3541	24.7	3.02	12.38
135	SLV 10	172	718	3535	25.08	2.98	14.34
135	SLV 11	-311	-496	4544	78.34	-2.31	-7.91
135	SLV 12	-356	-442	4537	78.72	-2.35	-5.95
135	SLV 13	-296	521	4115	53.32	-1.2	11.69
135	SLV 14	-342	575	4109	53.7	-1.24	13.65
135	SLV 15	-455	173	4416	69.41	-2.8	5.6
135	SLV 16	-500	227	4410	69.79	-2.84	7.56
135	CRTFP Ux+	0	0	0	0	0	0
135	CRTFP Ux-	0	0	0	0	0	0
135	CRTFP Uy+	0	0	0	0	0	0
135	CRTFP Uy-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
136	SLU 1	66	-2	3552	44.51	1.48	0.09
136	SLU 2	66	-20	3562	44.97	1.44	-0.2
136	SLU 3	66	-2	3552	44.51	1.48	0.09
136	SLU 4	66	-13	3558	44.78	1.45	-0.08
136	SLU 5	66	-20	3562	44.97	1.44	-0.2
136	SLU 6	66	-2	3552	44.51	1.48	0.09
136	SLU 7	66	-13	3558	44.78	1.45	-0.08
136	SLU 8	66	-2	3552	44.51	1.48	0.09
136	SLU 9	66	-13	3558	44.78	1.45	-0.08
136	SLU 10	77	-15	4263	52.88	1.92	-0.05
136	SLU 11	78	2	4252	52.42	1.95	0.24
136	SLU 12	77	-8	4258	52.7	1.93	0.06
136	SLU 13	77	-15	4263	52.88	1.92	-0.05
136	SLU 14	78	2	4252	52.42	1.95	0.24
136	SLU 15	77	-8	4258	52.7	1.93	0.06
136	SLU 16	78	2	4252	52.42	1.95	0.24
136	SLU 17	77	-8	4258	52.7	1.93	0.06
136	SLU 18	82	4	4552	55.81	2.16	0.3
136	SLU 19	82	-6	4559	56.09	2.14	0.12
136	SLU 20	82	4	4552	55.81	2.16	0.3
136	SLU 21	82	-6	4559	56.09	2.14	0.12
136	SLU 22	75	0	4054	50.04	1.79	0.18
136	SLU 23	75	-17	4065	50.51	1.75	-0.11
136	SLU 24	75	0	4054	50.04	1.79	0.18
136	SLU 25	75	-10	4061	50.32	1.77	0.01
136	SLU 26	75	-17	4065	50.51	1.75	-0.11
136	SLU 27	75	0	4054	50.04	1.79	0.18
136	SLU 28	75	-10	4061	50.32	1.77	0.01
136	SLU 29	75	0	4054	50.04	1.79	0.18
136	SLU 30	75	-10	4061	50.32	1.77	0.01
136	SLU 31	86	-12	4765	58.42	2.23	0.04
136	SLU 32	86	5	4755	57.96	2.27	0.33
136	SLU 33	86	-5	4761	58.24	2.25	0.16
136	SLU 34	86	-12	4765	58.42	2.23	0.04
136	SLU 35	86	5	4755	57.96	2.27	0.33
136	SLU 36	86	-5	4761	58.24	2.25	0.16
136	SLU 37	86	5	4755	57.96	2.27	0.33
136	SLU 38	86	-5	4761	58.24	2.25	0.16
136	SLU 39	91	7	5055	61.35	2.47	0.39
136	SLU 40	91	-3	5061	61.63	2.45	0.22
136	SLU 41	91	7	5055	61.35	2.47	0.39
136	SLU 42	91	-3	5061	61.63	2.45	0.22
136	SLU 43	83	-4	4445	55.96	1.81	0.08
136	SLU 44	83	-21	4456	56.42	1.77	-0.21
136	SLU 45	83	-4	4445	55.96	1.81	0.08
136	SLU 46	83	-14	4451	56.24	1.79	-0.09
136	SLU 47	83	-21	4456	56.42	1.77	-0.21
136	SLU 48	83	-4	4445	55.96	1.81	0.08
136	SLU 49	83	-14	4451	56.24	1.79	-0.09
136	SLU 50	83	-4	4445	55.96	1.81	0.08
136	SLU 51	83	-14	4451	56.24	1.79	-0.09
136	SLU 52	94	-17	5156	64.34	2.25	-0.06
136	SLU 53	94	1	5145	63.87	2.29	0.23
136	SLU 54	94	-10	5152	64.15	2.27	0.06
136	SLU 55	94	-17	5156	64.34	2.25	-0.06
136	SLU 56	94	1	5145	63.87	2.29	0.23
136	SLU 57	94	-10	5152	64.15	2.27	0.06
136	SLU 58	94	1	5145	63.87	2.29	0.23
136	SLU 59	94	-10	5152	64.15	2.27	0.06
136	SLU 60	99	3	5445	67.27	2.49	0.29
136	SLU 61	99	-8	5452	67.54	2.47	0.12
136	SLU 62	99	3	5445	67.27	2.49	0.29
136	SLU 63	99	-8	5452	67.54	2.47	0.12
136	SLU 64	92	-1	4948	61.5	2.12	0.18
136	SLU 65	92	-18	4958	61.96	2.09	-0.11
136	SLU 66	92	-1	4948	61.5	2.12	0.18
136	SLU 67	92	-12	4954	61.78	2.1	0
136	SLU 68	92	-18	4958	61.96	2.09	-0.11
136	SLU 69	92	-1	4948	61.5	2.12	0.18
136	SLU 70	92	-12	4954	61.78	2.1	0
136	SLU 71	92	-1	4948	61.5	2.12	0.18
136	SLU 72	92	-12	4954	61.78	2.1	0
136	SLU 73	103	-14	5658	69.87	2.57	0.03
136	SLU 74	103	3	5648	69.41	2.6	0.32
136	SLU 75	103	-7	5654	69.69	2.58	0.15
136	SLU 76	103	-14	5658	69.87	2.57	0.03
136	SLU 77	103	3	5648	69.41	2.6	0.32
136	SLU 78	103	-7	5654	69.69	2.58	0.15
136	SLU 79	103	3	5648	69.41	2.6	0.32
136	SLU 80	103	-7	5654	69.69	2.58	0.15
136	SLU 81	108	5	5948	72.8	2.81	0.39
136	SLU 82	108	-5	5954	73.08	2.79	0.21
136	SLU 83	108	5	5948	72.8	2.81	0.39
136	SLU 84	108	-5	5954	73.08	2.79	0.21
136	SLE RA 1	69	-2	3695	46.09	1.57	0.12
136	SLE RA 2	69	-13	3702	46.4	1.54	-0.08
136	SLE RA 3	69	-2	3695	46.09	1.57	0.12
136	SLE RA 4	69	-8	3700	46.27	1.55	0
136	SLE RA 5	69	-13	3702	46.4	1.54	-0.08



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
136	SLE RA 6	69	-2	3695	46.09	1.57	0.12
136	SLE RA 7	69	-8	3700	46.27	1.55	0
136	SLE RA 8	69	-2	3695	46.09	1.57	0.12
136	SLE RA 9	69	-8	3700	46.27	1.55	0
136	SLE RA 10	76	-10	4169	51.67	1.86	0.02
136	SLE RA 11	76	1	4162	51.36	1.88	0.21
136	SLE RA 12	76	-5	4167	51.55	1.87	0.1
136	SLE RA 13	76	-10	4169	51.67	1.86	0.02
136	SLE RA 14	76	1	4162	51.36	1.88	0.21
136	SLE RA 15	76	-5	4167	51.55	1.87	0.1
136	SLE RA 16	76	1	4162	51.36	1.88	0.21
136	SLE RA 17	76	-5	4167	51.55	1.87	0.1
136	SLE RA 18	79	3	4362	53.63	2.02	0.26
136	SLE RA 19	79	-4	4367	53.81	2.01	0.14
136	SLE RA 20	79	3	4362	53.63	2.02	0.26
136	SLE RA 21	79	-4	4367	53.81	2.01	0.14
136	SLE FR 1	69	-2	3695	46.09	1.57	0.12
136	SLE FR 2	69	-4	3697	46.15	1.56	0.08
136	SLE FR 3	69	-2	3695	46.09	1.57	0.12
136	SLE FR 4	72	-3	3897	48.41	1.7	0.12
136	SLE FR 5	72	0	3896	48.35	1.7	0.16
136	SLE FR 6	74	1	4029	49.86	1.79	0.19
136	SLE QP 1	69	-2	3695	46.09	1.57	0.12
136	SLE QP 2	72	0	3896	48.35	1.7	0.16
136	SLD 1	322	-118	3641	38.67	3.63	-3.07
136	SLD 2	302	-90	3639	38.85	3.61	-2.19
136	SLD 3	253	-283	3791	45.62	2.9	-5.99
136	SLD 4	233	-255	3789	45.8	2.88	-5.11
136	SLD 5	259	206	3593	34.84	3.39	3.31
136	SLD 6	238	234	3591	35.01	3.37	4.19
136	SLD 7	29	-346	4092	58.02	0.97	-6.42
136	SLD 8	9	-318	4090	58.19	0.95	-5.55
136	SLD 9	135	317	3701	38.51	2.46	5.86
136	SLD 10	115	345	3699	38.68	2.44	6.73
136	SLD 11	-95	-234	4201	61.68	0.04	-3.87
136	SLD 12	-115	-206	4198	61.86	0.01	-3
136	SLD 13	-89	254	4002	50.9	0.52	5.43
136	SLD 14	-110	283	4000	51.08	0.5	6.3
136	SLD 15	-158	89	4152	57.85	-0.2	2.51
136	SLD 16	-178	117	4150	58.03	-0.22	3.38
136	SLV 1	644	-266	3308	25.9	6.13	-7.14
136	SLV 2	598	-202	3303	26.3	6.08	-5.16
136	SLV 3	485	-647	3656	42.03	4.44	-13.85
136	SLV 4	440	-583	3651	42.43	4.39	-11.87
136	SLV 5	499	476	3193	17	5.6	7.45
136	SLV 6	454	540	3188	17.4	5.56	9.43
136	SLV 7	-28	-795	4353	70.79	-0.02	-14.91
136	SLV 8	-74	-731	4349	71.19	-0.07	-12.93
136	SLV 9	218	730	3442	25.51	3.47	13.25
136	SLV 10	172	794	3438	25.91	3.42	15.22
136	SLV 11	-310	-540	4603	79.3	-2.15	-9.11
136	SLV 12	-356	-476	4598	79.7	-2.2	-7.13
136	SLV 13	-296	582	4140	54.27	-0.99	12.18
136	SLV 14	-342	646	4135	54.67	-1.04	14.16
136	SLV 15	-454	201	4488	70.4	-2.68	5.48
136	SLV 16	-500	265	4483	70.8	-2.72	7.45
136	CRTFP Ux+	0	0	0	0	0	0
136	CRTFP Ux-	0	0	0	0	0	0
136	CRTFP Uy+	0	0	0	0	0	0
136	CRTFP Uy-	0	0	0	0	0	0
137	SLU 1	66	-3	3502	45.35	1.66	-0.2
137	SLU 2	66	-21	3514	45.82	1.62	-0.51
137	SLU 3	66	-3	3502	45.35	1.66	-0.2
137	SLU 4	66	-14	3509	45.63	1.64	-0.39
137	SLU 5	66	-21	3514	45.82	1.62	-0.51
137	SLU 6	66	-3	3502	45.35	1.66	-0.2
137	SLU 7	66	-14	3509	45.63	1.64	-0.39
137	SLU 8	66	-3	3502	45.35	1.66	-0.2
137	SLU 9	66	-14	3509	45.63	1.64	-0.39
137	SLU 10	77	-16	4198	53.89	2.18	-0.41
137	SLU 11	77	3	4186	53.42	2.22	-0.11
137	SLU 12	77	-9	4193	53.7	2.19	-0.29
137	SLU 13	77	-16	4198	53.89	2.18	-0.41
137	SLU 14	77	3	4186	53.42	2.22	-0.11
137	SLU 15	77	-9	4193	53.7	2.19	-0.29
137	SLU 16	77	3	4186	53.42	2.22	-0.11
137	SLU 17	77	-9	4193	53.7	2.19	-0.29
137	SLU 18	82	5	4479	56.88	2.45	-0.07
137	SLU 19	82	-6	4486	57.16	2.43	-0.25
137	SLU 20	82	5	4479	56.88	2.45	-0.07
137	SLU 21	82	-6	4486	57.16	2.43	-0.25
137	SLU 22	75	0	3994	51	2.03	-0.15
137	SLU 23	75	-18	4006	51.47	1.99	-0.45
137	SLU 24	75	0	3994	51	2.03	-0.15
137	SLU 25	75	-11	4001	51.28	2	-0.33
137	SLU 26	75	-18	4006	51.47	1.99	-0.45
137	SLU 27	75	0	3994	51	2.03	-0.15
137	SLU 28	75	-11	4001	51.28	2	-0.33
137	SLU 29	75	0	3994	51	2.03	-0.15



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
137	SLU 30	75	-11	4001	51.28	2	-0.33
137	SLU 31	86	-13	4690	59.54	2.54	-0.36
137	SLU 32	86	6	4678	59.08	2.58	-0.05
137	SLU 33	86	-6	4685	59.35	2.56	-0.23
137	SLU 34	86	-13	4690	59.54	2.54	-0.36
137	SLU 35	86	6	4678	59.08	2.58	-0.05
137	SLU 36	86	-6	4685	59.35	2.56	-0.23
137	SLU 37	86	6	4678	59.08	2.58	-0.05
137	SLU 38	86	-6	4685	59.35	2.56	-0.23
137	SLU 39	91	8	4971	62.54	2.82	-0.01
137	SLU 40	90	-3	4978	62.81	2.8	-0.19
137	SLU 41	91	8	4971	62.54	2.82	-0.01
137	SLU 42	90	-3	4978	62.81	2.8	-0.19
137	SLU 43	84	-5	4384	57.02	2.03	-0.29
137	SLU 44	83	-23	4396	57.48	1.99	-0.59
137	SLU 45	84	-5	4384	57.02	2.03	-0.29
137	SLU 46	83	-16	4391	57.3	2.01	-0.47
137	SLU 47	83	-23	4396	57.48	1.99	-0.59
137	SLU 48	84	-5	4384	57.02	2.03	-0.29
137	SLU 49	83	-16	4391	57.3	2.01	-0.47
137	SLU 50	84	-5	4384	57.02	2.03	-0.29
137	SLU 51	83	-16	4391	57.3	2.01	-0.47
137	SLU 52	94	-18	5080	65.56	2.55	-0.49
137	SLU 53	95	1	5068	65.09	2.59	-0.19
137	SLU 54	94	-11	5075	65.37	2.56	-0.37
137	SLU 55	94	-18	5080	65.56	2.55	-0.49
137	SLU 56	95	1	5068	65.09	2.59	-0.19
137	SLU 57	94	-11	5075	65.37	2.56	-0.37
137	SLU 58	95	1	5068	65.09	2.59	-0.19
137	SLU 59	94	-11	5075	65.37	2.56	-0.37
137	SLU 60	99	3	5361	68.55	2.83	-0.15
137	SLU 61	99	-8	5368	68.83	2.8	-0.33
137	SLU 62	99	3	5361	68.55	2.83	-0.15
137	SLU 63	99	-8	5368	68.83	2.8	-0.33
137	SLU 64	92	-1	4876	62.67	2.4	-0.23
137	SLU 65	92	-20	4888	63.14	2.36	-0.53
137	SLU 66	92	-1	4876	62.67	2.4	-0.23
137	SLU 67	92	-13	4883	62.95	2.38	-0.41
137	SLU 68	92	-20	4888	63.14	2.36	-0.53
137	SLU 69	92	-1	4876	62.67	2.4	-0.23
137	SLU 70	92	-13	4883	62.95	2.38	-0.41
137	SLU 71	92	-1	4876	62.67	2.4	-0.23
137	SLU 72	92	-13	4883	62.95	2.38	-0.41
137	SLU 73	103	-15	5572	71.21	2.92	-0.44
137	SLU 74	103	4	5560	70.74	2.96	-0.13
137	SLU 75	103	-7	5567	71.02	2.93	-0.31
137	SLU 76	103	-15	5572	71.21	2.92	-0.44
137	SLU 77	103	4	5560	70.74	2.96	-0.13
137	SLU 78	103	-7	5567	71.02	2.93	-0.31
137	SLU 79	103	4	5560	70.74	2.96	-0.13
137	SLU 80	103	-7	5567	71.02	2.93	-0.31
137	SLU 81	108	6	5853	74.2	3.19	-0.09
137	SLU 82	108	-5	5860	74.48	3.17	-0.27
137	SLU 83	108	6	5853	74.2	3.19	-0.09
137	SLU 84	108	-5	5860	74.48	3.17	-0.27
137	SLE RA 1	69	-2	3643	46.97	1.77	-0.19
137	SLE RA 2	69	-14	3651	47.28	1.74	-0.39
137	SLE RA 3	69	-2	3643	46.97	1.77	-0.19
137	SLE RA 4	69	-9	3647	47.15	1.75	-0.31
137	SLE RA 5	69	-14	3651	47.28	1.74	-0.39
137	SLE RA 6	69	-2	3643	46.97	1.77	-0.19
137	SLE RA 7	69	-9	3647	47.15	1.75	-0.31
137	SLE RA 8	69	-2	3643	46.97	1.77	-0.19
137	SLE RA 9	69	-9	3647	47.15	1.75	-0.31
137	SLE RA 10	76	-11	4107	52.66	2.11	-0.33
137	SLE RA 11	76	2	4099	52.35	2.14	-0.12
137	SLE RA 12	76	-6	4103	52.53	2.12	-0.25
137	SLE RA 13	76	-11	4107	52.66	2.11	-0.33
137	SLE RA 14	76	2	4099	52.35	2.14	-0.12
137	SLE RA 15	76	-6	4103	52.53	2.12	-0.25
137	SLE RA 16	76	2	4099	52.35	2.14	-0.12
137	SLE RA 17	76	-6	4103	52.53	2.12	-0.25
137	SLE RA 18	79	3	4294	54.65	2.29	-0.1
137	SLE RA 19	79	-4	4299	54.84	2.28	-0.22
137	SLE RA 20	79	3	4294	54.65	2.29	-0.1
137	SLE RA 21	79	-4	4299	54.84	2.28	-0.22
137	SLE FR 1	69	-2	3643	46.97	1.77	-0.19
137	SLE FR 2	69	-4	3644	47.03	1.76	-0.23
137	SLE FR 3	69	-2	3643	46.97	1.77	-0.19
137	SLE FR 4	72	-3	3840	49.34	1.92	-0.2
137	SLE FR 5	72	0	3838	49.27	1.92	-0.16
137	SLE FR 6	74	1	3968	50.81	2.03	-0.14
137	SLE QP 1	69	-2	3643	46.97	1.77	-0.19
137	SLE QP 2	72	0	3838	49.27	1.92	-0.16
137	SLD 1	322	-134	3526	39.52	3.91	-3.45
137	SLD 2	302	-102	3525	39.7	3.89	-2.57
137	SLD 3	253	-316	3698	46.49	3.15	-6.54
137	SLD 4	233	-283	3696	46.68	3.13	-5.67
137	SLD 5	258	223	3484	35.7	3.68	3.24



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
137	SLD 6	238	255	3483	35.88	3.66	4.11
137	SLD 7	29	-381	4057	58.96	1.15	-7.07
137	SLD 8	9	-348	4056	59.14	1.13	-6.2
137	SLD 9	135	348	3620	39.4	2.72	5.88
137	SLD 10	115	380	3619	39.59	2.7	6.75
137	SLD 11	-94	-256	4193	62.66	0.19	-4.44
137	SLD 12	-114	-223	4192	62.85	0.17	-3.56
137	SLD 13	-89	282	3980	51.87	0.72	5.35
137	SLD 14	-109	315	3978	52.05	0.7	6.22
137	SLD 15	-158	101	4152	58.85	-0.04	2.25
137	SLD 16	-178	134	4150	59.03	-0.06	3.13
137	SLV 1	643	-303	3117	26.64	6.49	-7.61
137	SLV 2	598	-229	3114	27.06	6.45	-5.62
137	SLV 3	485	-720	3517	42.83	4.73	-14.71
137	SLV 4	440	-646	3513	43.25	4.68	-12.73
137	SLV 5	499	516	3017	17.78	5.99	7.69
137	SLV 6	454	590	3014	18.2	5.94	9.68
137	SLV 7	-28	-875	4349	71.75	0.11	-16
137	SLV 8	-73	-801	4345	72.17	0.06	-14.02
137	SLV 9	217	800	3331	26.37	3.79	13.7
137	SLV 10	172	874	3328	26.79	3.74	15.68
137	SLV 11	-310	-590	4662	80.35	-2.09	-10
137	SLV 12	-355	-516	4659	80.77	-2.14	-8.01
137	SLV 13	-296	646	4163	55.29	-0.83	12.41
137	SLV 14	-341	720	4160	55.71	-0.88	14.39
137	SLV 15	-454	228	4562	71.49	-2.6	5.3
137	SLV 16	-499	303	4559	71.91	-2.64	7.28
137	CRTFP Ux+	0	0	0	0	0	0
137	CRTFP Ux-	0	0	0	0	0	0
137	CRTFP Uy+	0	0	0	0	0	0
137	CRTFP Uy-	0	0	0	0	0	0
138	SLU 1	67	-5	3449	46.26	1.68	-0.5
138	SLU 2	66	-25	3462	46.73	1.63	-0.82
138	SLU 3	67	-5	3449	46.26	1.68	-0.5
138	SLU 4	66	-17	3457	46.54	1.65	-0.69
138	SLU 5	66	-25	3462	46.73	1.63	-0.82
138	SLU 6	67	-5	3449	46.26	1.68	-0.5
138	SLU 7	66	-17	3457	46.54	1.65	-0.69
138	SLU 8	67	-5	3449	46.26	1.68	-0.5
138	SLU 9	66	-17	3457	46.54	1.65	-0.69
138	SLU 10	77	-19	4128	54.97	2.23	-0.77
138	SLU 11	77	1	4115	54.5	2.27	-0.46
138	SLU 12	77	-11	4123	54.78	2.24	-0.65
138	SLU 13	77	-19	4128	54.97	2.23	-0.77
138	SLU 14	77	1	4115	54.5	2.27	-0.46
138	SLU 15	77	-11	4123	54.78	2.24	-0.65
138	SLU 16	77	1	4115	54.5	2.27	-0.46
138	SLU 17	77	-11	4123	54.78	2.24	-0.65
138	SLU 18	82	3	4400	58.03	2.52	-0.44
138	SLU 19	82	-9	4408	58.31	2.5	-0.63
138	SLU 20	82	3	4400	58.03	2.52	-0.44
138	SLU 21	82	-9	4408	58.31	2.5	-0.63
138	SLU 22	75	-1	3929	52.03	2.07	-0.49
138	SLU 23	75	-22	3942	52.5	2.03	-0.8
138	SLU 24	75	-1	3929	52.03	2.07	-0.49
138	SLU 25	75	-13	3937	52.31	2.05	-0.67
138	SLU 26	75	-22	3942	52.5	2.03	-0.8
138	SLU 27	75	-1	3929	52.03	2.07	-0.49
138	SLU 28	75	-13	3937	52.31	2.05	-0.67
138	SLU 29	75	-1	3929	52.03	2.07	-0.49
138	SLU 30	75	-13	3937	52.31	2.05	-0.67
138	SLU 31	85	-16	4608	60.74	2.62	-0.75
138	SLU 32	86	4	4595	60.27	2.66	-0.44
138	SLU 33	85	-8	4603	60.55	2.64	-0.63
138	SLU 34	85	-16	4608	60.74	2.62	-0.75
138	SLU 35	86	4	4595	60.27	2.66	-0.44
138	SLU 36	85	-8	4603	60.55	2.64	-0.63
138	SLU 37	86	4	4595	60.27	2.66	-0.44
138	SLU 38	85	-8	4603	60.55	2.64	-0.63
138	SLU 39	90	7	4880	63.8	2.92	-0.42
138	SLU 40	90	-5	4888	64.08	2.89	-0.61
138	SLU 41	90	7	4880	63.8	2.92	-0.42
138	SLU 42	90	-5	4888	64.08	2.89	-0.61
138	SLU 43	84	-7	4319	58.16	2.05	-0.66
138	SLU 44	83	-27	4333	58.63	2	-0.97
138	SLU 45	84	-7	4319	58.16	2.05	-0.66
138	SLU 46	84	-19	4327	58.44	2.02	-0.85
138	SLU 47	83	-27	4333	58.63	2	-0.97
138	SLU 48	84	-7	4319	58.16	2.05	-0.66
138	SLU 49	84	-19	4327	58.44	2.02	-0.85
138	SLU 50	84	-7	4319	58.16	2.05	-0.66
138	SLU 51	84	-19	4327	58.44	2.02	-0.85
138	SLU 52	94	-22	4998	66.87	2.59	-0.93
138	SLU 53	94	-1	4985	66.4	2.64	-0.62
138	SLU 54	94	-14	4993	66.68	2.61	-0.8
138	SLU 55	94	-22	4998	66.87	2.59	-0.93
138	SLU 56	94	-1	4985	66.4	2.64	-0.62
138	SLU 57	94	-14	4993	66.68	2.61	-0.8
138	SLU 58	94	-1	4985	66.4	2.64	-0.62



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
138	SLU 59	94	-14	4993	66.68	2.61	-0.8
138	SLU 60	99	1	5271	69.93	2.89	-0.6
138	SLU 61	99	-11	5278	70.21	2.87	-0.79
138	SLU 62	99	1	5271	69.93	2.89	-0.6
138	SLU 63	99	-11	5278	70.21	2.87	-0.79
138	SLU 64	92	-4	4799	63.93	2.44	-0.64
138	SLU 65	92	-24	4812	64.4	2.4	-0.95
138	SLU 66	92	-4	4799	63.93	2.44	-0.64
138	SLU 67	92	-16	4807	64.21	2.41	-0.83
138	SLU 68	92	-24	4812	64.4	2.4	-0.95
138	SLU 69	92	-4	4799	63.93	2.44	-0.64
138	SLU 70	92	-16	4807	64.21	2.41	-0.83
138	SLU 71	92	-4	4799	63.93	2.44	-0.64
138	SLU 72	92	-16	4807	64.21	2.41	-0.83
138	SLU 73	103	-18	5478	72.64	2.99	-0.91
138	SLU 74	103	2	5465	72.17	3.03	-0.6
138	SLU 75	103	-10	5473	72.45	3.01	-0.79
138	SLU 76	103	-18	5478	72.64	2.99	-0.91
138	SLU 77	103	2	5465	72.17	3.03	-0.6
138	SLU 78	103	-10	5473	72.45	3.01	-0.79
138	SLU 79	103	2	5465	72.17	3.03	-0.6
138	SLU 80	103	-10	5473	72.45	3.01	-0.79
138	SLU 81	107	4	5750	75.7	3.29	-0.58
138	SLU 82	107	-8	5758	75.98	3.26	-0.77
138	SLU 83	107	4	5750	75.7	3.29	-0.58
138	SLU 84	107	-8	5758	75.98	3.26	-0.77
138	SLE RA 1	69	-4	3586	47.91	1.79	-0.5
138	SLE RA 2	69	-17	3595	48.22	1.76	-0.71
138	SLE RA 3	69	-4	3586	47.91	1.79	-0.5
138	SLE RA 4	69	-12	3592	48.1	1.77	-0.62
138	SLE RA 5	69	-17	3595	48.22	1.76	-0.71
138	SLE RA 6	69	-4	3586	47.91	1.79	-0.5
138	SLE RA 7	69	-12	3592	48.1	1.77	-0.62
138	SLE RA 8	69	-4	3586	47.91	1.79	-0.5
138	SLE RA 9	69	-12	3592	48.1	1.77	-0.62
138	SLE RA 10	76	-13	4039	53.71	2.16	-0.68
138	SLE RA 11	76	0	4030	53.4	2.19	-0.47
138	SLE RA 12	76	-8	4035	53.59	2.17	-0.59
138	SLE RA 13	76	-13	4039	53.71	2.16	-0.68
138	SLE RA 14	76	0	4030	53.4	2.19	-0.47
138	SLE RA 15	76	-8	4035	53.59	2.17	-0.59
138	SLE RA 16	76	0	4030	53.4	2.19	-0.47
138	SLE RA 17	76	-8	4035	53.59	2.17	-0.59
138	SLE RA 18	79	2	4220	55.76	2.35	-0.46
138	SLE RA 19	79	-6	4226	55.94	2.34	-0.58
138	SLE RA 20	79	2	4220	55.76	2.35	-0.46
138	SLE RA 21	79	-6	4226	55.94	2.34	-0.58
138	SLE FR 1	69	-4	3586	47.91	1.79	-0.5
138	SLE FR 2	69	-6	3588	47.97	1.78	-0.54
138	SLE FR 3	69	-4	3586	47.91	1.79	-0.5
138	SLE FR 4	72	-5	3778	50.33	1.95	-0.53
138	SLE FR 5	72	-2	3776	50.26	1.96	-0.49
138	SLE FR 6	74	-1	3903	51.83	2.07	-0.48
138	SLE QP 1	69	-4	3586	47.91	1.79	-0.5
138	SLE QP 2	72	-2	3776	50.26	1.96	-0.49
138	SLD 1	322	-153	3403	40.42	3.99	-3.8
138	SLD 2	302	-116	3403	40.61	3.98	-2.93
138	SLD 3	253	-351	3599	47.43	3.2	-6.95
138	SLD 4	233	-313	3598	47.62	3.18	-6.08
138	SLD 5	258	239	3369	36.61	3.79	3
138	SLD 6	238	277	3368	36.8	3.77	3.86
138	SLD 7	29	-419	4020	59.98	1.13	-7.51
138	SLD 8	9	-382	4019	60.17	1.11	-6.64
138	SLD 9	135	378	3534	40.36	2.81	5.67
138	SLD 10	115	415	3533	40.55	2.79	6.54
138	SLD 11	-94	-280	4185	63.72	0.15	-4.84
138	SLD 12	-114	-243	4184	63.92	0.13	-3.97
138	SLD 13	-89	309	3955	52.91	0.74	5.11
138	SLD 14	-109	347	3954	53.1	0.72	5.98
138	SLD 15	-158	112	4150	59.92	-0.06	1.96
138	SLD 16	-178	149	4150	60.11	-0.07	2.83
138	SLV 1	643	-343	2915	27.43	6.64	-7.99
138	SLV 2	597	-259	2913	27.86	6.6	-6.01
138	SLV 3	485	-798	3369	43.69	4.79	-15.23
138	SLV 4	439	-714	3367	44.13	4.75	-13.25
138	SLV 5	499	556	2830	18.59	6.18	7.56
138	SLV 6	453	640	2828	19.02	6.15	9.53
138	SLV 7	-28	-960	4344	72.81	0.02	-16.59
138	SLV 8	-73	-876	4342	73.24	-0.02	-14.61
138	SLV 9	217	872	3211	27.28	3.94	13.64
138	SLV 10	172	956	3209	27.72	3.9	15.61
138	SLV 11	-309	-644	4725	81.5	-2.23	-10.51
138	SLV 12	-355	-560	4723	81.94	-2.26	-8.53
138	SLV 13	-295	710	4186	56.4	-0.83	12.28
138	SLV 14	-341	794	4184	56.83	-0.87	14.25
138	SLV 15	-453	255	4640	72.67	-2.68	5.04
138	SLV 16	-499	340	4638	73.1	-2.72	7.01
138	CRTFP Ux+	0	0	0	0	0	0
138	CRTFP Ux-	0	0	0	0	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
138	CRTFP Uy+	0	0	0	0	0	0
138	CRTFP Uy-	0	0	0	0	0	0
139	SLU 1	67	-8	3399	47.23	1.45	-0.81
139	SLU 2	66	-30	3414	47.7	1.4	-1.11
139	SLU 3	67	-8	3399	47.23	1.45	-0.81
139	SLU 4	66	-21	3408	47.51	1.42	-0.99
139	SLU 5	66	-30	3414	47.7	1.4	-1.11
139	SLU 6	67	-8	3399	47.23	1.45	-0.81
139	SLU 7	66	-21	3408	47.51	1.42	-0.99
139	SLU 8	67	-8	3399	47.23	1.45	-0.81
139	SLU 9	66	-21	3408	47.51	1.42	-0.99
139	SLU 10	77	-24	4061	56.12	1.97	-1.13
139	SLU 11	77	-2	4047	55.65	2.02	-0.83
139	SLU 12	77	-15	4055	55.93	1.99	-1.01
139	SLU 13	77	-24	4061	56.12	1.97	-1.13
139	SLU 14	77	-2	4047	55.65	2.02	-0.83
139	SLU 15	77	-15	4055	55.93	1.99	-1.01
139	SLU 16	77	-2	4047	55.65	2.02	-0.83
139	SLU 17	77	-15	4055	55.93	1.99	-1.01
139	SLU 18	82	0	4324	59.26	2.26	-0.83
139	SLU 19	82	-13	4333	59.54	2.23	-1.01
139	SLU 20	82	0	4324	59.26	2.26	-0.83
139	SLU 21	82	-13	4333	59.54	2.23	-1.01
139	SLU 22	75	-5	3867	53.13	1.82	-0.84
139	SLU 23	74	-27	3882	53.6	1.77	-1.14
139	SLU 24	75	-5	3867	53.13	1.82	-0.84
139	SLU 25	75	-18	3876	53.41	1.79	-1.02
139	SLU 26	74	-27	3882	53.6	1.77	-1.14
139	SLU 27	75	-5	3867	53.13	1.82	-0.84
139	SLU 28	75	-18	3876	53.41	1.79	-1.02
139	SLU 29	75	-5	3867	53.13	1.82	-0.84
139	SLU 30	75	-18	3876	53.41	1.79	-1.02
139	SLU 31	85	-21	4529	62.02	2.34	-1.15
139	SLU 32	85	1	4514	61.55	2.39	-0.85
139	SLU 33	85	-12	4523	61.83	2.36	-1.03
139	SLU 34	85	-21	4529	62.02	2.34	-1.15
139	SLU 35	85	1	4514	61.55	2.39	-0.85
139	SLU 36	85	-12	4523	61.83	2.36	-1.03
139	SLU 37	85	1	4514	61.55	2.39	-0.85
139	SLU 38	85	-12	4523	61.83	2.36	-1.03
139	SLU 39	90	3	4792	65.16	2.64	-0.86
139	SLU 40	90	-10	4800	65.44	2.61	-1.04
139	SLU 41	90	3	4792	65.16	2.64	-0.86
139	SLU 42	90	-10	4800	65.44	2.61	-1.04
139	SLU 43	84	-11	4259	59.38	1.75	-1.05
139	SLU 44	83	-33	4274	59.85	1.7	-1.35
139	SLU 45	84	-11	4259	59.38	1.75	-1.05
139	SLU 46	84	-25	4268	59.66	1.72	-1.23
139	SLU 47	83	-33	4274	59.85	1.7	-1.35
139	SLU 48	84	-11	4259	59.38	1.75	-1.05
139	SLU 49	84	-25	4268	59.66	1.72	-1.23
139	SLU 50	84	-11	4259	59.38	1.75	-1.05
139	SLU 51	84	-25	4268	59.66	1.72	-1.23
139	SLU 52	94	-28	4921	68.26	2.27	-1.36
139	SLU 53	94	-6	4906	67.8	2.32	-1.06
139	SLU 54	94	-19	4915	68.08	2.29	-1.24
139	SLU 55	94	-28	4921	68.26	2.27	-1.36
139	SLU 56	94	-6	4906	67.8	2.32	-1.06
139	SLU 57	94	-19	4915	68.08	2.29	-1.24
139	SLU 58	94	-6	4906	67.8	2.32	-1.06
139	SLU 59	94	-19	4915	68.08	2.29	-1.24
139	SLU 60	99	-3	5184	71.4	2.57	-1.07
139	SLU 61	99	-16	5192	71.69	2.54	-1.25
139	SLU 62	99	-3	5184	71.4	2.57	-1.07
139	SLU 63	99	-16	5192	71.69	2.54	-1.25
139	SLU 64	92	-8	4726	65.28	2.13	-1.07
139	SLU 65	92	-30	4741	65.75	2.08	-1.37
139	SLU 66	92	-8	4726	65.28	2.13	-1.07
139	SLU 67	92	-21	4735	65.56	2.1	-1.25
139	SLU 68	92	-30	4741	65.75	2.08	-1.37
139	SLU 69	92	-8	4726	65.28	2.13	-1.07
139	SLU 70	92	-21	4735	65.56	2.1	-1.25
139	SLU 71	92	-8	4726	65.28	2.13	-1.07
139	SLU 72	92	-21	4735	65.56	2.1	-1.25
139	SLU 73	102	-24	5388	74.16	2.65	-1.39
139	SLU 74	102	-3	5374	73.69	2.7	-1.09
139	SLU 75	102	-16	5383	73.98	2.67	-1.27
139	SLU 76	102	-24	5388	74.16	2.65	-1.39
139	SLU 77	102	-3	5374	73.69	2.7	-1.09
139	SLU 78	102	-16	5383	73.98	2.67	-1.27
139	SLU 79	102	-3	5374	73.69	2.7	-1.09
139	SLU 80	102	-16	5383	73.98	2.67	-1.27
139	SLU 81	107	0	5651	77.3	2.94	-1.09
139	SLU 82	107	-13	5660	77.58	2.91	-1.27
139	SLU 83	107	0	5651	77.3	2.94	-1.09
139	SLU 84	107	-13	5660	77.58	2.91	-1.27
139	SLE RA 1	69	-7	3533	48.92	1.55	-0.82
139	SLE RA 2	69	-22	3543	49.23	1.52	-1.02
139	SLE RA 3	69	-7	3533	48.92	1.55	-0.82



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
139	SLE RA 4	69	-16	3539	49.1	1.53	-0.94
139	SLE RA 5	69	-22	3543	49.23	1.52	-1.02
139	SLE RA 6	69	-7	3533	48.92	1.55	-0.82
139	SLE RA 7	69	-16	3539	49.1	1.53	-0.94
139	SLE RA 8	69	-7	3533	48.92	1.55	-0.82
139	SLE RA 9	69	-16	3539	49.1	1.53	-0.94
139	SLE RA 10	76	-18	3974	54.84	1.9	-1.03
139	SLE RA 11	76	-3	3965	54.53	1.93	-0.83
139	SLE RA 12	76	-12	3970	54.72	1.91	-0.95
139	SLE RA 13	76	-18	3974	54.84	1.9	-1.03
139	SLE RA 14	76	-3	3965	54.53	1.93	-0.83
139	SLE RA 15	76	-12	3970	54.72	1.91	-0.95
139	SLE RA 16	76	-3	3965	54.53	1.93	-0.83
139	SLE RA 17	76	-12	3970	54.72	1.91	-0.95
139	SLE RA 18	79	-2	4149	56.93	2.1	-0.83
139	SLE RA 19	79	-10	4155	57.12	2.08	-0.95
139	SLE RA 20	79	-2	4149	56.93	2.1	-0.83
139	SLE RA 21	79	-10	4155	57.12	2.08	-0.95
139	SLE FR 1	69	-7	3533	48.92	1.55	-0.82
139	SLE FR 2	69	-10	3535	48.98	1.55	-0.86
139	SLE FR 3	69	-7	3533	48.92	1.55	-0.82
139	SLE FR 4	72	-8	3720	51.38	1.71	-0.86
139	SLE FR 5	72	-5	3718	51.32	1.72	-0.82
139	SLE FR 6	74	-4	3841	52.92	1.83	-0.83
139	SLE QP 1	69	-7	3533	48.92	1.55	-0.82
139	SLE QP 2	72	-5	3718	51.32	1.72	-0.82
139	SLD 1	321	-174	3281	41.37	3.81	-4.1
139	SLD 2	301	-132	3281	41.57	3.8	-3.25
139	SLD 3	253	-387	3502	48.42	2.96	-7.17
139	SLD 4	233	-346	3502	48.62	2.95	-6.32
139	SLD 5	258	254	3252	37.58	3.64	2.55
139	SLD 6	238	296	3252	37.78	3.63	3.4
139	SLD 7	29	-459	3988	61.07	0.81	-7.68
139	SLD 8	9	-417	3988	61.27	0.79	-6.83
139	SLD 9	135	407	3448	41.37	2.64	5.19
139	SLD 10	115	448	3448	41.57	2.63	6.03
139	SLD 11	-94	-307	4184	64.87	-0.19	-5.05
139	SLD 12	-114	-265	4183	65.07	-0.2	-4.2
139	SLD 13	-89	335	3934	54.02	0.48	4.67
139	SLD 14	-109	377	3934	54.22	0.47	5.52
139	SLD 15	-158	121	4155	61.07	-0.36	1.6
139	SLD 16	-178	163	4154	61.27	-0.38	2.45
139	SLV 1	642	-386	2711	28.25	6.54	-8.24
139	SLV 2	596	-291	2710	28.7	6.51	-6.31
139	SLV 3	484	-878	3223	44.61	4.57	-15.29
139	SLV 4	439	-783	3223	45.06	4.54	-13.36
139	SLV 5	498	594	2638	19.43	6.17	6.98
139	SLV 6	453	689	2637	19.89	6.14	8.9
139	SLV 7	-28	-1047	4348	73.96	-0.41	-16.54
139	SLV 8	-73	-952	4347	74.41	-0.44	-14.61
139	SLV 9	217	942	3089	28.24	3.87	12.96
139	SLV 10	171	1036	3088	28.69	3.84	14.89
139	SLV 11	-309	-700	4798	82.76	-2.7	-10.55
139	SLV 12	-354	-605	4798	83.21	-2.73	-8.62
139	SLV 13	-295	772	4213	57.58	-1.1	11.72
139	SLV 14	-340	867	4212	58.04	-1.13	13.65
139	SLV 15	-453	280	4726	73.94	-3.07	4.66
139	SLV 16	-498	375	4725	74.39	-3.11	6.59
139	CRTFP Ux+	0	0	0	0	0	0
139	CRTFP Ux-	0	0	0	0	0	0
139	CRTFP Uy+	0	0	0	0	0	0
139	CRTFP Uy-	0	0	0	0	0	0
140	SLU 1	57	-11	2879	41.44	80.92	-0.6
140	SLU 2	57	-31	2893	41.84	81.27	-0.27
140	SLU 3	57	-11	2879	41.44	80.92	-0.6
140	SLU 4	57	-23	2887	41.68	81.13	-0.4
140	SLU 5	57	-31	2893	41.84	81.27	-0.27
140	SLU 6	57	-11	2879	41.44	80.92	-0.6
140	SLU 7	57	-23	2887	41.68	81.13	-0.4
140	SLU 8	57	-11	2879	41.44	80.92	-0.6
140	SLU 9	57	-23	2887	41.68	81.13	-0.4
140	SLU 10	66	-26	3433	49.23	96.66	-0.46
140	SLU 11	66	-6	3420	48.83	96.31	-0.79
140	SLU 12	66	-18	3428	49.07	96.52	-0.59
140	SLU 13	66	-26	3433	49.23	96.66	-0.46
140	SLU 14	66	-6	3420	48.83	96.31	-0.79
140	SLU 15	66	-18	3428	49.07	96.52	-0.59
140	SLU 16	66	-6	3420	48.83	96.31	-0.79
140	SLU 17	66	-18	3428	49.07	96.52	-0.59
140	SLU 18	70	-4	3651	52	102.91	-0.87
140	SLU 19	70	-16	3660	52.24	103.12	-0.67
140	SLU 20	70	-4	3651	52	102.91	-0.87
140	SLU 21	70	-16	3660	52.24	103.12	-0.67
140	SLU 22	64	-8	3270	46.62	92.04	-0.73
140	SLU 23	64	-28	3284	47.02	92.39	-0.4
140	SLU 24	64	-8	3270	46.62	92.04	-0.73
140	SLU 25	64	-20	3279	46.86	92.25	-0.53
140	SLU 26	64	-28	3284	47.02	92.39	-0.4
140	SLU 27	64	-8	3270	46.62	92.04	-0.73



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
140	SLU 28	64	-20	3279	46.86	92.25	-0.53
140	SLU 29	64	-8	3270	46.62	92.04	-0.73
140	SLU 30	64	-20	3279	46.86	92.25	-0.53
140	SLU 31	73	-23	3825	54.42	107.78	-0.59
140	SLU 32	73	-3	3811	54.01	107.43	-0.92
140	SLU 33	73	-15	3819	54.25	107.64	-0.72
140	SLU 34	73	-23	3825	54.42	107.78	-0.59
140	SLU 35	73	-3	3811	54.01	107.43	-0.92
140	SLU 36	73	-15	3819	54.25	107.64	-0.72
140	SLU 37	73	-3	3811	54.01	107.43	-0.92
140	SLU 38	73	-15	3819	54.25	107.64	-0.72
140	SLU 39	77	-1	4043	57.18	114.02	-1
140	SLU 40	76	-13	4051	57.42	114.23	-0.8
140	SLU 41	77	-1	4043	57.18	114.02	-1
140	SLU 42	76	-13	4051	57.42	114.23	-0.8
140	SLU 43	72	-15	3608	52.09	101.39	-0.74
140	SLU 44	71	-35	3622	52.5	101.74	-0.41
140	SLU 45	72	-15	3608	52.09	101.39	-0.74
140	SLU 46	71	-27	3617	52.34	101.6	-0.54
140	SLU 47	71	-35	3622	52.5	101.74	-0.41
140	SLU 48	72	-15	3608	52.09	101.39	-0.74
140	SLU 49	71	-27	3617	52.34	101.6	-0.54
140	SLU 50	72	-15	3608	52.09	101.39	-0.74
140	SLU 51	71	-27	3617	52.34	101.6	-0.54
140	SLU 52	80	-30	4163	59.89	117.13	-0.6
140	SLU 53	81	-10	4149	59.48	116.78	-0.93
140	SLU 54	80	-22	4157	59.73	116.99	-0.73
140	SLU 55	80	-30	4163	59.89	117.13	-0.6
140	SLU 56	81	-10	4149	59.48	116.78	-0.93
140	SLU 57	80	-22	4157	59.73	116.99	-0.73
140	SLU 58	81	-10	4149	59.48	116.78	-0.93
140	SLU 59	80	-22	4157	59.73	116.99	-0.73
140	SLU 60	84	-8	4381	62.65	123.37	-1.01
140	SLU 61	84	-20	4389	62.89	123.58	-0.81
140	SLU 62	84	-8	4381	62.65	123.37	-1.01
140	SLU 63	84	-20	4389	62.89	123.58	-0.81
140	SLU 64	78	-12	4000	57.27	112.5	-0.87
140	SLU 65	78	-32	4014	57.68	112.86	-0.53
140	SLU 66	78	-12	4000	57.27	112.5	-0.87
140	SLU 67	78	-24	4008	57.52	112.72	-0.67
140	SLU 68	78	-32	4014	57.68	112.86	-0.53
140	SLU 69	78	-12	4000	57.27	112.5	-0.87
140	SLU 70	78	-24	4008	57.52	112.72	-0.67
140	SLU 71	78	-12	4000	57.27	112.5	-0.87
140	SLU 72	78	-24	4008	57.52	112.72	-0.67
140	SLU 73	87	-28	4554	65.07	128.24	-0.72
140	SLU 74	87	-8	4541	64.66	127.89	-1.06
140	SLU 75	87	-20	4549	64.91	128.1	-0.86
140	SLU 76	87	-28	4554	65.07	128.24	-0.72
140	SLU 77	87	-8	4541	64.66	127.89	-1.06
140	SLU 78	87	-20	4549	64.91	128.1	-0.86
140	SLU 79	87	-8	4541	64.66	127.89	-1.06
140	SLU 80	87	-20	4549	64.91	128.1	-0.86
140	SLU 81	91	-6	4772	67.83	134.49	-1.14
140	SLU 82	91	-18	4781	68.08	134.7	-0.94
140	SLU 83	91	-6	4772	67.83	134.49	-1.14
140	SLU 84	91	-18	4781	68.08	134.7	-0.94
140	SLE RA 1	59	-10	2991	42.92	84.1	-0.64
140	SLE RA 2	59	-23	3000	43.19	84.33	-0.42
140	SLE RA 3	59	-10	2991	42.92	84.1	-0.64
140	SLE RA 4	59	-18	2996	43.08	84.24	-0.51
140	SLE RA 5	59	-23	3000	43.19	84.33	-0.42
140	SLE RA 6	59	-10	2991	42.92	84.1	-0.64
140	SLE RA 7	59	-18	2996	43.08	84.24	-0.51
140	SLE RA 8	59	-10	2991	42.92	84.1	-0.64
140	SLE RA 9	59	-18	2996	43.08	84.24	-0.51
140	SLE RA 10	65	-20	3360	48.12	94.59	-0.54
140	SLE RA 11	65	-7	3351	47.85	94.36	-0.77
140	SLE RA 12	65	-15	3357	48.01	94.5	-0.63
140	SLE RA 13	65	-20	3360	48.12	94.59	-0.54
140	SLE RA 14	65	-7	3351	47.85	94.36	-0.77
140	SLE RA 15	65	-15	3357	48.01	94.5	-0.63
140	SLE RA 16	65	-7	3351	47.85	94.36	-0.77
140	SLE RA 17	65	-15	3357	48.01	94.5	-0.63
140	SLE RA 18	67	-6	3506	49.96	98.75	-0.82
140	SLE RA 19	67	-14	3511	50.12	98.89	-0.69
140	SLE RA 20	67	-6	3506	49.96	98.75	-0.82
140	SLE RA 21	67	-14	3511	50.12	98.89	-0.69
140	SLE FR 1	59	-10	2991	42.92	84.1	-0.64
140	SLE FR 2	59	-13	2993	42.97	84.15	-0.59
140	SLE FR 3	59	-10	2991	42.92	84.1	-0.64
140	SLE FR 4	61	-11	3147	45.08	88.54	-0.65
140	SLE FR 5	61	-9	3145	45.03	88.5	-0.69
140	SLE FR 6	63	-8	3248	46.44	91.43	-0.73
140	SLE QP 1	59	-10	2991	42.92	84.1	-0.64
140	SLE QP 2	61	-9	3145	45.03	88.5	-0.69
140	SLD 1	275	-166	2719	36.38	77.95	1.18
140	SLD 2	258	-127	2719	36.56	77.94	0.75
140	SLD 3	216	-361	2929	42.48	83.26	4.34



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
140	SLD 4	199	-322	2929	42.66	83.25	3.91
140	SLD 5	220	227	2698	33.12	77.28	-4.78
140	SLD 6	203	266	2698	33.3	77.28	-5.21
140	SLD 7	25	-425	3400	53.46	94.98	5.76
140	SLD 8	8	-385	3400	53.63	94.97	5.33
140	SLD 9	115	368	2891	36.43	82.02	-6.72
140	SLD 10	98	407	2891	36.6	82.01	-7.15
140	SLD 11	-80	-283	3593	56.76	99.71	3.82
140	SLD 12	-97	-244	3593	56.94	99.71	3.39
140	SLD 13	-76	305	3361	47.4	93.74	-5.3
140	SLD 14	-93	344	3361	47.58	93.73	-5.73
140	SLD 15	-135	109	3572	53.5	99.05	-2.14
140	SLD 16	-152	149	3572	53.68	99.04	-2.57
140	SLV 1	548	-364	2162	24.98	64.17	3.54
140	SLV 2	510	-275	2161	25.38	64.15	2.56
140	SLV 3	414	-814	2651	39.13	76.5	10.83
140	SLV 4	375	-725	2651	39.53	76.49	9.85
140	SLV 5	425	536	2108	17.4	62.49	-10.14
140	SLV 6	387	625	2108	17.8	62.48	-11.11
140	SLV 7	-24	-964	3739	64.59	103.61	14.16
140	SLV 8	-62	-875	3739	64.99	103.6	13.18
140	SLV 9	185	857	2551	25.06	73.4	-14.57
140	SLV 10	146	946	2551	25.47	73.38	-15.55
140	SLV 11	-264	-642	4183	72.26	114.51	9.73
140	SLV 12	-303	-553	4183	72.66	114.5	8.75
140	SLV 13	-252	708	3640	50.52	100.5	-11.24
140	SLV 14	-291	797	3639	50.93	100.49	-12.21
140	SLV 15	-387	258	4129	64.68	112.84	-3.95
140	SLV 16	-426	347	4129	65.08	112.82	-4.92
140	CRTFP Ux+	0	0	0	0	0	0
140	CRTFP Ux-	0	0	0	0	0	0
140	CRTFP Uy+	0	0	0	0	0	0
140	CRTFP Uy-	0	0	0	0	0	0
165	SLU 1	124	-28	6120	-655.24	1209.1	17.66
165	SLU 2	124	-72	6151	-658.45	1214.98	26.29
165	SLU 3	124	-28	6120	-655.24	1209.1	17.66
165	SLU 4	124	-55	6139	-657.17	1212.63	22.84
165	SLU 5	124	-72	6151	-658.45	1214.98	26.29
165	SLU 6	124	-28	6120	-655.24	1209.1	17.66
165	SLU 7	124	-55	6139	-657.17	1212.63	22.84
165	SLU 8	124	-28	6120	-655.24	1209.1	17.66
165	SLU 9	124	-55	6139	-657.17	1212.63	22.84
165	SLU 10	144	-63	7289	-781.1	1442.61	26.32
165	SLU 11	144	-19	7258	-777.89	1436.73	17.69
165	SLU 12	144	-45	7277	-779.81	1440.26	22.87
165	SLU 13	144	-63	7289	-781.1	1442.61	26.32
165	SLU 14	144	-19	7258	-777.89	1436.73	17.69
165	SLU 15	144	-45	7277	-779.81	1440.26	22.87
165	SLU 16	144	-19	7258	-777.89	1436.73	17.69
165	SLU 17	144	-45	7277	-779.81	1440.26	22.87
165	SLU 18	152	-15	7745	-830.45	1534.28	17.71
165	SLU 19	152	-41	7764	-832.38	1537.81	22.89
165	SLU 20	152	-15	7745	-830.45	1534.28	17.71
165	SLU 21	152	-41	7764	-832.38	1537.81	22.89
165	SLU 22	139	-23	6944	-744.39	1373.71	18.12
165	SLU 23	139	-67	6976	-747.6	1379.59	26.75
165	SLU 24	139	-23	6944	-744.39	1373.71	18.12
165	SLU 25	139	-50	6963	-746.32	1377.24	23.3
165	SLU 26	139	-67	6976	-747.6	1379.59	26.75
165	SLU 27	139	-23	6944	-744.39	1373.71	18.12
165	SLU 28	139	-50	6963	-746.32	1377.24	23.3
165	SLU 29	139	-23	6944	-744.39	1373.71	18.12
165	SLU 30	139	-50	6963	-746.32	1377.24	23.3
165	SLU 31	159	-58	8114	-870.24	1607.22	26.79
165	SLU 32	158	-14	8082	-867.04	1601.33	18.16
165	SLU 33	158	-40	8101	-868.96	1604.87	23.34
165	SLU 34	159	-58	8114	-870.24	1607.22	26.79
165	SLU 35	158	-14	8082	-867.04	1601.33	18.16
165	SLU 36	158	-40	8101	-868.96	1604.87	23.34
165	SLU 37	158	-14	8082	-867.04	1601.33	18.16
165	SLU 38	158	-40	8101	-868.96	1604.87	23.34
165	SLU 39	167	-10	8570	-919.6	1698.89	18.17
165	SLU 40	167	-36	8589	-921.53	1702.42	23.35
165	SLU 41	167	-10	8570	-919.6	1698.89	18.17
165	SLU 42	167	-36	8589	-921.53	1702.42	23.35
165	SLU 43	156	-39	7673	-821.25	1515.39	22.79
165	SLU 44	156	-82	7705	-824.45	1521.28	31.43
165	SLU 45	156	-39	7673	-821.25	1515.39	22.79
165	SLU 46	156	-65	7692	-823.17	1518.92	27.97
165	SLU 47	156	-82	7705	-824.45	1521.28	31.43
165	SLU 48	156	-39	7673	-821.25	1515.39	22.79
165	SLU 49	156	-65	7692	-823.17	1518.92	27.97
165	SLU 50	156	-39	7673	-821.25	1515.39	22.79
165	SLU 51	156	-65	7692	-823.17	1518.92	27.97
165	SLU 52	176	-73	8843	-947.1	1748.91	31.46
165	SLU 53	176	-29	8811	-943.9	1743.02	22.83
165	SLU 54	176	-56	8830	-945.82	1746.55	28.01
165	SLU 55	176	-73	8843	-947.1	1748.91	31.46
165	SLU 56	176	-29	8811	-943.9	1743.02	22.83



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
165	SLU 57	176	-56	8830	-945.82	1746.55	28.01
165	SLU 58	176	-29	8811	-943.9	1743.02	22.83
165	SLU 59	176	-56	8830	-945.82	1746.55	28.01
165	SLU 60	184	-25	9299	-996.46	1840.58	22.84
165	SLU 61	184	-51	9318	-998.38	1844.11	28.02
165	SLU 62	184	-25	9299	-996.46	1840.58	22.84
165	SLU 63	184	-51	9318	-998.38	1844.11	28.02
165	SLU 64	171	-34	8498	-910.4	1680	23.26
165	SLU 65	171	-77	8529	-913.6	1685.88	31.89
165	SLU 66	171	-34	8498	-910.4	1680	23.26
165	SLU 67	171	-60	8517	-912.32	1683.53	28.44
165	SLU 68	171	-77	8529	-913.6	1685.88	31.89
165	SLU 69	171	-34	8498	-910.4	1680	23.26
165	SLU 70	171	-60	8517	-912.32	1683.53	28.44
165	SLU 71	171	-34	8498	-910.4	1680	23.26
165	SLU 72	171	-60	8517	-912.32	1683.53	28.44
165	SLU 73	191	-68	9667	-1036.25	1913.51	31.93
165	SLU 74	191	-24	9636	-1033.05	1907.63	23.29
165	SLU 75	191	-50	9655	-1034.97	1911.16	28.47
165	SLU 76	191	-68	9667	-1036.25	1913.51	31.93
165	SLU 77	191	-24	9636	-1033.05	1907.63	23.29
165	SLU 78	191	-50	9655	-1034.97	1911.16	28.47
165	SLU 79	191	-24	9636	-1033.05	1907.63	23.29
165	SLU 80	191	-50	9655	-1034.97	1911.16	28.47
165	SLU 81	199	-20	10123	-1085.61	2005.18	23.31
165	SLU 82	199	-46	10142	-1087.53	2008.71	28.49
165	SLU 83	199	-20	10123	-1085.61	2005.18	23.31
165	SLU 84	199	-46	10142	-1087.53	2008.71	28.49
165	SLE RA 1	128	-27	6355	-680.71	1256.13	17.79
165	SLE RA 2	129	-56	6376	-682.85	1260.05	23.54
165	SLE RA 3	128	-27	6355	-680.71	1256.13	17.79
165	SLE RA 4	129	-45	6368	-682	1258.48	21.24
165	SLE RA 5	129	-56	6376	-682.85	1260.05	23.54
165	SLE RA 6	128	-27	6355	-680.71	1256.13	17.79
165	SLE RA 7	129	-45	6368	-682	1258.48	21.24
165	SLE RA 8	128	-27	6355	-680.71	1256.13	17.79
165	SLE RA 9	129	-45	6368	-682	1258.48	21.24
165	SLE RA 10	141	-50	7135	-764.62	1411.81	23.57
165	SLE RA 11	141	-21	7114	-762.48	1407.88	17.81
165	SLE RA 12	141	-38	7127	-763.76	1410.24	21.26
165	SLE RA 13	141	-50	7135	-764.62	1411.81	23.57
165	SLE RA 14	141	-21	7114	-762.48	1407.88	17.81
165	SLE RA 15	141	-38	7127	-763.76	1410.24	21.26
165	SLE RA 16	141	-21	7114	-762.48	1407.88	17.81
165	SLE RA 17	141	-38	7127	-763.76	1410.24	21.26
165	SLE RA 18	147	-18	7439	-797.52	1472.92	17.82
165	SLE RA 19	147	-36	7452	-798.8	1475.27	21.28
165	SLE RA 20	147	-18	7439	-797.52	1472.92	17.82
165	SLE RA 21	147	-36	7452	-798.8	1475.27	21.28
165	SLE FR 1	128	-27	6355	-680.71	1256.13	17.79
165	SLE FR 2	128	-33	6360	-681.14	1256.92	18.94
165	SLE FR 3	128	-27	6355	-680.71	1256.13	17.79
165	SLE FR 4	134	-30	6685	-716.18	1321.95	18.95
165	SLE FR 5	134	-24	6680	-715.76	1321.17	17.8
165	SLE FR 6	138	-23	6897	-739.12	1364.53	17.8
165	SLE QP 1	128	-27	6355	-680.71	1256.13	17.79
165	SLE QP 2	134	-24	6680	-715.76	1321.17	17.8
165	SLD 1	595	-373	5700	-610.15	1147.14	120.49
165	SLD 2	557	-286	5701	-609.93	1146.97	99.54
165	SLD 3	470	-802	6183	-659.2	1234.99	205.96
165	SLD 4	432	-714	6183	-658.99	1234.82	185.01
165	SLD 5	476	490	5655	-609.75	1135.79	-73.69
165	SLD 6	438	577	5655	-609.54	1135.62	-94.65
165	SLD 7	58	-937	7262	-773.26	1428.6	211.21
165	SLD 8	20	-850	7263	-773.05	1428.43	190.26
165	SLD 9	248	802	6098	-658.47	1213.9	-154.66
165	SLD 10	210	889	6099	-658.25	1213.73	-175.62
165	SLD 11	-170	-626	7705	-821.98	1506.71	130.24
165	SLD 12	-208	-539	7706	-821.76	1506.54	109.29
165	SLD 13	-164	666	7178	-772.53	1407.52	-149.41
165	SLD 14	-202	753	7178	-772.31	1407.35	-170.37
165	SLD 15	-289	238	7660	-821.58	1495.36	-63.94
165	SLD 16	-328	325	7661	-821.37	1495.19	-84.89
165	SLV 1	1188	-813	4420	-472.37	919.59	250.36
165	SLV 2	1101	-615	4421	-471.88	919.2	202.77
165	SLV 3	900	-1799	5541	-586.37	1123.72	446.38
165	SLV 4	813	-1601	5542	-585.88	1123.34	398.8
165	SLV 5	917	1164	4302	-470.01	891.22	-193.08
165	SLV 6	830	1362	4303	-469.52	890.84	-240.67
165	SLV 7	-42	-2121	8038	-850.01	1571.67	460.33
165	SLV 8	-129	-1923	8039	-849.52	1571.29	412.74
165	SLV 9	397	1874	5322	-581.99	1071.05	-377.15
165	SLV 10	310	2072	5323	-581.5	1070.66	-424.73
165	SLV 11	-562	-1411	9057	-961.99	1751.49	276.26
165	SLV 12	-649	-1213	9059	-961.5	1751.11	228.68
165	SLV 13	-545	1552	7819	-845.63	1519	-363.2
165	SLV 14	-632	1750	7820	-845.14	1518.61	-410.79
165	SLV 15	-833	567	8940	-959.63	1723.13	-167.18
165	SLV 16	-920	765	8941	-959.14	1722.75	-214.76



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
165	CRTFP Ux+	0	0	0	-0.01	0.01	0
165	CRTFP Ux-	0	0	0	0.01	-0.01	0
165	CRTFP Uy+	0	0	0	0	0.01	0.01
165	CRTFP Uy-	0	0	0	0	-0.01	-0.01
168	SLU 1	23	-86	2526	18.94	-748.5	-30.24
168	SLU 2	22	-98	2524	18.95	-747.74	-34.44
168	SLU 3	23	-86	2526	18.94	-748.5	-30.24
168	SLU 4	22	-93	2525	18.95	-748.04	-32.76
168	SLU 5	22	-98	2524	18.95	-747.74	-34.44
168	SLU 6	23	-86	2526	18.94	-748.5	-30.24
168	SLU 7	22	-93	2525	18.95	-748.04	-32.76
168	SLU 8	23	-86	2526	18.94	-748.5	-30.24
168	SLU 9	22	-93	2525	18.95	-748.04	-32.76
168	SLU 10	29	-114	2969	22.18	-880.9	-40.26
168	SLU 11	30	-102	2971	22.16	-881.66	-36.07
168	SLU 12	30	-110	2970	22.17	-881.21	-38.58
168	SLU 13	29	-114	2969	22.18	-880.9	-40.26
168	SLU 14	30	-102	2971	22.16	-881.66	-36.07
168	SLU 15	30	-110	2970	22.17	-881.21	-38.58
168	SLU 16	30	-102	2971	22.16	-881.66	-36.07
168	SLU 17	30	-110	2970	22.17	-881.21	-38.58
168	SLU 18	33	-109	3162	23.55	-938.73	-38.56
168	SLU 19	33	-117	3161	23.56	-938.28	-41.08
168	SLU 20	33	-109	3162	23.55	-938.73	-38.56
168	SLU 21	33	-117	3161	23.56	-938.28	-41.08
168	SLU 22	28	-98	2841	21.22	-842.83	-34.61
168	SLU 23	27	-110	2839	21.23	-842.07	-38.81
168	SLU 24	28	-98	2841	21.22	-842.83	-34.61
168	SLU 25	28	-105	2840	21.23	-842.38	-37.13
168	SLU 26	27	-110	2839	21.23	-842.07	-38.81
168	SLU 27	28	-98	2841	21.22	-842.83	-34.61
168	SLU 28	28	-105	2840	21.23	-842.38	-37.13
168	SLU 29	28	-98	2841	21.22	-842.83	-34.61
168	SLU 30	28	-105	2840	21.23	-842.38	-37.13
168	SLU 31	35	-127	3285	24.46	-975.24	-44.64
168	SLU 32	35	-115	3286	24.45	-976	-40.44
168	SLU 33	35	-122	3285	24.46	-975.54	-42.96
168	SLU 34	35	-127	3285	24.46	-975.24	-44.64
168	SLU 35	35	-115	3286	24.45	-976	-40.44
168	SLU 36	35	-122	3285	24.46	-975.54	-42.96
168	SLU 37	35	-115	3286	24.45	-976	-40.44
168	SLU 38	35	-122	3285	24.46	-975.54	-42.96
168	SLU 39	38	-122	3477	25.83	-1033.07	-42.94
168	SLU 40	38	-129	3476	25.84	-1032.61	-45.45
168	SLU 41	38	-122	3477	25.83	-1033.07	-42.94
168	SLU 42	38	-129	3476	25.84	-1032.61	-45.45
168	SLU 43	28	-107	3175	23.83	-940.71	-37.81
168	SLU 44	27	-119	3173	23.85	-939.95	-42.01
168	SLU 45	28	-107	3175	23.83	-940.71	-37.81
168	SLU 46	27	-115	3174	23.84	-940.25	-40.33
168	SLU 47	27	-119	3173	23.85	-939.95	-42.01
168	SLU 48	28	-107	3175	23.83	-940.71	-37.81
168	SLU 49	27	-115	3174	23.84	-940.25	-40.33
168	SLU 50	28	-107	3175	23.83	-940.71	-37.81
168	SLU 51	27	-115	3174	23.84	-940.25	-40.33
168	SLU 52	34	-136	3619	27.08	-1073.11	-47.84
168	SLU 53	35	-124	3621	27.06	-1073.87	-43.64
168	SLU 54	35	-131	3620	27.07	-1073.42	-46.16
168	SLU 55	34	-136	3619	27.08	-1073.11	-47.84
168	SLU 56	35	-124	3621	27.06	-1073.87	-43.64
168	SLU 57	35	-131	3620	27.07	-1073.42	-46.16
168	SLU 58	35	-124	3621	27.06	-1073.87	-43.64
168	SLU 59	35	-131	3620	27.07	-1073.42	-46.16
168	SLU 60	38	-131	3812	28.45	-1130.94	-46.14
168	SLU 61	38	-138	3810	28.46	-1130.49	-48.65
168	SLU 62	38	-131	3812	28.45	-1130.94	-46.14
168	SLU 63	38	-138	3810	28.46	-1130.49	-48.65
168	SLU 64	33	-120	3491	26.11	-1035.04	-42.18
168	SLU 65	32	-132	3489	26.13	-1034.28	-46.38
168	SLU 66	33	-120	3491	26.11	-1035.04	-42.18
168	SLU 67	33	-127	3490	26.12	-1034.58	-44.7
168	SLU 68	32	-132	3489	26.13	-1034.28	-46.38
168	SLU 69	33	-120	3491	26.11	-1035.04	-42.18
168	SLU 70	33	-127	3490	26.12	-1034.58	-44.7
168	SLU 71	33	-120	3491	26.11	-1035.04	-42.18
168	SLU 72	33	-127	3490	26.12	-1034.58	-44.7
168	SLU 73	40	-148	3934	29.36	-1167.44	-52.21
168	SLU 74	40	-136	3936	29.34	-1168.2	-48.01
168	SLU 75	40	-143	3935	29.35	-1167.75	-50.53
168	SLU 76	40	-148	3934	29.36	-1167.44	-52.21
168	SLU 77	40	-136	3936	29.34	-1168.2	-48.01
168	SLU 78	40	-143	3935	29.35	-1167.75	-50.53
168	SLU 79	40	-136	3936	29.34	-1168.2	-48.01
168	SLU 80	40	-143	3935	29.35	-1167.75	-50.53
168	SLU 81	43	-143	4127	30.73	-1225.27	-50.51
168	SLU 82	43	-151	4126	30.74	-1224.82	-53.03
168	SLU 83	43	-143	4127	30.73	-1225.27	-50.51
168	SLU 84	43	-151	4126	30.74	-1224.82	-53.03
168	SLE RA 1	24	-89	2616	19.59	-775.45	-31.49



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
168	SLE RA 2	24	-97	2615	19.6	-774.95	-34.29
168	SLE RA 3	24	-89	2616	19.59	-775.45	-31.49
168	SLE RA 4	24	-94	2615	19.59	-775.15	-33.17
168	SLE RA 5	24	-97	2615	19.6	-774.95	-34.29
168	SLE RA 6	24	-89	2616	19.59	-775.45	-31.49
168	SLE RA 7	24	-94	2615	19.59	-775.15	-33.17
168	SLE RA 8	24	-89	2616	19.59	-775.45	-31.49
168	SLE RA 9	24	-94	2615	19.59	-775.15	-33.17
168	SLE RA 10	29	-108	2911	21.75	-863.72	-38.17
168	SLE RA 11	29	-100	2913	21.74	-864.23	-35.37
168	SLE RA 12	29	-105	2912	21.75	-863.92	-37.05
168	SLE RA 13	29	-108	2911	21.75	-863.72	-38.17
168	SLE RA 14	29	-100	2913	21.74	-864.23	-35.37
168	SLE RA 15	29	-105	2912	21.75	-863.92	-37.05
168	SLE RA 16	29	-100	2913	21.74	-864.23	-35.37
168	SLE RA 17	29	-105	2912	21.75	-863.92	-37.05
168	SLE RA 18	31	-105	3040	22.66	-902.27	-37.04
168	SLE RA 19	31	-110	3039	22.67	-901.97	-38.72
168	SLE RA 20	31	-105	3040	22.66	-902.27	-37.04
168	SLE RA 21	31	-110	3039	22.67	-901.97	-38.72
168	SLE FR 1	24	-89	2616	19.59	-775.45	-31.49
168	SLE FR 2	24	-91	2616	19.59	-775.35	-32.05
168	SLE FR 3	24	-89	2616	19.59	-775.45	-31.49
168	SLE FR 4	26	-96	2743	20.51	-813.4	-33.71
168	SLE FR 5	26	-94	2743	20.51	-813.5	-33.15
168	SLE FR 6	28	-97	2828	21.12	-838.86	-34.26
168	SLE QP 1	24	-89	2616	19.59	-775.45	-31.49
168	SLE QP 2	26	-94	2743	20.51	-813.5	-33.15
168	SLD 1	166	104	3056	22.27	-899.9	35.52
168	SLD 2	154	77	3055	22.26	-899.6	26.39
168	SLD 3	127	-23	2967	22.9	-874.62	-8.79
168	SLD 4	114	-50	2966	22.89	-874.33	-17.93
168	SLD 5	133	167	2973	20.08	-877.86	57.86
168	SLD 6	120	141	2972	20.07	-877.56	48.73
168	SLD 7	0	-256	2675	22.19	-793.6	-89.87
168	SLD 8	-12	-283	2674	22.18	-793.31	-99
168	SLD 9	65	94	2812	18.84	-833.69	32.69
168	SLD 10	52	68	2811	18.83	-833.39	23.56
168	SLD 11	-68	-329	2515	20.95	-749.43	-115.04
168	SLD 12	-80	-355	2513	20.94	-749.14	-124.17
168	SLD 13	-62	-138	2520	18.13	-752.67	-48.38
168	SLD 14	-74	-165	2519	18.12	-752.37	-57.51
168	SLD 15	-101	-265	2431	18.76	-727.39	-92.7
168	SLD 16	-114	-292	2430	18.75	-727.1	-101.83
168	SLV 1	346	363	3460	24.52	-1011.39	125.66
168	SLV 2	318	303	3458	24.5	-1010.71	104.92
168	SLV 3	255	68	3255	25.96	-953.09	22.79
168	SLV 4	226	8	3252	25.95	-952.41	2.05
168	SLV 5	271	511	3270	19.53	-961.53	177.77
168	SLV 6	243	451	3268	19.51	-960.85	157.02
168	SLV 7	-34	-471	2586	24.34	-767.19	-165.12
168	SLV 8	-63	-531	2584	24.32	-766.51	-185.87
168	SLV 9	115	343	2903	16.7	-860.49	119.56
168	SLV 10	86	283	2900	16.68	-859.81	98.82
168	SLV 11	-190	-639	2218	21.5	-666.15	-223.33
168	SLV 12	-219	-699	2216	21.49	-665.47	-244.07
168	SLV 13	-174	-197	2234	15.07	-674.59	-68.36
168	SLV 14	-202	-256	2231	15.05	-673.91	-89.1
168	SLV 15	-265	-491	2029	16.52	-616.29	-171.22
168	SLV 16	-294	-551	2026	16.5	-615.61	-191.97
168	CRTFP Ux+	0	0	0	0	0	0
168	CRTFP Ux-	0	0	0	0	0	0
168	CRTFP Uy+	0	0	0	0	0	0
168	CRTFP Uy-	0	0	0	0	0	0
170	SLU 1	28	-97	2826	-41.75	-763.18	-33.33
170	SLU 2	27	-110	2825	-41.67	-762.33	-38.1
170	SLU 3	28	-97	2826	-41.75	-763.18	-33.33
170	SLU 4	27	-105	2825	-41.7	-762.67	-36.19
170	SLU 5	27	-110	2825	-41.67	-762.33	-38.1
170	SLU 6	28	-97	2826	-41.75	-763.18	-33.33
170	SLU 7	27	-105	2825	-41.7	-762.67	-36.19
170	SLU 8	28	-97	2826	-41.75	-763.18	-33.33
170	SLU 9	27	-105	2825	-41.7	-762.67	-36.19
170	SLU 10	35	-129	3320	-49.13	-896.55	-44.48
170	SLU 11	36	-115	3321	-49.21	-897.4	-39.71
170	SLU 12	36	-123	3321	-49.16	-896.89	-42.57
170	SLU 13	35	-129	3320	-49.13	-896.55	-44.48
170	SLU 14	36	-115	3321	-49.21	-897.4	-39.71
170	SLU 15	36	-123	3321	-49.16	-896.89	-42.57
170	SLU 16	36	-115	3321	-49.21	-897.4	-39.71
170	SLU 17	36	-123	3321	-49.16	-896.89	-42.57
170	SLU 18	40	-123	3534	-52.41	-954.92	-42.44
170	SLU 19	39	-131	3533	-52.36	-954.41	-45.3
170	SLU 20	40	-123	3534	-52.41	-954.92	-42.44
170	SLU 21	39	-131	3533	-52.36	-954.41	-45.3
170	SLU 22	34	-111	3177	-47.04	-858.25	-38.12
170	SLU 23	33	-124	3175	-46.96	-857.4	-42.89
170	SLU 24	34	-111	3177	-47.04	-858.25	-38.12
170	SLU 25	33	-119	3176	-46.99	-857.74	-40.98



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
170	SLU 26	33	-124	3175	-46.96	-857.4	-42.89
170	SLU 27	34	-111	3177	-47.04	-858.25	-38.12
170	SLU 28	33	-119	3176	-46.99	-857.74	-40.98
170	SLU 29	34	-111	3177	-47.04	-858.25	-38.12
170	SLU 30	33	-119	3176	-46.99	-857.74	-40.98
170	SLU 31	41	-143	3671	-54.42	-991.61	-49.26
170	SLU 32	42	-129	3672	-54.5	-992.46	-44.5
170	SLU 33	42	-137	3671	-54.46	-991.95	-47.36
170	SLU 34	41	-143	3671	-54.42	-991.61	-49.26
170	SLU 35	42	-129	3672	-54.5	-992.46	-44.5
170	SLU 36	42	-137	3671	-54.46	-991.95	-47.36
170	SLU 37	42	-129	3672	-54.5	-992.46	-44.5
170	SLU 38	42	-137	3671	-54.46	-991.95	-47.36
170	SLU 39	46	-137	3884	-57.7	-1049.98	-47.23
170	SLU 40	45	-145	3884	-57.65	-1049.47	-50.09
170	SLU 41	46	-137	3884	-57.7	-1049.98	-47.23
170	SLU 42	45	-145	3884	-57.65	-1049.47	-50.09
170	SLU 43	34	-121	3553	-52.46	-959.54	-41.69
170	SLU 44	33	-134	3552	-52.38	-958.69	-46.46
170	SLU 45	34	-121	3553	-52.46	-959.54	-41.69
170	SLU 46	34	-129	3553	-52.41	-959.03	-44.55
170	SLU 47	33	-134	3552	-52.38	-958.69	-46.46
170	SLU 48	34	-121	3553	-52.46	-959.54	-41.69
170	SLU 49	34	-129	3553	-52.41	-959.03	-44.55
170	SLU 50	34	-121	3553	-52.46	-959.54	-41.69
170	SLU 51	34	-129	3553	-52.41	-959.03	-44.55
170	SLU 52	42	-153	4048	-59.84	-1092.91	-52.84
170	SLU 53	42	-139	4049	-59.92	-1093.76	-48.07
170	SLU 54	42	-148	4048	-59.87	-1093.25	-50.93
170	SLU 55	42	-153	4048	-59.84	-1092.91	-52.84
170	SLU 56	42	-139	4049	-59.92	-1093.76	-48.07
170	SLU 57	42	-148	4048	-59.87	-1093.25	-50.93
170	SLU 58	42	-139	4049	-59.92	-1093.76	-48.07
170	SLU 59	42	-148	4048	-59.87	-1093.25	-50.93
170	SLU 60	46	-147	4261	-63.12	-1151.28	-50.8
170	SLU 61	45	-156	4260	-63.07	-1150.77	-53.66
170	SLU 62	46	-147	4261	-63.12	-1151.28	-50.8
170	SLU 63	45	-156	4260	-63.07	-1150.77	-53.66
170	SLU 64	40	-135	3904	-57.75	-1054.61	-46.48
170	SLU 65	39	-148	3903	-57.67	-1053.76	-51.24
170	SLU 66	40	-135	3904	-57.75	-1054.61	-46.48
170	SLU 67	40	-143	3903	-57.7	-1054.1	-49.34
170	SLU 68	39	-148	3903	-57.67	-1053.76	-51.24
170	SLU 69	40	-135	3904	-57.75	-1054.61	-46.48
170	SLU 70	40	-143	3903	-57.7	-1054.1	-49.34
170	SLU 71	40	-135	3904	-57.75	-1054.61	-46.48
170	SLU 72	40	-143	3903	-57.7	-1054.1	-49.34
170	SLU 73	48	-167	4398	-65.13	-1187.97	-57.62
170	SLU 74	48	-153	4399	-65.21	-1188.82	-52.85
170	SLU 75	48	-162	4399	-65.17	-1188.31	-55.71
170	SLU 76	48	-167	4398	-65.13	-1187.97	-57.62
170	SLU 77	48	-153	4399	-65.21	-1188.82	-52.85
170	SLU 78	48	-162	4399	-65.17	-1188.31	-55.71
170	SLU 79	48	-153	4399	-65.21	-1188.82	-52.85
170	SLU 80	48	-162	4399	-65.17	-1188.31	-55.71
170	SLU 81	52	-161	4612	-68.41	-1246.34	-55.59
170	SLU 82	51	-170	4611	-68.36	-1245.83	-58.45
170	SLU 83	52	-161	4612	-68.41	-1246.34	-55.59
170	SLU 84	51	-170	4611	-68.36	-1245.83	-58.45
170	SLE RA 1	29	-101	2926	-43.26	-790.35	-34.7
170	SLE RA 2	29	-110	2925	-43.21	-789.78	-37.88
170	SLE RA 3	29	-101	2926	-43.26	-790.35	-34.7
170	SLE RA 4	29	-106	2926	-43.23	-790.01	-36.61
170	SLE RA 5	29	-110	2925	-43.21	-789.78	-37.88
170	SLE RA 6	29	-101	2926	-43.26	-790.35	-34.7
170	SLE RA 7	29	-106	2926	-43.23	-790.01	-36.61
170	SLE RA 8	29	-101	2926	-43.26	-790.35	-34.7
170	SLE RA 9	29	-106	2926	-43.23	-790.01	-36.61
170	SLE RA 10	35	-122	3256	-48.18	-879.25	-42.13
170	SLE RA 11	35	-113	3256	-48.24	-879.82	-38.95
170	SLE RA 12	35	-118	3256	-48.2	-879.48	-40.86
170	SLE RA 13	35	-122	3256	-48.18	-879.25	-42.13
170	SLE RA 14	35	-113	3256	-48.24	-879.82	-38.95
170	SLE RA 15	35	-118	3256	-48.2	-879.48	-40.86
170	SLE RA 16	35	-113	3256	-48.24	-879.82	-38.95
170	SLE RA 17	35	-118	3256	-48.2	-879.48	-40.86
170	SLE RA 18	37	-118	3398	-50.37	-918.17	-40.77
170	SLE RA 19	37	-124	3397	-50.34	-917.83	-42.68
170	SLE RA 20	37	-118	3398	-50.37	-918.17	-40.77
170	SLE RA 21	37	-124	3397	-50.34	-917.83	-42.68
170	SLE FR 1	29	-101	2926	-43.26	-790.35	-34.7
170	SLE FR 2	29	-102	2926	-43.25	-790.23	-35.33
170	SLE FR 3	29	-101	2926	-43.26	-790.35	-34.7
170	SLE FR 4	32	-108	3067	-45.38	-828.58	-37.16
170	SLE FR 5	32	-106	3068	-45.39	-828.69	-36.52
170	SLE FR 6	33	-109	3162	-46.81	-854.26	-37.74
170	SLE QP 1	29	-101	2926	-43.26	-790.35	-34.7
170	SLE QP 2	32	-106	3068	-45.39	-828.69	-36.52
170	SID 1	202	118	3311	-50.76	-915.24	43.52



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
170	SLD 2	185	89	3309	-50.74	-914.84	32.87
170	SLD 3	153	-26	3402	-49.02	-890.01	-7.28
170	SLD 4	137	-56	3401	-48.99	-889.62	-17.93
170	SLD 5	162	190	3002	-49.66	-893.05	68.27
170	SLD 6	146	161	3001	-49.63	-892.65	57.62
170	SLD 7	0	-290	3307	-43.84	-808.97	-101.07
170	SLD 8	-16	-320	3306	-43.82	-808.57	-111.72
170	SLD 9	80	108	2829	-46.97	-848.81	38.67
170	SLD 10	64	78	2828	-46.94	-848.41	28.03
170	SLD 11	-82	-372	3135	-41.15	-764.73	-130.66
170	SLD 12	-99	-402	3133	-41.13	-764.33	-141.31
170	SLD 13	-73	-156	2734	-41.79	-767.77	-55.11
170	SLD 14	-89	-186	2733	-41.77	-767.37	-65.76
170	SLD 15	-122	-300	2826	-40.05	-742.55	-105.92
170	SLD 16	-138	-330	2825	-40.02	-742.15	-116.56
170	SLV 1	420	413	3622	-57.71	-1026.96	148.55
170	SLV 2	383	345	3620	-57.65	-1026.06	124.37
170	SLV 3	308	78	3833	-53.67	-968.76	30.62
170	SLV 4	271	10	3830	-53.61	-967.86	6.44
170	SLV 5	331	581	2915	-55.23	-976.76	206.33
170	SLV 6	295	513	2913	-55.18	-975.85	182.15
170	SLV 7	-43	-534	3618	-41.77	-782.76	-186.78
170	SLV 8	-80	-602	3615	-41.71	-781.86	-210.96
170	SLV 9	143	390	2520	-49.07	-875.53	137.92
170	SLV 10	106	323	2518	-49.02	-874.62	113.74
170	SLV 11	-231	-725	3222	-35.61	-681.53	-255.19
170	SLV 12	-268	-792	3220	-35.55	-680.63	-279.37
170	SLV 13	-208	-222	2305	-37.17	-689.53	-79.48
170	SLV 14	-244	-290	2302	-37.12	-688.62	-103.66
170	SLV 15	-320	-557	2515	-33.13	-631.33	-197.41
170	SLV 16	-357	-624	2513	-33.08	-630.43	-221.59
170	CRTFP Ux+	0	0	0	0	0	0
170	CRTFP Ux-	0	0	0	0	0	0
170	CRTFP Uy+	0	0	0	0	0	0
170	CRTFP Uy-	0	0	0	0	0	0
172	SLU 1	32	-96	2763	-37.22	-672.54	-33.1
172	SLU 2	31	-110	2763	-37.14	-671.77	-37.88
172	SLU 3	32	-96	2763	-37.22	-672.54	-33.1
172	SLU 4	31	-104	2763	-37.17	-672.07	-35.96
172	SLU 5	31	-110	2763	-37.14	-671.77	-37.88
172	SLU 6	32	-96	2763	-37.22	-672.54	-33.1
172	SLU 7	31	-104	2763	-37.17	-672.07	-35.96
172	SLU 8	32	-96	2763	-37.22	-672.54	-33.1
172	SLU 9	31	-104	2763	-37.17	-672.07	-35.96
172	SLU 10	40	-128	3243	-43.71	-787.67	-44.24
172	SLU 11	40	-115	3243	-43.78	-788.44	-39.46
172	SLU 12	40	-123	3243	-43.74	-787.98	-42.33
172	SLU 13	40	-128	3243	-43.71	-787.67	-44.24
172	SLU 14	40	-115	3243	-43.78	-788.44	-39.46
172	SLU 15	40	-123	3243	-43.74	-787.98	-42.33
172	SLU 16	40	-115	3243	-43.78	-788.44	-39.46
172	SLU 17	40	-123	3243	-43.74	-787.98	-42.33
172	SLU 18	44	-123	3449	-46.6	-838.11	-42.19
172	SLU 19	43	-131	3449	-46.55	-837.65	-45.06
172	SLU 20	44	-123	3449	-46.6	-838.11	-42.19
172	SLU 21	43	-131	3449	-46.55	-837.65	-45.06
172	SLU 22	38	-110	3103	-41.87	-754.62	-37.87
172	SLU 23	37	-124	3103	-41.79	-753.85	-42.65
172	SLU 24	38	-110	3103	-41.87	-754.62	-37.87
172	SLU 25	38	-118	3103	-41.83	-754.16	-40.74
172	SLU 26	37	-124	3103	-41.79	-753.85	-42.65
172	SLU 27	38	-110	3103	-41.87	-754.62	-37.87
172	SLU 28	38	-118	3103	-41.83	-754.16	-40.74
172	SLU 29	38	-110	3103	-41.87	-754.62	-37.87
172	SLU 30	38	-118	3103	-41.83	-754.16	-40.74
172	SLU 31	46	-142	3583	-48.36	-869.75	-49.01
172	SLU 32	46	-129	3583	-48.44	-870.52	-44.24
172	SLU 33	46	-137	3583	-48.39	-870.06	-47.1
172	SLU 34	46	-142	3583	-48.36	-869.75	-49.01
172	SLU 35	46	-129	3583	-48.44	-870.52	-44.24
172	SLU 36	46	-137	3583	-48.39	-870.06	-47.1
172	SLU 37	46	-129	3583	-48.44	-870.52	-44.24
172	SLU 38	46	-137	3583	-48.39	-870.06	-47.1
172	SLU 39	50	-136	3789	-51.25	-920.2	-46.96
172	SLU 40	50	-145	3789	-51.21	-919.73	-49.83
172	SLU 41	50	-136	3789	-51.25	-920.2	-46.96
172	SLU 42	50	-145	3789	-51.21	-919.73	-49.83
172	SLU 43	39	-120	3475	-46.79	-846.15	-41.39
172	SLU 44	38	-134	3475	-46.71	-845.38	-46.17
172	SLU 45	39	-120	3475	-46.79	-846.15	-41.39
172	SLU 46	39	-128	3475	-46.74	-845.69	-44.26
172	SLU 47	38	-134	3475	-46.71	-845.38	-46.17
172	SLU 48	39	-120	3475	-46.79	-846.15	-41.39
172	SLU 49	39	-128	3475	-46.74	-845.69	-44.26
172	SLU 50	39	-120	3475	-46.79	-846.15	-41.39
172	SLU 51	39	-128	3475	-46.74	-845.69	-44.26
172	SLU 52	47	-152	3956	-53.28	-961.29	-52.53
172	SLU 53	48	-139	3956	-53.35	-962.06	-47.76
172	SLU 54	47	-147	3956	-53.31	-961.59	-50.62



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
172	SLU 55	47	-152	3956	-53.28	-961.29	-52.53
172	SLU 56	48	-139	3956	-53.35	-962.06	-47.76
172	SLU 57	47	-147	3956	-53.31	-961.59	-50.62
172	SLU 58	48	-139	3956	-53.35	-962.06	-47.76
172	SLU 59	47	-147	3956	-53.31	-961.59	-50.62
172	SLU 60	51	-147	4161	-56.17	-1011.73	-50.49
172	SLU 61	51	-155	4161	-56.12	-1011.27	-53.35
172	SLU 62	51	-147	4161	-56.17	-1011.73	-50.49
172	SLU 63	51	-155	4161	-56.12	-1011.27	-53.35
172	SLU 64	45	-134	3815	-51.44	-928.24	-46.17
172	SLU 65	45	-147	3815	-51.37	-927.47	-50.94
172	SLU 66	45	-134	3815	-51.44	-928.24	-46.17
172	SLU 67	45	-142	3815	-51.4	-927.78	-49.03
172	SLU 68	45	-147	3815	-51.37	-927.47	-50.94
172	SLU 69	45	-134	3815	-51.44	-928.24	-46.17
172	SLU 70	45	-142	3815	-51.4	-927.78	-49.03
172	SLU 71	45	-134	3815	-51.44	-928.24	-46.17
172	SLU 72	45	-142	3815	-51.4	-927.78	-49.03
172	SLU 73	53	-166	4295	-57.93	-1043.37	-57.31
172	SLU 74	54	-153	4295	-58.01	-1044.14	-52.53
172	SLU 75	53	-161	4295	-57.96	-1043.68	-55.4
172	SLU 76	53	-166	4295	-57.93	-1043.37	-57.31
172	SLU 77	54	-153	4295	-58.01	-1044.14	-52.53
172	SLU 78	53	-161	4295	-57.96	-1043.68	-55.4
172	SLU 79	54	-153	4295	-58.01	-1044.14	-52.53
172	SLU 80	53	-161	4295	-57.96	-1043.68	-55.4
172	SLU 81	57	-160	4501	-60.82	-1093.81	-55.26
172	SLU 82	57	-169	4501	-60.78	-1093.35	-58.12
172	SLU 83	57	-160	4501	-60.82	-1093.81	-55.26
172	SLU 84	57	-169	4501	-60.78	-1093.35	-58.12
172	SLE RA 1	33	-100	2860	-38.55	-695.99	-34.46
172	SLE RA 2	33	-109	2860	-38.5	-695.47	-37.65
172	SLE RA 3	33	-100	2860	-38.55	-695.99	-34.46
172	SLE RA 4	33	-105	2860	-38.52	-695.68	-36.37
172	SLE RA 5	33	-109	2860	-38.5	-695.47	-37.65
172	SLE RA 6	33	-100	2860	-38.55	-695.99	-34.46
172	SLE RA 7	33	-105	2860	-38.52	-695.68	-36.37
172	SLE RA 8	33	-100	2860	-38.55	-695.99	-34.46
172	SLE RA 9	33	-105	2860	-38.52	-695.68	-36.37
172	SLE RA 10	39	-121	3180	-42.87	-772.74	-41.89
172	SLE RA 11	39	-112	3180	-42.93	-773.26	-38.71
172	SLE RA 12	39	-118	3180	-42.89	-772.95	-40.62
172	SLE RA 13	39	-121	3180	-42.87	-772.74	-41.89
172	SLE RA 14	39	-112	3180	-42.93	-773.26	-38.71
172	SLE RA 15	39	-118	3180	-42.89	-772.95	-40.62
172	SLE RA 16	39	-112	3180	-42.93	-773.26	-38.71
172	SLE RA 17	39	-118	3180	-42.89	-772.95	-40.62
172	SLE RA 18	42	-118	3317	-44.8	-806.37	-40.53
172	SLE RA 19	41	-123	3317	-44.77	-806.06	-42.44
172	SLE RA 20	42	-118	3317	-44.8	-806.37	-40.53
172	SLE RA 21	41	-123	3317	-44.77	-806.06	-42.44
172	SLE FR 1	33	-100	2860	-38.55	-695.99	-34.46
172	SLE FR 2	33	-102	2860	-38.54	-695.89	-35.1
172	SLE FR 3	33	-100	2860	-38.55	-695.99	-34.46
172	SLE FR 4	36	-107	2997	-40.41	-729	-36.92
172	SLE FR 5	36	-105	2997	-40.42	-729.1	-36.28
172	SLE FR 6	38	-109	3089	-41.68	-751.18	-37.49
172	SLE QP 1	33	-100	2860	-38.55	-695.99	-34.46
172	SLE QP 2	36	-105	2997	-40.42	-729.1	-36.28
172	SLD 1	218	119	3226	-45.16	-802.46	43.92
172	SLD 2	199	89	3225	-45.14	-802.03	33.27
172	SLD 3	166	-25	3308	-43.6	-781.45	-6.99
172	SLD 4	147	-55	3307	-43.58	-781.03	-17.64
172	SLD 5	176	191	2942	-44.22	-783.11	68.71
172	SLD 6	157	161	2941	-44.2	-782.69	58.06
172	SLD 7	2	-290	3215	-39.02	-713.1	-100.97
172	SLD 8	-16	-319	3214	-39	-712.68	-111.62
172	SLD 9	88	109	2780	-41.85	-745.53	39.06
172	SLD 10	69	79	2779	-41.83	-745.11	28.41
172	SLD 11	-86	-372	3054	-36.65	-675.52	-130.63
172	SLD 12	-104	-402	3053	-36.63	-675.09	-141.28
172	SLD 13	-75	-155	2688	-37.27	-677.18	-54.93
172	SLD 14	-94	-185	2687	-37.25	-676.75	-65.57
172	SLD 15	-127	-300	2770	-35.71	-656.17	-105.83
172	SLD 16	-146	-329	2769	-35.69	-655.75	-116.48
172	SLV 1	451	413	3519	-51.3	-897.2	149.16
172	SLV 2	409	346	3516	-51.24	-896.23	124.97
172	SLV 3	331	78	3707	-47.68	-848.74	30.98
172	SLV 4	289	11	3704	-47.63	-847.78	6.79
172	SLV 5	357	581	2870	-49.19	-853.36	207.05
172	SLV 6	315	514	2867	-49.13	-852.4	182.87
172	SLV 7	-43	-534	3496	-37.14	-691.84	-186.88
172	SLV 8	-85	-602	3493	-37.09	-690.88	-211.06
172	SLV 9	156	391	2501	-43.76	-767.33	138.5
172	SLV 10	115	324	2499	-43.71	-766.37	114.31
172	SLV 11	-243	-724	3127	-31.72	-605.81	-255.43
172	SLV 12	-285	-792	3125	-31.66	-604.85	-279.61
172	SLV 13	-218	-229	2290	-33.22	-610.43	-79.36
172	SLV 14	-259	-289	2288	-33.17	-609.47	-103.54



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
172	SLV 15	-338	-556	2478	-29.61	-561.97	-197.54
172	SLV 16	-379	-623	2476	-29.55	-561.01	-221.72
172	CRTFP Ux+	0	0	0	0	0	0
172	CRTFP Ux-	0	0	0	0	0	0
172	CRTFP Uy+	0	0	0	0	0	0
172	CRTFP Uy-	0	0	0	0	0	0
174	SLU 1	86	-15	3585	-664.5	575.64	18.97
174	SLU 2	87	-40	3604	-667.96	579.37	25.3
174	SLU 3	86	-15	3585	-664.5	575.64	18.97
174	SLU 4	86	-30	3596	-666.58	577.88	22.77
174	SLU 5	87	-40	3604	-667.96	579.37	25.3
174	SLU 6	86	-15	3585	-664.5	575.64	18.97
174	SLU 7	86	-30	3596	-666.58	577.88	22.77
174	SLU 8	86	-15	3585	-664.5	575.64	18.97
174	SLU 9	86	-30	3596	-666.58	577.88	22.77
174	SLU 10	100	-35	4255	-789.99	687.45	26.32
174	SLU 11	99	-10	4236	-786.54	683.73	19.99
174	SLU 12	100	-25	4247	-788.61	685.96	23.79
174	SLU 13	100	-35	4255	-789.99	687.45	26.32
174	SLU 14	99	-10	4236	-786.54	683.73	19.99
174	SLU 15	100	-25	4247	-788.61	685.96	23.79
174	SLU 16	99	-10	4236	-786.54	683.73	19.99
174	SLU 17	100	-25	4247	-788.61	685.96	23.79
174	SLU 18	105	-8	4515	-838.83	730.05	20.43
174	SLU 19	105	-23	4526	-840.91	732.28	24.23
174	SLU 20	105	-8	4515	-838.83	730.05	20.43
174	SLU 21	105	-23	4526	-840.91	732.28	24.23
174	SLU 22	96	-12	4056	-752.78	653.53	20.06
174	SLU 23	97	-37	4074	-756.24	657.26	26.39
174	SLU 24	96	-12	4056	-752.78	653.53	20.06
174	SLU 25	97	-27	4067	-754.86	655.77	23.86
174	SLU 26	97	-37	4074	-756.24	657.26	26.39
174	SLU 27	96	-12	4056	-752.78	653.53	20.06
174	SLU 28	97	-27	4067	-754.86	655.77	23.86
174	SLU 29	96	-12	4056	-752.78	653.53	20.06
174	SLU 30	97	-27	4067	-754.86	655.77	23.86
174	SLU 31	110	-32	4726	-878.27	765.34	27.41
174	SLU 32	110	-7	4707	-874.82	761.61	21.08
174	SLU 33	110	-22	4718	-876.89	763.85	24.88
174	SLU 34	110	-32	4726	-878.27	765.34	27.41
174	SLU 35	110	-7	4707	-874.82	761.61	21.08
174	SLU 36	110	-22	4718	-876.89	763.85	24.88
174	SLU 37	110	-7	4707	-874.82	761.61	21.08
174	SLU 38	110	-22	4718	-876.89	763.85	24.88
174	SLU 39	115	-5	4986	-927.11	807.94	21.52
174	SLU 40	116	-20	4997	-929.19	810.17	25.32
174	SLU 41	115	-5	4986	-927.11	807.94	21.52
174	SLU 42	116	-20	4997	-929.19	810.17	25.32
174	SLU 43	108	-21	4499	-833.59	721.63	24.28
174	SLU 44	109	-45	4517	-837.04	725.36	30.61
174	SLU 45	108	-21	4499	-833.59	721.63	24.28
174	SLU 46	109	-35	4510	-835.66	723.87	28.08
174	SLU 47	109	-45	4517	-837.04	725.36	30.61
174	SLU 48	108	-21	4499	-833.59	721.63	24.28
174	SLU 49	109	-35	4510	-835.66	723.87	28.08
174	SLU 50	108	-21	4499	-833.59	721.63	24.28
174	SLU 51	109	-35	4510	-835.66	723.87	28.08
174	SLU 52	122	-40	5169	-959.07	833.44	31.64
174	SLU 53	122	-15	5150	-955.62	829.72	25.31
174	SLU 54	122	-30	5161	-957.69	831.95	29.11
174	SLU 55	122	-40	5169	-959.07	833.44	31.64
174	SLU 56	122	-15	5150	-955.62	829.72	25.31
174	SLU 57	122	-30	5161	-957.69	831.95	29.11
174	SLU 58	122	-15	5150	-955.62	829.72	25.31
174	SLU 59	122	-30	5161	-957.69	831.95	29.11
174	SLU 60	127	-13	5429	-1007.92	876.04	25.75
174	SLU 61	128	-28	5440	-1009.99	878.27	29.54
174	SLU 62	127	-13	5429	-1007.92	876.04	25.75
174	SLU 63	128	-28	5440	-1009.99	878.27	29.54
174	SLU 64	119	-18	4970	-921.87	799.52	25.38
174	SLU 65	119	-43	4988	-925.32	803.24	31.71
174	SLU 66	119	-18	4970	-921.87	799.52	25.38
174	SLU 67	119	-33	4981	-923.94	801.75	29.17
174	SLU 68	119	-43	4988	-925.32	803.24	31.71
174	SLU 69	119	-18	4970	-921.87	799.52	25.38
174	SLU 70	119	-33	4981	-923.94	801.75	29.17
174	SLU 71	119	-18	4970	-921.87	799.52	25.38
174	SLU 72	119	-33	4981	-923.94	801.75	29.17
174	SLU 73	132	-37	5640	-1047.35	911.33	32.73
174	SLU 74	132	-13	5621	-1043.9	907.6	26.4
174	SLU 75	132	-28	5632	-1045.97	909.84	30.2
174	SLU 76	132	-37	5640	-1047.35	911.33	32.73
174	SLU 77	132	-13	5621	-1043.9	907.6	26.4
174	SLU 78	132	-28	5632	-1045.97	909.84	30.2
174	SLU 79	132	-13	5621	-1043.9	907.6	26.4
174	SLU 80	132	-28	5632	-1045.97	909.84	30.2
174	SLU 81	138	-11	5900	-1096.2	953.92	26.84
174	SLU 82	138	-25	5911	-1098.27	956.16	30.64
174	SLU 83	138	-11	5900	-1096.2	953.92	26.84



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
174	SLU 84	138	-25	5911	-1098.27	956.16	30.64
174	SLE RA 1	89	-14	3719	-689.73	597.9	19.28
174	SLE RA 2	89	-31	3732	-692.03	600.38	23.5
174	SLE RA 3	89	-14	3719	-689.73	597.9	19.28
174	SLE RA 4	89	-24	3727	-691.11	599.39	21.81
174	SLE RA 5	89	-31	3732	-692.03	600.38	23.5
174	SLE RA 6	89	-14	3719	-689.73	597.9	19.28
174	SLE RA 7	89	-24	3727	-691.11	599.39	21.81
174	SLE RA 8	89	-14	3719	-689.73	597.9	19.28
174	SLE RA 9	89	-24	3727	-691.11	599.39	21.81
174	SLE RA 10	98	-27	4166	-773.38	672.44	24.18
174	SLE RA 11	98	-11	4153	-771.08	669.95	19.96
174	SLE RA 12	98	-21	4161	-772.46	671.44	22.49
174	SLE RA 13	98	-27	4166	-773.38	672.44	24.18
174	SLE RA 14	98	-11	4153	-771.08	669.95	19.96
174	SLE RA 15	98	-21	4161	-772.46	671.44	22.49
174	SLE RA 16	98	-11	4153	-771.08	669.95	19.96
174	SLE RA 17	98	-21	4161	-772.46	671.44	22.49
174	SLE RA 18	102	-9	4340	-805.95	700.83	20.25
174	SLE RA 19	102	-19	4347	-807.33	702.32	22.79
174	SLE RA 20	102	-9	4340	-805.95	700.83	20.25
174	SLE RA 21	102	-19	4347	-807.33	702.32	22.79
174	SLE FR 1	89	-14	3719	-689.73	597.9	19.28
174	SLE FR 2	89	-18	3722	-690.19	598.39	20.12
174	SLE FR 3	89	-14	3719	-689.73	597.9	19.28
174	SLE FR 4	93	-16	3908	-725.05	629.27	20.42
174	SLE FR 5	93	-13	3905	-724.59	628.78	19.57
174	SLE FR 6	95	-12	4029	-747.84	649.37	19.77
174	SLE QP 1	89	-14	3719	-689.73	597.9	19.28
174	SLE QP 2	93	-13	3905	-724.59	628.78	19.57
174	SLD 1	313	-210	3338	-619.47	551.93	106.52
174	SLD 2	283	-161	3340	-619.77	550.45	89.12
174	SLD 3	392	-452	3629	-672.72	598.96	171.07
174	SLD 4	363	-403	3631	-673.01	597.48	153.66
174	SLD 5	49	277	3293	-612.19	534.92	-46.14
174	SLD 6	19	327	3295	-612.49	533.43	-63.55
174	SLD 7	313	-529	4263	-789.69	691.68	169
174	SLD 8	284	-480	4265	-789.98	690.19	151.6
174	SLD 9	-98	454	3545	-659.2	567.36	-112.45
174	SLD 10	-128	503	3548	-659.5	565.88	-129.86
174	SLD 11	166	-352	4516	-836.7	724.12	102.69
174	SLD 12	137	-303	4518	-836.99	722.64	85.28
174	SLD 13	-177	377	4179	-776.17	660.08	-114.51
174	SLD 14	-207	427	4181	-776.47	658.59	-131.92
174	SLD 15	-98	135	4470	-829.42	707.11	-49.97
174	SLD 16	-127	185	4472	-829.71	705.62	-67.38
174	SLV 1	595	-459	2596	-481.99	450.76	216.63
174	SLV 2	527	-348	2601	-482.66	447.39	177.1
174	SLV 3	776	-1016	3273	-605.73	559.92	364.48
174	SLV 4	709	-904	3277	-606.4	556.54	324.94
174	SLV 5	-9	658	2485	-463.91	411	-131.71
174	SLV 6	-76	770	2490	-464.57	407.63	-171.24
174	SLV 7	597	-1197	4740	-876.37	774.86	361.11
174	SLV 8	530	-1085	4744	-877.04	771.48	321.58
174	SLV 9	-344	1060	3066	-572.15	486.08	-282.44
174	SLV 10	-411	1171	3071	-572.81	482.7	-321.97
174	SLV 11	261	-796	5321	-984.61	849.93	210.38
174	SLV 12	194	-684	5326	-985.28	846.56	170.85
174	SLV 13	-523	879	4533	-842.79	701.01	-285.8
174	SLV 14	-590	990	4538	-843.46	697.64	-325.33
174	SLV 15	-342	322	5210	-966.53	810.17	-137.95
174	SLV 16	-409	434	5215	-967.2	806.8	-177.49
174	CRTFP Ux+	0	0	0	0	0	0
174	CRTFP Ux-	0	0	0	0	0	0
174	CRTFP Uy+	0	0	0	0	0	0
174	CRTFP Uy-	0	0	0	0	0	0
176	SLU 1	37	-95	2706	-32.4	-590.76	-32.89
176	SLU 2	37	-109	2707	-32.32	-590.17	-37.67
176	SLU 3	37	-95	2706	-32.4	-590.76	-32.89
176	SLU 4	37	-104	2707	-32.35	-590.41	-35.76
176	SLU 5	37	-109	2707	-32.32	-590.17	-37.67
176	SLU 6	37	-95	2706	-32.4	-590.76	-32.89
176	SLU 7	37	-104	2707	-32.35	-590.41	-35.76
176	SLU 8	37	-95	2706	-32.4	-590.76	-32.89
176	SLU 9	37	-104	2707	-32.35	-590.41	-35.76
176	SLU 10	45	-128	3173	-37.91	-689.2	-44.02
176	SLU 11	46	-114	3172	-37.98	-689.8	-39.24
176	SLU 12	46	-122	3172	-37.94	-689.44	-42.11
176	SLU 13	45	-128	3173	-37.91	-689.2	-44.02
176	SLU 14	46	-114	3172	-37.98	-689.8	-39.24
176	SLU 15	46	-122	3172	-37.94	-689.44	-42.11
176	SLU 16	46	-114	3172	-37.98	-689.8	-39.24
176	SLU 17	46	-122	3172	-37.94	-689.44	-42.11
176	SLU 18	50	-122	3371	-40.38	-732.24	-41.97
176	SLU 19	49	-130	3372	-40.33	-731.88	-44.83
176	SLU 20	50	-122	3371	-40.38	-732.24	-41.97
176	SLU 21	49	-130	3372	-40.33	-731.88	-44.83
176	SLU 22	44	-109	3035	-36.35	-660.88	-37.65
176	SLU 23	43	-123	3036	-36.28	-660.28	-42.43



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
176	SLU 24	44	-109	3035	-36.35	-660.88	-37.65
176	SLU 25	43	-118	3036	-36.31	-660.52	-40.52
176	SLU 26	43	-123	3036	-36.28	-660.28	-42.43
176	SLU 27	44	-109	3035	-36.35	-660.88	-37.65
176	SLU 28	43	-118	3036	-36.31	-660.52	-40.52
176	SLU 29	44	-109	3035	-36.35	-660.88	-37.65
176	SLU 30	43	-118	3036	-36.31	-660.52	-40.52
176	SLU 31	52	-142	3502	-41.87	-759.32	-48.78
176	SLU 32	53	-128	3501	-41.94	-759.91	-44
176	SLU 33	52	-136	3502	-41.9	-759.56	-46.87
176	SLU 34	52	-142	3502	-41.87	-759.32	-48.78
176	SLU 35	53	-128	3501	-41.94	-759.91	-44
176	SLU 36	52	-136	3502	-41.9	-759.56	-46.87
176	SLU 37	53	-128	3501	-41.94	-759.91	-44
176	SLU 38	52	-136	3502	-41.9	-759.56	-46.87
176	SLU 39	56	-136	3700	-44.33	-802.36	-46.72
176	SLU 40	56	-144	3701	-44.29	-802	-49.59
176	SLU 41	56	-136	3700	-44.33	-802.36	-46.72
176	SLU 42	56	-144	3701	-44.29	-802	-49.59
176	SLU 43	46	-119	3405	-40.76	-743.95	-41.13
176	SLU 44	45	-133	3406	-40.68	-743.36	-45.91
176	SLU 45	46	-119	3405	-40.76	-743.95	-41.13
176	SLU 46	46	-128	3406	-40.71	-743.59	-44
176	SLU 47	45	-133	3406	-40.68	-743.36	-45.91
176	SLU 48	46	-119	3405	-40.76	-743.95	-41.13
176	SLU 49	46	-128	3406	-40.71	-743.59	-44
176	SLU 50	46	-119	3405	-40.76	-743.95	-41.13
176	SLU 51	46	-128	3406	-40.71	-743.59	-44
176	SLU 52	54	-152	3872	-46.27	-842.39	-52.26
176	SLU 53	55	-138	3870	-46.34	-842.99	-47.48
176	SLU 54	55	-146	3871	-46.3	-842.63	-50.35
176	SLU 55	54	-152	3872	-46.27	-842.39	-52.26
176	SLU 56	55	-138	3870	-46.34	-842.99	-47.48
176	SLU 57	55	-146	3871	-46.3	-842.63	-50.35
176	SLU 58	55	-138	3870	-46.34	-842.99	-47.48
176	SLU 59	55	-146	3871	-46.3	-842.63	-50.35
176	SLU 60	59	-146	4070	-48.74	-885.43	-50.2
176	SLU 61	58	-154	4071	-48.69	-885.07	-53.07
176	SLU 62	59	-146	4070	-48.74	-885.43	-50.2
176	SLU 63	58	-154	4071	-48.69	-885.07	-53.07
176	SLU 64	53	-133	3734	-44.72	-814.07	-45.89
176	SLU 65	52	-147	3735	-44.64	-813.47	-50.67
176	SLU 66	53	-133	3734	-44.72	-814.07	-45.89
176	SLU 67	52	-141	3735	-44.67	-813.71	-48.76
176	SLU 68	52	-147	3735	-44.64	-813.47	-50.67
176	SLU 69	53	-133	3734	-44.72	-814.07	-45.89
176	SLU 70	52	-141	3735	-44.67	-813.71	-48.76
176	SLU 71	53	-133	3734	-44.72	-814.07	-45.89
176	SLU 72	52	-141	3735	-44.67	-813.71	-48.76
176	SLU 73	61	-166	4201	-50.23	-912.51	-57.02
176	SLU 74	61	-152	4200	-50.3	-913.1	-52.24
176	SLU 75	61	-160	4200	-50.26	-912.74	-55.11
176	SLU 76	61	-166	4201	-50.23	-912.51	-57.02
176	SLU 77	61	-152	4200	-50.3	-913.1	-52.24
176	SLU 78	61	-160	4200	-50.26	-912.74	-55.11
176	SLU 79	61	-152	4200	-50.3	-913.1	-52.24
176	SLU 80	61	-160	4200	-50.26	-912.74	-55.11
176	SLU 81	65	-160	4399	-52.7	-955.54	-54.96
176	SLU 82	65	-168	4400	-52.65	-955.19	-57.83
176	SLU 83	65	-160	4399	-52.7	-955.54	-54.96
176	SLU 84	65	-168	4400	-52.65	-955.19	-57.83
176	SLE RA 1	39	-99	2800	-33.53	-610.8	-34.25
176	SLE RA 2	39	-109	2801	-33.48	-610.4	-37.44
176	SLE RA 3	39	-99	2800	-33.53	-610.8	-34.25
176	SLE RA 4	39	-105	2800	-33.5	-610.56	-36.16
176	SLE RA 5	39	-109	2801	-33.48	-610.4	-37.44
176	SLE RA 6	39	-99	2800	-33.53	-610.8	-34.25
176	SLE RA 7	39	-105	2800	-33.5	-610.56	-36.16
176	SLE RA 8	39	-99	2800	-33.53	-610.8	-34.25
176	SLE RA 9	39	-105	2800	-33.5	-610.56	-36.16
176	SLE RA 10	45	-121	3111	-37.2	-676.42	-41.67
176	SLE RA 11	45	-112	3110	-37.25	-676.82	-38.49
176	SLE RA 12	45	-117	3111	-37.22	-676.58	-40.4
176	SLE RA 13	45	-121	3111	-37.2	-676.42	-41.67
176	SLE RA 14	45	-112	3110	-37.25	-676.82	-38.49
176	SLE RA 15	45	-117	3111	-37.22	-676.58	-40.4
176	SLE RA 16	45	-112	3110	-37.25	-676.82	-38.49
176	SLE RA 17	45	-117	3111	-37.22	-676.58	-40.4
176	SLE RA 18	47	-117	3243	-38.85	-705.11	-40.3
176	SLE RA 19	47	-123	3244	-38.82	-704.88	-42.21
176	SLE RA 20	47	-117	3243	-38.85	-705.11	-40.3
176	SLE RA 21	47	-123	3244	-38.82	-704.88	-42.21
176	SLE FR 1	39	-99	2800	-33.53	-610.8	-34.25
176	SLE FR 2	39	-101	2800	-33.52	-610.72	-34.89
176	SLE FR 3	39	-99	2800	-33.53	-610.8	-34.25
176	SLE FR 4	41	-107	2933	-35.11	-639.01	-36.7
176	SLE FR 5	41	-105	2933	-35.12	-639.09	-36.07
176	SLE FR 6	43	-108	3022	-36.19	-657.95	-37.28
176	SLE QP 1	39	-99	2800	-33.53	-610.8	-34.25



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
176	SLE QP 2	41	-105	2933	-35.12	-639.09	-36.07
176	SLD 1	236	119	3146	-39.13	-699.39	44.23
176	SLD 2	215	90	3145	-39.11	-698.99	33.58
176	SLD 3	180	-25	3221	-37.8	-682.9	-6.74
176	SLD 4	160	-55	3220	-37.78	-682.5	-17.39
176	SLD 5	191	192	2884	-38.35	-682.33	69.05
176	SLD 6	170	162	2883	-38.32	-681.93	58.41
176	SLD 7	7	-289	3133	-33.92	-627.37	-100.85
176	SLD 8	-14	-319	3132	-33.9	-626.96	-111.5
176	SLD 9	97	109	2734	-36.35	-651.22	39.36
176	SLD 10	76	80	2733	-36.32	-650.82	28.72
176	SLD 11	-87	-372	2983	-31.92	-596.25	-130.55
176	SLD 12	-108	-401	2982	-31.9	-595.85	-141.19
176	SLD 13	-77	-155	2646	-32.47	-595.69	-54.75
176	SLD 14	-97	-185	2645	-32.44	-595.28	-65.39
176	SLD 15	-132	-299	2721	-31.14	-579.2	-105.72
176	SLD 16	-153	-329	2720	-31.12	-578.79	-116.36
176	SLV 1	485	413	3420	-44.33	-777.27	149.6
176	SLV 2	438	346	3418	-44.28	-776.36	125.42
176	SLV 3	358	78	3591	-41.25	-739.28	31.26
176	SLV 4	311	11	3589	-41.2	-738.36	7.09
176	SLV 5	384	582	2821	-42.57	-738.49	207.56
176	SLV 6	337	515	2819	-42.52	-737.57	183.39
176	SLV 7	-40	-534	3390	-32.31	-611.84	-186.88
176	SLV 8	-87	-601	3388	-32.26	-610.93	-211.05
176	SLV 9	170	392	2478	-37.98	-667.26	138.92
176	SLV 10	123	325	2476	-37.93	-666.34	114.74
176	SLV 11	-254	-724	3047	-27.73	-540.61	-255.52
176	SLV 12	-301	-792	3045	-27.68	-539.69	-279.7
176	SLV 13	-228	-221	2277	-29.05	-539.82	-79.22
176	SLV 14	-275	-288	2275	-28.99	-538.9	-103.4
176	SLV 15	-355	-556	2448	-25.97	-501.83	-197.56
176	SLV 16	-402	-623	2446	-25.92	-500.91	-221.73
176	CRTFP Ux+	0	0	0	0	0	0
176	CRTFP Ux-	0	0	0	0	0	0
176	CRTFP Uy+	0	0	0	0	0	0
176	CRTFP Uy-	0	0	0	0	0	0
178	SLU 1	51	-8	1940	0.97	216.13	1.87
178	SLU 2	51	-21	1950	0.99	217.49	5.19
178	SLU 3	51	-8	1940	0.97	216.13	1.87
178	SLU 4	51	-16	1946	0.98	216.95	3.86
178	SLU 5	51	-21	1950	0.99	217.49	5.19
178	SLU 6	51	-8	1940	0.97	216.13	1.87
178	SLU 7	51	-16	1946	0.98	216.95	3.86
178	SLU 8	51	-8	1940	0.97	216.13	1.87
178	SLU 9	51	-16	1946	0.98	216.95	3.86
178	SLU 10	59	-19	2295	1	255.74	4.5
178	SLU 11	60	-5	2285	0.97	254.39	1.18
178	SLU 12	59	-13	2291	0.99	255.2	3.18
178	SLU 13	59	-19	2295	1	255.74	4.5
178	SLU 14	60	-5	2285	0.97	254.39	1.18
178	SLU 15	59	-13	2291	0.99	255.2	3.18
178	SLU 16	60	-5	2285	0.97	254.39	1.18
178	SLU 17	59	-13	2291	0.99	255.2	3.18
178	SLU 18	63	-4	2432	0.97	270.78	0.89
178	SLU 19	63	-12	2439	0.99	271.6	2.88
178	SLU 20	63	-4	2432	0.97	270.78	0.89
178	SLU 21	63	-12	2439	0.99	271.6	2.88
178	SLU 22	58	-7	2189	0.96	243.62	1.5
178	SLU 23	57	-20	2199	0.99	244.98	4.82
178	SLU 24	58	-7	2189	0.96	243.62	1.5
178	SLU 25	57	-15	2195	0.98	244.43	3.5
178	SLU 26	57	-20	2199	0.99	244.98	4.82
178	SLU 27	58	-7	2189	0.96	243.62	1.5
178	SLU 28	57	-15	2195	0.98	244.43	3.5
178	SLU 29	58	-7	2189	0.96	243.62	1.5
178	SLU 30	57	-15	2195	0.98	244.43	3.5
178	SLU 31	65	-17	2544	0.99	283.23	4.14
178	SLU 32	66	-4	2533	0.97	281.87	0.82
178	SLU 33	66	-12	2540	0.98	282.69	2.81
178	SLU 34	65	-17	2544	0.99	283.23	4.14
178	SLU 35	66	-4	2533	0.97	281.87	0.82
178	SLU 36	66	-12	2540	0.98	282.69	2.81
178	SLU 37	66	-4	2533	0.97	281.87	0.82
178	SLU 38	66	-12	2540	0.98	282.69	2.81
178	SLU 39	69	-3	2681	0.97	298.27	0.52
178	SLU 40	69	-11	2688	0.98	299.08	2.51
178	SLU 41	69	-3	2681	0.97	298.27	0.52
178	SLU 42	69	-11	2688	0.98	299.08	2.51
178	SLU 43	65	-11	2437	1.26	271.55	2.56
178	SLU 44	64	-24	2447	1.29	272.9	5.88
178	SLU 45	65	-11	2437	1.26	271.55	2.56
178	SLU 46	64	-19	2443	1.28	272.36	4.55
178	SLU 47	64	-24	2447	1.29	272.9	5.88
178	SLU 48	65	-11	2437	1.26	271.55	2.56
178	SLU 49	64	-19	2443	1.28	272.36	4.55
178	SLU 50	65	-11	2437	1.26	271.55	2.56
178	SLU 51	64	-19	2443	1.28	272.36	4.55
178	SLU 52	72	-21	2792	1.29	311.16	5.19



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
178	SLU 53	73	-8	2781	1.27	309.8	1.87
178	SLU 54	73	-16	2788	1.28	310.62	3.86
178	SLU 55	72	-21	2792	1.29	311.16	5.19
178	SLU 56	73	-8	2781	1.27	309.8	1.87
178	SLU 57	73	-16	2788	1.28	310.62	3.86
178	SLU 58	73	-8	2781	1.27	309.8	1.87
178	SLU 59	73	-16	2788	1.28	310.62	3.86
178	SLU 60	76	-7	2929	1.27	326.2	1.58
178	SLU 61	76	-15	2935	1.28	327.01	3.57
178	SLU 62	76	-7	2929	1.27	326.2	1.58
178	SLU 63	76	-15	2935	1.28	327.01	3.57
178	SLU 64	71	-10	2685	1.26	299.03	2.19
178	SLU 65	70	-23	2696	1.28	300.39	5.51
178	SLU 66	71	-10	2685	1.26	299.03	2.19
178	SLU 67	71	-17	2692	1.27	299.85	4.18
178	SLU 68	70	-23	2696	1.28	300.39	5.51
178	SLU 69	71	-10	2685	1.26	299.03	2.19
178	SLU 70	71	-17	2692	1.27	299.85	4.18
178	SLU 71	71	-10	2685	1.26	299.03	2.19
178	SLU 72	71	-17	2692	1.27	299.85	4.18
178	SLU 73	79	-20	3041	1.28	338.65	4.82
178	SLU 74	79	-7	3030	1.26	337.29	1.5
178	SLU 75	79	-15	3036	1.27	338.1	3.5
178	SLU 76	79	-20	3041	1.28	338.65	4.82
178	SLU 77	79	-7	3030	1.26	337.29	1.5
178	SLU 78	79	-15	3036	1.27	338.1	3.5
178	SLU 79	79	-7	3030	1.26	337.29	1.5
178	SLU 80	79	-15	3036	1.27	338.1	3.5
178	SLU 81	83	-6	3178	1.26	353.69	1.21
178	SLU 82	82	-14	3184	1.27	354.5	3.2
178	SLU 83	83	-6	3178	1.26	353.69	1.21
178	SLU 84	82	-14	3184	1.27	354.5	3.2
178	SLE RA 1	53	-8	2011	0.97	223.98	1.77
178	SLE RA 2	53	-16	2018	0.98	224.89	3.98
178	SLE RA 3	53	-8	2011	0.97	223.98	1.77
178	SLE RA 4	53	-13	2015	0.98	224.53	3.09
178	SLE RA 5	53	-16	2018	0.98	224.89	3.98
178	SLE RA 6	53	-8	2011	0.97	223.98	1.77
178	SLE RA 7	53	-13	2015	0.98	224.53	3.09
178	SLE RA 8	53	-8	2011	0.97	223.98	1.77
178	SLE RA 9	53	-13	2015	0.98	224.53	3.09
178	SLE RA 10	58	-15	2248	0.99	250.39	3.52
178	SLE RA 11	59	-6	2241	0.97	249.49	1.31
178	SLE RA 12	58	-11	2245	0.98	250.03	2.64
178	SLE RA 13	58	-15	2248	0.99	250.39	3.52
178	SLE RA 14	59	-6	2241	0.97	249.49	1.31
178	SLE RA 15	58	-11	2245	0.98	250.03	2.64
178	SLE RA 16	59	-6	2241	0.97	249.49	1.31
178	SLE RA 17	58	-11	2245	0.98	250.03	2.64
178	SLE RA 18	61	-5	2339	0.97	260.42	1.11
178	SLE RA 19	61	-10	2343	0.98	260.96	2.44
178	SLE RA 20	61	-5	2339	0.97	260.42	1.11
178	SLE RA 21	61	-10	2343	0.98	260.96	2.44
178	SLE FR 1	53	-8	2011	0.97	223.98	1.77
178	SLE FR 2	53	-9	2012	0.97	224.17	2.21
178	SLE FR 3	53	-8	2011	0.97	223.98	1.77
178	SLE FR 4	55	-9	2111	0.97	235.1	2.01
178	SLE FR 5	55	-7	2109	0.97	234.92	1.57
178	SLE FR 6	57	-6	2175	0.97	242.2	1.44
178	SLE QP 1	53	-8	2011	0.97	223.98	1.77
178	SLE QP 2	55	-7	2109	0.97	234.92	1.57
178	SLD 1	229	-113	1801	0.51	208.47	27.81
178	SLD 2	210	-86	1803	0.52	207.77	21.29
178	SLD 3	182	-242	1965	0.84	225.64	60.28
178	SLD 4	164	-216	1966	0.85	224.93	53.77
178	SLD 5	185	148	1768	0.33	201.2	-37.53
178	SLD 6	166	175	1770	0.34	200.5	-44.05
178	SLD 7	30	-283	2314	1.43	258.4	70.72
178	SLD 8	11	-257	2316	1.43	257.7	64.2
178	SLD 9	100	243	1903	0.5	212.13	-61.06
178	SLD 10	81	269	1905	0.51	211.43	-67.58
178	SLD 11	-55	-188	2449	1.6	269.33	47.18
178	SLD 12	-74	-162	2451	1.61	268.63	40.67
178	SLD 13	-53	202	2252	1.08	244.9	-50.63
178	SLD 14	-71	228	2254	1.09	244.19	-57.14
178	SLD 15	-99	73	2416	1.41	262.06	-18.16
178	SLD 16	-118	99	2418	1.42	261.36	-24.67
178	SLV 1	452	-246	1397	-0.08	173.54	60.88
178	SLV 2	409	-187	1401	-0.06	171.94	46.09
178	SLV 3	345	-544	1777	0.68	213.29	135.63
178	SLV 4	303	-484	1781	0.7	211.69	120.83
178	SLV 5	351	352	1317	-0.51	156.77	-88.82
178	SLV 6	309	412	1321	-0.49	155.18	-103.61
178	SLV 7	-5	-640	2586	2.03	289.27	160.33
178	SLV 8	-47	-581	2590	2.05	287.68	145.53
178	SLV 9	158	567	1629	-0.11	182.15	-142.39
178	SLV 10	116	627	1633	-0.09	180.56	-157.19
178	SLV 11	-198	-425	2898	2.42	314.65	106.75
178	SLV 12	-240	-366	2902	2.44	313.06	91.96



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
178	SLV 13	-192	470	2438	1.24	258.14	-117.7
178	SLV 14	-234	530	2442	1.26	256.54	-132.49
178	SLV 15	-298	173	2818	2	297.89	-42.95
178	SLV 16	-341	233	2822	2.02	296.29	-57.75
178	CRTFP Ux+	0	0	0	0	0	0
178	CRTFP Ux-	0	0	0	0	0	0
178	CRTFP Uy+	0	0	0	0	0	0
178	CRTFP Uy-	0	0	0	0	0	0
180	SLU 1	44	-95	2675	-28.1	-529.47	-32.7
180	SLU 2	43	-109	2677	-28.04	-529.18	-37.47
180	SLU 3	44	-95	2675	-28.1	-529.47	-32.7
180	SLU 4	44	-103	2676	-28.06	-529.3	-35.56
180	SLU 5	43	-109	2677	-28.04	-529.18	-37.47
180	SLU 6	44	-95	2675	-28.1	-529.47	-32.7
180	SLU 7	44	-103	2676	-28.06	-529.3	-35.56
180	SLU 8	44	-95	2675	-28.1	-529.47	-32.7
180	SLU 9	44	-103	2676	-28.06	-529.3	-35.56
180	SLU 10	53	-127	3133	-32.73	-615.2	-43.81
180	SLU 11	53	-114	3131	-32.8	-615.49	-39.03
180	SLU 12	53	-122	3132	-32.76	-615.31	-41.9
180	SLU 13	53	-127	3133	-32.73	-615.2	-43.81
180	SLU 14	53	-114	3131	-32.8	-615.49	-39.03
180	SLU 15	53	-122	3132	-32.76	-615.31	-41.9
180	SLU 16	53	-114	3131	-32.8	-615.49	-39.03
180	SLU 17	53	-122	3132	-32.76	-615.31	-41.9
180	SLU 18	57	-122	3326	-34.81	-652.35	-41.74
180	SLU 19	57	-130	3328	-34.77	-652.18	-44.61
180	SLU 20	57	-122	3326	-34.81	-652.35	-41.74
180	SLU 21	57	-130	3328	-34.77	-652.18	-44.61
180	SLU 22	51	-109	2997	-31.43	-590.34	-37.44
180	SLU 23	51	-123	3000	-31.37	-590.04	-42.21
180	SLU 24	51	-109	2997	-31.43	-590.34	-37.44
180	SLU 25	51	-117	2999	-31.39	-590.16	-40.3
180	SLU 26	51	-123	3000	-31.37	-590.04	-42.21
180	SLU 27	51	-109	2997	-31.43	-590.34	-37.44
180	SLU 28	51	-117	2999	-31.39	-590.16	-40.3
180	SLU 29	51	-109	2997	-31.43	-590.34	-37.44
180	SLU 30	51	-117	2999	-31.39	-590.16	-40.3
180	SLU 31	60	-141	3456	-36.06	-676.06	-48.55
180	SLU 32	60	-128	3453	-36.12	-676.35	-43.77
180	SLU 33	60	-136	3455	-36.09	-676.17	-46.64
180	SLU 34	60	-141	3456	-36.06	-676.06	-48.55
180	SLU 35	60	-128	3453	-36.12	-676.35	-43.77
180	SLU 36	60	-136	3455	-36.09	-676.17	-46.64
180	SLU 37	60	-128	3453	-36.12	-676.35	-43.77
180	SLU 38	60	-136	3455	-36.09	-676.17	-46.64
180	SLU 39	64	-136	3648	-38.14	-713.21	-46.49
180	SLU 40	64	-144	3650	-38.1	-713.04	-49.35
180	SLU 41	64	-136	3648	-38.14	-713.21	-46.49
180	SLU 42	64	-144	3650	-38.1	-713.04	-49.35
180	SLU 43	54	-119	3367	-35.39	-667.45	-40.88
180	SLU 44	54	-133	3369	-35.33	-667.16	-45.66
180	SLU 45	54	-119	3367	-35.39	-667.45	-40.88
180	SLU 46	54	-127	3368	-35.35	-667.27	-43.75
180	SLU 47	54	-133	3369	-35.33	-667.16	-45.66
180	SLU 48	54	-119	3367	-35.39	-667.45	-40.88
180	SLU 49	54	-127	3368	-35.35	-667.27	-43.75
180	SLU 50	54	-119	3367	-35.39	-667.45	-40.88
180	SLU 51	54	-127	3368	-35.35	-667.27	-43.75
180	SLU 52	64	-151	3825	-40.02	-753.17	-51.99
180	SLU 53	64	-138	3823	-40.09	-753.46	-47.21
180	SLU 54	64	-146	3824	-40.05	-753.29	-50.08
180	SLU 55	64	-151	3825	-40.02	-753.17	-51.99
180	SLU 56	64	-138	3823	-40.09	-753.46	-47.21
180	SLU 57	64	-146	3824	-40.05	-753.29	-50.08
180	SLU 58	64	-138	3823	-40.09	-753.46	-47.21
180	SLU 59	64	-146	3824	-40.05	-753.29	-50.08
180	SLU 60	68	-145	4018	-42.1	-790.33	-49.93
180	SLU 61	68	-154	4020	-42.06	-790.15	-52.79
180	SLU 62	68	-145	4018	-42.1	-790.33	-49.93
180	SLU 63	68	-154	4020	-42.06	-790.15	-52.79
180	SLU 64	62	-133	3689	-38.72	-728.31	-45.62
180	SLU 65	61	-146	3692	-38.66	-728.02	-50.4
180	SLU 66	62	-133	3689	-38.72	-728.31	-45.62
180	SLU 67	61	-141	3691	-38.68	-728.14	-48.49
180	SLU 68	61	-146	3692	-38.66	-728.02	-50.4
180	SLU 69	62	-133	3689	-38.72	-728.31	-45.62
180	SLU 70	61	-141	3691	-38.68	-728.14	-48.49
180	SLU 71	62	-133	3689	-38.72	-728.31	-45.62
180	SLU 72	61	-141	3691	-38.68	-728.14	-48.49
180	SLU 73	71	-165	4148	-43.35	-814.03	-56.73
180	SLU 74	71	-151	4145	-43.41	-814.33	-51.95
180	SLU 75	71	-160	4147	-43.38	-814.15	-54.82
180	SLU 76	71	-165	4148	-43.35	-814.03	-56.73
180	SLU 77	71	-151	4145	-43.41	-814.33	-51.95
180	SLU 78	71	-160	4147	-43.38	-814.15	-54.82
180	SLU 79	71	-151	4145	-43.41	-814.33	-51.95
180	SLU 80	71	-160	4147	-43.38	-814.15	-54.82
180	SLU 81	75	-159	4340	-45.43	-851.19	-54.67



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
180	SLU 82	75	-168	4342	-45.39	-851.01	-57.53
180	SLU 83	75	-159	4340	-45.43	-851.19	-54.67
180	SLU 84	75	-168	4342	-45.39	-851.01	-57.53
180	SLE RA 1	46	-99	2767	-29.05	-546.86	-34.05
180	SLE RA 2	46	-108	2769	-29.01	-546.67	-37.24
180	SLE RA 3	46	-99	2767	-29.05	-546.86	-34.05
180	SLE RA 4	46	-105	2768	-29.03	-546.75	-35.96
180	SLE RA 5	46	-108	2769	-29.01	-546.67	-37.24
180	SLE RA 6	46	-99	2767	-29.05	-546.86	-34.05
180	SLE RA 7	46	-105	2768	-29.03	-546.75	-35.96
180	SLE RA 8	46	-99	2767	-29.05	-546.86	-34.05
180	SLE RA 9	46	-105	2768	-29.03	-546.75	-35.96
180	SLE RA 10	52	-121	3073	-32.14	-604.01	-41.46
180	SLE RA 11	52	-111	3071	-32.18	-604.21	-38.27
180	SLE RA 12	52	-117	3072	-32.16	-604.09	-40.18
180	SLE RA 13	52	-121	3073	-32.14	-604.01	-41.46
180	SLE RA 14	52	-111	3071	-32.18	-604.21	-38.27
180	SLE RA 15	52	-117	3072	-32.16	-604.09	-40.18
180	SLE RA 16	52	-111	3071	-32.18	-604.21	-38.27
180	SLE RA 17	52	-117	3072	-32.16	-604.09	-40.18
180	SLE RA 18	55	-117	3201	-33.52	-628.78	-40.08
180	SLE RA 19	55	-122	3202	-33.5	-628.66	-41.99
180	SLE RA 20	55	-117	3201	-33.52	-628.78	-40.08
180	SLE RA 21	55	-122	3202	-33.5	-628.66	-41.99
180	SLE FR 1	46	-99	2767	-29.05	-546.86	-34.05
180	SLE FR 2	46	-101	2767	-29.04	-546.82	-34.69
180	SLE FR 3	46	-99	2767	-29.05	-546.86	-34.05
180	SLE FR 4	48	-106	2897	-30.39	-571.4	-36.5
180	SLE FR 5	49	-104	2897	-30.39	-571.44	-35.86
180	SLE FR 6	50	-108	2984	-31.29	-587.82	-37.07
180	SLE QP 1	46	-99	2767	-29.05	-546.86	-34.05
180	SLE QP 2	49	-104	2897	-30.39	-571.44	-35.86
180	SLD 1	257	119	3096	-33.67	-608.11	44.48
180	SLD 2	233	90	3095	-33.66	-607.77	33.84
180	SLD 3	198	-25	3169	-32.61	-620.36	-6.52
180	SLD 4	175	-54	3168	-32.59	-620.03	-17.16
180	SLD 5	208	192	2847	-33	-563.97	69.31
180	SLD 6	185	162	2847	-32.98	-563.64	58.67
180	SLD 7	13	-289	3089	-29.45	-604.81	-100.68
180	SLD 8	-11	-319	3088	-29.43	-604.48	-111.32
180	SLD 9	108	110	2707	-31.36	-538.4	39.6
180	SLD 10	84	80	2706	-31.34	-538.06	28.96
180	SLD 11	-88	-371	2948	-27.8	-579.24	-130.4
180	SLD 12	-111	-401	2947	-27.79	-578.9	-141.03
180	SLD 13	-78	-154	2627	-28.2	-522.85	-54.56
180	SLD 14	-101	-184	2626	-28.18	-522.52	-65.2
180	SLD 15	-136	-299	2699	-27.13	-535.1	-105.56
180	SLD 16	-159	-328	2698	-27.11	-534.77	-116.2
180	SLV 1	524	413	3352	-37.93	-655.37	149.9
180	SLV 2	471	346	3350	-37.89	-654.61	125.74
180	SLV 3	389	78	3516	-35.46	-683.48	31.5
180	SLV 4	336	11	3514	-35.42	-682.73	7.35
180	SLV 5	414	582	2785	-36.42	-554.24	207.88
180	SLV 6	362	515	2782	-36.38	-553.49	183.73
180	SLV 7	-36	-534	3333	-28.18	-647.96	-186.76
180	SLV 8	-88	-601	3331	-28.14	-647.2	-210.92
180	SLV 9	185	392	2463	-32.65	-495.68	139.19
180	SLV 10	133	325	2461	-32.61	-494.92	115.04
180	SLV 11	-265	-724	3012	-24.41	-589.39	-255.45
180	SLV 12	-317	-791	3010	-24.37	-588.63	-279.61
180	SLV 13	-239	-220	2280	-25.37	-460.15	-79.07
180	SLV 14	-292	-287	2278	-25.33	-459.39	-103.22
180	SLV 15	-374	-555	2445	-22.89	-488.26	-197.46
180	SLV 16	-427	-622	2443	-22.85	-487.51	-221.62
180	CRTFP Ux+	0	0	0	0	0	0
180	CRTFP Ux-	0	0	0	0	0	0
180	CRTFP Uy+	0	0	0	0	0	0
180	CRTFP Uy-	0	0	0	0	0	0
182	SLU 1	55	-8	1981	2	201.52	1.86
182	SLU 2	54	-21	1993	2.04	202.52	5.18
182	SLU 3	55	-8	1981	2	201.52	1.86
182	SLU 4	55	-16	1988	2.02	202.12	3.85
182	SLU 5	54	-21	1993	2.04	202.52	5.18
182	SLU 6	55	-8	1981	2	201.52	1.86
182	SLU 7	55	-16	1988	2.02	202.12	3.85
182	SLU 8	55	-8	1981	2	201.52	1.86
182	SLU 9	55	-16	1988	2.02	202.12	3.85
182	SLU 10	63	-19	2341	2.27	235.48	4.5
182	SLU 11	65	-5	2329	2.23	234.49	1.19
182	SLU 12	64	-13	2336	2.26	235.08	3.18
182	SLU 13	63	-19	2341	2.27	235.48	4.5
182	SLU 14	65	-5	2329	2.23	234.49	1.19
182	SLU 15	64	-13	2336	2.26	235.08	3.18
182	SLU 16	65	-5	2329	2.23	234.49	1.19
182	SLU 17	64	-13	2336	2.26	235.08	3.18
182	SLU 18	68	-4	2478	2.33	248.61	0.9
182	SLU 19	68	-12	2485	2.36	249.21	2.89
182	SLU 20	68	-4	2478	2.33	248.61	0.9
182	SLU 21	68	-12	2485	2.36	249.21	2.89



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
182	SLU 22	62	-7	2232	2.16	225.2	1.5
182	SLU 23	61	-20	2244	2.2	226.19	4.82
182	SLU 24	62	-7	2232	2.16	225.2	1.5
182	SLU 25	62	-15	2239	2.18	225.8	3.49
182	SLU 26	61	-20	2244	2.2	226.19	4.82
182	SLU 27	62	-7	2232	2.16	225.2	1.5
182	SLU 28	62	-15	2239	2.18	225.8	3.49
182	SLU 29	62	-7	2232	2.16	225.2	1.5
182	SLU 30	62	-15	2239	2.18	225.8	3.49
182	SLU 31	70	-17	2592	2.43	259.15	4.15
182	SLU 32	72	-4	2580	2.39	258.16	0.83
182	SLU 33	71	-12	2587	2.41	258.76	2.82
182	SLU 34	70	-17	2592	2.43	259.15	4.15
182	SLU 35	72	-4	2580	2.39	258.16	0.83
182	SLU 36	71	-12	2587	2.41	258.76	2.82
182	SLU 37	72	-4	2580	2.39	258.16	0.83
182	SLU 38	71	-12	2587	2.41	258.76	2.82
182	SLU 39	76	-3	2729	2.49	272.29	0.54
182	SLU 40	75	-11	2736	2.51	272.88	2.53
182	SLU 41	76	-3	2729	2.49	272.29	0.54
182	SLU 42	75	-11	2736	2.51	272.88	2.53
182	SLU 43	69	-11	2490	2.55	253.86	2.54
182	SLU 44	68	-24	2501	2.59	254.86	5.86
182	SLU 45	69	-11	2490	2.55	253.86	2.54
182	SLU 46	69	-19	2497	2.57	254.46	4.53
182	SLU 47	68	-24	2501	2.59	254.86	5.86
182	SLU 48	69	-11	2490	2.55	253.86	2.54
182	SLU 49	69	-19	2497	2.57	254.46	4.53
182	SLU 50	69	-11	2490	2.55	253.86	2.54
182	SLU 51	69	-19	2497	2.57	254.46	4.53
182	SLU 52	78	-21	2849	2.82	287.82	5.18
182	SLU 53	79	-8	2838	2.78	286.83	1.87
182	SLU 54	78	-16	2845	2.8	287.42	3.86
182	SLU 55	78	-21	2849	2.82	287.82	5.18
182	SLU 56	79	-8	2838	2.78	286.83	1.87
182	SLU 57	78	-16	2845	2.8	287.42	3.86
182	SLU 58	79	-8	2838	2.78	286.83	1.87
182	SLU 59	78	-16	2845	2.8	287.42	3.86
182	SLU 60	83	-7	2987	2.88	300.95	1.58
182	SLU 61	82	-15	2994	2.9	301.55	3.57
182	SLU 62	83	-7	2987	2.88	300.95	1.58
182	SLU 63	82	-15	2994	2.9	301.55	3.57
182	SLU 64	76	-10	2741	2.7	277.54	2.18
182	SLU 65	75	-23	2752	2.74	278.53	5.5
182	SLU 66	76	-10	2741	2.7	277.54	2.18
182	SLU 67	76	-17	2748	2.73	278.14	4.17
182	SLU 68	75	-23	2752	2.74	278.53	5.5
182	SLU 69	76	-10	2741	2.7	277.54	2.18
182	SLU 70	76	-17	2748	2.73	278.14	4.17
182	SLU 71	76	-10	2741	2.7	277.54	2.18
182	SLU 72	76	-17	2748	2.73	278.14	4.17
182	SLU 73	85	-20	3100	2.97	311.49	4.83
182	SLU 74	86	-7	3089	2.93	310.5	1.51
182	SLU 75	85	-15	3095	2.96	311.1	3.5
182	SLU 76	85	-20	3100	2.97	311.49	4.83
182	SLU 77	86	-7	3089	2.93	310.5	1.51
182	SLU 78	85	-15	3095	2.96	311.1	3.5
182	SLU 79	86	-7	3089	2.93	310.5	1.51
182	SLU 80	85	-15	3095	2.96	311.1	3.5
182	SLU 81	90	-6	3238	3.03	324.63	1.22
182	SLU 82	89	-14	3245	3.06	325.22	3.21
182	SLU 83	90	-6	3238	3.03	324.63	1.22
182	SLU 84	89	-14	3245	3.06	325.22	3.21
182	SLE RA 1	57	-8	2053	2.04	208.29	1.76
182	SLE RA 2	57	-16	2061	2.07	208.95	3.97
182	SLE RA 3	57	-8	2053	2.04	208.29	1.76
182	SLE RA 4	57	-13	2058	2.06	208.69	3.08
182	SLE RA 5	57	-16	2061	2.07	208.95	3.97
182	SLE RA 6	57	-8	2053	2.04	208.29	1.76
182	SLE RA 7	57	-13	2058	2.06	208.69	3.08
182	SLE RA 8	57	-8	2053	2.04	208.29	1.76
182	SLE RA 9	57	-13	2058	2.06	208.69	3.08
182	SLE RA 10	63	-15	2293	2.23	230.93	3.52
182	SLE RA 11	63	-6	2285	2.2	230.26	1.31
182	SLE RA 12	63	-11	2290	2.22	230.66	2.64
182	SLE RA 13	63	-15	2293	2.23	230.93	3.52
182	SLE RA 14	63	-6	2285	2.2	230.26	1.31
182	SLE RA 15	63	-11	2290	2.22	230.66	2.64
182	SLE RA 16	63	-6	2285	2.2	230.26	1.31
182	SLE RA 17	63	-11	2290	2.22	230.66	2.64
182	SLE RA 18	66	-5	2384	2.27	239.68	1.12
182	SLE RA 19	66	-10	2389	2.28	240.08	2.44
182	SLE RA 20	66	-5	2384	2.27	239.68	1.12
182	SLE RA 21	66	-10	2389	2.28	240.08	2.44
182	SLE FR 1	57	-8	2053	2.04	208.29	1.76
182	SLE FR 2	57	-9	2055	2.05	208.42	2.2
182	SLE FR 3	57	-8	2053	2.04	208.29	1.76
182	SLE FR 4	60	-9	2154	2.12	217.84	2.01
182	SLE FR 5	60	-7	2152	2.11	217.71	1.57



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
182	SLE FR 6	62	-6	2219	2.15	223.99	1.44
182	SLE QP 1	57	-8	2053	2.04	208.29	1.76
182	SLE QP 2	60	-7	2152	2.11	217.71	1.57
182	SLD 1	246	-113	1833	1.46	193.88	27.74
182	SLD 2	226	-87	1835	1.46	193.57	21.24
182	SLD 3	196	-242	2008	1.95	208.21	60.19
182	SLD 4	175	-216	2010	1.96	207.89	53.69
182	SLD 5	200	148	1791	1.16	188.94	-37.52
182	SLD 6	179	174	1793	1.17	188.62	-44.02
182	SLD 7	31	-283	2373	2.81	236.7	70.64
182	SLD 8	10	-256	2375	2.82	236.38	64.15
182	SLD 9	110	243	1930	1.41	199.03	-61.01
182	SLD 10	89	269	1932	1.41	198.72	-67.51
182	SLD 11	-60	-188	2512	3.05	246.79	47.15
182	SLD 12	-80	-162	2514	3.06	246.47	40.66
182	SLD 13	-55	202	2295	2.26	227.52	-50.56
182	SLD 14	-76	228	2297	2.27	227.21	-57.05
182	SLD 15	-106	73	2470	2.76	241.85	-18.11
182	SLD 16	-127	99	2472	2.76	241.53	-24.61
182	SLV 1	486	-246	1415	0.59	162.38	60.73
182	SLV 2	438	-187	1419	0.61	161.66	45.98
182	SLV 3	369	-544	1821	1.74	195.56	135.42
182	SLV 4	322	-484	1825	1.75	194.84	120.66
182	SLV 5	382	351	1314	-0.08	151.04	-88.8
182	SLV 6	334	411	1319	-0.07	150.32	-103.55
182	SLV 7	-8	-640	2667	3.73	261.64	160.16
182	SLV 8	-55	-580	2671	3.74	260.92	145.41
182	SLV 9	175	566	1634	0.48	174.49	-142.27
182	SLV 10	128	626	1638	0.49	173.78	-157.02
182	SLV 11	-214	-425	2986	4.29	285.09	106.68
182	SLV 12	-262	-365	2991	4.31	284.38	91.93
182	SLV 13	-202	470	2480	2.47	240.57	-117.53
182	SLV 14	-249	530	2484	2.48	239.85	-132.28
182	SLV 15	-319	173	2886	3.61	273.75	-42.84
182	SLV 16	-366	233	2890	3.63	273.03	-57.6
182	CRTFP Ux+	0	0	0	0	0	0
182	CRTFP Ux-	0	0	0	0	0	0
182	CRTFP Uy+	0	0	0	0	0	0
182	CRTFP Uy-	0	0	0	0	0	0
184	SLU 1	52	-95	2684	-24.96	-497.57	-32.51
184	SLU 2	51	-109	2688	-24.91	-497.72	-37.28
184	SLU 3	52	-95	2684	-24.96	-497.57	-32.51
184	SLU 4	52	-103	2687	-24.93	-497.66	-35.37
184	SLU 5	51	-109	2688	-24.91	-497.72	-37.28
184	SLU 6	52	-95	2684	-24.96	-497.57	-32.51
184	SLU 7	52	-103	2687	-24.93	-497.66	-35.37
184	SLU 8	52	-95	2684	-24.96	-497.57	-32.51
184	SLU 9	52	-103	2687	-24.93	-497.66	-35.37
184	SLU 10	62	-127	3142	-28.93	-576.33	-43.59
184	SLU 11	62	-113	3138	-28.98	-576.18	-38.82
184	SLU 12	62	-122	3141	-28.95	-576.27	-41.68
184	SLU 13	62	-127	3142	-28.93	-576.33	-43.59
184	SLU 14	62	-113	3138	-28.98	-576.18	-38.82
184	SLU 15	62	-122	3141	-28.95	-576.27	-41.68
184	SLU 16	62	-113	3138	-28.98	-576.18	-38.82
184	SLU 17	62	-122	3141	-28.95	-576.27	-41.68
184	SLU 18	67	-121	3333	-30.7	-609.88	-41.53
184	SLU 19	66	-130	3335	-30.67	-609.97	-44.39
184	SLU 20	67	-121	3333	-30.7	-609.88	-41.53
184	SLU 21	66	-130	3335	-30.67	-609.97	-44.39
184	SLU 22	59	-109	3005	-27.8	-553.15	-37.23
184	SLU 23	59	-122	3009	-27.76	-553.3	-42
184	SLU 24	59	-109	3005	-27.8	-553.15	-37.23
184	SLU 25	59	-117	3007	-27.78	-553.24	-40.09
184	SLU 26	59	-122	3009	-27.76	-553.3	-42
184	SLU 27	59	-109	3005	-27.8	-553.15	-37.23
184	SLU 28	59	-117	3007	-27.78	-553.24	-40.09
184	SLU 29	59	-109	3005	-27.8	-553.15	-37.23
184	SLU 30	59	-117	3007	-27.78	-553.24	-40.09
184	SLU 31	70	-141	3463	-31.78	-631.92	-48.31
184	SLU 32	70	-127	3459	-31.82	-631.77	-43.54
184	SLU 33	70	-135	3461	-31.8	-631.86	-46.4
184	SLU 34	70	-141	3463	-31.78	-631.92	-48.31
184	SLU 35	70	-127	3459	-31.82	-631.77	-43.54
184	SLU 36	70	-135	3461	-31.8	-631.86	-46.4
184	SLU 37	70	-127	3459	-31.82	-631.77	-43.54
184	SLU 38	70	-135	3461	-31.8	-631.86	-46.4
184	SLU 39	74	-135	3654	-33.55	-665.46	-46.25
184	SLU 40	74	-143	3656	-33.52	-665.55	-49.11
184	SLU 41	74	-135	3654	-33.55	-665.46	-46.25
184	SLU 42	74	-143	3656	-33.52	-665.55	-49.11
184	SLU 43	64	-119	3379	-31.47	-627.78	-40.64
184	SLU 44	64	-132	3383	-31.42	-627.93	-45.41
184	SLU 45	64	-119	3379	-31.47	-627.78	-40.64
184	SLU 46	64	-127	3382	-31.44	-627.87	-43.51
184	SLU 47	64	-132	3383	-31.42	-627.93	-45.41
184	SLU 48	64	-119	3379	-31.47	-627.78	-40.64
184	SLU 49	64	-127	3382	-31.44	-627.87	-43.51
184	SLU 50	64	-119	3379	-31.47	-627.78	-40.64



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
184	SLU 51	64	-127	3382	-31.44	-627.87	-43.51
184	SLU 52	75	-151	3837	-35.44	-706.55	-51.73
184	SLU 53	75	-137	3833	-35.49	-706.39	-46.96
184	SLU 54	75	-145	3836	-35.46	-706.49	-49.82
184	SLU 55	75	-151	3837	-35.44	-706.55	-51.73
184	SLU 56	75	-137	3833	-35.49	-706.39	-46.96
184	SLU 57	75	-145	3836	-35.46	-706.49	-49.82
184	SLU 58	75	-137	3833	-35.49	-706.39	-46.96
184	SLU 59	75	-145	3836	-35.46	-706.49	-49.82
184	SLU 60	79	-145	4028	-37.21	-740.09	-49.66
184	SLU 61	79	-153	4030	-37.18	-740.18	-52.52
184	SLU 62	79	-145	4028	-37.21	-740.09	-49.66
184	SLU 63	79	-153	4030	-37.18	-740.18	-52.52
184	SLU 64	72	-133	3700	-34.31	-683.36	-45.37
184	SLU 65	72	-146	3704	-34.27	-683.51	-50.14
184	SLU 66	72	-133	3700	-34.31	-683.36	-45.37
184	SLU 67	72	-141	3703	-34.29	-683.45	-48.23
184	SLU 68	72	-146	3704	-34.27	-683.51	-50.14
184	SLU 69	72	-133	3700	-34.31	-683.36	-45.37
184	SLU 70	72	-141	3703	-34.29	-683.45	-48.23
184	SLU 71	72	-133	3700	-34.31	-683.36	-45.37
184	SLU 72	72	-141	3703	-34.29	-683.45	-48.23
184	SLU 73	83	-165	4158	-38.29	-762.13	-56.45
184	SLU 74	83	-151	4154	-38.33	-761.98	-51.68
184	SLU 75	83	-159	4157	-38.31	-762.07	-54.54
184	SLU 76	83	-165	4158	-38.29	-762.13	-56.45
184	SLU 77	83	-151	4154	-38.33	-761.98	-51.68
184	SLU 78	83	-159	4157	-38.31	-762.07	-54.54
184	SLU 79	83	-151	4154	-38.33	-761.98	-51.68
184	SLU 80	83	-159	4157	-38.31	-762.07	-54.54
184	SLU 81	87	-159	4349	-40.06	-795.67	-54.38
184	SLU 82	87	-167	4351	-40.03	-795.76	-57.24
184	SLU 83	87	-159	4349	-40.06	-795.67	-54.38
184	SLU 84	87	-167	4351	-40.03	-795.76	-57.24
184	SLE RA 1	54	-99	2776	-25.77	-513.45	-33.86
184	SLE RA 2	54	-108	2778	-25.74	-513.55	-37.04
184	SLE RA 3	54	-99	2776	-25.77	-513.45	-33.86
184	SLE RA 4	54	-104	2777	-25.75	-513.51	-35.77
184	SLE RA 5	54	-108	2778	-25.74	-513.55	-37.04
184	SLE RA 6	54	-99	2776	-25.77	-513.45	-33.86
184	SLE RA 7	54	-104	2777	-25.75	-513.51	-35.77
184	SLE RA 8	54	-99	2776	-25.77	-513.45	-33.86
184	SLE RA 9	54	-104	2777	-25.75	-513.51	-35.77
184	SLE RA 10	61	-120	3081	-28.42	-565.96	-41.25
184	SLE RA 11	61	-111	3078	-28.45	-565.86	-38.07
184	SLE RA 12	61	-117	3080	-28.43	-565.92	-39.97
184	SLE RA 13	61	-120	3081	-28.42	-565.96	-41.25
184	SLE RA 14	61	-111	3078	-28.45	-565.86	-38.07
184	SLE RA 15	61	-117	3080	-28.43	-565.92	-39.97
184	SLE RA 16	61	-111	3078	-28.45	-565.86	-38.07
184	SLE RA 17	61	-117	3080	-28.43	-565.92	-39.97
184	SLE RA 18	64	-117	3208	-29.6	-588.32	-39.87
184	SLE RA 19	64	-122	3210	-29.58	-588.38	-41.78
184	SLE RA 20	64	-117	3208	-29.6	-588.32	-39.87
184	SLE RA 21	64	-122	3210	-29.58	-588.38	-41.78
184	SLE FR 1	54	-99	2776	-25.77	-513.45	-33.86
184	SLE FR 2	54	-101	2776	-25.76	-513.47	-34.5
184	SLE FR 3	54	-99	2776	-25.77	-513.45	-33.86
184	SLE FR 4	57	-106	2906	-26.91	-535.93	-36.3
184	SLE FR 5	57	-104	2905	-26.92	-535.91	-35.66
184	SLE FR 6	59	-108	2992	-27.68	-550.88	-36.86
184	SLE QP 1	54	-99	2776	-25.77	-513.45	-33.86
184	SLE QP 2	57	-104	2905	-26.92	-535.91	-35.66
184	SLD 1	280	119	3092	-29.55	-567.16	44.66
184	SLD 2	255	90	3091	-29.54	-566.93	34.03
184	SLD 3	218	-25	3168	-28.76	-577.05	-6.33
184	SLD 4	192	-54	3167	-28.75	-576.81	-16.95
184	SLD 5	227	192	2847	-28.92	-530.38	69.47
184	SLD 6	202	162	2845	-28.91	-530.14	58.85
184	SLD 7	20	-289	3100	-26.26	-563.33	-100.47
184	SLD 8	-6	-318	3099	-26.25	-563.09	-111.09
184	SLD 9	120	110	2712	-27.58	-508.73	39.77
184	SLD 10	94	81	2711	-27.57	-508.49	29.14
184	SLD 11	-88	-371	2965	-24.92	-541.68	-130.17
184	SLD 12	-114	-400	2964	-24.91	-541.44	-140.8
184	SLD 13	-79	-154	2644	-25.09	-495.01	-54.37
184	SLD 14	-104	-183	2642	-25.08	-494.77	-65
184	SLD 15	-141	-298	2720	-24.29	-504.89	-105.36
184	SLD 16	-167	-328	2719	-24.28	-504.65	-115.98
184	SLV 1	568	412	3332	-32.98	-607.48	150.05
184	SLV 2	509	346	3329	-32.95	-606.94	125.92
184	SLV 3	424	78	3505	-31.13	-630	31.7
184	SLV 4	366	11	3502	-31.11	-629.46	7.57
184	SLV 5	448	582	2772	-31.55	-523.41	208
184	SLV 6	389	515	2769	-31.52	-522.87	183.87
184	SLV 7	-30	-534	3348	-25.39	-598.48	-186.51
184	SLV 8	-89	-601	3346	-25.36	-597.94	-210.65
184	SLV 9	202	392	2465	-28.47	-473.88	139.32
184	SLV 10	144	326	2462	-28.45	-473.33	115.19



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
184	SLV 11	-276	-723	3042	-22.31	-548.95	-255.2
184	SLV 12	-334	-790	3039	-22.29	-548.4	-279.33
184	SLV 13	-252	-219	2309	-22.73	-442.36	-78.89
184	SLV 14	-311	-286	2306	-22.71	-441.82	-103.02
184	SLV 15	-395	-554	2482	-20.88	-464.88	-197.25
184	SLV 16	-454	-621	2479	-20.86	-464.34	-221.38
184	CRTFP Ux+	0	0	0	0	0	0
184	CRTFP Ux-	0	0	0	0	0	0
184	CRTFP Uy+	0	0	0	0	0	0
184	CRTFP Uy-	0	0	0	0	0	0
186	SLU 1	59	-8	2057	3.33	207.95	1.86
186	SLU 2	58	-21	2069	3.39	208.91	5.17
186	SLU 3	59	-8	2057	3.33	207.95	1.86
186	SLU 4	58	-16	2064	3.36	208.52	3.84
186	SLU 5	58	-21	2069	3.39	208.91	5.17
186	SLU 6	59	-8	2057	3.33	207.95	1.86
186	SLU 7	58	-16	2064	3.36	208.52	3.84
186	SLU 8	59	-8	2057	3.33	207.95	1.86
186	SLU 9	58	-16	2064	3.36	208.52	3.84
186	SLU 10	68	-19	2428	3.91	241.16	4.51
186	SLU 11	70	-6	2415	3.85	240.19	1.21
186	SLU 12	69	-13	2423	3.88	240.77	3.19
186	SLU 13	68	-19	2428	3.91	241.16	4.51
186	SLU 14	70	-6	2415	3.85	240.19	1.21
186	SLU 15	69	-13	2423	3.88	240.77	3.19
186	SLU 16	70	-6	2415	3.85	240.19	1.21
186	SLU 17	69	-13	2423	3.88	240.77	3.19
186	SLU 18	74	-4	2569	4.07	254.02	0.93
186	SLU 19	73	-12	2576	4.11	254.59	2.91
186	SLU 20	74	-4	2569	4.07	254.02	0.93
186	SLU 21	73	-12	2576	4.11	254.59	2.91
186	SLU 22	67	-7	2315	3.69	231.09	1.52
186	SLU 23	65	-20	2328	3.75	232.05	4.82
186	SLU 24	67	-7	2315	3.69	231.09	1.52
186	SLU 25	66	-15	2322	3.73	231.66	3.5
186	SLU 26	65	-20	2328	3.75	232.05	4.82
186	SLU 27	67	-7	2315	3.69	231.09	1.52
186	SLU 28	66	-15	2322	3.73	231.66	3.5
186	SLU 29	67	-7	2315	3.69	231.09	1.52
186	SLU 30	66	-15	2322	3.73	231.66	3.5
186	SLU 31	76	-17	2686	4.27	264.3	4.16
186	SLU 32	77	-4	2673	4.21	263.34	0.86
186	SLU 33	76	-12	2681	4.25	263.91	2.84
186	SLU 34	76	-17	2686	4.27	264.3	4.16
186	SLU 35	77	-4	2673	4.21	263.34	0.86
186	SLU 36	76	-12	2681	4.25	263.91	2.84
186	SLU 37	77	-4	2673	4.21	263.34	0.86
186	SLU 38	76	-12	2681	4.25	263.91	2.84
186	SLU 39	82	-3	2827	4.43	277.16	0.58
186	SLU 40	81	-11	2835	4.47	277.73	2.56
186	SLU 41	82	-3	2827	4.43	277.16	0.58
186	SLU 42	81	-11	2835	4.47	277.73	2.56
186	SLU 43	75	-11	2585	4.2	262.4	2.54
186	SLU 44	73	-24	2598	4.26	263.36	5.84
186	SLU 45	75	-11	2585	4.2	262.4	2.54
186	SLU 46	74	-19	2593	4.24	262.97	4.52
186	SLU 47	73	-24	2598	4.26	263.36	5.84
186	SLU 48	75	-11	2585	4.2	262.4	2.54
186	SLU 49	74	-19	2593	4.24	262.97	4.52
186	SLU 50	75	-11	2585	4.2	262.4	2.54
186	SLU 51	74	-19	2593	4.24	262.97	4.52
186	SLU 52	83	-22	2956	4.78	295.61	5.19
186	SLU 53	85	-8	2943	4.72	294.64	1.89
186	SLU 54	84	-16	2951	4.76	295.22	3.87
186	SLU 55	83	-22	2956	4.78	295.61	5.19
186	SLU 56	85	-8	2943	4.72	294.64	1.89
186	SLU 57	84	-16	2951	4.76	295.22	3.87
186	SLU 58	85	-8	2943	4.72	294.64	1.89
186	SLU 59	84	-16	2951	4.76	295.22	3.87
186	SLU 60	89	-7	3097	4.95	308.47	1.6
186	SLU 61	88	-15	3105	4.98	309.04	3.59
186	SLU 62	89	-7	3097	4.95	308.47	1.6
186	SLU 63	88	-15	3105	4.98	309.04	3.59
186	SLU 64	82	-10	2843	4.57	285.54	2.19
186	SLU 65	81	-23	2856	4.62	286.5	5.5
186	SLU 66	82	-10	2843	4.57	285.54	2.19
186	SLU 67	81	-17	2851	4.6	286.11	4.18
186	SLU 68	81	-23	2856	4.62	286.5	5.5
186	SLU 69	82	-10	2843	4.57	285.54	2.19
186	SLU 70	81	-17	2851	4.6	286.11	4.18
186	SLU 71	82	-10	2843	4.57	285.54	2.19
186	SLU 72	81	-17	2851	4.6	286.11	4.18
186	SLU 73	91	-20	3215	5.14	318.75	4.84
186	SLU 74	92	-7	3202	5.09	317.79	1.54
186	SLU 75	91	-15	3209	5.12	318.36	3.52
186	SLU 76	91	-20	3215	5.14	318.75	4.84
186	SLU 77	92	-7	3202	5.09	317.79	1.54
186	SLU 78	91	-15	3209	5.12	318.36	3.52
186	SLU 79	92	-7	3202	5.09	317.79	1.54



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
186	SLU 80	91	-15	3209	5.12	318.36	3.52
186	SLU 81	97	-6	3355	5.31	331.61	1.26
186	SLU 82	96	-14	3363	5.34	332.18	3.24
186	SLU 83	97	-6	3355	5.31	331.61	1.26
186	SLU 84	96	-14	3363	5.34	332.18	3.24
186	SLE RA 1	62	-8	2130	3.43	214.56	1.76
186	SLE RA 2	60	-16	2139	3.47	215.2	3.97
186	SLE RA 3	62	-8	2130	3.43	214.56	1.76
186	SLE RA 4	61	-13	2135	3.46	214.94	3.09
186	SLE RA 5	60	-16	2139	3.47	215.2	3.97
186	SLE RA 6	62	-8	2130	3.43	214.56	1.76
186	SLE RA 7	61	-13	2135	3.46	214.94	3.09
186	SLE RA 8	62	-8	2130	3.43	214.56	1.76
186	SLE RA 9	61	-13	2135	3.46	214.94	3.09
186	SLE RA 10	67	-15	2378	3.82	236.7	3.53
186	SLE RA 11	68	-6	2369	3.78	236.06	1.33
186	SLE RA 12	68	-11	2374	3.8	236.44	2.65
186	SLE RA 13	67	-15	2378	3.82	236.7	3.53
186	SLE RA 14	68	-6	2369	3.78	236.06	1.33
186	SLE RA 15	68	-11	2374	3.8	236.44	2.65
186	SLE RA 16	68	-6	2369	3.78	236.06	1.33
186	SLE RA 17	68	-11	2374	3.8	236.44	2.65
186	SLE RA 18	71	-5	2472	3.93	245.27	1.14
186	SLE RA 19	71	-11	2477	3.95	245.66	2.46
186	SLE RA 20	71	-5	2472	3.93	245.27	1.14
186	SLE RA 21	71	-11	2477	3.95	245.66	2.46
186	SLE FR 1	62	-8	2130	3.43	214.56	1.76
186	SLE FR 2	61	-9	2132	3.44	214.69	2.2
186	SLE FR 3	62	-8	2130	3.43	214.56	1.76
186	SLE FR 4	64	-9	2234	3.59	223.9	2.02
186	SLE FR 5	64	-7	2233	3.58	223.77	1.58
186	SLE FR 6	66	-6	2301	3.68	229.91	1.45
186	SLE QP 1	62	-8	2130	3.43	214.56	1.76
186	SLE QP 2	64	-7	2233	3.58	223.77	1.58
186	SLD 1	268	-113	1894	2.65	198.79	27.66
186	SLD 2	244	-87	1897	2.66	198.73	21.19
186	SLD 3	211	-242	2085	3.33	213.54	60.04
186	SLD 4	188	-216	2087	3.34	213.48	53.57
186	SLD 5	219	148	1841	2.27	193.92	-37.45
186	SLD 6	196	174	1843	2.28	193.85	-43.92
186	SLD 7	31	-282	2477	4.53	243.11	70.5
186	SLD 8	8	-256	2479	4.54	243.04	64.02
186	SLD 9	121	242	1986	2.62	204.5	-60.87
186	SLD 10	98	268	1989	2.63	204.44	-67.34
186	SLD 11	-67	-188	2622	4.89	253.69	47.07
186	SLD 12	-90	-162	2624	4.89	253.63	40.6
186	SLD 13	-59	202	2378	3.82	234.06	-50.42
186	SLD 14	-82	228	2380	3.83	234	-56.89
186	SLD 15	-115	73	2569	4.5	248.82	-18.03
186	SLD 16	-139	99	2571	4.51	248.76	-24.51
186	SLV 1	529	-247	1450	1.42	165.75	60.54
186	SLV 2	475	-187	1455	1.44	165.61	45.84
186	SLV 3	399	-543	1894	3	199.94	135.07
186	SLV 4	345	-484	1898	3.02	199.8	120.37
186	SLV 5	420	351	1324	0.54	154.56	-88.63
186	SLV 6	366	410	1329	0.55	154.41	-103.33
186	SLV 7	-13	-639	2801	5.79	268.53	159.81
186	SLV 8	-67	-579	2806	5.81	268.39	145.11
186	SLV 9	196	565	1659	1.35	179.15	-141.96
186	SLV 10	142	625	1664	1.37	179.01	-156.66
186	SLV 11	-237	-424	3136	6.61	293.13	106.48
186	SLV 12	-291	-364	3141	6.63	292.99	91.78
186	SLV 13	-217	470	2567	4.15	247.74	-117.22
186	SLV 14	-270	530	2572	4.16	247.6	-131.92
186	SLV 15	-346	173	3010	5.72	281.94	-42.68
186	SLV 16	-400	233	3015	5.74	281.8	-57.38
186	CRTFP Ux+	0	0	0	0	0	0
186	CRTFP Ux-	0	0	0	0	0	0
186	CRTFP Uy+	0	0	0	0	0	0
186	CRTFP Uy-	0	0	0	0	0	0
188	SLU 1	60	-95	2744	-23.45	-502.22	-32.34
188	SLU 2	60	-108	2750	-23.42	-502.96	-37.1
188	SLU 3	60	-95	2744	-23.45	-502.22	-32.34
188	SLU 4	60	-103	2747	-23.43	-502.67	-35.19
188	SLU 5	60	-108	2750	-23.42	-502.96	-37.1
188	SLU 6	60	-95	2744	-23.45	-502.22	-32.34
188	SLU 7	60	-103	2747	-23.43	-502.67	-35.19
188	SLU 8	60	-95	2744	-23.45	-502.22	-32.34
188	SLU 9	60	-103	2747	-23.43	-502.67	-35.19
188	SLU 10	72	-127	3212	-27.08	-581.17	-43.38
188	SLU 11	72	-113	3206	-27.1	-580.43	-38.63
188	SLU 12	72	-121	3210	-27.09	-580.87	-41.48
188	SLU 13	72	-127	3212	-27.08	-581.17	-43.38
188	SLU 14	72	-113	3206	-27.1	-580.43	-38.63
188	SLU 15	72	-121	3210	-27.09	-580.87	-41.48
188	SLU 16	72	-113	3206	-27.1	-580.43	-38.63
188	SLU 17	72	-121	3210	-27.09	-580.87	-41.48
188	SLU 18	77	-121	3404	-28.67	-613.94	-41.32
188	SLU 19	77	-129	3408	-28.66	-614.39	-44.18



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
188	SLU 20	77	-121	3404	-28.67	-613.94	-41.32
188	SLU 21	77	-129	3408	-28.66	-614.39	-44.18
188	SLU 22	69	-109	3070	-26.03	-557.47	-37.04
188	SLU 23	69	-122	3076	-26.01	-558.21	-41.8
188	SLU 24	69	-109	3070	-26.03	-557.47	-37.04
188	SLU 25	69	-117	3074	-26.02	-557.91	-39.89
188	SLU 26	69	-122	3076	-26.01	-558.21	-41.8
188	SLU 27	69	-109	3070	-26.03	-557.47	-37.04
188	SLU 28	69	-117	3074	-26.02	-557.91	-39.89
188	SLU 29	69	-109	3070	-26.03	-557.47	-37.04
188	SLU 30	69	-117	3074	-26.02	-557.91	-39.89
188	SLU 31	81	-141	3538	-29.67	-636.41	-48.09
188	SLU 32	81	-127	3532	-29.69	-635.67	-43.33
188	SLU 33	81	-135	3536	-29.68	-636.12	-46.18
188	SLU 34	81	-141	3538	-29.67	-636.41	-48.09
188	SLU 35	81	-127	3532	-29.69	-635.67	-43.33
188	SLU 36	81	-135	3536	-29.68	-636.12	-46.18
188	SLU 37	81	-127	3532	-29.69	-635.67	-43.33
188	SLU 38	81	-135	3536	-29.68	-636.12	-46.18
188	SLU 39	86	-135	3730	-31.26	-669.19	-46.02
188	SLU 40	86	-143	3734	-31.24	-669.63	-48.88
188	SLU 41	86	-135	3730	-31.26	-669.19	-46.02
188	SLU 42	86	-143	3734	-31.24	-669.63	-48.88
188	SLU 43	76	-119	3455	-29.59	-633.95	-40.43
188	SLU 44	75	-132	3461	-29.57	-634.69	-45.19
188	SLU 45	76	-119	3455	-29.59	-633.95	-40.43
188	SLU 46	76	-127	3459	-29.58	-634.39	-43.28
188	SLU 47	75	-132	3461	-29.57	-634.69	-45.19
188	SLU 48	76	-119	3455	-29.59	-633.95	-40.43
188	SLU 49	76	-127	3459	-29.58	-634.39	-43.28
188	SLU 50	76	-119	3455	-29.59	-633.95	-40.43
188	SLU 51	76	-127	3459	-29.58	-634.39	-43.28
188	SLU 52	87	-151	3923	-33.23	-712.89	-51.47
188	SLU 53	87	-137	3917	-33.25	-712.15	-46.72
188	SLU 54	87	-145	3921	-33.24	-712.6	-49.57
188	SLU 55	87	-151	3923	-33.23	-712.89	-51.47
188	SLU 56	87	-137	3917	-33.25	-712.15	-46.72
188	SLU 57	87	-145	3921	-33.24	-712.6	-49.57
188	SLU 58	87	-137	3917	-33.25	-712.15	-46.72
188	SLU 59	87	-145	3921	-33.24	-712.6	-49.57
188	SLU 60	92	-145	4115	-34.82	-745.67	-49.41
188	SLU 61	92	-153	4119	-34.8	-746.11	-52.27
188	SLU 62	92	-145	4115	-34.82	-745.67	-49.41
188	SLU 63	92	-153	4119	-34.8	-746.11	-52.27
188	SLU 64	84	-132	3782	-32.18	-689.2	-45.13
188	SLU 65	84	-146	3787	-32.16	-689.94	-49.89
188	SLU 66	84	-132	3782	-32.18	-689.2	-45.13
188	SLU 67	84	-141	3785	-32.17	-689.64	-47.98
188	SLU 68	84	-146	3787	-32.16	-689.94	-49.89
188	SLU 69	84	-132	3782	-32.18	-689.2	-45.13
188	SLU 70	84	-141	3785	-32.17	-689.64	-47.98
188	SLU 71	84	-132	3782	-32.18	-689.2	-45.13
188	SLU 72	84	-141	3785	-32.17	-689.64	-47.98
188	SLU 73	96	-164	4250	-35.81	-768.14	-56.17
188	SLU 74	96	-151	4244	-35.84	-767.4	-51.42
188	SLU 75	96	-159	4247	-35.82	-767.84	-54.27
188	SLU 76	96	-164	4250	-35.81	-768.14	-56.17
188	SLU 77	96	-151	4244	-35.84	-767.4	-51.42
188	SLU 78	96	-159	4247	-35.82	-767.84	-54.27
188	SLU 79	96	-151	4244	-35.84	-767.4	-51.42
188	SLU 80	96	-159	4247	-35.82	-767.84	-54.27
188	SLU 81	101	-159	4442	-37.4	-800.91	-54.11
188	SLU 82	101	-167	4445	-37.39	-801.36	-56.97
188	SLU 83	101	-159	4442	-37.4	-800.91	-54.11
188	SLU 84	101	-167	4445	-37.39	-801.36	-56.97
188	SLE RA 1	63	-99	2837	-24.18	-518.01	-33.68
188	SLE RA 2	63	-108	2841	-24.17	-518.5	-36.85
188	SLE RA 3	63	-99	2837	-24.18	-518.01	-33.68
188	SLE RA 4	63	-104	2839	-24.18	-518.3	-35.58
188	SLE RA 5	63	-108	2841	-24.17	-518.5	-36.85
188	SLE RA 6	63	-99	2837	-24.18	-518.01	-33.68
188	SLE RA 7	63	-104	2839	-24.18	-518.3	-35.58
188	SLE RA 8	63	-99	2837	-24.18	-518.01	-33.68
188	SLE RA 9	63	-104	2839	-24.18	-518.3	-35.58
188	SLE RA 10	71	-120	3149	-26.61	-570.64	-41.05
188	SLE RA 11	71	-111	3145	-26.62	-570.14	-37.87
188	SLE RA 12	71	-117	3148	-26.61	-570.44	-39.78
188	SLE RA 13	71	-120	3149	-26.61	-570.64	-41.05
188	SLE RA 14	71	-111	3145	-26.62	-570.14	-37.87
188	SLE RA 15	71	-117	3148	-26.61	-570.44	-39.78
188	SLE RA 16	71	-111	3145	-26.62	-570.14	-37.87
188	SLE RA 17	71	-117	3148	-26.61	-570.44	-39.78
188	SLE RA 18	74	-116	3277	-27.67	-592.49	-39.67
188	SLE RA 19	74	-122	3280	-27.66	-592.78	-41.57
188	SLE RA 20	74	-116	3277	-27.67	-592.49	-39.67
188	SLE RA 21	74	-122	3280	-27.66	-592.78	-41.57
188	SLE FR 1	63	-99	2837	-24.18	-518.01	-33.68
188	SLE FR 2	63	-101	2838	-24.18	-518.11	-34.32
188	SLE FR 3	63	-99	2837	-24.18	-518.01	-33.68



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
188	SLE FR 4	66	-106	2970	-25.23	-540.45	-36.11
188	SLE FR 5	66	-104	2969	-25.23	-540.35	-35.48
188	SLE FR 6	68	-108	3057	-25.93	-555.25	-36.68
188	SLE QP 1	63	-99	2837	-24.18	-518.01	-33.68
188	SLE QP 2	66	-104	2969	-25.23	-540.35	-35.48
188	SLD 1	307	119	3147	-27.38	-567.75	44.77
188	SLD 2	278	90	3146	-27.38	-567.59	34.16
188	SLD 3	241	-25	3233	-26.82	-579.61	-6.15
188	SLD 4	212	-55	3232	-26.82	-579.44	-16.77
188	SLD 5	249	191	2892	-26.73	-530.65	69.55
188	SLD 6	221	162	2891	-26.72	-530.48	58.93
188	SLD 7	28	-289	3179	-24.86	-570.17	-100.2
188	SLD 8	-1	-318	3178	-24.86	-570	-110.81
188	SLD 9	133	110	2760	-25.6	-510.7	39.86
188	SLD 10	105	81	2759	-25.6	-510.54	29.25
188	SLD 11	-88	-370	3047	-23.74	-550.22	-129.89
188	SLD 12	-117	-400	3046	-23.73	-550.06	-140.5
188	SLD 13	-80	-154	2707	-23.64	-501.26	-54.19
188	SLD 14	-108	-183	2705	-23.64	-501.1	-64.8
188	SLD 15	-146	-298	2793	-23.08	-513.12	-105.12
188	SLD 16	-175	-327	2792	-23.08	-512.95	-115.73
188	SLV 1	617	411	3373	-30.17	-602.99	150.07
188	SLV 2	551	345	3371	-30.16	-602.61	125.97
188	SLV 3	463	77	3570	-28.88	-630.05	31.85
188	SLV 4	398	11	3567	-28.87	-629.67	7.75
188	SLV 5	486	581	2793	-28.67	-518.23	207.93
188	SLV 6	421	514	2791	-28.66	-517.86	183.83
188	SLV 7	-24	-534	3448	-24.37	-608.43	-186.15
188	SLV 8	-89	-600	3446	-24.37	-608.06	-210.25
188	SLV 9	221	392	2493	-26.09	-472.65	139.29
188	SLV 10	156	326	2490	-26.08	-472.27	115.19
188	SLV 11	-289	-723	3148	-21.8	-562.85	-254.78
188	SLV 12	-354	-789	3145	-21.79	-562.47	-278.88
188	SLV 13	-266	-219	2371	-21.59	-451.03	-78.71
188	SLV 14	-331	-285	2368	-21.58	-450.66	-102.81
188	SLV 15	-419	-553	2568	-20.3	-478.09	-196.93
188	SLV 16	-484	-619	2565	-20.29	-477.72	-221.03
188	CRTFP Ux+	0	0	0	0	0	0
188	CRTFP Ux-	0	0	0	0	0	0
188	CRTFP Uy+	0	0	0	0	0	0
188	CRTFP Uy-	0	0	0	0	0	0
190	SLU 1	63	-8	2174	4.94	240.6	1.88
190	SLU 2	61	-21	2188	5.02	241.88	5.17
190	SLU 3	63	-8	2174	4.94	240.6	1.88
190	SLU 4	62	-16	2182	4.99	241.37	3.85
190	SLU 5	61	-21	2188	5.02	241.88	5.17
190	SLU 6	63	-8	2174	4.94	240.6	1.88
190	SLU 7	62	-16	2182	4.99	241.37	3.85
190	SLU 8	63	-8	2174	4.94	240.6	1.88
190	SLU 9	62	-16	2182	4.99	241.37	3.85
190	SLU 10	73	-19	2566	5.88	278.98	4.53
190	SLU 11	75	-6	2552	5.8	277.69	1.25
190	SLU 12	73	-14	2560	5.84	278.46	3.22
190	SLU 13	73	-19	2566	5.88	278.98	4.53
190	SLU 14	75	-6	2552	5.8	277.69	1.25
190	SLU 15	73	-14	2560	5.84	278.46	3.22
190	SLU 16	75	-6	2552	5.8	277.69	1.25
190	SLU 17	73	-14	2560	5.84	278.46	3.22
190	SLU 18	79	-5	2714	6.17	293.59	0.97
190	SLU 19	78	-12	2722	6.21	294.36	2.94
190	SLU 20	79	-5	2714	6.17	293.59	0.97
190	SLU 21	78	-12	2722	6.21	294.36	2.94
190	SLU 22	72	-7	2445	5.54	267.18	1.55
190	SLU 23	70	-20	2460	5.62	268.47	4.83
190	SLU 24	72	-7	2445	5.54	267.18	1.55
190	SLU 25	71	-15	2454	5.59	267.95	3.52
190	SLU 26	70	-20	2460	5.62	268.47	4.83
190	SLU 27	72	-7	2445	5.54	267.18	1.55
190	SLU 28	71	-15	2454	5.59	267.95	3.52
190	SLU 29	72	-7	2445	5.54	267.18	1.55
190	SLU 30	71	-15	2454	5.59	267.95	3.52
190	SLU 31	81	-18	2838	6.48	305.56	4.2
190	SLU 32	83	-4	2823	6.4	304.27	0.91
190	SLU 33	82	-12	2832	6.45	305.05	2.88
190	SLU 34	81	-18	2838	6.48	305.56	4.2
190	SLU 35	83	-4	2823	6.4	304.27	0.91
190	SLU 36	82	-12	2832	6.45	305.05	2.88
190	SLU 37	83	-4	2823	6.4	304.27	0.91
190	SLU 38	82	-12	2832	6.45	305.05	2.88
190	SLU 39	88	-3	2985	6.77	320.17	0.64
190	SLU 40	86	-11	2994	6.82	320.94	2.61
190	SLU 41	88	-3	2985	6.77	320.17	0.64
190	SLU 42	86	-11	2994	6.82	320.94	2.61
190	SLU 43	80	-11	2732	6.21	303.66	2.56
190	SLU 44	78	-24	2747	6.29	304.95	5.85
190	SLU 45	80	-11	2732	6.21	303.66	2.56
190	SLU 46	78	-19	2741	6.26	304.43	4.53
190	SLU 47	78	-24	2747	6.29	304.95	5.85
190	SLU 48	80	-11	2732	6.21	303.66	2.56



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
190	SLU 49	78	-19	2741	6.26	304.43	4.53
190	SLU 50	80	-11	2732	6.21	303.66	2.56
190	SLU 51	78	-19	2741	6.26	304.43	4.53
190	SLU 52	89	-22	3125	7.15	342.04	5.21
190	SLU 53	91	-9	3110	7.07	340.75	1.93
190	SLU 54	89	-16	3119	7.12	341.53	3.9
190	SLU 55	89	-22	3125	7.15	342.04	5.21
190	SLU 56	91	-9	3110	7.07	340.75	1.93
190	SLU 57	89	-16	3119	7.12	341.53	3.9
190	SLU 58	91	-9	3110	7.07	340.75	1.93
190	SLU 59	89	-16	3119	7.12	341.53	3.9
190	SLU 60	95	-7	3272	7.44	356.65	1.65
190	SLU 61	94	-15	3281	7.49	357.42	3.62
190	SLU 62	95	-7	3272	7.44	356.65	1.65
190	SLU 63	94	-15	3281	7.49	357.42	3.62
190	SLU 64	88	-10	3004	6.82	330.24	2.23
190	SLU 65	86	-23	3019	6.89	331.53	5.51
190	SLU 66	88	-10	3004	6.82	330.24	2.23
190	SLU 67	87	-18	3013	6.86	331.02	4.2
190	SLU 68	86	-23	3019	6.89	331.53	5.51
190	SLU 69	88	-10	3004	6.82	330.24	2.23
190	SLU 70	87	-18	3013	6.86	331.02	4.2
190	SLU 71	88	-10	3004	6.82	330.24	2.23
190	SLU 72	87	-18	3013	6.86	331.02	4.2
190	SLU 73	97	-20	3397	7.75	368.63	4.88
190	SLU 74	99	-7	3382	7.68	367.34	1.59
190	SLU 75	98	-15	3391	7.72	368.11	3.56
190	SLU 76	97	-20	3397	7.75	368.63	4.88
190	SLU 77	99	-7	3382	7.68	367.34	1.59
190	SLU 78	98	-15	3391	7.72	368.11	3.56
190	SLU 79	99	-7	3382	7.68	367.34	1.59
190	SLU 80	98	-15	3391	7.72	368.11	3.56
190	SLU 81	104	-6	3544	8.05	383.23	1.32
190	SLU 82	103	-14	3553	8.09	384.01	3.29
190	SLU 83	104	-6	3544	8.05	383.23	1.32
190	SLU 84	103	-14	3553	8.09	384.01	3.29
190	SLE RA 1	66	-8	2251	5.11	248.19	1.79
190	SLE RA 2	64	-16	2261	5.16	249.05	3.98
190	SLE RA 3	66	-8	2251	5.11	248.19	1.79
190	SLE RA 4	65	-13	2257	5.14	248.71	3.1
190	SLE RA 5	64	-16	2261	5.16	249.05	3.98
190	SLE RA 6	66	-8	2251	5.11	248.19	1.79
190	SLE RA 7	65	-13	2257	5.14	248.71	3.1
190	SLE RA 8	66	-8	2251	5.11	248.19	1.79
190	SLE RA 9	65	-13	2257	5.14	248.71	3.1
190	SLE RA 10	72	-15	2513	5.74	273.78	3.55
190	SLE RA 11	73	-6	2503	5.69	272.92	1.36
190	SLE RA 12	72	-11	2509	5.72	273.44	2.68
190	SLE RA 13	72	-15	2513	5.74	273.78	3.55
190	SLE RA 14	73	-6	2503	5.69	272.92	1.36
190	SLE RA 15	72	-11	2509	5.72	273.44	2.68
190	SLE RA 16	73	-6	2503	5.69	272.92	1.36
190	SLE RA 17	72	-11	2509	5.72	273.44	2.68
190	SLE RA 18	76	-5	2611	5.93	283.52	1.18
190	SLE RA 19	76	-11	2617	5.96	284.03	2.5
190	SLE RA 20	76	-5	2611	5.93	283.52	1.18
190	SLE RA 21	76	-11	2617	5.96	284.03	2.5
190	SLE FR 1	66	-8	2251	5.11	248.19	1.79
190	SLE FR 2	66	-9	2253	5.12	248.36	2.23
190	SLE FR 3	66	-8	2251	5.11	248.19	1.79
190	SLE FR 4	69	-9	2361	5.37	258.96	2.04
190	SLE FR 5	69	-7	2359	5.36	258.79	1.61
190	SLE FR 6	71	-7	2431	5.52	265.86	1.49
190	SLE QP 1	66	-8	2251	5.11	248.19	1.79
190	SLE QP 2	69	-7	2359	5.36	258.79	1.61
190	SLD 1	293	-113	1992	4.09	227.91	27.6
190	SLD 2	266	-87	1994	4.1	228.02	21.15
190	SLD 3	230	-242	2205	4.98	246.77	59.87
190	SLD 4	203	-215	2207	4.99	246.89	53.42
190	SLD 5	241	147	1926	3.63	220.88	-37.28
190	SLD 6	214	174	1928	3.64	220.99	-43.73
190	SLD 7	31	-282	2634	6.59	283.75	70.29
190	SLD 8	5	-256	2637	6.59	283.87	63.84
190	SLD 9	133	242	2082	4.12	233.71	-60.62
190	SLD 10	107	268	2084	4.13	233.83	-67.07
190	SLD 11	-76	-188	2790	7.08	296.59	46.95
190	SLD 12	-103	-161	2793	7.09	296.7	40.5
190	SLD 13	-65	201	2512	5.73	270.69	-50.2
190	SLD 14	-92	228	2514	5.74	270.81	-56.65
190	SLD 15	-128	73	2724	6.62	289.56	-17.93
190	SLD 16	-155	99	2726	6.63	289.67	-24.38
190	SLV 1	581	-247	1510	2.42	187.09	60.35
190	SLV 2	520	-187	1515	2.44	187.35	45.71
190	SLV 3	436	-543	2004	4.48	230.84	134.63
190	SLV 4	375	-483	2009	4.5	231.1	119.98
190	SLV 5	463	350	1353	1.35	170.83	-88.3
190	SLV 6	402	409	1359	1.37	171.1	-102.94
190	SLV 7	-19	-638	3000	8.21	316.67	159.3
190	SLV 8	-80	-578	3005	8.23	316.93	144.65



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
190	SLV 9	218	564	1713	2.49	200.65	-141.43
190	SLV 10	157	624	1719	2.51	200.91	-156.08
190	SLV 11	-264	-423	3360	9.35	346.48	106.16
190	SLV 12	-325	-364	3365	9.37	346.75	91.51
190	SLV 13	-237	469	2710	6.21	286.48	-116.77
190	SLV 14	-298	529	2715	6.24	286.74	-131.42
190	SLV 15	-382	173	3203	8.27	330.23	-42.49
190	SLV 16	-443	232	3209	8.29	330.49	-57.14
190	CRTFP Ux+	0	0	0	0	0	0
190	CRTFP Ux-	0	0	0	0	0	0
190	CRTFP Uy+	0	0	0	0	0	0
190	CRTFP Uy-	0	0	0	0	0	0
192	SLU 1	70	-95	2862	-23.97	-549.36	-32.19
192	SLU 2	69	-108	2870	-23.98	-550.83	-36.93
192	SLU 3	70	-95	2862	-23.97	-549.36	-32.19
192	SLU 4	69	-103	2866	-23.97	-550.25	-35.03
192	SLU 5	69	-108	2870	-23.98	-550.83	-36.93
192	SLU 6	70	-95	2862	-23.97	-549.36	-32.19
192	SLU 7	69	-103	2866	-23.97	-550.25	-35.03
192	SLU 8	70	-95	2862	-23.97	-549.36	-32.19
192	SLU 9	69	-103	2866	-23.97	-550.25	-35.03
192	SLU 10	82	-127	3351	-27.65	-636.69	-43.19
192	SLU 11	82	-113	3343	-27.65	-635.22	-38.45
192	SLU 12	82	-121	3348	-27.65	-636.1	-41.3
192	SLU 13	82	-127	3351	-27.65	-636.69	-43.19
192	SLU 14	82	-113	3343	-27.65	-635.22	-38.45
192	SLU 15	82	-121	3348	-27.65	-636.1	-41.3
192	SLU 16	82	-113	3343	-27.65	-635.22	-38.45
192	SLU 17	82	-121	3348	-27.65	-636.1	-41.3
192	SLU 18	88	-121	3549	-29.22	-672.01	-41.14
192	SLU 19	88	-129	3554	-29.23	-672.89	-43.98
192	SLU 20	88	-121	3549	-29.22	-672.01	-41.14
192	SLU 21	88	-129	3554	-29.23	-672.89	-43.98
192	SLU 22	79	-109	3201	-26.57	-609.98	-36.87
192	SLU 23	79	-122	3209	-26.58	-611.45	-41.61
192	SLU 24	79	-109	3201	-26.57	-609.98	-36.87
192	SLU 25	79	-117	3206	-26.57	-610.86	-39.71
192	SLU 26	79	-122	3209	-26.58	-611.45	-41.61
192	SLU 27	79	-109	3201	-26.57	-609.98	-36.87
192	SLU 28	79	-117	3206	-26.57	-610.86	-39.71
192	SLU 29	79	-109	3201	-26.57	-609.98	-36.87
192	SLU 30	79	-117	3206	-26.57	-610.86	-39.71
192	SLU 31	92	-141	3691	-30.26	-697.3	-47.87
192	SLU 32	92	-127	3683	-30.25	-695.83	-43.13
192	SLU 33	92	-135	3688	-30.25	-696.72	-45.98
192	SLU 34	92	-141	3691	-30.26	-697.3	-47.87
192	SLU 35	92	-127	3683	-30.25	-695.83	-43.13
192	SLU 36	92	-135	3688	-30.25	-696.72	-45.98
192	SLU 37	92	-127	3683	-30.25	-695.83	-43.13
192	SLU 38	92	-135	3688	-30.25	-696.72	-45.98
192	SLU 39	98	-135	3889	-31.82	-732.63	-45.82
192	SLU 40	98	-143	3894	-31.83	-733.51	-48.66
192	SLU 41	98	-135	3889	-31.82	-732.63	-45.82
192	SLU 42	98	-143	3894	-31.83	-733.51	-48.66
192	SLU 43	87	-119	3603	-30.27	-693.39	-40.24
192	SLU 44	87	-132	3611	-30.28	-694.86	-44.98
192	SLU 45	87	-119	3603	-30.27	-693.39	-40.24
192	SLU 46	87	-127	3608	-30.27	-694.27	-43.08
192	SLU 47	87	-132	3611	-30.28	-694.86	-44.98
192	SLU 48	87	-119	3603	-30.27	-693.39	-40.24
192	SLU 49	87	-127	3608	-30.27	-694.27	-43.08
192	SLU 50	87	-119	3603	-30.27	-693.39	-40.24
192	SLU 51	87	-127	3608	-30.27	-694.27	-43.08
192	SLU 52	100	-151	4093	-33.95	-780.71	-51.24
192	SLU 53	100	-137	4085	-33.95	-779.24	-46.5
192	SLU 54	100	-145	4090	-33.95	-780.13	-49.35
192	SLU 55	100	-151	4093	-33.95	-780.71	-51.24
192	SLU 56	100	-137	4085	-33.95	-779.24	-46.5
192	SLU 57	100	-145	4090	-33.95	-780.13	-49.35
192	SLU 58	100	-137	4085	-33.95	-779.24	-46.5
192	SLU 59	100	-145	4090	-33.95	-780.13	-49.35
192	SLU 60	105	-145	4291	-35.52	-816.04	-49.19
192	SLU 61	105	-153	4296	-35.53	-816.92	-52.03
192	SLU 62	105	-145	4291	-35.52	-816.04	-49.19
192	SLU 63	105	-153	4296	-35.53	-816.92	-52.03
192	SLU 64	97	-132	3943	-32.87	-754	-44.92
192	SLU 65	97	-146	3951	-32.88	-755.48	-49.66
192	SLU 66	97	-132	3943	-32.87	-754	-44.92
192	SLU 67	97	-141	3948	-32.87	-754.89	-47.76
192	SLU 68	97	-146	3951	-32.88	-755.48	-49.66
192	SLU 69	97	-132	3943	-32.87	-754	-44.92
192	SLU 70	97	-141	3948	-32.87	-754.89	-47.76
192	SLU 71	97	-132	3943	-32.87	-754	-44.92
192	SLU 72	97	-141	3948	-32.87	-754.89	-47.76
192	SLU 73	110	-164	4433	-36.55	-841.33	-55.92
192	SLU 74	110	-151	4425	-36.55	-839.86	-51.18
192	SLU 75	110	-159	4430	-36.55	-840.74	-54.03
192	SLU 76	110	-164	4433	-36.55	-841.33	-55.92
192	SLU 77	110	-151	4425	-36.55	-839.86	-51.18



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
192	SLU 78	110	-159	4430	-36.55	-840.74	-54.03
192	SLU 79	110	-151	4425	-36.55	-839.86	-51.18
192	SLU 80	110	-159	4430	-36.55	-840.74	-54.03
192	SLU 81	115	-159	4631	-38.12	-876.65	-53.87
192	SLU 82	115	-167	4636	-38.13	-877.54	-56.71
192	SLU 83	115	-159	4631	-38.12	-876.65	-53.87
192	SLU 84	115	-167	4636	-38.13	-877.54	-56.71
192	SLE RA 1	72	-99	2959	-24.71	-566.68	-33.52
192	SLE RA 2	72	-108	2964	-24.72	-567.66	-36.69
192	SLE RA 3	72	-99	2959	-24.71	-566.68	-33.52
192	SLE RA 4	72	-104	2962	-24.71	-567.27	-35.42
192	SLE RA 5	72	-108	2964	-24.72	-567.66	-36.69
192	SLE RA 6	72	-99	2959	-24.71	-566.68	-33.52
192	SLE RA 7	72	-104	2962	-24.71	-567.27	-35.42
192	SLE RA 8	72	-99	2959	-24.71	-566.68	-33.52
192	SLE RA 9	72	-104	2962	-24.71	-567.27	-35.42
192	SLE RA 10	81	-120	3285	-27.17	-624.9	-40.86
192	SLE RA 11	81	-111	3280	-27.16	-623.92	-37.7
192	SLE RA 12	81	-117	3283	-27.17	-624.51	-39.6
192	SLE RA 13	81	-120	3285	-27.17	-624.9	-40.86
192	SLE RA 14	81	-111	3280	-27.16	-623.92	-37.7
192	SLE RA 15	81	-117	3283	-27.17	-624.51	-39.6
192	SLE RA 16	81	-111	3280	-27.16	-623.92	-37.7
192	SLE RA 17	81	-117	3283	-27.17	-624.51	-39.6
192	SLE RA 18	85	-116	3417	-28.21	-648.45	-39.49
192	SLE RA 19	85	-122	3420	-28.22	-649.04	-41.39
192	SLE RA 20	85	-116	3417	-28.21	-648.45	-39.49
192	SLE RA 21	85	-122	3420	-28.22	-649.04	-41.39
192	SLE FR 1	72	-99	2959	-24.71	-566.68	-33.52
192	SLE FR 2	72	-101	2960	-24.71	-566.88	-34.16
192	SLE FR 3	72	-99	2959	-24.71	-566.68	-33.52
192	SLE FR 4	76	-106	3097	-25.76	-591.41	-35.95
192	SLE FR 5	76	-104	3096	-25.76	-591.21	-35.31
192	SLE FR 6	78	-108	3188	-26.46	-607.56	-36.51
192	SLE QP 1	72	-99	2959	-24.71	-566.68	-33.52
192	SLE QP 2	76	-104	3096	-25.76	-591.21	-35.31
192	SLD 1	336	118	3268	-27.24	-617.32	44.82
192	SLD 2	304	89	3267	-27.24	-617.17	34.22
192	SLD 3	265	-26	3370	-27.7	-635.03	-6.01
192	SLD 4	233	-55	3369	-27.69	-634.88	-16.61
192	SLD 5	273	191	2994	-25.51	-572.24	69.52
192	SLD 6	241	162	2992	-25.51	-572.09	58.93
192	SLD 7	36	-289	3334	-27.04	-631.27	-99.9
192	SLD 8	4	-317	3332	-27.04	-631.12	-110.5
192	SLD 9	148	109	2860	-24.49	-551.31	39.87
192	SLD 10	116	80	2859	-24.49	-551.15	29.27
192	SLD 11	-89	-370	3200	-26.01	-610.34	-129.56
192	SLD 12	-121	-399	3199	-26.01	-610.18	-140.15
192	SLD 13	-81	-153	2824	-23.83	-547.54	-54.02
192	SLD 14	-113	-182	2822	-23.83	-547.39	-64.62
192	SLD 15	-152	-297	2926	-24.29	-565.25	-104.85
192	SLD 16	-184	-326	2924	-24.29	-565.1	-115.45
192	SLV 1	670	409	3487	-29.15	-650.68	149.97
192	SLV 2	597	343	3484	-29.14	-650.33	125.9
192	SLV 3	506	76	3720	-30.19	-691.3	31.97
192	SLV 4	433	10	3718	-30.18	-690.95	7.9
192	SLV 5	528	579	2861	-25.2	-547.56	207.66
192	SLV 6	456	513	2858	-25.19	-547.21	183.59
192	SLV 7	-18	-533	3638	-28.67	-682.98	-185.67
192	SLV 8	-91	-599	3635	-28.67	-682.63	-209.74
192	SLV 9	243	391	2557	-22.86	-499.79	139.11
192	SLV 10	170	325	2554	-22.85	-499.45	115.04
192	SLV 11	-304	-721	3335	-26.33	-635.21	-254.22
192	SLV 12	-376	-787	3332	-26.33	-634.87	-278.29
192	SLV 13	-282	-218	2475	-21.34	-491.47	-78.53
192	SLV 14	-354	-284	2472	-21.34	-491.12	-102.6
192	SLV 15	-445	-552	2708	-22.38	-532.09	-196.53
192	SLV 16	-518	-617	2705	-22.38	-531.75	-220.6
192	CRTFP Ux+	0	0	0	0	0	0
192	CRTFP Ux-	0	0	0	0	0	0
192	CRTFP Uy+	0	0	0	0	0	0
192	CRTFP Uy-	0	0	0	0	0	0
194	SLU 1	67	-8	2340	6.82	304.7	1.93
194	SLU 2	65	-21	2358	6.92	306.68	5.19
194	SLU 3	67	-8	2340	6.82	304.7	1.93
194	SLU 4	66	-16	2351	6.88	305.89	3.89
194	SLU 5	65	-21	2358	6.92	306.68	5.19
194	SLU 6	67	-8	2340	6.82	304.7	1.93
194	SLU 7	66	-16	2351	6.88	305.89	3.89
194	SLU 8	67	-8	2340	6.82	304.7	1.93
194	SLU 9	66	-16	2351	6.88	305.89	3.89
194	SLU 10	77	-19	2765	8.16	355.08	4.57
194	SLU 11	79	-6	2748	8.07	353.1	1.32
194	SLU 12	78	-14	2758	8.12	354.29	3.27
194	SLU 13	77	-19	2765	8.16	355.08	4.57
194	SLU 14	79	-6	2748	8.07	353.1	1.32
194	SLU 15	78	-14	2758	8.12	354.29	3.27
194	SLU 16	79	-6	2748	8.07	353.1	1.32
194	SLU 17	78	-14	2758	8.12	354.29	3.27



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
194	SLU 18	84	-5	2923	8.6	373.85	1.05
194	SLU 19	83	-13	2933	8.66	375.04	3.01
194	SLU 20	84	-5	2923	8.6	373.85	1.05
194	SLU 21	83	-13	2933	8.66	375.04	3.01
194	SLU 22	76	-7	2633	7.7	339.35	1.61
194	SLU 23	74	-20	2650	7.8	341.33	4.87
194	SLU 24	76	-7	2633	7.7	339.35	1.61
194	SLU 25	75	-15	2644	7.76	340.54	3.57
194	SLU 26	74	-20	2650	7.8	341.33	4.87
194	SLU 27	76	-7	2633	7.7	339.35	1.61
194	SLU 28	75	-15	2644	7.76	340.54	3.57
194	SLU 29	76	-7	2633	7.7	339.35	1.61
194	SLU 30	75	-15	2644	7.76	340.54	3.57
194	SLU 31	86	-18	3058	9.04	389.74	4.25
194	SLU 32	88	-5	3041	8.95	387.76	1
194	SLU 33	87	-12	3051	9.01	388.95	2.95
194	SLU 34	86	-18	3058	9.04	389.74	4.25
194	SLU 35	88	-5	3041	8.95	387.76	1
194	SLU 36	87	-12	3051	9.01	388.95	2.95
194	SLU 37	88	-5	3041	8.95	387.76	1
194	SLU 38	87	-12	3051	9.01	388.95	2.95
194	SLU 39	93	-4	3216	9.48	408.5	0.73
194	SLU 40	92	-11	3226	9.54	409.69	2.69
194	SLU 41	93	-4	3216	9.48	408.5	0.73
194	SLU 42	92	-11	3226	9.54	409.69	2.69
194	SLU 43	84	-11	2942	8.56	384.23	2.62
194	SLU 44	82	-24	2959	8.66	386.21	5.88
194	SLU 45	84	-11	2942	8.56	384.23	2.62
194	SLU 46	83	-19	2952	8.62	385.41	4.58
194	SLU 47	82	-24	2959	8.66	386.21	5.88
194	SLU 48	84	-11	2942	8.56	384.23	2.62
194	SLU 49	83	-19	2952	8.62	385.41	4.58
194	SLU 50	84	-11	2942	8.56	384.23	2.62
194	SLU 51	83	-19	2952	8.62	385.41	4.58
194	SLU 52	94	-22	3367	9.91	434.61	5.26
194	SLU 53	96	-9	3350	9.81	432.63	2
194	SLU 54	95	-17	3360	9.87	433.82	3.96
194	SLU 55	94	-22	3367	9.91	434.61	5.26
194	SLU 56	96	-9	3350	9.81	432.63	2
194	SLU 57	95	-17	3360	9.87	433.82	3.96
194	SLU 58	96	-9	3350	9.81	432.63	2
194	SLU 59	95	-17	3360	9.87	433.82	3.96
194	SLU 60	101	-8	3525	10.35	453.38	1.74
194	SLU 61	100	-16	3535	10.4	454.56	3.69
194	SLU 62	101	-8	3525	10.35	453.38	1.74
194	SLU 63	100	-16	3535	10.4	454.56	3.69
194	SLU 64	93	-10	3235	9.45	418.88	2.3
194	SLU 65	91	-23	3252	9.54	420.86	5.56
194	SLU 66	93	-10	3235	9.45	418.88	2.3
194	SLU 67	92	-18	3245	9.5	420.07	4.26
194	SLU 68	91	-23	3252	9.54	420.86	5.56
194	SLU 69	93	-10	3235	9.45	418.88	2.3
194	SLU 70	92	-18	3245	9.5	420.07	4.26
194	SLU 71	93	-10	3235	9.45	418.88	2.3
194	SLU 72	92	-18	3245	9.5	420.07	4.26
194	SLU 73	103	-21	3660	10.79	469.26	4.94
194	SLU 74	105	-8	3643	10.69	467.29	1.68
194	SLU 75	104	-15	3653	10.75	468.47	3.64
194	SLU 76	103	-21	3660	10.79	469.26	4.94
194	SLU 77	105	-8	3643	10.69	467.29	1.68
194	SLU 78	104	-15	3653	10.75	468.47	3.64
194	SLU 79	105	-8	3643	10.69	467.29	1.68
194	SLU 80	104	-15	3653	10.75	468.47	3.64
194	SLU 81	110	-6	3818	11.23	488.03	1.42
194	SLU 82	109	-14	3828	11.28	489.22	3.38
194	SLU 83	110	-6	3818	11.23	488.03	1.42
194	SLU 84	109	-14	3828	11.28	489.22	3.38
194	SLE RA 1	70	-8	2424	7.07	314.6	1.84
194	SLE RA 2	68	-17	2435	7.14	315.92	4.01
194	SLE RA 3	70	-8	2424	7.07	314.6	1.84
194	SLE RA 4	69	-13	2431	7.11	315.39	3.14
194	SLE RA 5	68	-17	2435	7.14	315.92	4.01
194	SLE RA 6	70	-8	2424	7.07	314.6	1.84
194	SLE RA 7	69	-13	2431	7.11	315.39	3.14
194	SLE RA 8	70	-8	2424	7.07	314.6	1.84
194	SLE RA 9	69	-13	2431	7.11	315.39	3.14
194	SLE RA 10	76	-15	2707	7.97	348.19	3.6
194	SLE RA 11	78	-6	2696	7.9	346.87	1.43
194	SLE RA 12	77	-12	2703	7.94	347.66	2.73
194	SLE RA 13	76	-15	2707	7.97	348.19	3.6
194	SLE RA 14	78	-6	2696	7.9	346.87	1.43
194	SLE RA 15	77	-12	2703	7.94	347.66	2.73
194	SLE RA 16	78	-6	2696	7.9	346.87	1.43
194	SLE RA 17	77	-12	2703	7.94	347.66	2.73
194	SLE RA 18	81	-6	2812	8.26	360.7	1.25
194	SLE RA 19	80	-11	2819	8.3	361.49	2.56
194	SLE RA 20	81	-6	2812	8.26	360.7	1.25
194	SLE RA 21	80	-11	2819	8.3	361.49	2.56
194	SLE FR 1	70	-8	2424	7.07	314.6	1.84



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
194	SLE FR 2	70	-10	2426	7.09	314.86	2.27
194	SLE FR 3	70	-8	2424	7.07	314.6	1.84
194	SLE FR 4	73	-9	2543	7.44	328.69	2.1
194	SLE FR 5	73	-7	2541	7.43	328.43	1.66
194	SLE FR 6	75	-7	2618	7.67	337.65	1.55
194	SLE QP 1	70	-8	2424	7.07	314.6	1.84
194	SLE QP 2	73	-7	2541	7.43	328.43	1.66
194	SLD 1	321	-113	2133	5.78	285.21	27.57
194	SLD 2	290	-87	2136	5.79	285.47	21.14
194	SLD 3	251	-242	2374	6.9	312.25	59.69
194	SLD 4	221	-215	2377	6.91	312.51	53.26
194	SLD 5	264	147	2052	5.24	274.35	-37.02
194	SLD 6	233	173	2055	5.25	274.61	-43.45
194	SLD 7	32	-281	2855	8.96	364.51	70.03
194	SLD 8	1	-255	2858	8.97	364.77	63.6
194	SLD 9	145	241	2224	5.89	292.09	-60.27
194	SLD 10	114	267	2226	5.9	292.35	-66.7
194	SLD 11	-87	-187	3026	9.61	382.25	46.78
194	SLD 12	-117	-161	3029	9.62	382.51	40.35
194	SLD 13	-74	201	2704	7.95	344.35	-49.93
194	SLD 14	-105	227	2707	7.96	344.61	-56.36
194	SLD 15	-144	72	2945	9.06	371.39	-17.81
194	SLD 16	-174	99	2948	9.08	371.65	-24.24
194	SLV 1	639	-247	1599	3.61	228.17	60.23
194	SLV 2	569	-187	1605	3.64	228.77	45.63
194	SLV 3	479	-542	2158	6.2	290.96	134.15
194	SLV 4	409	-482	2164	6.23	291.55	119.54
194	SLV 5	510	348	1407	2.35	202.92	-87.76
194	SLV 6	440	408	1413	2.37	203.52	-102.37
194	SLV 7	-23	-637	3272	10.98	412.2	158.63
194	SLV 8	-93	-577	3278	11.01	412.8	144.02
194	SLV 9	240	563	1803	3.85	244.06	-140.7
194	SLV 10	170	622	1809	3.88	244.66	-155.3
194	SLV 11	-294	-422	3668	12.48	453.35	105.69
194	SLV 12	-364	-363	3674	12.51	453.94	91.09
194	SLV 13	-263	468	2917	8.63	365.31	-116.22
194	SLV 14	-333	528	2923	8.65	365.9	-130.82
194	SLV 15	-423	173	3477	11.22	428.09	-42.3
194	SLV 16	-493	232	3482	11.24	428.69	-56.9
194	CRTFP Ux+	0	0	0	0	0	0
194	CRTFP Ux-	0	0	0	0	0	0
194	CRTFP Uy+	0	0	0	0	0	0
194	CRTFP Uy-	0	0	0	0	0	0
196	SLU 1	78	-95	3042	-26.85	-643.55	-32.06
196	SLU 2	78	-109	3052	-26.89	-645.91	-36.77
196	SLU 3	78	-95	3042	-26.85	-643.55	-32.06
196	SLU 4	78	-103	3048	-26.88	-644.97	-34.89
196	SLU 5	78	-109	3052	-26.89	-645.91	-36.77
196	SLU 6	78	-95	3042	-26.85	-643.55	-32.06
196	SLU 7	78	-103	3048	-26.88	-644.97	-34.89
196	SLU 8	78	-95	3042	-26.85	-643.55	-32.06
196	SLU 9	78	-103	3048	-26.88	-644.97	-34.89
196	SLU 10	92	-127	3565	-31.04	-748.32	-43.02
196	SLU 11	93	-114	3554	-31	-745.95	-38.3
196	SLU 12	93	-122	3561	-31.02	-747.37	-41.13
196	SLU 13	92	-127	3565	-31.04	-748.32	-43.02
196	SLU 14	93	-114	3554	-31	-745.95	-38.3
196	SLU 15	93	-122	3561	-31.02	-747.37	-41.13
196	SLU 16	93	-114	3554	-31	-745.95	-38.3
196	SLU 17	93	-122	3561	-31.02	-747.37	-41.13
196	SLU 18	99	-121	3774	-32.78	-789.84	-40.97
196	SLU 19	99	-130	3780	-32.8	-791.26	-43.8
196	SLU 20	99	-121	3774	-32.78	-789.84	-40.97
196	SLU 21	99	-130	3780	-32.8	-791.26	-43.8
196	SLU 22	89	-109	3404	-29.78	-715.82	-36.72
196	SLU 23	89	-122	3414	-29.83	-718.19	-41.44
196	SLU 24	89	-109	3404	-29.78	-715.82	-36.72
196	SLU 25	89	-117	3410	-29.81	-717.24	-39.55
196	SLU 26	89	-122	3414	-29.83	-718.19	-41.44
196	SLU 27	89	-109	3404	-29.78	-715.82	-36.72
196	SLU 28	89	-117	3410	-29.81	-717.24	-39.55
196	SLU 29	89	-109	3404	-29.78	-715.82	-36.72
196	SLU 30	89	-117	3410	-29.81	-717.24	-39.55
196	SLU 31	103	-141	3927	-33.97	-820.59	-47.68
196	SLU 32	103	-127	3916	-33.93	-818.23	-42.96
196	SLU 33	103	-135	3923	-33.96	-819.64	-45.79
196	SLU 34	103	-141	3927	-33.97	-820.59	-47.68
196	SLU 35	103	-127	3916	-33.93	-818.23	-42.96
196	SLU 36	103	-135	3923	-33.96	-819.64	-45.79
196	SLU 37	103	-127	3916	-33.93	-818.23	-42.96
196	SLU 38	103	-135	3923	-33.96	-819.64	-45.79
196	SLU 39	110	-135	4136	-35.71	-862.11	-45.64
196	SLU 40	109	-143	4142	-35.73	-863.53	-48.47
196	SLU 41	110	-135	4136	-35.71	-862.11	-45.64
196	SLU 42	109	-143	4142	-35.73	-863.53	-48.47
196	SLU 43	98	-119	3830	-33.9	-811.83	-40.07
196	SLU 44	98	-132	3840	-33.94	-814.2	-44.79
196	SLU 45	98	-119	3830	-33.9	-811.83	-40.07
196	SLU 46	98	-127	3836	-33.93	-813.25	-42.9



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
196	SLU 47	98	-132	3840	-33.94	-814.2	-44.79
196	SLU 48	98	-119	3830	-33.9	-811.83	-40.07
196	SLU 49	98	-127	3836	-33.93	-813.25	-42.9
196	SLU 50	98	-119	3830	-33.9	-811.83	-40.07
196	SLU 51	98	-127	3836	-33.93	-813.25	-42.9
196	SLU 52	112	-151	4353	-38.09	-916.6	-51.03
196	SLU 53	112	-137	4343	-38.05	-914.23	-46.32
196	SLU 54	112	-145	4349	-38.07	-915.65	-49.15
196	SLU 55	112	-151	4353	-38.09	-916.6	-51.03
196	SLU 56	112	-137	4343	-38.05	-914.23	-46.32
196	SLU 57	112	-145	4349	-38.07	-915.65	-49.15
196	SLU 58	112	-137	4343	-38.05	-914.23	-46.32
196	SLU 59	112	-145	4349	-38.07	-915.65	-49.15
196	SLU 60	119	-145	4563	-39.83	-958.12	-48.99
196	SLU 61	119	-153	4569	-39.85	-959.54	-51.82
196	SLU 62	119	-145	4563	-39.83	-958.12	-48.99
196	SLU 63	119	-153	4569	-39.85	-959.54	-51.82
196	SLU 64	109	-133	4192	-36.83	-884.11	-44.74
196	SLU 65	109	-146	4202	-36.88	-886.47	-49.45
196	SLU 66	109	-133	4192	-36.83	-884.11	-44.74
196	SLU 67	109	-141	4198	-36.86	-885.52	-47.57
196	SLU 68	109	-146	4202	-36.88	-886.47	-49.45
196	SLU 69	109	-133	4192	-36.83	-884.11	-44.74
196	SLU 70	109	-141	4198	-36.86	-885.52	-47.57
196	SLU 71	109	-133	4192	-36.83	-884.11	-44.74
196	SLU 72	109	-141	4198	-36.86	-885.52	-47.57
196	SLU 73	123	-165	4715	-41.02	-988.87	-55.7
196	SLU 74	123	-151	4705	-40.98	-986.51	-50.98
196	SLU 75	123	-159	4711	-41.01	-987.93	-53.81
196	SLU 76	123	-165	4715	-41.02	-988.87	-55.7
196	SLU 77	123	-151	4705	-40.98	-986.51	-50.98
196	SLU 78	123	-159	4711	-41.01	-987.93	-53.81
196	SLU 79	123	-151	4705	-40.98	-986.51	-50.98
196	SLU 80	123	-159	4711	-41.01	-987.93	-53.81
196	SLU 81	129	-159	4925	-42.76	-1030.4	-53.65
196	SLU 82	129	-167	4931	-42.78	-1031.82	-56.49
196	SLU 83	129	-159	4925	-42.76	-1030.4	-53.65
196	SLU 84	129	-167	4931	-42.78	-1031.82	-56.49
196	SLE RA 1	81	-99	3145	-27.69	-664.2	-33.39
196	SLE RA 2	81	-108	3152	-27.72	-665.77	-36.53
196	SLE RA 3	81	-99	3145	-27.69	-664.2	-33.39
196	SLE RA 4	81	-104	3149	-27.71	-665.14	-35.28
196	SLE RA 5	81	-108	3152	-27.72	-665.77	-36.53
196	SLE RA 6	81	-99	3145	-27.69	-664.2	-33.39
196	SLE RA 7	81	-104	3149	-27.71	-665.14	-35.28
196	SLE RA 8	81	-99	3145	-27.69	-664.2	-33.39
196	SLE RA 9	81	-104	3149	-27.71	-665.14	-35.28
196	SLE RA 10	91	-120	3494	-30.48	-734.04	-40.7
196	SLE RA 11	91	-111	3487	-30.45	-732.47	-37.55
196	SLE RA 12	91	-117	3491	-30.47	-733.41	-39.44
196	SLE RA 13	91	-120	3494	-30.48	-734.04	-40.7
196	SLE RA 14	91	-111	3487	-30.45	-732.47	-37.55
196	SLE RA 15	91	-117	3491	-30.47	-733.41	-39.44
196	SLE RA 16	91	-111	3487	-30.45	-732.47	-37.55
196	SLE RA 17	91	-117	3491	-30.47	-733.41	-39.44
196	SLE RA 18	95	-117	3633	-31.64	-761.72	-39.33
196	SLE RA 19	95	-122	3638	-31.66	-762.67	-41.22
196	SLE RA 20	95	-117	3633	-31.64	-761.72	-39.33
196	SLE RA 21	95	-122	3638	-31.66	-762.67	-41.22
196	SLE FR 1	81	-99	3145	-27.69	-664.2	-33.39
196	SLE FR 2	81	-101	3146	-27.69	-664.51	-34.02
196	SLE FR 3	81	-99	3145	-27.69	-664.2	-33.39
196	SLE FR 4	85	-106	3293	-28.88	-693.77	-35.8
196	SLE FR 5	86	-104	3292	-28.87	-693.46	-35.17
196	SLE FR 6	88	-108	3389	-29.66	-712.96	-36.36
196	SLE QP 1	81	-99	3145	-27.69	-664.2	-33.39
196	SLE QP 2	86	-104	3292	-28.87	-693.46	-35.17
196	SLD 1	366	117	3462	-30.33	-721.75	44.82
196	SLD 2	331	88	3461	-30.33	-721.54	34.23
196	SLD 3	289	-27	3585	-30.97	-747.74	-5.88
196	SLD 4	254	-55	3584	-30.96	-747.53	-16.47
196	SLD 5	298	190	3157	-28.35	-662.6	69.43
196	SLD 6	263	161	3156	-28.34	-662.39	58.84
196	SLD 7	43	-288	3566	-30.47	-749.23	-99.58
196	SLD 8	8	-317	3565	-30.46	-749.02	-110.16
196	SLD 9	163	109	3018	-27.28	-637.89	39.82
196	SLD 10	128	80	3017	-27.28	-637.68	29.23
196	SLD 11	-92	-369	3427	-29.4	-724.52	-129.18
196	SLD 12	-127	-398	3426	-29.4	-724.31	-139.77
196	SLD 13	-83	-153	2999	-26.78	-639.38	-53.88
196	SLD 14	-118	-182	2998	-26.78	-639.17	-64.46
196	SLD 15	-160	-297	3122	-27.42	-665.37	-104.58
196	SLD 16	-195	-325	3121	-27.41	-665.16	-115.16
196	SLV 1	726	407	3680	-32.2	-757.67	149.78
196	SLV 2	646	342	3676	-32.2	-757.18	125.74
196	SLV 3	550	74	3961	-33.66	-817.43	32.07
196	SLV 4	470	9	3957	-33.65	-816.94	8.04
196	SLV 5	573	577	2982	-27.67	-622.26	207.24
196	SLV 6	493	511	2979	-27.66	-621.77	183.21



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
196	SLV 7	-14	-532	3920	-32.51	-821.45	-185.1
196	SLV 8	-94	-598	3917	-32.5	-820.97	-209.14
196	SLV 9	265	389	2666	-25.24	-565.94	138.8
196	SLV 10	185	324	2663	-25.23	-565.46	114.76
196	SLV 11	-322	-720	3604	-30.08	-765.14	-253.55
196	SLV 12	-402	-785	3601	-30.07	-764.65	-277.59
196	SLV 13	-299	-217	2626	-24.1	-569.97	-78.38
196	SLV 14	-379	-283	2622	-24.09	-569.48	-102.42
196	SLV 15	-475	-550	2907	-25.55	-629.73	-196.08
196	SLV 16	-555	-615	2904	-25.54	-629.24	-220.12
196	CRTFP Ux+	0	0	0	0	0	0
196	CRTFP Ux-	0	0	0	0	0	0
196	CRTFP Uy+	0	0	0	0	0	0
196	CRTFP Uy-	0	0	0	0	0	0
198	SLU 1	70	-8	2564	8.92	405.56	2.01
198	SLU 2	69	-21	2584	9.04	408.61	5.24
198	SLU 3	70	-8	2564	8.92	405.56	2.01
198	SLU 4	69	-16	2576	8.99	407.39	3.95
198	SLU 5	69	-21	2584	9.04	408.61	5.24
198	SLU 6	70	-8	2564	8.92	405.56	2.01
198	SLU 7	69	-16	2576	8.99	407.39	3.95
198	SLU 8	70	-8	2564	8.92	405.56	2.01
198	SLU 9	69	-16	2576	8.99	407.39	3.95
198	SLU 10	81	-19	3033	10.71	475.7	4.65
198	SLU 11	83	-6	3013	10.59	472.65	1.42
198	SLU 12	81	-14	3025	10.66	474.48	3.36
198	SLU 13	81	-19	3033	10.71	475.7	4.65
198	SLU 14	83	-6	3013	10.59	472.65	1.42
198	SLU 15	81	-14	3025	10.66	474.48	3.36
198	SLU 16	83	-6	3013	10.59	472.65	1.42
198	SLU 17	81	-14	3025	10.66	474.48	3.36
198	SLU 18	88	-5	3206	11.31	501.4	1.17
198	SLU 19	87	-13	3218	11.38	503.23	3.1
198	SLU 20	88	-5	3206	11.31	501.4	1.17
198	SLU 21	87	-13	3218	11.38	503.23	3.1
198	SLU 22	80	-7	2886	10.11	453.57	1.71
198	SLU 23	78	-20	2906	10.22	456.62	4.94
198	SLU 24	80	-7	2886	10.11	453.57	1.71
198	SLU 25	79	-15	2898	10.18	455.4	3.64
198	SLU 26	78	-20	2906	10.22	456.62	4.94
198	SLU 27	80	-7	2886	10.11	453.57	1.71
198	SLU 28	79	-15	2898	10.18	455.4	3.64
198	SLU 29	80	-7	2886	10.11	453.57	1.71
198	SLU 30	79	-15	2898	10.18	455.4	3.64
198	SLU 31	90	-18	3356	11.89	523.71	4.35
198	SLU 32	92	-5	3336	11.78	520.66	1.12
198	SLU 33	91	-13	3348	11.85	522.49	3.05
198	SLU 34	90	-18	3356	11.89	523.71	4.35
198	SLU 35	92	-5	3336	11.78	520.66	1.12
198	SLU 36	91	-13	3348	11.85	522.49	3.05
198	SLU 37	92	-5	3336	11.78	520.66	1.12
198	SLU 38	91	-13	3348	11.85	522.49	3.05
198	SLU 39	97	-4	3528	12.5	549.41	0.87
198	SLU 40	96	-12	3540	12.56	551.24	2.8
198	SLU 41	97	-4	3528	12.5	549.41	0.87
198	SLU 42	96	-12	3540	12.56	551.24	2.8
198	SLU 43	88	-11	3223	11.19	510.77	2.72
198	SLU 44	87	-24	3243	11.31	513.82	5.94
198	SLU 45	88	-11	3223	11.19	510.77	2.72
198	SLU 46	87	-19	3235	11.26	512.6	4.65
198	SLU 47	87	-24	3243	11.31	513.82	5.94
198	SLU 48	88	-11	3223	11.19	510.77	2.72
198	SLU 49	87	-19	3235	11.26	512.6	4.65
198	SLU 50	88	-11	3223	11.19	510.77	2.72
198	SLU 51	87	-19	3235	11.26	512.6	4.65
198	SLU 52	99	-22	3692	12.98	580.91	5.35
198	SLU 53	100	-9	3672	12.86	577.86	2.13
198	SLU 54	99	-17	3684	12.93	579.69	4.06
198	SLU 55	99	-22	3692	12.98	580.91	5.35
198	SLU 56	100	-9	3672	12.86	577.86	2.13
198	SLU 57	99	-17	3684	12.93	579.69	4.06
198	SLU 58	100	-9	3672	12.86	577.86	2.13
198	SLU 59	99	-17	3684	12.93	579.69	4.06
198	SLU 60	106	-8	3864	13.58	606.61	1.87
198	SLU 61	105	-16	3876	13.65	608.44	3.81
198	SLU 62	106	-8	3864	13.58	606.61	1.87
198	SLU 63	105	-16	3876	13.65	608.44	3.81
198	SLU 64	98	-10	3545	12.38	558.78	2.41
198	SLU 65	96	-23	3565	12.49	561.83	5.64
198	SLU 66	98	-10	3545	12.38	558.78	2.41
198	SLU 67	96	-18	3557	12.45	560.61	4.35
198	SLU 68	96	-23	3565	12.49	561.83	5.64
198	SLU 69	98	-10	3545	12.38	558.78	2.41
198	SLU 70	96	-18	3557	12.45	560.61	4.35
198	SLU 71	98	-10	3545	12.38	558.78	2.41
198	SLU 72	96	-18	3557	12.45	560.61	4.35
198	SLU 73	108	-21	4014	14.16	628.92	5.05
198	SLU 74	110	-8	3994	14.05	625.87	1.82
198	SLU 75	109	-16	4006	14.12	627.7	3.76



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
198	SLU 76	108	-21	4014	14.16	628.92	5.05
198	SLU 77	110	-8	3994	14.05	625.87	1.82
198	SLU 78	109	-16	4006	14.12	627.7	3.76
198	SLU 79	110	-8	3994	14.05	625.87	1.82
198	SLU 80	109	-16	4006	14.12	627.7	3.76
198	SLU 81	115	-7	4187	14.77	654.62	1.57
198	SLU 82	114	-15	4199	14.83	656.45	3.51
198	SLU 83	115	-7	4187	14.77	654.62	1.57
198	SLU 84	114	-15	4199	14.83	656.45	3.51
198	SLE RA 1	73	-8	2656	9.26	419.28	1.92
198	SLE RA 2	72	-17	2669	9.34	421.31	4.08
198	SLE RA 3	73	-8	2656	9.26	419.28	1.92
198	SLE RA 4	72	-13	2664	9.31	420.5	3.21
198	SLE RA 5	72	-17	2669	9.34	421.31	4.08
198	SLE RA 6	73	-8	2656	9.26	419.28	1.92
198	SLE RA 7	72	-13	2664	9.31	420.5	3.21
198	SLE RA 8	73	-8	2656	9.26	419.28	1.92
198	SLE RA 9	72	-13	2664	9.31	420.5	3.21
198	SLE RA 10	80	-15	2969	10.45	466.04	3.68
198	SLE RA 11	81	-7	2956	10.38	464	1.53
198	SLE RA 12	80	-12	2964	10.42	465.22	2.82
198	SLE RA 13	80	-15	2969	10.45	466.04	3.68
198	SLE RA 14	81	-7	2956	10.38	464	1.53
198	SLE RA 15	80	-12	2964	10.42	465.22	2.82
198	SLE RA 16	81	-7	2956	10.38	464	1.53
198	SLE RA 17	80	-12	2964	10.42	465.22	2.82
198	SLE RA 18	85	-6	3084	10.85	483.17	1.36
198	SLE RA 19	84	-11	3092	10.9	484.39	2.65
198	SLE RA 20	85	-6	3084	10.85	483.17	1.36
198	SLE RA 21	84	-11	3092	10.9	484.39	2.65
198	SLE FR 1	73	-8	2656	9.26	419.28	1.92
198	SLE FR 2	73	-10	2659	9.28	419.68	2.35
198	SLE FR 3	73	-8	2656	9.26	419.28	1.92
198	SLE FR 4	76	-9	2787	9.75	438.85	2.19
198	SLE FR 5	76	-7	2784	9.74	438.45	1.75
198	SLE FR 6	79	-7	2870	10.06	451.23	1.64
198	SLE QP 1	73	-8	2656	9.26	419.28	1.92
198	SLE QP 2	76	-7	2784	9.74	438.45	1.75
198	SLD 1	349	-113	2326	7.69	375.14	27.61
198	SLD 2	315	-87	2329	7.7	375.54	21.2
198	SLD 3	274	-241	2602	9.05	414.89	59.53
198	SLD 4	239	-215	2605	9.06	415.29	53.11
198	SLD 5	285	146	2227	7.05	359.03	-36.64
198	SLD 6	251	172	2230	7.07	359.43	-43.06
198	SLD 7	33	-281	3147	11.59	491.52	69.73
198	SLD 8	-2	-255	3150	11.6	491.92	63.32
198	SLD 9	155	240	2419	7.87	384.97	-59.81
198	SLD 10	120	266	2422	7.89	385.37	-66.22
198	SLD 11	-98	-187	3338	12.41	517.46	46.57
198	SLD 12	-132	-161	3341	12.42	517.86	40.15
198	SLD 13	-86	200	2964	10.42	461.6	-49.6
198	SLD 14	-121	226	2967	10.43	462.01	-56.02
198	SLD 15	-162	72	3240	11.78	501.35	-17.69
198	SLD 16	-196	98	3243	11.79	501.75	-24.1
198	SLV 1	700	-247	1723	4.99	291.75	60.21
198	SLV 2	621	-187	1730	5.02	292.66	45.64
198	SLV 3	526	-541	2364	8.15	384.06	133.66
198	SLV 4	447	-482	2371	8.18	384.97	119.09
198	SLV 5	556	347	1492	3.51	254.12	-87
198	SLV 6	477	406	1498	3.54	255.03	-101.58
198	SLV 7	-26	-635	3628	14.04	561.81	157.82
198	SLV 8	-105	-576	3635	14.08	562.72	143.25
198	SLV 9	258	561	1934	5.4	314.17	-139.74
198	SLV 10	179	620	1941	5.43	315.09	-154.31
198	SLV 11	-324	-421	4070	15.94	621.86	105.09
198	SLV 12	-403	-361	4077	15.97	622.77	90.51
198	SLV 13	-294	467	3198	11.3	491.92	-115.58
198	SLV 14	-373	527	3205	11.33	492.84	-130.15
198	SLV 15	-468	172	3839	14.46	584.23	-42.13
198	SLV 16	-547	232	3846	14.49	585.14	-56.7
198	CRTFP Ux+	0	0	0	0	0	0
198	CRTFP Ux-	0	0	0	0	0	0
198	CRTFP Uy+	0	0	0	0	0	0
198	CRTFP Uy-	0	0	0	0	0	0
200	SLU 1	86	-95	3286	-32.35	-787.78	-31.94
200	SLU 2	86	-109	3298	-32.45	-791.23	-36.63
200	SLU 3	86	-95	3286	-32.35	-787.78	-31.94
200	SLU 4	86	-103	3293	-32.41	-789.85	-34.75
200	SLU 5	86	-109	3298	-32.45	-791.23	-36.63
200	SLU 6	86	-95	3286	-32.35	-787.78	-31.94
200	SLU 7	86	-103	3293	-32.41	-789.85	-34.75
200	SLU 8	86	-95	3286	-32.35	-787.78	-31.94
200	SLU 9	86	-103	3293	-32.41	-789.85	-34.75
200	SLU 10	101	-127	3855	-37.56	-919.63	-42.85
200	SLU 11	102	-114	3842	-37.47	-916.18	-38.16
200	SLU 12	102	-122	3850	-37.52	-918.25	-40.97
200	SLU 13	101	-127	3855	-37.56	-919.63	-42.85
200	SLU 14	102	-114	3842	-37.47	-916.18	-38.16
200	SLU 15	102	-122	3850	-37.52	-918.25	-40.97



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
200	SLU 16	102	-114	3842	-37.47	-916.18	-38.16
200	SLU 17	102	-122	3850	-37.52	-918.25	-40.97
200	SLU 18	109	-122	4081	-39.66	-971.21	-40.82
200	SLU 19	108	-130	4089	-39.72	-973.28	-43.64
200	SLU 20	109	-122	4081	-39.66	-971.21	-40.82
200	SLU 21	108	-130	4089	-39.72	-973.28	-43.64
200	SLU 22	98	-109	3678	-35.96	-878.38	-36.58
200	SLU 23	97	-122	3691	-36.06	-881.83	-41.27
200	SLU 24	98	-109	3678	-35.96	-878.38	-36.58
200	SLU 25	98	-117	3686	-36.02	-880.45	-39.4
200	SLU 26	97	-122	3691	-36.06	-881.83	-41.27
200	SLU 27	98	-109	3678	-35.96	-878.38	-36.58
200	SLU 28	98	-117	3686	-36.02	-880.45	-39.4
200	SLU 29	98	-109	3678	-35.96	-878.38	-36.58
200	SLU 30	98	-117	3686	-36.02	-880.45	-39.4
200	SLU 31	113	-141	4248	-41.17	-1010.23	-47.5
200	SLU 32	114	-128	4235	-41.08	-1006.78	-42.8
200	SLU 33	113	-136	4243	-41.14	-1008.85	-45.62
200	SLU 34	113	-141	4248	-41.17	-1010.23	-47.5
200	SLU 35	114	-128	4235	-41.08	-1006.78	-42.8
200	SLU 36	113	-136	4243	-41.14	-1008.85	-45.62
200	SLU 37	114	-128	4235	-41.08	-1006.78	-42.8
200	SLU 38	113	-136	4243	-41.14	-1008.85	-45.62
200	SLU 39	120	-135	4474	-43.27	-1061.81	-45.47
200	SLU 40	120	-144	4481	-43.33	-1063.88	-48.28
200	SLU 41	120	-135	4474	-43.27	-1061.81	-45.47
200	SLU 42	120	-144	4481	-43.33	-1063.88	-48.28
200	SLU 43	108	-119	4137	-40.82	-993.05	-39.92
200	SLU 44	107	-133	4149	-40.91	-996.5	-44.62
200	SLU 45	108	-119	4137	-40.82	-993.05	-39.92
200	SLU 46	108	-127	4144	-40.88	-995.12	-42.74
200	SLU 47	107	-133	4149	-40.91	-996.5	-44.62
200	SLU 48	108	-119	4137	-40.82	-993.05	-39.92
200	SLU 49	108	-127	4144	-40.88	-995.12	-42.74
200	SLU 50	108	-119	4137	-40.82	-993.05	-39.92
200	SLU 51	108	-127	4144	-40.88	-995.12	-42.74
200	SLU 52	123	-151	4706	-46.03	-1124.9	-50.84
200	SLU 53	124	-138	4693	-45.93	-1121.45	-46.14
200	SLU 54	123	-146	4701	-45.99	-1123.52	-48.96
200	SLU 55	123	-151	4706	-46.03	-1124.9	-50.84
200	SLU 56	124	-138	4693	-45.93	-1121.45	-46.14
200	SLU 57	123	-146	4701	-45.99	-1123.52	-48.96
200	SLU 58	124	-138	4693	-45.93	-1121.45	-46.14
200	SLU 59	123	-146	4701	-45.99	-1123.52	-48.96
200	SLU 60	130	-145	4932	-48.13	-1176.48	-48.81
200	SLU 61	130	-154	4940	-48.18	-1178.54	-51.63
200	SLU 62	130	-145	4932	-48.13	-1176.48	-48.81
200	SLU 63	130	-154	4940	-48.18	-1178.54	-51.63
200	SLU 64	120	-133	4529	-44.43	-1083.65	-44.57
200	SLU 65	119	-146	4542	-44.53	-1087.1	-49.26
200	SLU 66	120	-133	4529	-44.43	-1083.65	-44.57
200	SLU 67	119	-141	4537	-44.49	-1085.72	-47.39
200	SLU 68	119	-146	4542	-44.53	-1087.1	-49.26
200	SLU 69	120	-133	4529	-44.43	-1083.65	-44.57
200	SLU 70	119	-141	4537	-44.49	-1085.72	-47.39
200	SLU 71	120	-133	4529	-44.43	-1083.65	-44.57
200	SLU 72	119	-141	4537	-44.49	-1085.72	-47.39
200	SLU 73	135	-165	5099	-49.64	-1215.5	-55.48
200	SLU 74	135	-151	5086	-49.55	-1212.05	-50.79
200	SLU 75	135	-159	5094	-49.6	-1214.12	-53.61
200	SLU 76	135	-165	5099	-49.64	-1215.5	-55.48
200	SLU 77	135	-151	5086	-49.55	-1212.05	-50.79
200	SLU 78	135	-159	5094	-49.6	-1214.12	-53.61
200	SLU 79	135	-151	5086	-49.55	-1212.05	-50.79
200	SLU 80	135	-159	5094	-49.6	-1214.12	-53.61
200	SLU 81	142	-159	5325	-51.74	-1267.08	-53.46
200	SLU 82	142	-167	5332	-51.79	-1269.15	-56.27
200	SLU 83	142	-159	5325	-51.74	-1267.08	-53.46
200	SLU 84	142	-167	5332	-51.79	-1269.15	-56.27
200	SLE RA 1	90	-99	3398	-33.38	-813.66	-33.26
200	SLE RA 2	89	-108	3406	-33.45	-815.96	-36.39
200	SLE RA 3	90	-99	3398	-33.38	-813.66	-33.26
200	SLE RA 4	89	-105	3403	-33.42	-815.04	-35.14
200	SLE RA 5	89	-108	3406	-33.45	-815.96	-36.39
200	SLE RA 6	90	-99	3398	-33.38	-813.66	-33.26
200	SLE RA 7	89	-105	3403	-33.42	-815.04	-35.14
200	SLE RA 8	90	-99	3398	-33.38	-813.66	-33.26
200	SLE RA 9	89	-105	3403	-33.42	-815.04	-35.14
200	SLE RA 10	100	-120	3778	-36.86	-901.56	-40.54
200	SLE RA 11	100	-112	3769	-36.79	-899.26	-37.41
200	SLE RA 12	100	-117	3774	-36.83	-900.64	-39.29
200	SLE RA 13	100	-120	3778	-36.86	-901.56	-40.54
200	SLE RA 14	100	-112	3769	-36.79	-899.26	-37.41
200	SLE RA 15	100	-117	3774	-36.83	-900.64	-39.29
200	SLE RA 16	100	-112	3769	-36.79	-899.26	-37.41
200	SLE RA 17	100	-117	3774	-36.83	-900.64	-39.29
200	SLE RA 18	104	-117	3928	-38.26	-935.95	-39.19
200	SLE RA 19	104	-122	3933	-38.29	-937.33	-41.07
200	SLE RA 20	104	-117	3928	-38.26	-935.95	-39.19



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
200	SLE RA 21	104	-122	3933	-38.29	-937.33	-41.07
200	SLE FR 1	90	-99	3398	-33.38	-813.66	-33.26
200	SLE FR 2	89	-101	3400	-33.4	-814.12	-33.89
200	SLE FR 3	90	-99	3398	-33.38	-813.66	-33.26
200	SLE FR 4	94	-106	3559	-34.86	-850.81	-35.67
200	SLE FR 5	94	-104	3557	-34.85	-850.35	-35.04
200	SLE FR 6	97	-108	3663	-35.82	-874.81	-36.23
200	SLE QP 1	90	-99	3398	-33.38	-813.66	-33.26
200	SLE QP 2	94	-104	3557	-34.85	-850.35	-35.04
200	SLD 1	396	116	3731	-36.44	-884.23	44.78
200	SLD 2	357	87	3730	-36.43	-883.9	34.21
200	SLD 3	313	-27	3879	-37.48	-920.69	-5.76
200	SLD 4	275	-56	3877	-37.47	-920.37	-16.34
200	SLD 5	323	188	3386	-33.75	-805.33	69.27
200	SLD 6	284	160	3384	-33.74	-805	58.7
200	SLD 7	49	-288	3878	-37.21	-926.87	-99.22
200	SLD 8	10	-317	3876	-37.2	-926.54	-109.79
200	SLD 9	178	108	3237	-32.49	-774.16	39.71
200	SLD 10	140	79	3235	-32.48	-773.83	29.14
200	SLD 11	-96	-369	3730	-35.95	-895.7	-128.78
200	SLD 12	-135	-397	3728	-35.94	-895.37	-139.35
200	SLD 13	-87	-153	3236	-32.22	-780.34	-53.75
200	SLD 14	-125	-182	3235	-32.21	-780.01	-64.32
200	SLD 15	-169	-296	3384	-33.26	-816.8	-104.29
200	SLD 16	-208	-324	3382	-33.25	-816.47	-114.86
200	SLV 1	783	404	3952	-38.47	-927.07	149.53
200	SLV 2	695	339	3948	-38.45	-926.32	125.51
200	SLV 3	594	73	4291	-40.85	-1010.97	32.18
200	SLV 4	506	8	4287	-40.83	-1010.23	8.17
200	SLV 5	619	574	3163	-32.33	-746.37	206.71
200	SLV 6	531	509	3159	-32.31	-745.62	182.69
200	SLV 7	-12	-531	4293	-40.26	-1026.05	-184.44
200	SLV 8	-100	-596	4289	-40.24	-1025.31	-208.45
200	SLV 9	289	387	2825	-29.45	-675.39	138.37
200	SLV 10	201	323	2821	-29.43	-674.65	114.36
200	SLV 11	-343	-718	3955	-37.38	-955.08	-252.78
200	SLV 12	-431	-783	3951	-37.36	-954.33	-276.79
200	SLV 13	-318	-217	2826	-28.86	-690.47	-78.25
200	SLV 14	-406	-282	2822	-28.84	-689.73	-102.26
200	SLV 15	-507	-548	3165	-31.24	-774.38	-195.59
200	SLV 16	-595	-613	3161	-31.22	-773.63	-219.61
200	CRTFP Ux+	0	0	0	0	0	0
200	CRTFP Ux-	0	0	0	0	0	0
200	CRTFP Uy+	0	0	0	0	0	0
200	CRTFP Uy-	0	0	0	0	0	0
202	SLU 1	63	-8	2460	-61.44	468.8	3.6
202	SLU 2	62	-19	2480	-61.92	472.65	6.36
202	SLU 3	63	-8	2460	-61.44	468.8	3.6
202	SLU 4	62	-14	2472	-61.73	471.11	5.26
202	SLU 5	62	-19	2480	-61.92	472.65	6.36
202	SLU 6	63	-8	2460	-61.44	468.8	3.6
202	SLU 7	62	-14	2472	-61.73	471.11	5.26
202	SLU 8	63	-8	2460	-61.44	468.8	3.6
202	SLU 9	62	-14	2472	-61.73	471.11	5.26
202	SLU 10	72	-17	2914	-72.67	552.9	6.17
202	SLU 11	73	-6	2894	-72.19	549.05	3.4
202	SLU 12	73	-12	2906	-72.48	551.36	5.06
202	SLU 13	72	-17	2914	-72.67	552.9	6.17
202	SLU 14	73	-6	2894	-72.19	549.05	3.4
202	SLU 15	73	-12	2906	-72.48	551.36	5.06
202	SLU 16	73	-6	2894	-72.19	549.05	3.4
202	SLU 17	73	-12	2906	-72.48	551.36	5.06
202	SLU 18	78	-5	3080	-76.8	583.44	3.32
202	SLU 19	77	-11	3092	-77.09	585.75	4.98
202	SLU 20	78	-5	3080	-76.8	583.44	3.32
202	SLU 21	77	-11	3092	-77.09	585.75	4.98
202	SLU 22	71	-7	2771	-69.15	526.21	3.58
202	SLU 23	70	-18	2791	-69.64	530.06	6.34
202	SLU 24	71	-7	2771	-69.15	526.21	3.58
202	SLU 25	70	-13	2783	-69.44	528.52	5.24
202	SLU 26	70	-18	2791	-69.64	530.06	6.34
202	SLU 27	71	-7	2771	-69.15	526.21	3.58
202	SLU 28	70	-13	2783	-69.44	528.52	5.24
202	SLU 29	71	-7	2771	-69.15	526.21	3.58
202	SLU 30	70	-13	2783	-69.44	528.52	5.24
202	SLU 31	80	-16	3225	-80.38	610.31	6.14
202	SLU 32	81	-5	3205	-79.9	606.46	3.38
202	SLU 33	81	-11	3217	-80.19	608.77	5.04
202	SLU 34	80	-16	3225	-80.38	610.31	6.14
202	SLU 35	81	-5	3205	-79.9	606.46	3.38
202	SLU 36	81	-11	3217	-80.19	608.77	5.04
202	SLU 37	81	-5	3205	-79.9	606.46	3.38
202	SLU 38	81	-11	3217	-80.19	608.77	5.04
202	SLU 39	86	-4	3391	-84.51	640.85	3.3
202	SLU 40	85	-10	3403	-84.8	643.16	4.96
202	SLU 41	86	-4	3391	-84.51	640.85	3.3
202	SLU 42	85	-10	3403	-84.8	643.16	4.96
202	SLU 43	79	-10	3091	-77.23	589.76	4.69
202	SLU 44	78	-21	3111	-77.71	593.61	7.45



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
202	SLU 45	79	-10	3091	-77.23	589.76	4.69
202	SLU 46	78	-17	3103	-77.52	592.07	6.35
202	SLU 47	78	-21	3111	-77.71	593.61	7.45
202	SLU 48	79	-10	3091	-77.23	589.76	4.69
202	SLU 49	78	-17	3103	-77.52	592.07	6.35
202	SLU 50	79	-10	3091	-77.23	589.76	4.69
202	SLU 51	78	-17	3103	-77.52	592.07	6.35
202	SLU 52	89	-19	3545	-88.46	673.86	7.25
202	SLU 53	89	-8	3525	-87.98	670.01	4.49
202	SLU 54	89	-15	3537	-88.27	672.32	6.15
202	SLU 55	89	-19	3545	-88.46	673.86	7.25
202	SLU 56	89	-8	3525	-87.98	670.01	4.49
202	SLU 57	89	-15	3537	-88.27	672.32	6.15
202	SLU 58	89	-8	3525	-87.98	670.01	4.49
202	SLU 59	89	-15	3537	-88.27	672.32	6.15
202	SLU 60	94	-7	3711	-92.58	704.4	4.41
202	SLU 61	93	-14	3723	-92.87	706.71	6.06
202	SLU 62	94	-7	3711	-92.58	704.4	4.41
202	SLU 63	93	-14	3723	-92.87	706.71	6.06
202	SLU 64	87	-9	3402	-84.94	647.17	4.67
202	SLU 65	86	-20	3422	-85.42	651.02	7.43
202	SLU 66	87	-9	3402	-84.94	647.17	4.67
202	SLU 67	86	-16	3414	-85.23	649.48	6.33
202	SLU 68	86	-20	3422	-85.42	651.02	7.43
202	SLU 69	87	-9	3402	-84.94	647.17	4.67
202	SLU 70	86	-16	3414	-85.23	649.48	6.33
202	SLU 71	87	-9	3402	-84.94	647.17	4.67
202	SLU 72	86	-16	3414	-85.23	649.48	6.33
202	SLU 73	97	-18	3856	-96.17	731.27	7.23
202	SLU 74	97	-7	3836	-95.69	727.41	4.47
202	SLU 75	97	-14	3848	-95.98	729.73	6.13
202	SLU 76	97	-18	3856	-96.17	731.27	7.23
202	SLU 77	97	-7	3836	-95.69	727.41	4.47
202	SLU 78	97	-14	3848	-95.98	729.73	6.13
202	SLU 79	97	-7	3836	-95.69	727.41	4.47
202	SLU 80	97	-14	3848	-95.98	729.73	6.13
202	SLU 81	102	-6	4022	-100.3	761.81	4.39
202	SLU 82	101	-13	4034	-100.59	764.12	6.04
202	SLU 83	102	-6	4022	-100.3	761.81	4.39
202	SLU 84	101	-13	4034	-100.59	764.12	6.04
202	SLE RA 1	65	-7	2549	-63.64	485.2	3.6
202	SLE RA 2	65	-15	2562	-63.97	487.77	5.44
202	SLE RA 3	65	-7	2549	-63.64	485.2	3.6
202	SLE RA 4	65	-12	2557	-63.84	486.75	4.7
202	SLE RA 5	65	-15	2562	-63.97	487.77	5.44
202	SLE RA 6	65	-7	2549	-63.64	485.2	3.6
202	SLE RA 7	65	-12	2557	-63.84	486.75	4.7
202	SLE RA 8	65	-7	2549	-63.64	485.2	3.6
202	SLE RA 9	65	-12	2557	-63.84	486.75	4.7
202	SLE RA 10	72	-13	2851	-71.13	541.27	5.3
202	SLE RA 11	72	-6	2838	-70.81	538.7	3.46
202	SLE RA 12	72	-10	2846	-71	540.24	4.57
202	SLE RA 13	72	-13	2851	-71.13	541.27	5.3
202	SLE RA 14	72	-6	2838	-70.81	538.7	3.46
202	SLE RA 15	72	-10	2846	-71	540.24	4.57
202	SLE RA 16	72	-6	2838	-70.81	538.7	3.46
202	SLE RA 17	72	-10	2846	-71	540.24	4.57
202	SLE RA 18	75	-5	2962	-73.88	561.63	3.41
202	SLE RA 19	75	-10	2970	-74.07	563.17	4.51
202	SLE RA 20	75	-5	2962	-73.88	561.63	3.41
202	SLE RA 21	75	-10	2970	-74.07	563.17	4.51
202	SLE FR 1	65	-7	2549	-63.64	485.2	3.6
202	SLE FR 2	65	-9	2551	-63.71	485.72	3.96
202	SLE FR 3	65	-7	2549	-63.64	485.2	3.6
202	SLE FR 4	68	-8	2675	-66.78	508.65	3.91
202	SLE FR 5	68	-7	2673	-66.71	508.13	3.54
202	SLE FR 6	70	-6	2755	-68.76	523.42	3.5
202	SLE QP 1	65	-7	2549	-63.64	485.2	3.6
202	SLE QP 2	68	-7	2673	-66.71	508.13	3.54
202	SLD 1	326	-99	2223	-55.73	429.78	30.98
202	SLD 2	292	-76	2225	-55.81	430.27	24.43
202	SLD 3	256	-210	2497	-62.34	478.77	58.53
202	SLD 4	222	-187	2499	-62.41	479.26	51.98
202	SLD 5	264	126	2121	-53.38	410.15	-27.71
202	SLD 6	230	149	2124	-53.46	410.64	-34.27
202	SLD 7	30	-244	3034	-75.39	573.46	64.11
202	SLD 8	-4	-221	3037	-75.46	573.94	57.56
202	SLD 9	140	208	2308	-57.97	442.32	-50.48
202	SLD 10	106	231	2311	-58.04	442.81	-57.03
202	SLD 11	-94	-162	3221	-79.97	605.63	41.35
202	SLD 12	-127	-139	3224	-80.04	606.11	34.79
202	SLD 13	-86	174	2846	-71.02	537.01	-44.9
202	SLD 14	-119	196	2849	-71.09	537.49	-51.45
202	SLD 15	-156	63	3120	-77.62	586	-17.35
202	SLD 16	-189	85	3123	-77.69	586.49	-23.9
202	SLV 1	657	-215	1631	-41.3	326.68	65.63
202	SLV 2	580	-163	1638	-41.47	327.78	50.75
202	SLV 3	495	-470	2268	-56.64	440.48	128.92
202	SLV 4	419	-418	2274	-56.8	441.59	114.04



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
202	SLV 5	516	300	1392	-35.77	280.71	-68.62
202	SLV 6	440	352	1399	-35.94	281.81	-83.5
202	SLV 7	-22	-551	3514	-86.89	660.05	142.36
202	SLV 8	-98	-499	3521	-87.06	661.16	127.48
202	SLV 9	234	486	1824	-46.37	355.11	-120.4
202	SLV 10	158	538	1831	-46.54	356.21	-135.28
202	SLV 11	-303	-365	3946	-97.49	734.45	90.58
202	SLV 12	-380	-313	3953	-97.65	735.56	75.7
202	SLV 13	-282	405	3071	-76.62	574.68	-106.96
202	SLV 14	-359	457	3078	-76.79	575.78	-121.84
202	SLV 15	-444	150	3707	-91.96	688.48	-43.67
202	SLV 16	-520	201	3714	-92.13	689.59	-58.55
202	CRTFP Ux+	0	0	0	0	0	0
202	CRTFP Ux-	0	0	0	0	0	0
202	CRTFP Uy+	0	0	0	0	0	0
202	CRTFP Uy-	0	0	0	0	0	0
204	SLU 1	81	-84	3143	-110.88	-852.11	-25.98
204	SLU 2	80	-96	3157	-111.35	-856.22	-30.11
204	SLU 3	81	-84	3143	-110.88	-852.11	-25.98
204	SLU 4	80	-91	3151	-111.16	-854.57	-28.46
204	SLU 5	80	-96	3157	-111.35	-856.22	-30.11
204	SLU 6	81	-84	3143	-110.88	-852.11	-25.98
204	SLU 7	80	-91	3151	-111.16	-854.57	-28.46
204	SLU 8	81	-84	3143	-110.88	-852.11	-25.98
204	SLU 9	80	-91	3151	-111.16	-854.57	-28.46
204	SLU 10	95	-112	3692	-129.99	-998.2	-35.19
204	SLU 11	96	-100	3679	-129.52	-994.1	-31.07
204	SLU 12	95	-107	3687	-129.8	-996.56	-33.54
204	SLU 13	95	-112	3692	-129.99	-998.2	-35.19
204	SLU 14	96	-100	3679	-129.52	-994.1	-31.07
204	SLU 15	95	-107	3687	-129.8	-996.56	-33.54
204	SLU 16	96	-100	3679	-129.52	-994.1	-31.07
204	SLU 17	95	-107	3687	-129.8	-996.56	-33.54
204	SLU 18	102	-107	3908	-137.51	-1054.95	-33.25
204	SLU 19	101	-114	3916	-137.79	-1057.42	-35.72
204	SLU 20	102	-107	3908	-137.51	-1054.95	-33.25
204	SLU 21	101	-114	3916	-137.79	-1057.42	-35.72
204	SLU 22	92	-96	3521	-124.03	-952.29	-29.78
204	SLU 23	91	-108	3534	-124.5	-956.4	-33.9
204	SLU 24	92	-96	3521	-124.03	-952.29	-29.78
204	SLU 25	91	-103	3529	-124.31	-954.76	-32.25
204	SLU 26	91	-108	3534	-124.5	-956.4	-33.9
204	SLU 27	92	-96	3521	-124.03	-952.29	-29.78
204	SLU 28	91	-103	3529	-124.31	-954.76	-32.25
204	SLU 29	92	-96	3521	-124.03	-952.29	-29.78
204	SLU 30	91	-103	3529	-124.31	-954.76	-32.25
204	SLU 31	106	-124	4070	-143.14	-1098.39	-38.99
204	SLU 32	107	-112	4056	-142.67	-1094.28	-34.87
204	SLU 33	106	-119	4065	-142.95	-1096.75	-37.34
204	SLU 34	106	-124	4070	-143.14	-1098.39	-38.99
204	SLU 35	107	-112	4056	-142.67	-1094.28	-34.87
204	SLU 36	106	-119	4065	-142.95	-1096.75	-37.34
204	SLU 37	107	-112	4056	-142.67	-1094.28	-34.87
204	SLU 38	106	-119	4065	-142.95	-1096.75	-37.34
204	SLU 39	113	-119	4286	-150.66	-1155.14	-37.05
204	SLU 40	112	-126	4294	-150.94	-1157.6	-39.52
204	SLU 41	113	-119	4286	-150.66	-1155.14	-37.05
204	SLU 42	112	-126	4294	-150.94	-1157.6	-39.52
204	SLU 43	101	-105	3956	-139.63	-1073.39	-32.48
204	SLU 44	100	-117	3970	-140.1	-1077.5	-36.6
204	SLU 45	101	-105	3956	-139.63	-1073.39	-32.48
204	SLU 46	101	-112	3964	-139.92	-1075.86	-34.95
204	SLU 47	100	-117	3970	-140.1	-1077.5	-36.6
204	SLU 48	101	-105	3956	-139.63	-1073.39	-32.48
204	SLU 49	101	-112	3964	-139.92	-1075.86	-34.95
204	SLU 50	101	-105	3956	-139.63	-1073.39	-32.48
204	SLU 51	101	-112	3964	-139.92	-1075.86	-34.95
204	SLU 52	115	-133	4506	-158.74	-1219.49	-41.69
204	SLU 53	116	-121	4492	-158.27	-1215.38	-37.56
204	SLU 54	116	-128	4500	-158.55	-1217.85	-40.04
204	SLU 55	115	-133	4506	-158.74	-1219.49	-41.69
204	SLU 56	116	-121	4492	-158.27	-1215.38	-37.56
204	SLU 57	116	-128	4500	-158.55	-1217.85	-40.04
204	SLU 58	116	-121	4492	-158.27	-1215.38	-37.56
204	SLU 59	116	-128	4500	-158.55	-1217.85	-40.04
204	SLU 60	122	-128	4721	-166.26	-1276.23	-39.74
204	SLU 61	122	-135	4730	-166.54	-1278.7	-42.22
204	SLU 62	122	-128	4721	-166.26	-1276.23	-39.74
204	SLU 63	122	-135	4730	-166.54	-1278.7	-42.22
204	SLU 64	112	-117	4334	-152.78	-1173.58	-36.27
204	SLU 65	111	-129	4348	-153.26	-1177.68	-40.4
204	SLU 66	112	-117	4334	-152.78	-1173.58	-36.27
204	SLU 67	112	-124	4342	-153.07	-1176.04	-38.75
204	SLU 68	111	-129	4348	-153.26	-1177.68	-40.4
204	SLU 69	112	-117	4334	-152.78	-1173.58	-36.27
204	SLU 70	112	-124	4342	-153.07	-1176.04	-38.75
204	SLU 71	112	-117	4334	-152.78	-1173.58	-36.27
204	SLU 72	112	-124	4342	-153.07	-1176.04	-38.75
204	SLU 73	126	-145	4883	-171.89	-1319.67	-45.48



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
204	SLU 74	127	-133	4870	-171.42	-1315.57	-41.36
204	SLU 75	127	-141	4878	-171.71	-1318.03	-43.83
204	SLU 76	126	-145	4883	-171.89	-1319.67	-45.48
204	SLU 77	127	-133	4870	-171.42	-1315.57	-41.36
204	SLU 78	127	-141	4878	-171.71	-1318.03	-43.83
204	SLU 79	127	-133	4870	-171.42	-1315.57	-41.36
204	SLU 80	127	-141	4878	-171.71	-1318.03	-43.83
204	SLU 81	134	-140	5099	-179.41	-1376.42	-43.54
204	SLU 82	133	-147	5107	-179.69	-1378.88	-46.01
204	SLU 83	134	-140	5099	-179.41	-1376.42	-43.54
204	SLU 84	133	-147	5107	-179.69	-1378.88	-46.01
204	SLE RA 1	84	-87	3251	-114.64	-880.73	-27.07
204	SLE RA 2	83	-95	3260	-114.95	-883.47	-29.82
204	SLE RA 3	84	-87	3251	-114.64	-880.73	-27.07
204	SLE RA 4	84	-92	3256	-114.82	-882.38	-28.72
204	SLE RA 5	83	-95	3260	-114.95	-883.47	-29.82
204	SLE RA 6	84	-87	3251	-114.64	-880.73	-27.07
204	SLE RA 7	84	-92	3256	-114.82	-882.38	-28.72
204	SLE RA 8	84	-87	3251	-114.64	-880.73	-27.07
204	SLE RA 9	84	-92	3256	-114.82	-882.38	-28.72
204	SLE RA 10	93	-106	3617	-127.38	-978.13	-33.21
204	SLE RA 11	94	-98	3608	-127.06	-975.39	-30.46
204	SLE RA 12	94	-103	3613	-127.25	-977.04	-32.11
204	SLE RA 13	93	-106	3617	-127.38	-978.13	-33.21
204	SLE RA 14	94	-98	3608	-127.06	-975.39	-30.46
204	SLE RA 15	94	-103	3613	-127.25	-977.04	-32.11
204	SLE RA 16	94	-98	3608	-127.06	-975.39	-30.46
204	SLE RA 17	94	-103	3613	-127.25	-977.04	-32.11
204	SLE RA 18	98	-103	3761	-132.39	-1015.96	-31.91
204	SLE RA 19	98	-108	3766	-132.58	-1017.6	-33.56
204	SLE RA 20	98	-103	3761	-132.39	-1015.96	-31.91
204	SLE RA 21	98	-108	3766	-132.58	-1017.6	-33.56
204	SLE FR 1	84	-87	3251	-114.64	-880.73	-27.07
204	SLE FR 2	84	-89	3253	-114.7	-881.28	-27.62
204	SLE FR 3	84	-87	3251	-114.64	-880.73	-27.07
204	SLE FR 4	88	-94	3406	-120.02	-921.85	-29.07
204	SLE FR 5	88	-92	3404	-119.96	-921.3	-28.52
204	SLE FR 6	91	-95	3506	-123.51	-948.35	-29.49
204	SLE QP 1	84	-87	3251	-114.64	-880.73	-27.07
204	SLE QP 2	88	-92	3404	-119.96	-921.3	-28.52
204	SLD 1	372	101	3564	-125.42	-958.18	45.99
204	SLD 2	334	76	3562	-125.36	-957.77	35.83
204	SLD 3	294	-25	3718	-130.58	-1000.77	0.75
204	SLD 4	257	-50	3716	-130.52	-1000.36	-9.41
204	SLD 5	304	164	3219	-113.79	-867.9	66
204	SLD 6	267	139	3218	-113.74	-867.49	55.84
204	SLD 7	45	-253	3732	-130.99	-1009.89	-84.8
204	SLD 8	8	-278	3730	-130.93	-1009.48	-94.95
204	SLD 9	169	94	3078	-108.99	-833.12	37.91
204	SLD 10	131	69	3076	-108.93	-832.71	27.75
204	SLD 11	-90	-324	3590	-126.19	-975.11	-112.88
204	SLD 12	-127	-349	3588	-126.13	-974.7	-123.04
204	SLD 13	-80	-135	3092	-109.4	-842.24	-47.64
204	SLD 14	-117	-160	3090	-109.35	-841.83	-57.79
204	SLD 15	-158	-260	3246	-114.56	-884.84	-92.87
204	SLD 16	-195	-285	3244	-114.5	-884.43	-103.03
204	SLV 1	735	353	3766	-132.32	-1004.7	143.69
204	SLV 2	651	297	3762	-132.19	-1003.77	120.62
204	SLV 3	557	63	4119	-144.18	-1102.74	38.63
204	SLV 4	472	6	4115	-144.05	-1101.81	15.56
204	SLV 5	583	502	2978	-105.73	-797.95	190.55
204	SLV 6	499	446	2974	-105.6	-797.02	167.48
204	SLV 7	-13	-467	4156	-145.25	-1124.76	-159.64
204	SLV 8	-97	-523	4152	-145.12	-1123.83	-182.71
204	SLV 9	274	339	2656	-94.8	-718.77	125.67
204	SLV 10	189	282	2652	-94.67	-717.84	102.6
204	SLV 11	-322	-630	3834	-134.32	-1045.59	-224.53
204	SLV 12	-406	-686	3830	-134.19	-1044.66	-247.6
204	SLV 13	-296	-190	2693	-95.88	-740.79	-72.6
204	SLV 14	-380	-247	2689	-95.75	-739.86	-95.67
204	SLV 15	-475	-481	3046	-107.73	-838.83	-177.66
204	SLV 16	-559	-538	3042	-107.6	-837.9	-200.73
204	CRTFP Ux+	0	0	0	0	0	0
204	CRTFP Ux-	0	0	0	0	0	0
204	CRTFP Uy+	0	0	0	0	0	0
204	CRTFP Uy-	0	0	0	0	0	0
228	SLU 1	128	-128	5193	-1134.13	-1076.43	1.36
228	SLU 2	126	-146	5216	-1138.78	-1081.65	-3.22
228	SLU 3	128	-128	5193	-1134.13	-1076.43	1.36
228	SLU 4	126	-139	5207	-1136.92	-1079.56	-1.39
228	SLU 5	126	-146	5216	-1138.78	-1081.65	-3.22
228	SLU 6	128	-128	5193	-1134.13	-1076.43	1.36
228	SLU 7	126	-139	5207	-1136.92	-1079.56	-1.39
228	SLU 8	128	-128	5193	-1134.13	-1076.43	1.36
228	SLU 9	126	-139	5207	-1136.92	-1079.56	-1.39
228	SLU 10	149	-171	6106	-1331.48	-1264.72	-3.31
228	SLU 11	151	-153	6083	-1326.83	-1259.5	1.28
228	SLU 12	150	-164	6096	-1329.62	-1262.63	-1.48
228	SLU 13	149	-171	6106	-1331.48	-1264.72	-3.31



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
228	SLU 14	151	-153	6083	-1326.83	-1259.5	1.28
228	SLU 15	150	-164	6096	-1329.62	-1262.63	-1.48
228	SLU 16	151	-153	6083	-1326.83	-1259.5	1.28
228	SLU 17	150	-164	6096	-1329.62	-1262.63	-1.48
228	SLU 18	161	-163	6464	-1409.42	-1337.96	1.24
228	SLU 19	160	-174	6478	-1412.21	-1341.1	-1.51
228	SLU 20	161	-163	6464	-1409.42	-1337.96	1.24
228	SLU 21	160	-174	6478	-1412.21	-1341.1	-1.51
228	SLU 22	145	-146	5820	-1270.05	-1205.58	1.32
228	SLU 23	143	-165	5843	-1274.7	-1210.81	-3.27
228	SLU 24	145	-146	5820	-1270.05	-1205.58	1.32
228	SLU 25	144	-157	5834	-1272.84	-1208.72	-1.43
228	SLU 26	143	-165	5843	-1274.7	-1210.81	-3.27
228	SLU 27	145	-146	5820	-1270.05	-1205.58	1.32
228	SLU 28	144	-157	5834	-1272.84	-1208.72	-1.43
228	SLU 29	145	-146	5820	-1270.05	-1205.58	1.32
228	SLU 30	144	-157	5834	-1272.84	-1208.72	-1.43
228	SLU 31	166	-190	6733	-1467.4	-1393.88	-3.36
228	SLU 32	168	-171	6710	-1462.75	-1388.66	1.23
228	SLU 33	167	-182	6724	-1465.54	-1391.79	-1.52
228	SLU 34	166	-190	6733	-1467.4	-1393.88	-3.36
228	SLU 35	168	-171	6710	-1462.75	-1388.66	1.23
228	SLU 36	167	-182	6724	-1465.54	-1391.79	-1.52
228	SLU 37	168	-171	6710	-1462.75	-1388.66	1.23
228	SLU 38	167	-182	6724	-1465.54	-1391.79	-1.52
228	SLU 39	178	-182	7091	-1545.34	-1467.12	1.19
228	SLU 40	177	-193	7105	-1548.13	-1470.25	-1.56
228	SLU 41	178	-182	7091	-1545.34	-1467.12	1.19
228	SLU 42	177	-193	7105	-1548.13	-1470.25	-1.56
228	SLU 43	160	-160	6536	-1427.76	-1355.07	1.79
228	SLU 44	158	-178	6559	-1432.41	-1360.29	-2.8
228	SLU 45	160	-160	6536	-1427.76	-1355.07	1.79
228	SLU 46	159	-171	6550	-1430.55	-1358.2	-0.96
228	SLU 47	158	-178	6559	-1432.41	-1360.29	-2.8
228	SLU 48	160	-160	6536	-1427.76	-1355.07	1.79
228	SLU 49	159	-171	6550	-1430.55	-1358.2	-0.96
228	SLU 50	160	-160	6536	-1427.76	-1355.07	1.79
228	SLU 51	159	-171	6550	-1430.55	-1358.2	-0.96
228	SLU 52	181	-203	7448	-1625.12	-1543.37	-2.89
228	SLU 53	183	-185	7425	-1620.47	-1538.14	1.7
228	SLU 54	182	-196	7439	-1623.26	-1541.28	-1.05
228	SLU 55	181	-203	7448	-1625.12	-1543.37	-2.89
228	SLU 56	183	-185	7425	-1620.47	-1538.14	1.7
228	SLU 57	182	-196	7439	-1623.26	-1541.28	-1.05
228	SLU 58	183	-185	7425	-1620.47	-1538.14	1.7
228	SLU 59	182	-196	7439	-1623.26	-1541.28	-1.05
228	SLU 60	193	-195	7807	-1703.05	-1616.61	1.66
228	SLU 61	192	-206	7820	-1705.84	-1619.74	-1.09
228	SLU 62	193	-195	7807	-1703.05	-1616.61	1.66
228	SLU 63	192	-206	7820	-1705.84	-1619.74	-1.09
228	SLU 64	177	-178	7163	-1563.68	-1484.23	1.74
228	SLU 65	175	-197	7186	-1568.33	-1489.45	-2.85
228	SLU 66	177	-178	7163	-1563.68	-1484.23	1.74
228	SLU 67	176	-189	7177	-1566.47	-1487.36	-1.01
228	SLU 68	175	-197	7186	-1568.33	-1489.45	-2.85
228	SLU 69	177	-178	7163	-1563.68	-1484.23	1.74
228	SLU 70	176	-189	7177	-1566.47	-1487.36	-1.01
228	SLU 71	177	-178	7163	-1563.68	-1484.23	1.74
228	SLU 72	176	-189	7177	-1566.47	-1487.36	-1.01
228	SLU 73	199	-222	8076	-1761.04	-1672.53	-2.93
228	SLU 74	201	-203	8053	-1756.39	-1667.3	1.66
228	SLU 75	199	-214	8067	-1759.18	-1670.44	-1.1
228	SLU 76	199	-222	8076	-1761.04	-1672.53	-2.93
228	SLU 77	201	-203	8053	-1756.39	-1667.3	1.66
228	SLU 78	199	-214	8067	-1759.18	-1670.44	-1.1
228	SLU 79	201	-203	8053	-1756.39	-1667.3	1.66
228	SLU 80	199	-214	8067	-1759.18	-1670.44	-1.1
228	SLU 81	211	-214	8434	-1838.97	-1745.76	1.62
228	SLU 82	209	-225	8448	-1841.76	-1748.9	-1.13
228	SLU 83	211	-214	8434	-1838.97	-1745.76	1.62
228	SLU 84	209	-225	8448	-1841.76	-1748.9	-1.13
228	SLE RA 1	133	-133	5372	-1172.96	-1113.33	1.35
228	SLE RA 2	131	-145	5388	-1176.06	-1116.81	-1.71
228	SLE RA 3	133	-133	5372	-1172.96	-1113.33	1.35
228	SLE RA 4	132	-141	5381	-1174.82	-1115.42	-0.48
228	SLE RA 5	131	-145	5388	-1176.06	-1116.81	-1.71
228	SLE RA 6	133	-133	5372	-1172.96	-1113.33	1.35
228	SLE RA 7	132	-141	5381	-1174.82	-1115.42	-0.48
228	SLE RA 8	133	-133	5372	-1172.96	-1113.33	1.35
228	SLE RA 9	132	-141	5381	-1174.82	-1115.42	-0.48
228	SLE RA 10	147	-162	5981	-1304.53	-1238.86	-1.77
228	SLE RA 11	148	-150	5965	-1301.43	-1235.38	1.29
228	SLE RA 12	147	-157	5974	-1303.29	-1237.47	-0.54
228	SLE RA 13	147	-162	5981	-1304.53	-1238.86	-1.77
228	SLE RA 14	148	-150	5965	-1301.43	-1235.38	1.29
228	SLE RA 15	147	-157	5974	-1303.29	-1237.47	-0.54
228	SLE RA 16	148	-150	5965	-1301.43	-1235.38	1.29
228	SLE RA 17	147	-157	5974	-1303.29	-1237.47	-0.54
228	SLE RA 18	155	-157	6219	-1356.49	-1287.68	1.27



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
228	SLE RA 19	154	-164	6229	-1358.35	-1289.77	-0.57
228	SLE RA 20	155	-157	6219	-1356.49	-1287.68	1.27
228	SLE RA 21	154	-164	6229	-1358.35	-1289.77	-0.57
228	SLE FR 1	133	-133	5372	-1172.96	-1113.33	1.35
228	SLE FR 2	132	-136	5375	-1173.58	-1114.02	0.74
228	SLE FR 3	133	-133	5372	-1172.96	-1113.33	1.35
228	SLE FR 4	139	-143	5630	-1228.64	-1166.33	0.71
228	SLE FR 5	139	-140	5626	-1228.02	-1165.63	1.33
228	SLE FR 6	144	-145	5796	-1264.72	-1200.51	1.31
228	SLE QP 1	133	-133	5372	-1172.96	-1113.33	1.35
228	SLE QP 2	139	-140	5626	-1228.02	-1165.63	1.33
228	SLD 1	589	162	5892	-1288.79	-1215.61	160.65
228	SLD 2	529	122	5889	-1288.12	-1215.02	137.64
228	SLD 3	465	-33	6155	-1342.32	-1270.97	95.91
228	SLD 4	405	-73	6152	-1341.64	-1270.37	72.89
228	SLD 5	483	260	5308	-1165.31	-1096.88	155.38
228	SLD 6	423	220	5305	-1164.63	-1096.28	132.36
228	SLD 7	70	-390	6186	-1343.73	-1281.4	-60.44
228	SLD 8	11	-429	6182	-1343.05	-1280.81	-83.46
228	SLD 9	268	149	5070	-1112.99	-1050.46	86.11
228	SLD 10	208	109	5067	-1112.31	-1049.87	63.1
228	SLD 11	-145	-501	5948	-1291.41	-1234.98	-129.71
228	SLD 12	-204	-540	5945	-1290.73	-1234.39	-152.73
228	SLD 13	-127	-208	5101	-1114.4	-1060.89	-70.24
228	SLD 14	-186	-247	5098	-1113.72	-1060.3	-93.25
228	SLD 15	-251	-403	5364	-1167.92	-1116.25	-134.99
228	SLD 16	-310	-442	5361	-1167.25	-1115.66	-158
228	SLV 1	1166	558	6227	-1365.71	-1278.65	367.55
228	SLV 2	1031	468	6220	-1364.18	-1277.31	315.28
228	SLV 3	881	106	6833	-1488.61	-1406	217.08
228	SLV 4	746	16	6826	-1487.08	-1404.66	164.82
228	SLV 5	927	787	4891	-1083.47	-1006.86	357.69
228	SLV 6	792	697	4884	-1081.94	-1005.52	305.42
228	SLV 7	-23	-721	6909	-1493.13	-1431.36	-143.86
228	SLV 8	-158	-811	6902	-1491.59	-1430.02	-196.12
228	SLV 9	436	530	4351	-964.44	-901.25	198.78
228	SLV 10	302	441	4344	-962.91	-899.9	146.51
228	SLV 11	-513	-978	6369	-1374.1	-1325.75	-302.77
228	SLV 12	-648	-1067	6362	-1372.57	-1324.41	-355.04
228	SLV 13	-468	-296	4427	-968.96	-926.61	-162.16
228	SLV 14	-603	-386	4420	-967.43	-925.26	-214.43
228	SLV 15	-753	-749	5032	-1091.86	-1053.96	-312.63
228	SLV 16	-887	-839	5025	-1090.33	-1052.61	-364.9
228	CRTFP Ux+	0	0	0	0	0	0
228	CRTFP Ux-	0	0	0	0	0	0
228	CRTFP Uy+	0	0	0	-0.01	-0.01	0
228	CRTFP Uy-	0	0	0	0.01	0.01	0
230	SLU 1	86	-87	3272	-861.05	-68.26	28.07
230	SLU 2	85	-99	3286	-865.13	-68.61	27.44
230	SLU 3	86	-87	3272	-861.05	-68.26	28.07
230	SLU 4	85	-94	3281	-863.5	-68.47	27.69
230	SLU 5	85	-99	3286	-865.13	-68.61	27.44
230	SLU 6	86	-87	3272	-861.05	-68.26	28.07
230	SLU 7	85	-94	3281	-863.5	-68.47	27.69
230	SLU 8	86	-87	3272	-861.05	-68.26	28.07
230	SLU 9	85	-94	3281	-863.5	-68.47	27.69
230	SLU 10	101	-116	3844	-1007.25	-80.14	32.53
230	SLU 11	102	-104	3829	-1003.18	-79.79	33.16
230	SLU 12	101	-111	3838	-1005.62	-80	32.78
230	SLU 13	101	-116	3844	-1007.25	-80.14	32.53
230	SLU 14	102	-104	3829	-1003.18	-79.79	33.16
230	SLU 15	101	-111	3838	-1005.62	-80	32.78
230	SLU 16	102	-104	3829	-1003.18	-79.79	33.16
230	SLU 17	101	-111	3838	-1005.62	-80	32.78
230	SLU 18	108	-111	4068	-1064.09	-84.73	35.34
230	SLU 19	108	-119	4077	-1066.53	-84.94	34.96
230	SLU 20	108	-111	4068	-1064.09	-84.73	35.34
230	SLU 21	108	-119	4077	-1066.53	-84.94	34.96
230	SLU 22	98	-100	3665	-961.27	-76.4	31.89
230	SLU 23	97	-112	3680	-965.34	-76.75	31.26
230	SLU 24	98	-100	3665	-961.27	-76.4	31.89
230	SLU 25	97	-107	3674	-963.71	-76.61	31.51
230	SLU 26	97	-112	3680	-965.34	-76.75	31.26
230	SLU 27	98	-100	3665	-961.27	-76.4	31.89
230	SLU 28	97	-107	3674	-963.71	-76.61	31.51
230	SLU 29	98	-100	3665	-961.27	-76.4	31.89
230	SLU 30	97	-107	3674	-963.71	-76.61	31.51
230	SLU 31	112	-129	4237	-1107.46	-88.28	36.35
230	SLU 32	113	-117	4222	-1103.39	-87.93	36.97
230	SLU 33	113	-124	4231	-1105.83	-88.14	36.6
230	SLU 34	112	-129	4237	-1107.46	-88.28	36.35
230	SLU 35	113	-117	4222	-1103.39	-87.93	36.97
230	SLU 36	113	-124	4231	-1105.83	-88.14	36.6
230	SLU 37	113	-117	4222	-1103.39	-87.93	36.97
230	SLU 38	113	-124	4231	-1105.83	-88.14	36.6
230	SLU 39	120	-124	4461	-1164.3	-92.87	39.15
230	SLU 40	120	-131	4470	-1166.74	-93.08	38.78
230	SLU 41	120	-124	4461	-1164.3	-92.87	39.15
230	SLU 42	120	-131	4470	-1166.74	-93.08	38.78



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
230	SLU 43	108	-109	4118	-1085.01	-85.95	35.18
230	SLU 44	107	-121	4133	-1089.09	-86.3	34.55
230	SLU 45	108	-109	4118	-1085.01	-85.95	35.18
230	SLU 46	107	-116	4127	-1087.46	-86.16	34.8
230	SLU 47	107	-121	4133	-1089.09	-86.3	34.55
230	SLU 48	108	-109	4118	-1085.01	-85.95	35.18
230	SLU 49	107	-116	4127	-1087.46	-86.16	34.8
230	SLU 50	108	-109	4118	-1085.01	-85.95	35.18
230	SLU 51	107	-116	4127	-1087.46	-86.16	34.8
230	SLU 52	122	-138	4691	-1231.21	-97.83	39.64
230	SLU 53	123	-126	4676	-1227.14	-97.48	40.27
230	SLU 54	123	-133	4685	-1229.58	-97.69	39.89
230	SLU 55	122	-138	4691	-1231.21	-97.83	39.64
230	SLU 56	123	-126	4676	-1227.14	-97.48	40.27
230	SLU 57	123	-133	4685	-1229.58	-97.69	39.89
230	SLU 58	123	-126	4676	-1227.14	-97.48	40.27
230	SLU 59	123	-133	4685	-1229.58	-97.69	39.89
230	SLU 60	130	-133	4915	-1288.05	-102.42	42.45
230	SLU 61	130	-140	4924	-1290.49	-102.63	42.07
230	SLU 62	130	-133	4915	-1288.05	-102.42	42.45
230	SLU 63	130	-140	4924	-1290.49	-102.63	42.07
230	SLU 64	120	-122	4512	-1185.22	-94.09	39
230	SLU 65	118	-133	4526	-1189.3	-94.44	38.37
230	SLU 66	120	-122	4512	-1185.22	-94.09	39
230	SLU 67	119	-129	4520	-1187.67	-94.3	38.62
230	SLU 68	118	-133	4526	-1189.3	-94.44	38.37
230	SLU 69	120	-122	4512	-1185.22	-94.09	39
230	SLU 70	119	-129	4520	-1187.67	-94.3	38.62
230	SLU 71	120	-122	4512	-1185.22	-94.09	39
230	SLU 72	119	-129	4520	-1187.67	-94.3	38.62
230	SLU 73	134	-150	5084	-1331.42	-105.97	43.46
230	SLU 74	135	-139	5069	-1327.35	-105.62	44.08
230	SLU 75	135	-146	5078	-1329.79	-105.83	43.71
230	SLU 76	134	-150	5084	-1331.42	-105.97	43.46
230	SLU 77	135	-139	5069	-1327.35	-105.62	44.08
230	SLU 78	135	-146	5078	-1329.79	-105.83	43.71
230	SLU 79	135	-139	5069	-1327.35	-105.62	44.08
230	SLU 80	135	-146	5078	-1329.79	-105.83	43.71
230	SLU 81	142	-146	5308	-1388.26	-110.56	46.26
230	SLU 82	141	-153	5317	-1390.7	-110.77	45.89
230	SLU 83	142	-146	5308	-1388.26	-110.56	46.26
230	SLU 84	141	-153	5317	-1390.7	-110.77	45.89
230	SLE RA 1	89	-91	3384	-889.69	-70.59	29.16
230	SLE RA 2	89	-99	3394	-892.4	-70.82	28.74
230	SLE RA 3	89	-91	3384	-889.69	-70.59	29.16
230	SLE RA 4	89	-96	3390	-891.32	-70.73	28.91
230	SLE RA 5	89	-99	3394	-892.4	-70.82	28.74
230	SLE RA 6	89	-91	3384	-889.69	-70.59	29.16
230	SLE RA 7	89	-96	3390	-891.32	-70.73	28.91
230	SLE RA 8	89	-91	3384	-889.69	-70.59	29.16
230	SLE RA 9	89	-96	3390	-891.32	-70.73	28.91
230	SLE RA 10	99	-110	3765	-987.15	-78.51	32.13
230	SLE RA 11	100	-102	3756	-984.43	-78.27	32.55
230	SLE RA 12	99	-107	3762	-986.06	-78.41	32.3
230	SLE RA 13	99	-110	3765	-987.15	-78.51	32.13
230	SLE RA 14	100	-102	3756	-984.43	-78.27	32.55
230	SLE RA 15	99	-107	3762	-986.06	-78.41	32.3
230	SLE RA 16	100	-102	3756	-984.43	-78.27	32.55
230	SLE RA 17	99	-107	3762	-986.06	-78.41	32.3
230	SLE RA 18	104	-107	3915	-1025.04	-81.57	34
230	SLE RA 19	104	-112	3921	-1026.67	-81.71	33.75
230	SLE RA 20	104	-107	3915	-1025.04	-81.57	34
230	SLE RA 21	104	-112	3921	-1026.67	-81.71	33.75
230	SLE FR 1	89	-91	3384	-889.69	-70.59	29.16
230	SLE FR 2	89	-92	3386	-890.23	-70.63	29.08
230	SLE FR 3	89	-91	3384	-889.69	-70.59	29.16
230	SLE FR 4	94	-97	3545	-930.84	-73.93	30.53
230	SLE FR 5	94	-96	3543	-930.29	-73.88	30.61
230	SLE FR 6	97	-99	3649	-957.36	-76.08	31.58
230	SLE QP 1	89	-91	3384	-889.69	-70.59	29.16
230	SLE QP 2	94	-96	3543	-930.29	-73.88	30.61
230	SLD 1	395	100	3705	-977.1	-76.84	138.17
230	SLD 2	355	75	3703	-976.5	-76.81	123.83
230	SLD 3	312	-28	3867	-1015.12	-80.24	107.86
230	SLD 4	273	-53	3865	-1014.53	-80.21	93.53
230	SLD 5	323	166	3346	-886.87	-69.62	113.86
230	SLD 6	283	140	3344	-886.27	-69.59	99.52
230	SLD 7	48	-260	3888	-1013.62	-80.96	12.85
230	SLD 8	9	-285	3886	-1013.03	-80.93	-1.49
230	SLD 9	179	94	3201	-847.56	-66.84	62.72
230	SLD 10	140	69	3199	-846.96	-66.8	48.38
230	SLD 11	-96	-332	3743	-974.31	-78.17	-38.29
230	SLD 12	-135	-357	3741	-973.72	-78.14	-52.63
230	SLD 13	-85	-138	3221	-846.06	-67.55	-32.3
230	SLD 14	-124	-164	3219	-845.46	-67.52	-46.64
230	SLD 15	-167	-266	3384	-884.08	-70.96	-62.6
230	SLD 16	-207	-291	3382	-883.49	-70.92	-76.94
230	SLV 1	781	357	3908	-1036.42	-80.58	276.48
230	SLV 2	691	300	3904	-1035.06	-80.5	243.92



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
230	SLV 3	591	61	4282	-1123.66	-88.4	206.62
230	SLV 4	502	3	4278	-1122.31	-88.32	174.06
230	SLV 5	619	510	3087	-830.28	-64.05	221.71
230	SLV 6	529	453	3083	-828.92	-63.97	189.16
230	SLV 7	-13	-478	4334	-1121.1	-90.14	-11.14
230	SLV 8	-103	-536	4329	-1119.75	-90.06	-43.69
230	SLV 9	291	344	2757	-740.84	-57.71	104.92
230	SLV 10	201	287	2753	-739.48	-57.63	72.36
230	SLV 11	-342	-644	4004	-1031.66	-83.79	-127.93
230	SLV 12	-431	-701	3999	-1030.31	-83.72	-160.49
230	SLV 13	-314	-195	2808	-738.27	-59.44	-112.84
230	SLV 14	-404	-252	2804	-736.92	-59.36	-145.4
230	SLV 15	-503	-491	3182	-825.52	-67.27	-182.69
230	SLV 16	-593	-549	3178	-824.17	-67.19	-215.25
230	CRTFP Ux+	0	0	0	0	0	0
230	CRTFP Ux-	0	0	0	0	0	0
230	CRTFP Uy+	0	0	0	0	0	0
230	CRTFP Uy-	0	0	0	0	0	0
231	SLU 1	97	-97	3388	-745.02	10	34.05
231	SLU 2	96	-109	3405	-749.79	9.99	33.69
231	SLU 3	97	-97	3388	-745.02	10	34.05
231	SLU 4	96	-105	3399	-747.88	10	33.83
231	SLU 5	96	-109	3405	-749.79	9.99	33.69
231	SLU 6	97	-97	3388	-745.02	10	34.05
231	SLU 7	96	-105	3399	-747.88	10	33.83
231	SLU 8	97	-97	3388	-745.02	10	34.05
231	SLU 9	96	-105	3399	-747.88	10	33.83
231	SLU 10	114	-128	3979	-867.96	11.81	39.88
231	SLU 11	115	-117	3962	-863.18	11.82	40.24
231	SLU 12	114	-124	3972	-866.04	11.81	40.02
231	SLU 13	114	-128	3979	-867.96	11.81	39.88
231	SLU 14	115	-117	3962	-863.18	11.82	40.24
231	SLU 15	114	-124	3972	-866.04	11.81	40.02
231	SLU 16	115	-117	3962	-863.18	11.82	40.24
231	SLU 17	114	-124	3972	-866.04	11.81	40.02
231	SLU 18	122	-125	4208	-913.82	12.59	42.9
231	SLU 19	122	-132	4218	-916.69	12.59	42.68
231	SLU 20	122	-125	4208	-913.82	12.59	42.9
231	SLU 21	122	-132	4218	-916.69	12.59	42.68
231	SLU 22	110	-112	3793	-828.3	11.27	38.7
231	SLU 23	109	-124	3810	-833.08	11.27	38.33
231	SLU 24	110	-112	3793	-828.3	11.27	38.7
231	SLU 25	110	-119	3804	-831.17	11.27	38.48
231	SLU 26	109	-124	3810	-833.08	11.27	38.33
231	SLU 27	110	-112	3793	-828.3	11.27	38.7
231	SLU 28	110	-119	3804	-831.17	11.27	38.48
231	SLU 29	110	-112	3793	-828.3	11.27	38.7
231	SLU 30	110	-119	3804	-831.17	11.27	38.48
231	SLU 31	127	-143	4384	-951.24	13.08	44.53
231	SLU 32	128	-131	4367	-946.46	13.09	44.89
231	SLU 33	127	-138	4377	-949.33	13.09	44.67
231	SLU 34	127	-143	4384	-951.24	13.08	44.53
231	SLU 35	128	-131	4367	-946.46	13.09	44.89
231	SLU 36	127	-138	4377	-949.33	13.09	44.67
231	SLU 37	128	-131	4367	-946.46	13.09	44.89
231	SLU 38	127	-138	4377	-949.33	13.09	44.67
231	SLU 39	136	-139	4613	-997.1	13.87	47.55
231	SLU 40	135	-146	4623	-999.97	13.86	47.33
231	SLU 41	136	-139	4613	-997.1	13.87	47.55
231	SLU 42	135	-146	4623	-999.97	13.86	47.33
231	SLU 43	122	-122	4266	-939.97	12.56	42.67
231	SLU 44	120	-134	4283	-944.75	12.56	42.31
231	SLU 45	122	-122	4266	-939.97	12.56	42.67
231	SLU 46	121	-129	4276	-942.84	12.56	42.45
231	SLU 47	120	-134	4283	-944.75	12.56	42.31
231	SLU 48	122	-122	4266	-939.97	12.56	42.67
231	SLU 49	121	-129	4276	-942.84	12.56	42.45
231	SLU 50	122	-122	4266	-939.97	12.56	42.67
231	SLU 51	121	-129	4276	-942.84	12.56	42.45
231	SLU 52	138	-153	4857	-1062.91	14.37	48.5
231	SLU 53	139	-141	4840	-1058.13	14.38	48.86
231	SLU 54	139	-148	4850	-1061	14.37	48.65
231	SLU 55	138	-153	4857	-1062.91	14.37	48.5
231	SLU 56	139	-141	4840	-1058.13	14.38	48.86
231	SLU 57	139	-148	4850	-1061	14.37	48.65
231	SLU 58	139	-141	4840	-1058.13	14.38	48.86
231	SLU 59	139	-148	4850	-1061	14.37	48.65
231	SLU 60	147	-149	5086	-1108.77	15.16	51.52
231	SLU 61	146	-156	5096	-1111.64	15.15	51.3
231	SLU 62	147	-149	5086	-1108.77	15.16	51.52
231	SLU 63	146	-156	5096	-1111.64	15.15	51.3
231	SLU 64	135	-136	4671	-1023.25	13.84	47.32
231	SLU 65	134	-148	4688	-1028.03	13.83	46.95
231	SLU 66	135	-136	4671	-1023.25	13.84	47.32
231	SLU 67	134	-143	4681	-1026.12	13.83	47.1
231	SLU 68	134	-148	4688	-1028.03	13.83	46.95
231	SLU 69	135	-136	4671	-1023.25	13.84	47.32
231	SLU 70	134	-143	4681	-1026.12	13.83	47.1
231	SLU 71	135	-136	4671	-1023.25	13.84	47.32



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
231	SLU 72	134	-143	4681	-1026.12	13.83	47.1
231	SLU 73	151	-167	5262	-1146.19	15.65	53.15
231	SLU 74	153	-155	5245	-1141.41	15.65	53.51
231	SLU 75	152	-162	5255	-1144.28	15.65	53.29
231	SLU 76	151	-167	5262	-1146.19	15.65	53.15
231	SLU 77	153	-155	5245	-1141.41	15.65	53.51
231	SLU 78	152	-162	5255	-1144.28	15.65	53.29
231	SLU 79	153	-155	5245	-1141.41	15.65	53.51
231	SLU 80	152	-162	5255	-1144.28	15.65	53.29
231	SLU 81	160	-164	5491	-1192.05	16.43	56.17
231	SLU 82	159	-171	5501	-1194.92	16.43	55.95
231	SLU 83	160	-164	5491	-1192.05	16.43	56.17
231	SLU 84	159	-171	5501	-1194.92	16.43	55.95
231	SLE RA 1	101	-102	3504	-768.81	10.36	35.38
231	SLE RA 2	100	-109	3515	-772	10.36	35.13
231	SLE RA 3	101	-102	3504	-768.81	10.36	35.38
231	SLE RA 4	100	-106	3511	-770.72	10.36	35.23
231	SLE RA 5	100	-109	3515	-772	10.36	35.13
231	SLE RA 6	101	-102	3504	-768.81	10.36	35.38
231	SLE RA 7	100	-106	3511	-770.72	10.36	35.23
231	SLE RA 8	101	-102	3504	-768.81	10.36	35.38
231	SLE RA 9	100	-106	3511	-770.72	10.36	35.23
231	SLE RA 10	112	-122	3898	-850.77	11.57	39.26
231	SLE RA 11	113	-114	3887	-847.59	11.57	39.51
231	SLE RA 12	112	-119	3893	-849.5	11.57	39.36
231	SLE RA 13	112	-122	3898	-850.77	11.57	39.26
231	SLE RA 14	113	-114	3887	-847.59	11.57	39.51
231	SLE RA 15	112	-119	3893	-849.5	11.57	39.36
231	SLE RA 16	113	-114	3887	-847.59	11.57	39.51
231	SLE RA 17	112	-119	3893	-849.5	11.57	39.36
231	SLE RA 18	118	-120	4051	-881.35	12.09	41.28
231	SLE RA 19	117	-125	4057	-883.26	12.09	41.13
231	SLE RA 20	118	-120	4051	-881.35	12.09	41.28
231	SLE RA 21	117	-125	4057	-883.26	12.09	41.13
231	SLE FR 1	101	-102	3504	-768.81	10.36	35.38
231	SLE FR 2	101	-103	3506	-769.45	10.36	35.33
231	SLE FR 3	101	-102	3504	-768.81	10.36	35.38
231	SLE FR 4	106	-109	3670	-803.21	10.88	37.1
231	SLE FR 5	106	-107	3668	-802.57	10.88	37.15
231	SLE FR 6	109	-111	3777	-825.08	11.23	38.33
231	SLE QP 1	101	-102	3504	-768.81	10.36	35.38
231	SLE QP 2	106	-107	3668	-802.57	10.88	37.15
231	SLD 1	446	94	3819	-841.35	11.97	155.65
231	SLD 2	402	69	3817	-840.74	11.96	140.11
231	SLD 3	353	-40	3988	-873.08	12.51	123.29
231	SLD 4	308	-65	3986	-872.47	12.5	107.75
231	SLD 5	365	164	3458	-766.29	10.39	127.21
231	SLD 6	320	139	3456	-765.69	10.38	111.68
231	SLD 7	54	-280	4020	-872.06	12.19	19.35
231	SLD 8	10	-305	4019	-871.45	12.18	3.81
231	SLD 9	202	91	3318	-733.69	9.58	70.48
231	SLD 10	157	66	3316	-733.09	9.57	54.94
231	SLD 11	-108	-353	3880	-839.46	11.38	-37.38
231	SLD 12	-153	-378	3878	-838.85	11.37	-52.92
231	SLD 13	-97	-149	3350	-732.68	9.27	-33.46
231	SLD 14	-141	-174	3349	-732.07	9.26	-49
231	SLD 15	-190	-283	3519	-764.41	9.81	-65.82
231	SLD 16	-234	-308	3517	-763.8	9.8	-81.35
231	SLV 1	884	357	4009	-890.49	13.35	307.86
231	SLV 2	782	300	4005	-889.11	13.33	272.58
231	SLV 3	669	48	4397	-963.32	14.59	233.41
231	SLV 4	568	-9	4393	-961.94	14.56	198.14
231	SLV 5	700	521	3183	-718.98	9.76	243.62
231	SLV 6	598	465	3179	-717.6	9.74	208.34
231	SLV 7	-15	-510	4477	-961.73	13.87	-4.54
231	SLV 8	-116	-567	4473	-960.35	13.85	-39.81
231	SLV 9	328	353	2863	-644.79	7.92	114.11
231	SLV 10	227	296	2859	-643.41	7.89	78.83
231	SLV 11	-387	-679	4157	-887.55	12.03	-134.05
231	SLV 12	-488	-736	4153	-886.17	12	-169.33
231	SLV 13	-356	-205	2943	-643.21	7.2	-123.84
231	SLV 14	-457	-262	2939	-641.83	7.18	-159.12
231	SLV 15	-570	-514	3331	-716.03	8.44	-198.29
231	SLV 16	-672	-571	3327	-714.65	8.41	-233.57
231	CRTFP Ux+	0	0	0	0	0	0
231	CRTFP Ux-	0	0	0	0	0	0
231	CRTFP Uy+	0	0	0	0	0	0
231	CRTFP Uy-	0	0	0	0	0	0
232	SLU 1	97	-94	3118	-554.03	8.04	34.01
232	SLU 2	96	-104	3135	-559.19	8.02	33.67
232	SLU 3	97	-94	3118	-554.03	8.04	34.01
232	SLU 4	96	-100	3128	-557.13	8.03	33.81
232	SLU 5	96	-104	3135	-559.19	8.02	33.67
232	SLU 6	97	-94	3118	-554.03	8.04	34.01
232	SLU 7	96	-100	3128	-557.13	8.03	33.81
232	SLU 8	97	-94	3118	-554.03	8.04	34.01
232	SLU 9	96	-100	3128	-557.13	8.03	33.81
232	SLU 10	113	-123	3659	-641.8	9.47	39.85
232	SLU 11	114	-113	3642	-636.65	9.48	40.19



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
232	SLU 12	114	-119	3653	-639.74	9.47	39.98
232	SLU 13	113	-123	3659	-641.8	9.47	39.85
232	SLU 14	114	-113	3642	-636.65	9.48	40.19
232	SLU 15	114	-119	3653	-639.74	9.47	39.98
232	SLU 16	114	-113	3642	-636.65	9.48	40.19
232	SLU 17	114	-119	3653	-639.74	9.47	39.98
232	SLU 18	122	-121	3867	-672.05	10.1	42.84
232	SLU 19	121	-127	3877	-675.14	10.09	42.63
232	SLU 20	122	-121	3867	-672.05	10.1	42.84
232	SLU 21	121	-127	3877	-675.14	10.09	42.63
232	SLU 22	110	-108	3488	-612.23	9.05	38.65
232	SLU 23	109	-118	3505	-617.38	9.04	38.31
232	SLU 24	110	-108	3488	-612.23	9.05	38.65
232	SLU 25	109	-114	3498	-615.32	9.04	38.44
232	SLU 26	109	-118	3505	-617.38	9.04	38.31
232	SLU 27	110	-108	3488	-612.23	9.05	38.65
232	SLU 28	109	-114	3498	-615.32	9.04	38.44
232	SLU 29	110	-108	3488	-612.23	9.05	38.65
232	SLU 30	109	-114	3498	-615.32	9.04	38.44
232	SLU 31	126	-137	4030	-700	10.48	44.48
232	SLU 32	128	-127	4013	-694.84	10.5	44.83
232	SLU 33	127	-133	4023	-697.93	10.49	44.62
232	SLU 34	126	-137	4030	-700	10.48	44.48
232	SLU 35	128	-127	4013	-694.84	10.5	44.83
232	SLU 36	127	-133	4023	-697.93	10.49	44.62
232	SLU 37	128	-127	4013	-694.84	10.5	44.83
232	SLU 38	127	-133	4023	-697.93	10.49	44.62
232	SLU 39	135	-135	4238	-730.25	11.12	47.48
232	SLU 40	134	-141	4248	-733.34	11.11	47.27
232	SLU 41	135	-135	4238	-730.25	11.12	47.48
232	SLU 42	134	-141	4248	-733.34	11.11	47.27
232	SLU 43	121	-118	3926	-700.29	10.1	42.63
232	SLU 44	120	-127	3943	-705.44	10.09	42.28
232	SLU 45	121	-118	3926	-700.29	10.1	42.63
232	SLU 46	121	-123	3936	-703.38	10.09	42.42
232	SLU 47	120	-127	3943	-705.44	10.09	42.28
232	SLU 48	121	-118	3926	-700.29	10.1	42.63
232	SLU 49	121	-123	3936	-703.38	10.09	42.42
232	SLU 50	121	-118	3926	-700.29	10.1	42.63
232	SLU 51	121	-123	3936	-703.38	10.09	42.42
232	SLU 52	138	-146	4468	-788.06	11.53	48.46
232	SLU 53	139	-137	4451	-782.9	11.55	48.8
232	SLU 54	138	-142	4461	-786	11.54	48.6
232	SLU 55	138	-146	4468	-788.06	11.53	48.46
232	SLU 56	139	-137	4451	-782.9	11.55	48.8
232	SLU 57	138	-142	4461	-786	11.54	48.6
232	SLU 58	139	-137	4451	-782.9	11.55	48.8
232	SLU 59	138	-142	4461	-786	11.54	48.6
232	SLU 60	146	-145	4675	-818.31	12.16	51.45
232	SLU 61	146	-151	4686	-821.4	12.16	51.25
232	SLU 62	146	-145	4675	-818.31	12.16	51.45
232	SLU 63	146	-151	4686	-821.4	12.16	51.25
232	SLU 64	135	-132	4296	-758.49	11.11	47.26
232	SLU 65	133	-142	4313	-763.64	11.1	46.92
232	SLU 66	135	-132	4296	-758.49	11.11	47.26
232	SLU 67	134	-138	4307	-761.58	11.11	47.06
232	SLU 68	133	-142	4313	-763.64	11.1	46.92
232	SLU 69	135	-132	4296	-758.49	11.11	47.26
232	SLU 70	134	-138	4307	-761.58	11.11	47.06
232	SLU 71	135	-132	4296	-758.49	11.11	47.26
232	SLU 72	134	-138	4307	-761.58	11.11	47.06
232	SLU 73	151	-160	4838	-846.25	12.55	53.1
232	SLU 74	152	-151	4821	-841.1	12.56	53.44
232	SLU 75	151	-157	4831	-844.19	12.55	53.24
232	SLU 76	151	-160	4838	-846.25	12.55	53.1
232	SLU 77	152	-151	4821	-841.1	12.56	53.44
232	SLU 78	151	-157	4831	-844.19	12.55	53.24
232	SLU 79	152	-151	4821	-841.1	12.56	53.44
232	SLU 80	151	-157	4831	-844.19	12.55	53.24
232	SLU 81	160	-159	5046	-876.51	13.18	56.09
232	SLU 82	159	-165	5056	-879.6	13.17	55.88
232	SLU 83	160	-159	5046	-876.51	13.18	56.09
232	SLU 84	159	-165	5056	-879.6	13.17	55.88
232	SLE RA 1	101	-98	3223	-570.66	8.33	35.34
232	SLE RA 2	100	-105	3235	-574.1	8.32	35.11
232	SLE RA 3	101	-98	3223	-570.66	8.33	35.34
232	SLE RA 4	100	-102	3230	-572.72	8.32	35.2
232	SLE RA 5	100	-105	3235	-574.1	8.32	35.11
232	SLE RA 6	101	-98	3223	-570.66	8.33	35.34
232	SLE RA 7	100	-102	3230	-572.72	8.32	35.2
232	SLE RA 8	101	-98	3223	-570.66	8.33	35.34
232	SLE RA 9	100	-102	3230	-572.72	8.32	35.2
232	SLE RA 10	112	-117	3585	-629.17	9.28	39.23
232	SLE RA 11	112	-111	3573	-625.74	9.29	39.46
232	SLE RA 12	112	-115	3580	-627.8	9.29	39.32
232	SLE RA 13	112	-117	3585	-629.17	9.28	39.23
232	SLE RA 14	112	-111	3573	-625.74	9.29	39.46
232	SLE RA 15	112	-115	3580	-627.8	9.29	39.32
232	SLE RA 16	112	-111	3573	-625.74	9.29	39.46



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
232	SLE RA 17	112	-115	3580	-627.8	9.29	39.32
232	SLE RA 18	117	-116	3723	-649.34	9.7	41.22
232	SLE RA 19	117	-120	3730	-651.4	9.7	41.08
232	SLE RA 20	117	-116	3723	-649.34	9.7	41.22
232	SLE RA 21	117	-120	3730	-651.4	9.7	41.08
232	SLE FR 1	101	-98	3223	-570.66	8.33	35.34
232	SLE FR 2	100	-100	3226	-571.35	8.32	35.29
232	SLE FR 3	101	-98	3223	-570.66	8.33	35.34
232	SLE FR 4	105	-105	3376	-594.95	8.74	37.06
232	SLE FR 5	106	-104	3373	-594.27	8.74	37.1
232	SLE FR 6	109	-107	3473	-610	9.01	38.28
232	SLE QP 1	101	-98	3223	-570.66	8.33	35.34
232	SLE QP 2	106	-104	3373	-594.27	8.74	37.1
232	SLD 1	446	75	3495	-620.71	9.7	155.82
232	SLD 2	402	54	3494	-620.21	9.69	140.26
232	SLD 3	353	-46	3651	-643.52	10.14	123.44
232	SLD 4	308	-67	3649	-643.02	10.14	107.88
232	SLD 5	365	141	3174	-567.78	8.35	127.27
232	SLD 6	320	119	3173	-567.27	8.34	111.71
232	SLD 7	54	-262	3693	-643.82	9.84	19.34
232	SLD 8	9	-283	3691	-643.31	9.83	3.78
232	SLD 9	202	76	3055	-545.22	7.64	70.43
232	SLD 10	157	54	3054	-544.72	7.64	54.87
232	SLD 11	-109	-326	3574	-621.26	9.14	-37.51
232	SLD 12	-154	-348	3572	-620.75	9.13	-53.07
232	SLD 13	-97	-140	3098	-545.51	7.34	-33.67
232	SLD 14	-142	-162	3096	-545.01	7.33	-49.23
232	SLD 15	-190	-261	3253	-568.33	7.79	-66.05
232	SLD 16	-235	-282	3252	-567.82	7.78	-81.61
232	SLV 1	884	310	3648	-654.21	10.92	308.3
232	SLV 2	783	261	3645	-653.07	10.9	272.96
232	SLV 3	670	30	4006	-706.64	11.94	233.81
232	SLV 4	568	-19	4003	-705.5	11.92	198.47
232	SLV 5	700	462	2914	-533.13	7.85	243.81
232	SLV 6	598	413	2910	-531.99	7.83	208.47
232	SLV 7	-15	-471	4108	-707.9	11.25	-4.49
232	SLV 8	-117	-520	4104	-706.76	11.23	-39.83
232	SLV 9	328	313	2642	-481.78	6.25	114.04
232	SLV 10	226	264	2639	-480.63	6.23	78.7
232	SLV 11	-387	-620	3836	-656.55	9.64	-134.26
232	SLV 12	-489	-669	3833	-655.4	9.63	-169.6
232	SLV 13	-357	-188	2744	-483.03	5.56	-124.27
232	SLV 14	-459	-237	2740	-481.89	5.54	-159.6
232	SLV 15	-571	-468	3102	-535.46	6.58	-198.76
232	SLV 16	-673	-517	3098	-534.32	6.56	-234.09
232	CRTFP Ux+	0	0	0	0	0	0
232	CRTFP Ux-	0	0	0	0	0	0
232	CRTFP Uy+	0	0	0	0	0	0
232	CRTFP Uy-	0	0	0	0	0	0
233	SLU 1	96	-90	2903	-406.36	6.24	33.93
233	SLU 2	95	-97	2921	-412.01	6.22	33.59
233	SLU 3	96	-90	2903	-406.36	6.24	33.93
233	SLU 4	96	-94	2914	-409.75	6.23	33.73
233	SLU 5	95	-97	2921	-412.01	6.22	33.59
233	SLU 6	96	-90	2903	-406.36	6.24	33.93
233	SLU 7	96	-94	2914	-409.75	6.23	33.73
233	SLU 8	96	-90	2903	-406.36	6.24	33.93
233	SLU 9	96	-94	2914	-409.75	6.23	33.73
233	SLU 10	113	-116	3407	-467.06	7.33	39.74
233	SLU 11	114	-108	3390	-461.41	7.35	40.08
233	SLU 12	113	-113	3400	-464.8	7.34	39.88
233	SLU 13	113	-116	3407	-467.06	7.33	39.74
233	SLU 14	114	-108	3390	-461.41	7.35	40.08
233	SLU 15	113	-113	3400	-464.8	7.34	39.88
233	SLU 16	114	-108	3390	-461.41	7.35	40.08
233	SLU 17	113	-113	3400	-464.8	7.34	39.88
233	SLU 18	121	-116	3598	-485.01	7.82	42.71
233	SLU 19	121	-121	3609	-488.4	7.81	42.51
233	SLU 20	121	-116	3598	-485.01	7.82	42.71
233	SLU 21	121	-121	3609	-488.4	7.81	42.51
233	SLU 22	110	-103	3247	-445.12	7.02	38.55
233	SLU 23	108	-111	3265	-450.77	7	38.21
233	SLU 24	110	-103	3247	-445.12	7.02	38.55
233	SLU 25	109	-108	3258	-448.51	7.01	38.35
233	SLU 26	108	-111	3265	-450.77	7	38.21
233	SLU 27	110	-103	3247	-445.12	7.02	38.55
233	SLU 28	109	-108	3258	-448.51	7.01	38.35
233	SLU 29	110	-103	3247	-445.12	7.02	38.55
233	SLU 30	109	-108	3258	-448.51	7.01	38.35
233	SLU 31	126	-130	3751	-505.83	8.11	44.36
233	SLU 32	127	-122	3733	-500.18	8.13	44.7
233	SLU 33	126	-126	3744	-503.57	8.12	44.5
233	SLU 34	126	-130	3751	-505.83	8.11	44.36
233	SLU 35	127	-122	3733	-500.18	8.13	44.7
233	SLU 36	126	-126	3744	-503.57	8.12	44.5
233	SLU 37	127	-122	3733	-500.18	8.13	44.7
233	SLU 38	126	-126	3744	-503.57	8.12	44.5
233	SLU 39	135	-130	3942	-523.77	8.6	47.33
233	SLU 40	134	-134	3952	-527.16	8.59	47.13



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
233	SLU 41	135	-130	3942	-523.77	8.6	47.33
233	SLU 42	134	-134	3952	-527.16	8.59	47.13
233	SLU 43	121	-112	3657	-514.98	7.84	42.52
233	SLU 44	120	-120	3674	-520.62	7.83	42.19
233	SLU 45	121	-112	3657	-514.98	7.84	42.52
233	SLU 46	120	-116	3667	-518.36	7.83	42.32
233	SLU 47	120	-120	3674	-520.62	7.83	42.19
233	SLU 48	121	-112	3657	-514.98	7.84	42.52
233	SLU 49	120	-116	3667	-518.36	7.83	42.32
233	SLU 50	121	-112	3657	-514.98	7.84	42.52
233	SLU 51	120	-116	3667	-518.36	7.83	42.32
233	SLU 52	137	-138	4161	-575.68	8.94	48.34
233	SLU 53	138	-130	4143	-570.03	8.95	48.67
233	SLU 54	138	-135	4154	-573.42	8.94	48.47
233	SLU 55	137	-138	4161	-575.68	8.94	48.34
233	SLU 56	138	-130	4143	-570.03	8.95	48.67
233	SLU 57	138	-135	4154	-573.42	8.94	48.47
233	SLU 58	138	-130	4143	-570.03	8.95	48.67
233	SLU 59	138	-135	4154	-573.42	8.94	48.47
233	SLU 60	146	-138	4351	-593.63	9.43	51.31
233	SLU 61	145	-143	4362	-597.02	9.42	51.11
233	SLU 62	146	-138	4351	-593.63	9.43	51.31
233	SLU 63	145	-143	4362	-597.02	9.42	51.11
233	SLU 64	134	-125	4000	-553.74	8.62	47.14
233	SLU 65	133	-133	4018	-559.39	8.6	46.81
233	SLU 66	134	-125	4000	-553.74	8.62	47.14
233	SLU 67	133	-130	4011	-557.13	8.61	46.94
233	SLU 68	133	-133	4018	-559.39	8.6	46.81
233	SLU 69	134	-125	4000	-553.74	8.62	47.14
233	SLU 70	133	-130	4011	-557.13	8.61	46.94
233	SLU 71	134	-125	4000	-553.74	8.62	47.14
233	SLU 72	133	-130	4011	-557.13	8.61	46.94
233	SLU 73	150	-152	4504	-614.44	9.71	52.96
233	SLU 74	152	-144	4487	-608.79	9.73	53.29
233	SLU 75	151	-149	4497	-612.18	9.72	53.09
233	SLU 76	150	-152	4504	-614.44	9.71	52.96
233	SLU 77	152	-144	4487	-608.79	9.73	53.29
233	SLU 78	151	-149	4497	-612.18	9.72	53.09
233	SLU 79	152	-144	4487	-608.79	9.73	53.29
233	SLU 80	151	-149	4497	-612.18	9.72	53.09
233	SLU 81	159	-152	4695	-632.39	10.21	55.93
233	SLU 82	158	-157	4706	-635.78	10.2	55.73
233	SLU 83	159	-152	4695	-632.39	10.21	55.93
233	SLU 84	158	-157	4706	-635.78	10.2	55.73
233	SLE RA 1	100	-93	3002	-417.43	6.46	35.25
233	SLE RA 2	99	-99	3013	-421.2	6.45	35.03
233	SLE RA 3	100	-93	3002	-417.43	6.46	35.25
233	SLE RA 4	100	-97	3009	-419.69	6.45	35.11
233	SLE RA 5	99	-99	3013	-421.2	6.45	35.03
233	SLE RA 6	100	-93	3002	-417.43	6.46	35.25
233	SLE RA 7	100	-97	3009	-419.69	6.45	35.11
233	SLE RA 8	100	-93	3002	-417.43	6.46	35.25
233	SLE RA 9	100	-97	3009	-419.69	6.45	35.11
233	SLE RA 10	111	-111	3338	-457.9	7.19	39.13
233	SLE RA 11	112	-106	3326	-454.14	7.2	39.35
233	SLE RA 12	111	-109	3333	-456.4	7.19	39.21
233	SLE RA 13	111	-111	3338	-457.9	7.19	39.13
233	SLE RA 14	112	-106	3326	-454.14	7.2	39.35
233	SLE RA 15	111	-109	3333	-456.4	7.19	39.21
233	SLE RA 16	112	-106	3326	-454.14	7.2	39.35
233	SLE RA 17	111	-109	3333	-456.4	7.19	39.21
233	SLE RA 18	117	-111	3465	-469.87	7.52	41.1
233	SLE RA 19	116	-114	3472	-472.13	7.51	40.97
233	SLE RA 20	117	-111	3465	-469.87	7.52	41.1
233	SLE RA 21	116	-114	3472	-472.13	7.51	40.97
233	SLE FR 1	100	-93	3002	-417.43	6.46	35.25
233	SLE FR 2	100	-95	3004	-418.19	6.46	35.2
233	SLE FR 3	100	-93	3002	-417.43	6.46	35.25
233	SLE FR 4	105	-100	3143	-433.92	6.78	36.96
233	SLE FR 5	105	-99	3141	-433.16	6.78	37
233	SLE FR 6	109	-102	3233	-443.65	6.99	38.18
233	SLE QP 1	100	-93	3002	-417.43	6.46	35.25
233	SLE QP 2	105	-99	3141	-433.16	6.78	37
233	SLD 1	446	59	3237	-449.31	7.62	155.92
233	SLD 2	402	40	3236	-448.97	7.61	140.34
233	SLD 3	353	-49	3383	-466.3	7.98	123.52
233	SLD 4	308	-67	3382	-465.95	7.97	107.93
233	SLD 5	365	118	2949	-412.37	6.49	127.29
233	SLD 6	320	100	2948	-412.02	6.48	111.7
233	SLD 7	54	-241	3435	-468.98	7.69	19.26
233	SLD 8	9	-259	3433	-468.64	7.68	3.68
233	SLD 9	201	62	2848	-397.69	5.88	70.33
233	SLD 10	157	44	2847	-397.34	5.87	54.75
233	SLD 11	-109	-298	3333	-454.3	7.08	-37.69
233	SLD 12	-154	-316	3332	-453.96	7.07	-53.28
233	SLD 13	-98	-130	2899	-400.37	5.58	-33.92
233	SLD 14	-143	-148	2898	-400.03	5.58	-49.51
233	SLD 15	-191	-238	3045	-417.36	5.94	-66.33
233	SLD 16	-236	-256	3044	-417.01	5.94	-81.91



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
233	SLV 1	885	265	3359	-469.73	8.69	308.66
233	SLV 2	783	224	3356	-468.95	8.68	273.26
233	SLV 3	670	15	3695	-508.93	9.51	234.11
233	SLV 4	568	-26	3692	-508.14	9.5	198.72
233	SLV 5	700	404	2698	-384.96	6.11	243.95
233	SLV 6	598	363	2695	-384.18	6.1	208.56
233	SLV 7	-15	-429	3817	-515.61	8.85	-4.54
233	SLV 8	-117	-471	3814	-514.83	8.83	-39.93
233	SLV 9	327	273	2467	-351.5	4.72	113.94
233	SLV 10	226	232	2464	-350.72	4.71	78.55
233	SLV 11	-388	-560	3586	-482.15	7.46	-134.55
233	SLV 12	-490	-602	3583	-481.36	7.44	-169.94
233	SLV 13	-358	-171	2589	-358.19	4.06	-124.71
233	SLV 14	-460	-213	2586	-357.4	4.04	-160.1
233	SLV 15	-573	-421	2925	-397.38	4.88	-199.25
233	SLV 16	-674	-463	2922	-396.6	4.86	-234.65
233	CRTFP Ux+	0	0	0	0	0	0
233	CRTFP Ux-	0	0	0	0	0	0
233	CRTFP Uy+	0	0	0	0	0	0
233	CRTFP Uy-	0	0	0	0	0	0
234	SLU 1	96	-84	2740	-294.94	4.7	33.79
234	SLU 2	95	-90	2758	-301.13	4.68	33.46
234	SLU 3	96	-84	2740	-294.94	4.7	33.79
234	SLU 4	95	-88	2750	-298.65	4.69	33.59
234	SLU 5	95	-90	2758	-301.13	4.68	33.46
234	SLU 6	96	-84	2740	-294.94	4.7	33.79
234	SLU 7	95	-88	2750	-298.65	4.69	33.59
234	SLU 8	96	-84	2740	-294.94	4.7	33.79
234	SLU 9	95	-88	2750	-298.65	4.69	33.59
234	SLU 10	112	-108	3215	-335.29	5.5	39.57
234	SLU 11	113	-102	3197	-329.1	5.52	39.9
234	SLU 12	113	-106	3208	-332.81	5.51	39.7
234	SLU 13	112	-108	3215	-335.29	5.5	39.57
234	SLU 14	113	-102	3197	-329.1	5.52	39.9
234	SLU 15	113	-106	3208	-332.81	5.51	39.7
234	SLU 16	113	-102	3197	-329.1	5.52	39.9
234	SLU 17	113	-106	3208	-332.81	5.51	39.7
234	SLU 18	121	-110	3393	-343.73	5.87	42.51
234	SLU 19	120	-113	3404	-347.45	5.86	42.32
234	SLU 20	121	-110	3393	-343.73	5.87	42.51
234	SLU 21	120	-113	3404	-347.45	5.86	42.32
234	SLU 22	109	-97	3063	-318.97	5.27	38.38
234	SLU 23	108	-103	3081	-325.17	5.25	38.05
234	SLU 24	109	-97	3063	-318.97	5.27	38.38
234	SLU 25	108	-101	3074	-322.69	5.26	38.18
234	SLU 26	108	-103	3081	-325.17	5.25	38.05
234	SLU 27	109	-97	3063	-318.97	5.27	38.38
234	SLU 28	108	-101	3074	-322.69	5.26	38.18
234	SLU 29	109	-97	3063	-318.97	5.27	38.38
234	SLU 30	108	-101	3074	-322.69	5.26	38.18
234	SLU 31	125	-121	3539	-359.33	6.08	44.16
234	SLU 32	126	-115	3520	-353.13	6.1	44.48
234	SLU 33	126	-119	3531	-356.85	6.08	44.29
234	SLU 34	125	-121	3539	-359.33	6.08	44.16
234	SLU 35	126	-115	3520	-353.13	6.1	44.48
234	SLU 36	126	-119	3531	-356.85	6.08	44.29
234	SLU 37	126	-115	3520	-353.13	6.1	44.48
234	SLU 38	126	-119	3531	-356.85	6.08	44.29
234	SLU 39	134	-123	3716	-367.77	6.45	47.1
234	SLU 40	133	-127	3727	-371.49	6.44	46.91
234	SLU 41	134	-123	3716	-367.77	6.45	47.1
234	SLU 42	133	-127	3727	-371.49	6.44	46.91
234	SLU 43	120	-105	3451	-375.18	5.91	42.35
234	SLU 44	119	-111	3469	-381.37	5.89	42.03
234	SLU 45	120	-105	3451	-375.18	5.91	42.35
234	SLU 46	120	-109	3461	-378.89	5.9	42.16
234	SLU 47	119	-111	3469	-381.37	5.89	42.03
234	SLU 48	120	-105	3451	-375.18	5.91	42.35
234	SLU 49	120	-109	3461	-378.89	5.9	42.16
234	SLU 50	120	-105	3451	-375.18	5.91	42.35
234	SLU 51	120	-109	3461	-378.89	5.9	42.16
234	SLU 52	137	-129	3926	-415.53	6.71	48.13
234	SLU 53	138	-123	3908	-409.34	6.73	48.46
234	SLU 54	137	-126	3919	-413.05	6.72	48.26
234	SLU 55	137	-129	3926	-415.53	6.71	48.13
234	SLU 56	138	-123	3908	-409.34	6.73	48.46
234	SLU 57	137	-126	3919	-413.05	6.72	48.26
234	SLU 58	138	-123	3908	-409.34	6.73	48.46
234	SLU 59	137	-126	3919	-413.05	6.72	48.26
234	SLU 60	145	-131	4104	-423.98	7.09	51.08
234	SLU 61	145	-134	4115	-427.69	7.07	50.88
234	SLU 62	145	-131	4104	-423.98	7.09	51.08
234	SLU 63	145	-134	4115	-427.69	7.07	50.88
234	SLU 64	133	-118	3774	-399.21	6.49	46.94
234	SLU 65	132	-124	3792	-405.41	6.47	46.61
234	SLU 66	133	-118	3774	-399.21	6.49	46.94
234	SLU 67	133	-122	3785	-402.93	6.47	46.75
234	SLU 68	132	-124	3792	-405.41	6.47	46.61
234	SLU 69	133	-118	3774	-399.21	6.49	46.94



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
234	SLU 70	133	-122	3785	-402.93	6.47	46.75
234	SLU 71	133	-118	3774	-399.21	6.49	46.94
234	SLU 72	133	-122	3785	-402.93	6.47	46.75
234	SLU 73	150	-142	4250	-439.57	7.29	52.72
234	SLU 74	151	-136	4231	-433.37	7.31	53.05
234	SLU 75	150	-140	4242	-437.09	7.3	52.85
234	SLU 76	150	-142	4250	-439.57	7.29	52.72
234	SLU 77	151	-136	4231	-433.37	7.31	53.05
234	SLU 78	150	-140	4242	-437.09	7.3	52.85
234	SLU 79	151	-136	4231	-433.37	7.31	53.05
234	SLU 80	150	-140	4242	-437.09	7.3	52.85
234	SLU 81	158	-144	4427	-448.01	7.66	55.67
234	SLU 82	158	-147	4438	-451.73	7.65	55.47
234	SLU 83	158	-144	4427	-448.01	7.66	55.67
234	SLU 84	158	-147	4438	-451.73	7.65	55.47
234	SLE RA 1	100	-88	2832	-301.8	4.86	35.1
234	SLE RA 2	99	-92	2844	-305.94	4.85	34.88
234	SLE RA 3	100	-88	2832	-301.8	4.86	35.1
234	SLE RA 4	99	-90	2839	-304.28	4.85	34.97
234	SLE RA 5	99	-92	2844	-305.94	4.85	34.88
234	SLE RA 6	100	-88	2832	-301.8	4.86	35.1
234	SLE RA 7	99	-90	2839	-304.28	4.85	34.97
234	SLE RA 8	100	-88	2832	-301.8	4.86	35.1
234	SLE RA 9	99	-90	2839	-304.28	4.85	34.97
234	SLE RA 10	111	-104	3149	-328.71	5.4	38.95
234	SLE RA 11	111	-100	3137	-324.58	5.41	39.17
234	SLE RA 12	111	-102	3144	-327.06	5.4	39.04
234	SLE RA 13	111	-104	3149	-328.71	5.4	38.95
234	SLE RA 14	111	-100	3137	-324.58	5.41	39.17
234	SLE RA 15	111	-102	3144	-327.06	5.4	39.04
234	SLE RA 16	111	-100	3137	-324.58	5.41	39.17
234	SLE RA 17	111	-102	3144	-327.06	5.4	39.04
234	SLE RA 18	116	-105	3268	-334.34	5.65	40.92
234	SLE RA 19	116	-107	3275	-336.81	5.64	40.79
234	SLE RA 20	116	-105	3268	-334.34	5.65	40.92
234	SLE RA 21	116	-107	3275	-336.81	5.64	40.79
234	SLE FR 1	100	-88	2832	-301.8	4.86	35.1
234	SLE FR 2	100	-89	2834	-302.63	4.86	35.06
234	SLE FR 3	100	-88	2832	-301.8	4.86	35.1
234	SLE FR 4	105	-94	2965	-312.39	5.1	36.8
234	SLE FR 5	105	-93	2963	-311.56	5.1	36.85
234	SLE FR 6	108	-97	3050	-318.07	5.25	38.01
234	SLE QP 1	100	-88	2832	-301.8	4.86	35.1
234	SLE QP 2	105	-93	2963	-311.56	5.1	36.85
234	SLD 1	446	44	3039	-319.31	5.84	155.94
234	SLD 2	401	29	3038	-319.15	5.83	140.33
234	SLD 3	353	-51	3178	-333.65	6.13	123.51
234	SLD 4	308	-66	3177	-333.49	6.12	107.9
234	SLD 5	364	98	2776	-292.2	4.89	127.23
234	SLD 6	320	83	2775	-292.04	4.88	111.62
234	SLD 7	53	-220	3238	-339.99	5.84	19.11
234	SLD 8	9	-235	3237	-339.83	5.84	3.5
234	SLD 9	201	49	2689	-283.3	4.36	70.19
234	SLD 10	156	34	2688	-283.14	4.35	54.58
234	SLD 11	-110	-269	3151	-331.09	5.31	-37.93
234	SLD 12	-155	-284	3150	-330.93	5.31	-53.54
234	SLD 13	-99	-120	2749	-289.64	4.07	-34.21
234	SLD 14	-144	-135	2748	-289.48	4.07	-49.82
234	SLD 15	-192	-215	2887	-303.98	4.36	-66.64
234	SLD 16	-237	-231	2886	-303.81	4.36	-82.25
234	SLV 1	885	225	3135	-329.05	6.79	308.91
234	SLV 2	783	190	3133	-328.68	6.78	273.46
234	SLV 3	671	3	3455	-362.34	7.44	234.3
234	SLV 4	569	-31	3453	-361.97	7.43	198.85
234	SLV 5	700	350	2530	-266.44	4.62	244.03
234	SLV 6	598	315	2528	-266.07	4.61	208.58
234	SLV 7	-15	-388	3596	-377.42	6.8	-4.67
234	SLV 8	-117	-422	3594	-377.05	6.78	-40.12
234	SLV 9	327	236	2331	-246.07	3.41	113.81
234	SLV 10	225	202	2329	-245.71	3.4	78.36
234	SLV 11	-389	-502	3398	-357.05	5.59	-134.89
234	SLV 12	-491	-536	3395	-356.69	5.58	-170.34
234	SLV 13	-359	-155	2473	-261.16	2.77	-125.16
234	SLV 14	-461	-190	2470	-260.79	2.75	-160.61
234	SLV 15	-574	-377	2793	-294.45	3.42	-199.76
234	SLV 16	-676	-411	2790	-294.08	3.41	-235.22
234	CRTFP Ux+	0	0	0	0	0	0
234	CRTFP Ux-	0	0	0	0	0	0
234	CRTFP Uy+	0	0	0	0	0	0
234	CRTFP Uy-	0	0	0	0	0	0
235	SLU 1	95	-79	2618	-213.44	3.45	33.59
235	SLU 2	94	-83	2636	-220.18	3.43	33.26
235	SLU 3	95	-79	2618	-213.44	3.45	33.59
235	SLU 4	95	-81	2629	-217.48	3.44	33.39
235	SLU 5	94	-83	2636	-220.18	3.43	33.26
235	SLU 6	95	-79	2618	-213.44	3.45	33.59
235	SLU 7	95	-81	2629	-217.48	3.44	33.39
235	SLU 8	95	-79	2618	-213.44	3.45	33.59
235	SLU 9	95	-81	2629	-217.48	3.44	33.39



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
235	SLU 10	112	-100	3073	-238.96	4.02	39.31
235	SLU 11	113	-96	3054	-232.22	4.04	39.64
235	SLU 12	112	-98	3065	-236.26	4.03	39.44
235	SLU 13	112	-100	3073	-238.96	4.02	39.31
235	SLU 14	113	-96	3054	-232.22	4.04	39.64
235	SLU 15	112	-98	3065	-236.26	4.03	39.44
235	SLU 16	113	-96	3054	-232.22	4.04	39.64
235	SLU 17	112	-98	3065	-236.26	4.03	39.44
235	SLU 18	120	-103	3241	-240.27	4.29	42.23
235	SLU 19	119	-106	3252	-244.31	4.28	42.03
235	SLU 20	120	-103	3241	-240.27	4.29	42.23
235	SLU 21	119	-106	3252	-244.31	4.28	42.03
235	SLU 22	108	-91	2926	-226.65	3.86	38.14
235	SLU 23	107	-95	2945	-233.38	3.84	37.81
235	SLU 24	108	-91	2926	-226.65	3.86	38.14
235	SLU 25	108	-94	2938	-230.69	3.85	37.94
235	SLU 26	107	-95	2945	-233.38	3.84	37.81
235	SLU 27	108	-91	2926	-226.65	3.86	38.14
235	SLU 28	108	-94	2938	-230.69	3.85	37.94
235	SLU 29	108	-91	2926	-226.65	3.86	38.14
235	SLU 30	108	-94	2938	-230.69	3.85	37.94
235	SLU 31	124	-113	3381	-252.16	4.43	43.86
235	SLU 32	126	-109	3363	-245.43	4.45	44.18
235	SLU 33	125	-111	3374	-249.47	4.44	43.99
235	SLU 34	124	-113	3381	-252.16	4.43	43.86
235	SLU 35	126	-109	3363	-245.43	4.45	44.18
235	SLU 36	125	-111	3374	-249.47	4.44	43.99
235	SLU 37	126	-109	3363	-245.43	4.45	44.18
235	SLU 38	125	-111	3374	-249.47	4.44	43.99
235	SLU 39	133	-116	3550	-253.47	4.71	46.77
235	SLU 40	132	-118	3561	-257.51	4.69	46.58
235	SLU 41	133	-116	3550	-253.47	4.71	46.77
235	SLU 42	132	-118	3561	-257.51	4.69	46.58
235	SLU 43	120	-98	3297	-272.95	4.34	42.11
235	SLU 44	119	-102	3316	-279.68	4.32	41.78
235	SLU 45	120	-98	3297	-272.95	4.34	42.11
235	SLU 46	119	-100	3308	-276.99	4.33	41.91
235	SLU 47	119	-102	3316	-279.68	4.32	41.78
235	SLU 48	120	-98	3297	-272.95	4.34	42.11
235	SLU 49	119	-100	3308	-276.99	4.33	41.91
235	SLU 50	120	-98	3297	-272.95	4.34	42.11
235	SLU 51	119	-100	3308	-276.99	4.33	41.91
235	SLU 52	136	-119	3752	-298.46	4.91	47.83
235	SLU 53	137	-115	3734	-291.73	4.93	48.15
235	SLU 54	136	-118	3745	-295.77	4.92	47.96
235	SLU 55	136	-119	3752	-298.46	4.91	47.83
235	SLU 56	137	-115	3734	-291.73	4.93	48.15
235	SLU 57	136	-118	3745	-295.77	4.92	47.96
235	SLU 58	137	-115	3734	-291.73	4.93	48.15
235	SLU 59	136	-118	3745	-295.77	4.92	47.96
235	SLU 60	144	-123	3921	-299.78	5.19	50.75
235	SLU 61	144	-125	3932	-303.82	5.18	50.55
235	SLU 62	144	-123	3921	-299.78	5.19	50.75
235	SLU 63	144	-125	3932	-303.82	5.18	50.55
235	SLU 64	133	-111	3606	-286.15	4.76	46.65
235	SLU 65	131	-115	3625	-292.89	4.74	46.33
235	SLU 66	133	-111	3606	-286.15	4.76	46.65
235	SLU 67	132	-113	3617	-290.19	4.74	46.46
235	SLU 68	131	-115	3625	-292.89	4.74	46.33
235	SLU 69	133	-111	3606	-286.15	4.76	46.65
235	SLU 70	132	-113	3617	-290.19	4.74	46.46
235	SLU 71	133	-111	3606	-286.15	4.76	46.65
235	SLU 72	132	-113	3617	-290.19	4.74	46.46
235	SLU 73	149	-132	4061	-311.67	5.33	52.38
235	SLU 74	150	-128	4042	-304.93	5.35	52.7
235	SLU 75	149	-130	4053	-308.97	5.33	52.51
235	SLU 76	149	-132	4061	-311.67	5.33	52.38
235	SLU 77	150	-128	4042	-304.93	5.35	52.7
235	SLU 78	149	-130	4053	-308.97	5.33	52.51
235	SLU 79	150	-128	4042	-304.93	5.35	52.7
235	SLU 80	149	-130	4053	-308.97	5.33	52.51
235	SLU 81	157	-135	4229	-312.98	5.6	55.29
235	SLU 82	157	-138	4240	-317.02	5.59	55.1
235	SLU 83	157	-135	4229	-312.98	5.6	55.29
235	SLU 84	157	-138	4240	-317.02	5.59	55.1
235	SLE RA 1	99	-82	2706	-217.22	3.57	34.89
235	SLE RA 2	98	-85	2718	-221.7	3.55	34.67
235	SLE RA 3	99	-82	2706	-217.22	3.57	34.89
235	SLE RA 4	99	-84	2713	-219.91	3.56	34.76
235	SLE RA 5	98	-85	2718	-221.7	3.55	34.67
235	SLE RA 6	99	-82	2706	-217.22	3.57	34.89
235	SLE RA 7	99	-84	2713	-219.91	3.56	34.76
235	SLE RA 8	99	-82	2706	-217.22	3.57	34.89
235	SLE RA 9	99	-84	2713	-219.91	3.56	34.76
235	SLE RA 10	110	-97	3009	-234.22	3.95	38.7
235	SLE RA 11	111	-94	2997	-229.74	3.96	38.92
235	SLE RA 12	110	-95	3004	-232.43	3.95	38.79
235	SLE RA 13	110	-97	3009	-234.22	3.95	38.7
235	SLE RA 14	111	-94	2997	-229.74	3.96	38.92



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
235	SLE RA 15	110	-95	3004	-232.43	3.95	38.79
235	SLE RA 16	111	-94	2997	-229.74	3.96	38.92
235	SLE RA 17	110	-95	3004	-232.43	3.95	38.79
235	SLE RA 18	116	-99	3121	-235.1	4.13	40.65
235	SLE RA 19	115	-100	3129	-237.79	4.12	40.52
235	SLE RA 20	116	-99	3121	-235.1	4.13	40.65
235	SLE RA 21	115	-100	3129	-237.79	4.12	40.52
235	SLE FR 1	99	-82	2706	-217.22	3.57	34.89
235	SLE FR 2	99	-83	2708	-218.11	3.57	34.85
235	SLE FR 3	99	-82	2706	-217.22	3.57	34.89
235	SLE FR 4	104	-88	2833	-223.48	3.73	36.57
235	SLE FR 5	104	-87	2831	-222.58	3.74	36.62
235	SLE FR 6	107	-91	2914	-226.16	3.85	37.77
235	SLE QP 1	99	-82	2706	-217.22	3.57	34.89
235	SLE QP 2	104	-87	2831	-222.58	3.74	36.62
235	SLD 1	446	32	2891	-224.65	4.4	155.86
235	SLD 2	401	20	2890	-224.63	4.39	140.23
235	SLD 3	353	-52	3025	-238.89	4.63	123.4
235	SLD 4	308	-64	3024	-238.88	4.63	107.77
235	SLD 5	364	80	2645	-201.6	3.58	127.1
235	SLD 6	319	68	2644	-201.59	3.58	111.46
235	SLD 7	53	-200	3093	-249.09	4.36	18.89
235	SLD 8	8	-212	3092	-249.08	4.36	3.26
235	SLD 9	200	38	2569	-196.09	3.12	69.98
235	SLD 10	155	25	2568	-196.08	3.11	54.34
235	SLD 11	-111	-243	3017	-243.58	3.9	-38.23
235	SLD 12	-156	-255	3016	-243.57	3.89	-53.86
235	SLD 13	-100	-110	2637	-206.28	2.85	-34.54
235	SLD 14	-145	-123	2636	-206.27	2.84	-50.17
235	SLD 15	-193	-195	2771	-220.53	3.08	-67
235	SLD 16	-238	-207	2770	-220.52	3.07	-82.63
235	SLV 1	885	189	2966	-227.19	5.25	309.02
235	SLV 2	783	161	2964	-227.16	5.24	273.52
235	SLV 3	670	-6	3277	-260.42	5.78	234.35
235	SLV 4	568	-34	3275	-260.4	5.77	198.85
235	SLV 5	700	301	2401	-173.57	3.39	244.01
235	SLV 6	598	273	2399	-173.55	3.38	208.51
235	SLV 7	-16	-349	3436	-284.34	5.16	-4.89
235	SLV 8	-118	-377	3434	-284.32	5.14	-40.39
235	SLV 9	326	202	2227	-160.84	2.33	113.62
235	SLV 10	224	174	2225	-160.82	2.31	78.12
235	SLV 11	-389	-448	3262	-271.62	4.1	-135.28
235	SLV 12	-492	-475	3260	-271.59	4.08	-170.78
235	SLV 13	-360	-141	2386	-184.77	1.71	-125.62
235	SLV 14	-462	-168	2384	-184.74	1.69	-161.12
235	SLV 15	-575	-336	2697	-218	2.24	-200.29
235	SLV 16	-677	-363	2695	-217.97	2.22	-235.79
235	CRTFP Ux+	0	0	0	0	0	0
235	CRTFP Ux-	0	0	0	0	0	0
235	CRTFP Uy+	0	0	0	0	0	0
235	CRTFP Uy-	0	0	0	0	0	0
236	SLU 1	95	-73	2529	-156.41	2.49	33.33
236	SLU 2	94	-75	2548	-163.62	2.47	33
236	SLU 3	95	-73	2529	-156.41	2.49	33.33
236	SLU 4	94	-75	2541	-160.73	2.48	33.13
236	SLU 5	94	-75	2548	-163.62	2.47	33
236	SLU 6	95	-73	2529	-156.41	2.49	33.33
236	SLU 7	94	-75	2541	-160.73	2.48	33.13
236	SLU 8	95	-73	2529	-156.41	2.49	33.33
236	SLU 9	94	-75	2541	-160.73	2.48	33.13
236	SLU 10	111	-92	2970	-171.59	2.88	38.97
236	SLU 11	112	-90	2950	-164.38	2.9	39.3
236	SLU 12	111	-91	2962	-168.7	2.89	39.1
236	SLU 13	111	-92	2970	-171.59	2.88	38.97
236	SLU 14	112	-90	2950	-164.38	2.9	39.3
236	SLU 15	111	-91	2962	-168.7	2.89	39.1
236	SLU 16	112	-90	2950	-164.38	2.9	39.3
236	SLU 17	111	-91	2962	-168.7	2.89	39.1
236	SLU 18	119	-97	3131	-167.79	3.08	41.86
236	SLU 19	118	-98	3143	-172.12	3.07	41.66
236	SLU 20	119	-97	3131	-167.79	3.08	41.86
236	SLU 21	118	-98	3143	-172.12	3.07	41.66
236	SLU 22	107	-85	2827	-162	2.78	37.82
236	SLU 23	106	-88	2847	-169.21	2.76	37.49
236	SLU 24	107	-85	2827	-162	2.78	37.82
236	SLU 25	107	-87	2839	-166.33	2.76	37.62
236	SLU 26	106	-88	2847	-169.21	2.76	37.49
236	SLU 27	107	-85	2827	-162	2.78	37.82
236	SLU 28	107	-87	2839	-166.33	2.76	37.62
236	SLU 29	107	-85	2827	-162	2.78	37.82
236	SLU 30	107	-87	2839	-166.33	2.76	37.62
236	SLU 31	123	-104	3268	-177.18	3.17	43.46
236	SLU 32	124	-102	3248	-169.97	3.19	43.79
236	SLU 33	124	-103	3260	-174.3	3.18	43.59
236	SLU 34	123	-104	3268	-177.18	3.17	43.46
236	SLU 35	124	-102	3248	-169.97	3.19	43.79
236	SLU 36	124	-103	3260	-174.3	3.18	43.59
236	SLU 37	124	-102	3248	-169.97	3.19	43.79
236	SLU 38	124	-103	3260	-174.3	3.18	43.59



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
236	SLU 39	132	-109	3429	-173.38	3.37	46.35
236	SLU 40	131	-110	3441	-177.71	3.36	46.15
236	SLU 41	132	-109	3429	-173.38	3.37	46.35
236	SLU 42	131	-110	3441	-177.71	3.36	46.15
236	SLU 43	119	-91	3185	-201.41	3.14	41.78
236	SLU 44	118	-93	3205	-208.62	3.11	41.46
236	SLU 45	119	-91	3185	-201.41	3.14	41.78
236	SLU 46	118	-92	3197	-205.74	3.12	41.59
236	SLU 47	118	-93	3205	-208.62	3.11	41.46
236	SLU 48	119	-91	3185	-201.41	3.14	41.78
236	SLU 49	118	-92	3197	-205.74	3.12	41.59
236	SLU 50	119	-91	3185	-201.41	3.14	41.78
236	SLU 51	118	-92	3197	-205.74	3.12	41.59
236	SLU 52	135	-110	3626	-216.59	3.53	47.43
236	SLU 53	136	-107	3607	-209.38	3.55	47.75
236	SLU 54	135	-109	3618	-213.71	3.54	47.56
236	SLU 55	135	-110	3626	-216.59	3.53	47.43
236	SLU 56	136	-107	3607	-209.38	3.55	47.75
236	SLU 57	135	-109	3618	-213.71	3.54	47.56
236	SLU 58	136	-107	3607	-209.38	3.55	47.75
236	SLU 59	135	-109	3618	-213.71	3.54	47.56
236	SLU 60	143	-114	3787	-212.8	3.73	50.31
236	SLU 61	142	-116	3799	-217.12	3.72	50.12
236	SLU 62	143	-114	3787	-212.8	3.73	50.31
236	SLU 63	142	-116	3799	-217.12	3.72	50.12
236	SLU 64	131	-103	3484	-207.01	3.42	46.28
236	SLU 65	130	-105	3503	-214.22	3.4	45.95
236	SLU 66	131	-103	3484	-207.01	3.42	46.28
236	SLU 67	131	-104	3495	-211.33	3.41	46.08
236	SLU 68	130	-105	3503	-214.22	3.4	45.95
236	SLU 69	131	-103	3484	-207.01	3.42	46.28
236	SLU 70	131	-104	3495	-211.33	3.41	46.08
236	SLU 71	131	-103	3484	-207.01	3.42	46.28
236	SLU 72	131	-104	3495	-211.33	3.41	46.08
236	SLU 73	147	-122	3924	-222.19	3.82	51.92
236	SLU 74	148	-119	3905	-214.97	3.84	52.25
236	SLU 75	148	-121	3917	-219.3	3.83	52.05
236	SLU 76	147	-122	3924	-222.19	3.82	51.92
236	SLU 77	148	-119	3905	-214.97	3.84	52.25
236	SLU 78	148	-121	3917	-219.3	3.83	52.05
236	SLU 79	148	-119	3905	-214.97	3.84	52.25
236	SLU 80	148	-121	3917	-219.3	3.83	52.05
236	SLU 81	156	-127	4085	-218.39	4.02	54.81
236	SLU 82	155	-128	4097	-222.72	4	54.61
236	SLU 83	156	-127	4085	-218.39	4.02	54.81
236	SLU 84	155	-128	4097	-222.72	4	54.61
236	SLE RA 1	98	-77	2614	-158.01	2.57	34.61
236	SLE RA 2	98	-78	2627	-162.81	2.56	34.39
236	SLE RA 3	98	-77	2614	-158.01	2.57	34.61
236	SLE RA 4	98	-77	2622	-160.89	2.56	34.48
236	SLE RA 5	98	-78	2627	-162.81	2.56	34.39
236	SLE RA 6	98	-77	2614	-158.01	2.57	34.61
236	SLE RA 7	98	-77	2622	-160.89	2.56	34.48
236	SLE RA 8	98	-77	2614	-158.01	2.57	34.61
236	SLE RA 9	98	-77	2622	-160.89	2.56	34.48
236	SLE RA 10	109	-89	2908	-168.13	2.83	38.37
236	SLE RA 11	110	-88	2895	-163.32	2.85	38.59
236	SLE RA 12	109	-89	2903	-166.2	2.84	38.46
236	SLE RA 13	109	-89	2908	-168.13	2.83	38.37
236	SLE RA 14	110	-88	2895	-163.32	2.85	38.59
236	SLE RA 15	109	-89	2903	-166.2	2.84	38.46
236	SLE RA 16	110	-88	2895	-163.32	2.85	38.59
236	SLE RA 17	109	-89	2903	-166.2	2.84	38.46
236	SLE RA 18	114	-92	3015	-165.59	2.97	40.3
236	SLE RA 19	114	-93	3023	-168.48	2.96	40.17
236	SLE RA 20	114	-92	3015	-165.59	2.97	40.3
236	SLE RA 21	114	-93	3023	-168.48	2.96	40.17
236	SLE FR 1	98	-77	2614	-158.01	2.57	34.61
236	SLE FR 2	98	-77	2617	-158.97	2.57	34.57
236	SLE FR 3	98	-77	2614	-158.01	2.57	34.61
236	SLE FR 4	103	-82	2737	-161.24	2.69	36.27
236	SLE FR 5	103	-81	2735	-160.28	2.69	36.32
236	SLE FR 6	106	-84	2815	-161.8	2.77	37.45
236	SLE QP 1	98	-77	2614	-158.01	2.57	34.61
236	SLE QP 2	103	-81	2735	-160.28	2.69	36.32
236	SLD 1	445	23	2783	-160.43	3.29	155.68
236	SLD 2	400	13	2782	-160.49	3.28	140.03
236	SLD 3	352	-52	2915	-175.87	3.49	123.2
236	SLD 4	307	-61	2915	-175.93	3.49	107.55
236	SLD 5	363	66	2549	-136.88	2.57	126.88
236	SLD 6	318	56	2548	-136.94	2.56	111.23
236	SLD 7	52	-182	2990	-188.36	3.24	18.58
236	SLD 8	7	-191	2989	-188.42	3.23	2.93
236	SLD 9	199	29	2480	-132.14	2.15	69.7
236	SLD 10	154	19	2479	-132.21	2.14	54.05
236	SLD 11	-112	-219	2921	-183.62	2.82	-38.59
236	SLD 12	-157	-228	2921	-183.68	2.81	-54.25
236	SLD 13	-101	-101	2555	-144.63	1.89	-34.91
236	SLD 14	-146	-111	2554	-144.69	1.88	-50.57



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
236	SLD 15	-194	-176	2687	-160.07	2.09	-67.4
236	SLD 16	-239	-185	2686	-160.14	2.09	-83.05
236	SLV 1	885	159	2844	-160.52	4.06	308.99
236	SLV 2	783	137	2842	-160.67	4.05	273.45
236	SLV 3	670	-13	3150	-196.59	4.52	234.27
236	SLV 4	568	-35	3148	-196.73	4.51	198.72
236	SLV 5	699	260	2304	-105.61	2.41	243.89
236	SLV 6	597	238	2302	-105.75	2.39	208.35
236	SLV 7	-17	-314	3324	-225.82	3.94	-5.19
236	SLV 8	-119	-336	3322	-225.96	3.93	-40.74
236	SLV 9	325	173	2147	-94.6	1.45	113.37
236	SLV 10	223	152	2145	-94.75	1.43	77.82
236	SLV 11	-390	-400	3167	-214.81	2.99	-135.72
236	SLV 12	-493	-422	3165	-214.96	2.97	-171.26
236	SLV 13	-362	-128	2321	-123.83	0.87	-126.09
236	SLV 14	-464	-149	2319	-123.98	0.85	-161.64
236	SLV 15	-576	-300	2627	-159.9	1.33	-200.82
236	SLV 16	-678	-322	2625	-160.04	1.31	-236.36
236	CRTFP Ux+	0	0	0	0	0	0
236	CRTFP Ux-	0	0	0	0	0	0
236	CRTFP Uy+	0	0	0	0	0	0
236	CRTFP Uy-	0	0	0	0	0	0
237	SLU 1	94	-67	2465	-119	1.78	33.01
237	SLU 2	93	-68	2485	-126.6	1.76	32.67
237	SLU 3	94	-67	2465	-119	1.78	33.01
237	SLU 4	93	-68	2477	-123.56	1.77	32.81
237	SLU 5	93	-68	2485	-126.6	1.76	32.67
237	SLU 6	94	-67	2465	-119	1.78	33.01
237	SLU 7	93	-68	2477	-123.56	1.77	32.81
237	SLU 8	94	-67	2465	-119	1.78	33.01
237	SLU 9	93	-68	2477	-123.56	1.77	32.81
237	SLU 10	109	-84	2896	-127.48	2.05	38.56
237	SLU 11	110	-83	2876	-119.88	2.06	38.89
237	SLU 12	110	-84	2888	-124.44	2.05	38.69
237	SLU 13	109	-84	2896	-127.48	2.05	38.56
237	SLU 14	110	-83	2876	-119.88	2.06	38.89
237	SLU 15	110	-84	2888	-124.44	2.05	38.69
237	SLU 16	110	-83	2876	-119.88	2.06	38.89
237	SLU 17	110	-84	2888	-124.44	2.05	38.69
237	SLU 18	118	-90	3052	-120.25	2.19	41.41
237	SLU 19	117	-90	3064	-124.81	2.18	41.21
237	SLU 20	118	-90	3052	-120.25	2.19	41.41
237	SLU 21	117	-90	3064	-124.81	2.18	41.21
237	SLU 22	106	-79	2756	-119.6	1.98	37.44
237	SLU 23	105	-80	2776	-127.21	1.96	37.11
237	SLU 24	106	-79	2756	-119.6	1.98	37.44
237	SLU 25	106	-79	2768	-124.17	1.96	37.24
237	SLU 26	105	-80	2776	-127.21	1.96	37.11
237	SLU 27	106	-79	2756	-119.6	1.98	37.44
237	SLU 28	106	-79	2768	-124.17	1.96	37.24
237	SLU 29	106	-79	2756	-119.6	1.98	37.44
237	SLU 30	106	-79	2768	-124.17	1.96	37.24
237	SLU 31	122	-95	3187	-128.08	2.24	42.99
237	SLU 32	123	-94	3167	-120.48	2.26	43.32
237	SLU 33	122	-95	3179	-125.04	2.25	43.12
237	SLU 34	122	-95	3187	-128.08	2.24	42.99
237	SLU 35	123	-94	3167	-120.48	2.26	43.32
237	SLU 36	122	-95	3179	-125.04	2.25	43.12
237	SLU 37	123	-94	3167	-120.48	2.26	43.32
237	SLU 38	122	-95	3179	-125.04	2.25	43.12
237	SLU 39	130	-101	3343	-120.86	2.39	45.84
237	SLU 40	130	-102	3355	-125.42	2.37	45.64
237	SLU 41	130	-101	3343	-120.86	2.39	45.84
237	SLU 42	130	-102	3355	-125.42	2.37	45.64
237	SLU 43	118	-83	3105	-154.49	2.24	41.39
237	SLU 44	116	-85	3125	-162.1	2.22	41.06
237	SLU 45	118	-83	3105	-154.49	2.24	41.39
237	SLU 46	117	-84	3117	-159.06	2.23	41.19
237	SLU 47	116	-85	3125	-162.1	2.22	41.06
237	SLU 48	118	-83	3105	-154.49	2.24	41.39
237	SLU 49	117	-84	3117	-159.06	2.23	41.19
237	SLU 50	118	-83	3105	-154.49	2.24	41.39
237	SLU 51	117	-84	3117	-159.06	2.23	41.19
237	SLU 52	133	-100	3536	-162.97	2.51	46.94
237	SLU 53	134	-99	3516	-155.37	2.53	47.27
237	SLU 54	134	-100	3528	-159.93	2.52	47.07
237	SLU 55	133	-100	3536	-162.97	2.51	46.94
237	SLU 56	134	-99	3516	-155.37	2.53	47.27
237	SLU 57	134	-100	3528	-159.93	2.52	47.07
237	SLU 58	134	-99	3516	-155.37	2.53	47.27
237	SLU 59	134	-100	3528	-159.93	2.52	47.07
237	SLU 60	141	-106	3692	-155.75	2.65	49.79
237	SLU 61	141	-106	3704	-160.31	2.64	49.59
237	SLU 62	141	-106	3692	-155.75	2.65	49.79
237	SLU 63	141	-106	3704	-160.31	2.64	49.59
237	SLU 64	130	-95	3396	-155.1	2.44	45.82
237	SLU 65	129	-96	3416	-162.7	2.42	45.49
237	SLU 66	130	-95	3396	-155.1	2.44	45.82
237	SLU 67	129	-95	3408	-159.66	2.43	45.62



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
237	SLU 68	129	-96	3416	-162.7	2.42	45.49
237	SLU 69	130	-95	3396	-155.1	2.44	45.82
237	SLU 70	129	-95	3408	-159.66	2.43	45.62
237	SLU 71	130	-95	3396	-155.1	2.44	45.82
237	SLU 72	129	-95	3408	-159.66	2.43	45.62
237	SLU 73	146	-112	3827	-163.58	2.71	51.37
237	SLU 74	147	-111	3807	-155.97	2.73	51.7
237	SLU 75	146	-111	3819	-160.54	2.72	51.5
237	SLU 76	146	-112	3827	-163.58	2.71	51.37
237	SLU 77	147	-111	3807	-155.97	2.73	51.7
237	SLU 78	146	-111	3819	-160.54	2.72	51.5
237	SLU 79	147	-111	3807	-155.97	2.73	51.7
237	SLU 80	146	-111	3819	-160.54	2.72	51.5
237	SLU 81	154	-117	3983	-156.35	2.85	54.22
237	SLU 82	153	-118	3995	-160.91	2.84	54.02
237	SLU 83	154	-117	3983	-156.35	2.85	54.22
237	SLU 84	153	-118	3995	-160.91	2.84	54.02
237	SLE RA 1	97	-70	2548	-119.17	1.83	34.27
237	SLE RA 2	97	-71	2562	-124.24	1.82	34.05
237	SLE RA 3	97	-70	2548	-119.17	1.83	34.27
237	SLE RA 4	97	-71	2556	-122.21	1.83	34.14
237	SLE RA 5	97	-71	2562	-124.24	1.82	34.05
237	SLE RA 6	97	-70	2548	-119.17	1.83	34.27
237	SLE RA 7	97	-71	2556	-122.21	1.83	34.14
237	SLE RA 8	97	-70	2548	-119.17	1.83	34.27
237	SLE RA 9	97	-71	2556	-122.21	1.83	34.14
237	SLE RA 10	108	-82	2836	-124.83	2.01	37.97
237	SLE RA 11	108	-81	2822	-119.76	2.03	38.19
237	SLE RA 12	108	-81	2830	-122.8	2.02	38.06
237	SLE RA 13	108	-82	2836	-124.83	2.01	37.97
237	SLE RA 14	108	-81	2822	-119.76	2.03	38.19
237	SLE RA 15	108	-81	2830	-122.8	2.02	38.06
237	SLE RA 16	108	-81	2822	-119.76	2.03	38.19
237	SLE RA 17	108	-81	2830	-122.8	2.02	38.06
237	SLE RA 18	113	-85	2940	-120.01	2.11	39.87
237	SLE RA 19	113	-86	2948	-123.05	2.1	39.74
237	SLE RA 20	113	-85	2940	-120.01	2.11	39.87
237	SLE RA 21	113	-86	2948	-123.05	2.1	39.74
237	SLE FR 1	97	-70	2548	-119.17	1.83	34.27
237	SLE FR 2	97	-71	2551	-120.19	1.83	34.23
237	SLE FR 3	97	-70	2548	-119.17	1.83	34.27
237	SLE FR 4	102	-75	2669	-120.44	1.91	35.91
237	SLE FR 5	102	-75	2666	-119.42	1.92	35.95
237	SLE FR 6	105	-78	2744	-119.59	1.97	37.07
237	SLE QP 1	97	-70	2548	-119.17	1.83	34.27
237	SLE QP 2	102	-75	2666	-119.42	1.92	35.95
237	SLD 1	444	16	2706	-119.79	2.67	155.41
237	SLD 2	399	9	2706	-119.85	2.66	139.75
237	SLD 3	351	-50	2839	-136.71	2.47	122.9
237	SLD 4	306	-57	2838	-136.77	2.46	107.24
237	SLD 5	362	55	2477	-93.85	2.44	126.58
237	SLD 6	317	48	2477	-93.91	2.43	110.91
237	SLD 7	51	-165	2919	-150.25	1.79	18.21
237	SLD 8	6	-172	2918	-150.31	1.78	2.55
237	SLD 9	198	23	2414	-88.53	2.05	69.36
237	SLD 10	153	16	2413	-88.6	2.04	53.69
237	SLD 11	-113	-198	2855	-144.93	1.4	-39.01
237	SLD 12	-158	-205	2854	-145	1.4	-54.67
237	SLD 13	-102	-93	2493	-102.07	1.37	-35.33
237	SLD 14	-147	-100	2493	-102.14	1.36	-51
237	SLD 15	-195	-159	2626	-118.99	1.17	-67.84
237	SLD 16	-240	-166	2625	-119.06	1.17	-83.51
237	SLV 1	884	136	2758	-120.09	3.63	308.84
237	SLV 2	782	120	2756	-120.24	3.61	273.26
237	SLV 3	669	-17	3064	-159.59	3.19	234.06
237	SLV 4	567	-33	3063	-159.74	3.17	198.49
237	SLV 5	698	227	2229	-59.66	3.11	243.68
237	SLV 6	596	211	2228	-59.81	3.09	208.1
237	SLV 7	-17	-285	3250	-191.34	1.63	-5.57
237	SLV 8	-120	-301	3249	-191.49	1.61	-41.15
237	SLV 9	324	151	2082	-47.36	2.22	113.06
237	SLV 10	222	135	2081	-47.51	2.2	77.48
237	SLV 11	-392	-361	3104	-179.04	0.74	-136.2
237	SLV 12	-494	-377	3103	-179.19	0.72	-171.78
237	SLV 13	-363	-117	2269	-79.1	0.66	-126.58
237	SLV 14	-465	-133	2268	-79.25	0.65	-162.16
237	SLV 15	-578	-270	2575	-118.61	0.22	-201.36
237	SLV 16	-680	-286	2574	-118.76	0.2	-236.93
237	CRTFP Ux+	0	0	0	0	0	0
237	CRTFP Ux-	0	0	0	0	0	0
237	CRTFP Uy+	0	0	0	0	0	0
237	CRTFP Uy-	0	0	0	0	0	0
238	SLU 1	93	-61	2420	-96.76	1.26	32.65
238	SLU 2	92	-61	2441	-104.65	1.25	32.31
238	SLU 3	93	-61	2420	-96.76	1.26	32.65
238	SLU 4	92	-61	2432	-101.5	1.25	32.44
238	SLU 5	92	-61	2441	-104.65	1.25	32.31
238	SLU 6	93	-61	2420	-96.76	1.26	32.65
238	SLU 7	92	-61	2432	-101.5	1.25	32.44



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
238	SLU 8	93	-61	2420	-96.76	1.26	32.65
238	SLU 9	92	-61	2432	-101.5	1.25	32.44
238	SLU 10	108	-76	2844	-101.33	1.45	38.09
238	SLU 11	109	-76	2824	-93.43	1.46	38.43
238	SLU 12	108	-76	2836	-98.17	1.45	38.23
238	SLU 13	108	-76	2844	-101.33	1.45	38.09
238	SLU 14	109	-76	2824	-93.43	1.46	38.43
238	SLU 15	108	-76	2836	-98.17	1.45	38.23
238	SLU 16	109	-76	2824	-93.43	1.46	38.43
238	SLU 17	108	-76	2836	-98.17	1.45	38.23
238	SLU 18	116	-82	2997	-92.01	1.55	40.91
238	SLU 19	116	-82	3009	-96.74	1.54	40.7
238	SLU 20	116	-82	2997	-92.01	1.55	40.91
238	SLU 21	116	-82	3009	-96.74	1.54	40.7
238	SLU 22	105	-72	2706	-94.4	1.4	37.01
238	SLU 23	104	-72	2726	-102.3	1.38	36.67
238	SLU 24	105	-72	2706	-94.4	1.4	37.01
238	SLU 25	104	-72	2718	-99.14	1.39	36.8
238	SLU 26	104	-72	2726	-102.3	1.38	36.67
238	SLU 27	105	-72	2706	-94.4	1.4	37.01
238	SLU 28	104	-72	2718	-99.14	1.39	36.8
238	SLU 29	105	-72	2706	-94.4	1.4	37.01
238	SLU 30	104	-72	2718	-99.14	1.39	36.8
238	SLU 31	120	-86	3130	-98.98	1.58	42.45
238	SLU 32	121	-86	3110	-91.08	1.6	42.79
238	SLU 33	121	-86	3122	-95.82	1.59	42.59
238	SLU 34	120	-86	3130	-98.98	1.58	42.45
238	SLU 35	121	-86	3110	-91.08	1.6	42.79
238	SLU 36	121	-86	3122	-95.82	1.59	42.59
238	SLU 37	121	-86	3110	-91.08	1.6	42.79
238	SLU 38	121	-86	3122	-95.82	1.59	42.59
238	SLU 39	129	-93	3282	-89.65	1.68	45.27
238	SLU 40	128	-93	3295	-94.39	1.67	45.07
238	SLU 41	129	-93	3282	-89.65	1.68	45.27
238	SLU 42	128	-93	3295	-94.39	1.67	45.07
238	SLU 43	116	-76	3048	-126.59	1.6	40.94
238	SLU 44	115	-76	3069	-134.49	1.58	40.6
238	SLU 45	116	-76	3048	-126.59	1.6	40.94
238	SLU 46	116	-76	3060	-131.33	1.59	40.74
238	SLU 47	115	-76	3069	-134.49	1.58	40.6
238	SLU 48	116	-76	3048	-126.59	1.6	40.94
238	SLU 49	116	-76	3060	-131.33	1.59	40.74
238	SLU 50	116	-76	3048	-126.59	1.6	40.94
238	SLU 51	116	-76	3060	-131.33	1.59	40.74
238	SLU 52	132	-91	3472	-131.16	1.78	46.39
238	SLU 53	133	-90	3452	-123.26	1.8	46.73
238	SLU 54	132	-90	3464	-128	1.79	46.52
238	SLU 55	132	-91	3472	-131.16	1.78	46.39
238	SLU 56	133	-90	3452	-123.26	1.8	46.73
238	SLU 57	132	-90	3464	-128	1.79	46.52
238	SLU 58	133	-90	3452	-123.26	1.8	46.73
238	SLU 59	132	-90	3464	-128	1.79	46.52
238	SLU 60	140	-97	3625	-121.84	1.88	49.21
238	SLU 61	139	-97	3637	-126.58	1.87	49
238	SLU 62	140	-97	3625	-121.84	1.88	49.21
238	SLU 63	139	-97	3637	-126.58	1.87	49
238	SLU 64	129	-86	3334	-124.24	1.73	45.31
238	SLU 65	128	-86	3354	-132.14	1.72	44.97
238	SLU 66	129	-86	3334	-124.24	1.73	45.31
238	SLU 67	128	-86	3346	-128.98	1.72	45.1
238	SLU 68	128	-86	3354	-132.14	1.72	44.97
238	SLU 69	129	-86	3334	-124.24	1.73	45.31
238	SLU 70	128	-86	3346	-128.98	1.72	45.1
238	SLU 71	129	-86	3334	-124.24	1.73	45.31
238	SLU 72	128	-86	3346	-128.98	1.72	45.1
238	SLU 73	144	-101	3758	-128.81	1.91	50.75
238	SLU 74	145	-101	3737	-120.91	1.93	51.09
238	SLU 75	144	-101	3750	-125.65	1.92	50.89
238	SLU 76	144	-101	3758	-128.81	1.91	50.75
238	SLU 77	145	-101	3737	-120.91	1.93	51.09
238	SLU 78	144	-101	3750	-125.65	1.92	50.89
238	SLU 79	145	-101	3737	-120.91	1.93	51.09
238	SLU 80	144	-101	3750	-125.65	1.92	50.89
238	SLU 81	152	-107	3910	-119.49	2.02	53.57
238	SLU 82	151	-107	3923	-124.23	2.01	53.36
238	SLU 83	152	-107	3910	-119.49	2.02	53.57
238	SLU 84	151	-107	3923	-124.23	2.01	53.36
238	SLE RA 1	96	-64	2502	-96.08	1.3	33.89
238	SLE RA 2	96	-64	2515	-101.35	1.29	33.67
238	SLE RA 3	96	-64	2502	-96.08	1.3	33.89
238	SLE RA 4	96	-64	2510	-99.24	1.3	33.76
238	SLE RA 5	96	-64	2515	-101.35	1.29	33.67
238	SLE RA 6	96	-64	2502	-96.08	1.3	33.89
238	SLE RA 7	96	-64	2510	-99.24	1.3	33.76
238	SLE RA 8	96	-64	2502	-96.08	1.3	33.89
238	SLE RA 9	96	-64	2510	-99.24	1.3	33.76
238	SLE RA 10	106	-74	2784	-99.13	1.42	37.52
238	SLE RA 11	107	-74	2771	-93.87	1.44	37.75
238	SLE RA 12	107	-74	2779	-97.03	1.43	37.61



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
238	SLE RA 13	106	-74	2784	-99.13	1.42	37.52
238	SLE RA 14	107	-74	2771	-93.87	1.44	37.75
238	SLE RA 15	107	-74	2779	-97.03	1.43	37.61
238	SLE RA 16	107	-74	2771	-93.87	1.44	37.75
238	SLE RA 17	107	-74	2779	-97.03	1.43	37.61
238	SLE RA 18	112	-78	2886	-92.92	1.49	39.4
238	SLE RA 19	111	-78	2894	-96.08	1.48	39.26
238	SLE RA 20	112	-78	2886	-92.92	1.49	39.4
238	SLE RA 21	111	-78	2894	-96.08	1.48	39.26
238	SLE FR 1	96	-64	2502	-96.08	1.3	33.89
238	SLE FR 2	96	-64	2504	-97.14	1.3	33.85
238	SLE FR 3	96	-64	2502	-96.08	1.3	33.89
238	SLE FR 4	101	-68	2620	-96.19	1.36	35.5
238	SLE FR 5	101	-68	2617	-95.13	1.36	35.55
238	SLE FR 6	104	-71	2694	-94.5	1.4	36.65
238	SLE QP 1	96	-64	2502	-96.08	1.3	33.89
238	SLE QP 2	101	-68	2617	-95.13	1.36	35.55
238	SLD 1	443	14	2446	-95.93	2.08	155.07
238	SLD 2	398	9	2446	-95.95	2.07	139.39
238	SLD 3	350	-46	2580	-114.09	1.88	122.54
238	SLD 4	305	-51	2580	-114.12	1.87	106.86
238	SLD 5	361	49	2363	-67.81	1.89	126.22
238	SLD 6	316	44	2362	-67.84	1.88	110.55
238	SLD 7	50	-151	2809	-128.36	1.21	17.8
238	SLD 8	5	-156	2809	-128.39	1.2	2.12
238	SLD 9	197	20	2425	-61.88	1.52	68.97
238	SLD 10	152	15	2425	-61.91	1.51	53.29
238	SLD 11	-114	-181	2872	-122.43	0.84	-39.46
238	SLD 12	-159	-186	2871	-122.46	0.83	-55.13
238	SLD 13	-103	-85	2654	-76.15	0.85	-35.77
238	SLD 14	-148	-90	2654	-76.18	0.84	-51.45
238	SLD 15	-196	-146	2788	-94.32	0.64	-68.3
238	SLD 16	-241	-150	2788	-94.34	0.64	-83.98
238	SLV 1	883	121	2223	-96.71	3.02	308.57
238	SLV 2	781	110	2223	-96.78	3	272.97
238	SLV 3	668	-18	2534	-139.11	2.55	233.76
238	SLV 4	566	-29	2533	-139.17	2.53	198.15
238	SLV 5	697	204	2028	-31.29	2.57	243.39
238	SLV 6	594	193	2028	-31.35	2.55	207.79
238	SLV 7	-18	-261	3063	-172.6	1.02	-6.01
238	SLV 8	-121	-272	3063	-172.67	1	-41.61
238	SLV 9	322	135	2171	-17.6	1.72	112.7
238	SLV 10	220	124	2171	-17.67	1.7	77.1
238	SLV 11	-393	-329	3206	-158.92	0.17	-136.7
238	SLV 12	-495	-340	3206	-158.98	0.15	-172.3
238	SLV 13	-364	-108	2701	-51.1	0.19	-127.06
238	SLV 14	-467	-119	2700	-51.16	0.17	-162.67
238	SLV 15	-579	-247	3011	-93.49	-0.28	-201.88
238	SLV 16	-681	-258	3011	-93.55	-0.3	-237.48
238	CRTFP Ux+	0	0	0	0	0	0
238	CRTFP Ux-	0	0	0	0	0	0
238	CRTFP Uy+	0	0	0	0	0	0
238	CRTFP Uy-	0	0	0	0	0	0
239	SLU 1	92	-55	2388	-85.99	0.89	32.26
239	SLU 2	91	-54	2409	-94.08	0.87	31.91
239	SLU 3	92	-55	2388	-85.99	0.89	32.26
239	SLU 4	91	-54	2400	-90.84	0.88	32.05
239	SLU 5	91	-54	2409	-94.08	0.87	31.91
239	SLU 6	92	-55	2388	-85.99	0.89	32.26
239	SLU 7	91	-54	2400	-90.84	0.88	32.05
239	SLU 8	92	-55	2388	-85.99	0.89	32.26
239	SLU 9	91	-54	2400	-90.84	0.88	32.05
239	SLU 10	107	-68	2808	-88.74	1.01	37.59
239	SLU 11	108	-68	2787	-80.65	1.02	37.94
239	SLU 12	107	-68	2799	-85.51	1.01	37.73
239	SLU 13	107	-68	2808	-88.74	1.01	37.59
239	SLU 14	108	-68	2787	-80.65	1.02	37.94
239	SLU 15	107	-68	2799	-85.51	1.01	37.73
239	SLU 16	108	-68	2787	-80.65	1.02	37.94
239	SLU 17	107	-68	2799	-85.51	1.01	37.73
239	SLU 18	115	-74	2957	-78.37	1.08	40.37
239	SLU 19	114	-74	2970	-83.22	1.07	40.16
239	SLU 20	115	-74	2957	-78.37	1.08	40.37
239	SLU 21	114	-74	2970	-83.22	1.07	40.16
239	SLU 22	104	-64	2670	-82.22	0.98	36.55
239	SLU 23	103	-64	2691	-90.31	0.96	36.2
239	SLU 24	104	-64	2670	-82.22	0.98	36.55
239	SLU 25	103	-64	2683	-87.08	0.97	36.34
239	SLU 26	103	-64	2691	-90.31	0.96	36.2
239	SLU 27	104	-64	2670	-82.22	0.98	36.55
239	SLU 28	103	-64	2683	-87.08	0.97	36.34
239	SLU 29	104	-64	2670	-82.22	0.98	36.55
239	SLU 30	103	-64	2683	-87.08	0.97	36.34
239	SLU 31	119	-77	3090	-84.98	1.1	41.88
239	SLU 32	120	-78	3069	-76.89	1.11	42.23
239	SLU 33	119	-78	3082	-81.74	1.1	42.02
239	SLU 34	119	-77	3090	-84.98	1.1	41.88
239	SLU 35	120	-78	3069	-76.89	1.11	42.23
239	SLU 36	119	-78	3082	-81.74	1.1	42.02



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
239	SLU 37	120	-78	3069	-76.89	1.11	42.23
239	SLU 38	119	-78	3082	-81.74	1.1	42.02
239	SLU 39	127	-84	3240	-74.6	1.17	44.66
239	SLU 40	126	-83	3253	-79.45	1.16	44.45
239	SLU 41	127	-84	3240	-74.6	1.17	44.66
239	SLU 42	126	-83	3253	-79.45	1.16	44.45
239	SLU 43	115	-68	3007	-113.08	1.12	40.47
239	SLU 44	114	-67	3028	-121.16	1.11	40.12
239	SLU 45	115	-68	3007	-113.08	1.12	40.47
239	SLU 46	114	-68	3020	-117.93	1.12	40.26
239	SLU 47	114	-67	3028	-121.16	1.11	40.12
239	SLU 48	115	-68	3007	-113.08	1.12	40.47
239	SLU 49	114	-68	3020	-117.93	1.12	40.26
239	SLU 50	115	-68	3007	-113.08	1.12	40.47
239	SLU 51	114	-68	3020	-117.93	1.12	40.26
239	SLU 52	130	-81	3427	-115.83	1.24	45.8
239	SLU 53	131	-81	3406	-107.74	1.26	46.15
239	SLU 54	130	-81	3419	-112.59	1.25	45.94
239	SLU 55	130	-81	3427	-115.83	1.24	45.8
239	SLU 56	131	-81	3406	-107.74	1.26	46.15
239	SLU 57	130	-81	3419	-112.59	1.25	45.94
239	SLU 58	131	-81	3406	-107.74	1.26	46.15
239	SLU 59	130	-81	3419	-112.59	1.25	45.94
239	SLU 60	138	-87	3577	-105.45	1.32	48.58
239	SLU 61	137	-87	3589	-110.31	1.31	48.37
239	SLU 62	138	-87	3577	-105.45	1.32	48.58
239	SLU 63	137	-87	3589	-110.31	1.31	48.37
239	SLU 64	127	-78	3290	-109.31	1.21	44.76
239	SLU 65	126	-77	3311	-117.4	1.2	44.41
239	SLU 66	127	-78	3290	-109.31	1.21	44.76
239	SLU 67	126	-77	3303	-114.16	1.2	44.55
239	SLU 68	126	-77	3311	-117.4	1.2	44.41
239	SLU 69	127	-78	3290	-109.31	1.21	44.76
239	SLU 70	126	-77	3303	-114.16	1.2	44.55
239	SLU 71	127	-78	3290	-109.31	1.21	44.76
239	SLU 72	126	-77	3303	-114.16	1.2	44.55
239	SLU 73	142	-90	3710	-112.06	1.33	50.08
239	SLU 74	143	-91	3689	-103.98	1.35	50.43
239	SLU 75	143	-91	3701	-108.83	1.34	50.22
239	SLU 76	142	-90	3710	-112.06	1.33	50.08
239	SLU 77	143	-91	3689	-103.98	1.35	50.43
239	SLU 78	143	-91	3701	-108.83	1.34	50.22
239	SLU 79	143	-91	3689	-103.98	1.35	50.43
239	SLU 80	143	-91	3701	-108.83	1.34	50.22
239	SLU 81	150	-97	3859	-101.69	1.4	52.87
239	SLU 82	149	-96	3872	-106.54	1.4	52.66
239	SLU 83	150	-97	3859	-101.69	1.4	52.87
239	SLU 84	149	-96	3872	-106.54	1.4	52.66
239	SLE RA 1	95	-58	2469	-84.91	0.91	33.49
239	SLE RA 2	94	-57	2483	-90.31	0.9	33.25
239	SLE RA 3	95	-58	2469	-84.91	0.91	33.49
239	SLE RA 4	95	-57	2477	-88.15	0.91	33.35
239	SLE RA 5	94	-57	2483	-90.31	0.9	33.25
239	SLE RA 6	95	-58	2469	-84.91	0.91	33.49
239	SLE RA 7	95	-57	2477	-88.15	0.91	33.35
239	SLE RA 8	95	-58	2469	-84.91	0.91	33.49
239	SLE RA 9	95	-57	2477	-88.15	0.91	33.35
239	SLE RA 10	105	-66	2748	-86.75	0.99	37.04
239	SLE RA 11	106	-67	2734	-81.36	1	37.27
239	SLE RA 12	105	-66	2743	-84.59	1	37.13
239	SLE RA 13	105	-66	2748	-86.75	0.99	37.04
239	SLE RA 14	106	-67	2734	-81.36	1	37.27
239	SLE RA 15	105	-66	2743	-84.59	1	37.13
239	SLE RA 16	106	-67	2734	-81.36	1	37.27
239	SLE RA 17	105	-66	2743	-84.59	1	37.13
239	SLE RA 18	110	-70	2848	-79.83	1.04	38.89
239	SLE RA 19	110	-70	2857	-83.07	1.04	38.75
239	SLE RA 20	110	-70	2848	-79.83	1.04	38.89
239	SLE RA 21	110	-70	2857	-83.07	1.04	38.75
239	SLE FR 1	95	-58	2469	-84.91	0.91	33.49
239	SLE FR 2	95	-57	2471	-85.99	0.91	33.44
239	SLE FR 3	95	-58	2469	-84.91	0.91	33.49
239	SLE FR 4	100	-61	2585	-84.47	0.95	35.06
239	SLE FR 5	100	-61	2582	-83.39	0.95	35.11
239	SLE FR 6	103	-64	2658	-82.37	0.98	36.19
239	SLE QP 1	95	-58	2469	-84.91	0.91	33.49
239	SLE QP 2	100	-61	2582	-83.39	0.95	35.11
239	SLD 1	442	15	2408	-84.37	1.67	154.66
239	SLD 2	397	12	2408	-84.35	1.66	138.98
239	SLD 3	349	-41	2546	-103.33	1.45	122.12
239	SLD 4	304	-44	2546	-103.3	1.44	106.44
239	SLD 5	360	48	2322	-54.95	1.51	125.82
239	SLD 6	315	45	2322	-54.92	1.5	110.13
239	SLD 7	49	-140	2780	-118.12	0.77	17.35
239	SLD 8	4	-142	2780	-118.1	0.76	1.66
239	SLD 9	196	19	2385	-48.68	1.15	68.55
239	SLD 10	151	17	2385	-48.65	1.14	52.87
239	SLD 11	-115	-168	2843	-111.85	0.4	-39.92
239	SLD 12	-160	-170	2843	-111.83	0.39	-55.6



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
239	SLD 13	-105	-79	2619	-63.48	0.46	-36.22
239	SLD 14	-150	-82	2619	-63.45	0.45	-51.9
239	SLD 15	-198	-135	2757	-82.43	0.24	-68.76
239	SLD 16	-243	-138	2757	-82.4	0.23	-84.45
239	SLV 1	882	115	2180	-85.38	2.6	308.21
239	SLV 2	780	109	2180	-85.32	2.58	272.6
239	SLV 3	667	-15	2498	-129.6	2.09	233.36
239	SLV 4	565	-21	2498	-129.54	2.07	197.75
239	SLV 5	695	191	1979	-16.93	2.24	243.03
239	SLV 6	593	185	1979	-16.87	2.21	207.41
239	SLV 7	-20	-243	3040	-164.35	0.52	-6.47
239	SLV 8	-122	-249	3040	-164.29	0.5	-42.09
239	SLV 9	321	126	2125	-2.48	1.41	112.31
239	SLV 10	219	120	2125	-2.43	1.38	76.69
239	SLV 11	-394	-307	3186	-149.91	-0.31	-137.2
239	SLV 12	-496	-313	3186	-149.85	-0.33	-172.81
239	SLV 13	-366	-101	2667	-37.23	-0.16	-127.53
239	SLV 14	-468	-107	2667	-37.17	-0.19	-163.15
239	SLV 15	-580	-231	2985	-81.46	-0.68	-202.38
239	SLV 16	-683	-237	2985	-81.4	-0.7	-238
239	CRTFP Ux+	0	0	0	0	0	0
239	CRTFP Ux-	0	0	0	0	0	0
239	CRTFP Uy+	0	0	0	0	0	0
239	CRTFP Uy-	0	0	0	0	0	0
240	SLU 1	90	-48	2366	-84.25	0.58	31.86
240	SLU 2	89	-47	2387	-92.43	0.57	31.5
240	SLU 3	90	-48	2366	-84.25	0.58	31.86
240	SLU 4	90	-48	2379	-89.15	0.58	31.65
240	SLU 5	89	-47	2387	-92.43	0.57	31.5
240	SLU 6	90	-48	2366	-84.25	0.58	31.86
240	SLU 7	90	-48	2379	-89.15	0.58	31.65
240	SLU 8	90	-48	2366	-84.25	0.58	31.86
240	SLU 9	90	-48	2379	-89.15	0.58	31.65
240	SLU 10	105	-60	2783	-86.81	0.66	37.07
240	SLU 11	106	-60	2761	-78.63	0.67	37.43
240	SLU 12	106	-60	2774	-83.54	0.66	37.22
240	SLU 13	105	-60	2783	-86.81	0.66	37.07
240	SLU 14	106	-60	2761	-78.63	0.67	37.43
240	SLU 15	106	-60	2774	-83.54	0.66	37.22
240	SLU 16	106	-60	2761	-78.63	0.67	37.43
240	SLU 17	106	-60	2774	-83.54	0.66	37.22
240	SLU 18	113	-66	2931	-76.22	0.7	39.82
240	SLU 19	112	-65	2944	-81.13	0.7	39.6
240	SLU 20	113	-66	2931	-76.22	0.7	39.82
240	SLU 21	112	-65	2944	-81.13	0.7	39.6
240	SLU 22	102	-57	2646	-80.29	0.64	36.08
240	SLU 23	101	-56	2668	-88.47	0.62	35.71
240	SLU 24	102	-57	2646	-80.29	0.64	36.08
240	SLU 25	102	-57	2659	-85.2	0.63	35.86
240	SLU 26	101	-56	2668	-88.47	0.62	35.71
240	SLU 27	102	-57	2646	-80.29	0.64	36.08
240	SLU 28	102	-57	2659	-85.2	0.63	35.86
240	SLU 29	102	-57	2646	-80.29	0.64	36.08
240	SLU 30	102	-57	2659	-85.2	0.63	35.86
240	SLU 31	117	-68	3063	-82.85	0.71	41.28
240	SLU 32	118	-69	3042	-74.67	0.72	41.65
240	SLU 33	118	-69	3055	-79.58	0.71	41.43
240	SLU 34	117	-68	3063	-82.85	0.71	41.28
240	SLU 35	118	-69	3042	-74.67	0.72	41.65
240	SLU 36	118	-69	3055	-79.58	0.71	41.43
240	SLU 37	118	-69	3042	-74.67	0.72	41.65
240	SLU 38	118	-69	3055	-79.58	0.71	41.43
240	SLU 39	125	-74	3211	-72.27	0.75	44.03
240	SLU 40	124	-74	3224	-77.17	0.75	43.82
240	SLU 41	125	-74	3211	-72.27	0.75	44.03
240	SLU 42	124	-74	3224	-77.17	0.75	43.82
240	SLU 43	113	-60	2979	-110.88	0.74	39.98
240	SLU 44	112	-59	3001	-119.06	0.73	39.62
240	SLU 45	113	-60	2979	-110.88	0.74	39.98
240	SLU 46	113	-59	2992	-115.79	0.73	39.76
240	SLU 47	112	-59	3001	-119.06	0.73	39.62
240	SLU 48	113	-60	2979	-110.88	0.74	39.98
240	SLU 49	113	-59	2992	-115.79	0.73	39.76
240	SLU 50	113	-60	2979	-110.88	0.74	39.98
240	SLU 51	113	-59	2992	-115.79	0.73	39.76
240	SLU 52	128	-71	3396	-113.44	0.81	45.18
240	SLU 53	129	-72	3375	-105.26	0.82	45.55
240	SLU 54	129	-71	3388	-110.17	0.82	45.33
240	SLU 55	128	-71	3396	-113.44	0.81	45.18
240	SLU 56	129	-72	3375	-105.26	0.82	45.55
240	SLU 57	129	-71	3388	-110.17	0.82	45.33
240	SLU 58	129	-72	3375	-105.26	0.82	45.55
240	SLU 59	129	-71	3388	-110.17	0.82	45.33
240	SLU 60	136	-77	3544	-102.85	0.86	47.93
240	SLU 61	135	-77	3557	-107.76	0.85	47.72
240	SLU 62	136	-77	3544	-102.85	0.86	47.93
240	SLU 63	135	-77	3557	-107.76	0.85	47.72
240	SLU 64	125	-69	3260	-106.92	0.79	44.19
240	SLU 65	124	-68	3281	-115.1	0.78	43.83



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
240	SLU 66	125	-69	3260	-106.92	0.79	44.19
240	SLU 67	125	-68	3273	-111.83	0.79	43.97
240	SLU 68	124	-68	3281	-115.1	0.78	43.83
240	SLU 69	125	-69	3260	-106.92	0.79	44.19
240	SLU 70	125	-68	3273	-111.83	0.79	43.97
240	SLU 71	125	-69	3260	-106.92	0.79	44.19
240	SLU 72	125	-68	3273	-111.83	0.79	43.97
240	SLU 73	140	-80	3677	-109.48	0.87	49.4
240	SLU 74	141	-81	3655	-101.3	0.88	49.76
240	SLU 75	141	-80	3668	-106.21	0.87	49.54
240	SLU 76	140	-80	3677	-109.48	0.87	49.4
240	SLU 77	141	-81	3655	-101.3	0.88	49.76
240	SLU 78	141	-80	3668	-106.21	0.87	49.54
240	SLU 79	141	-81	3655	-101.3	0.88	49.76
240	SLU 80	141	-80	3668	-106.21	0.87	49.54
240	SLU 81	148	-86	3825	-98.9	0.91	52.15
240	SLU 82	147	-85	3838	-103.8	0.91	51.93
240	SLU 83	148	-86	3825	-98.9	0.91	52.15
240	SLU 84	147	-85	3838	-103.8	0.91	51.93
240	SLE RA 1	94	-51	2446	-83.12	0.6	33.07
240	SLE RA 2	93	-50	2460	-88.57	0.59	32.83
240	SLE RA 3	94	-51	2446	-83.12	0.6	33.07
240	SLE RA 4	93	-51	2455	-86.39	0.59	32.92
240	SLE RA 5	93	-50	2460	-88.57	0.59	32.83
240	SLE RA 6	94	-51	2446	-83.12	0.6	33.07
240	SLE RA 7	93	-51	2455	-86.39	0.59	32.92
240	SLE RA 8	94	-51	2446	-83.12	0.6	33.07
240	SLE RA 9	93	-51	2455	-86.39	0.59	32.92
240	SLE RA 10	104	-58	2724	-84.82	0.65	36.54
240	SLE RA 11	104	-59	2710	-79.37	0.65	36.78
240	SLE RA 12	104	-59	2718	-82.64	0.65	36.63
240	SLE RA 13	104	-58	2724	-84.82	0.65	36.54
240	SLE RA 14	104	-59	2710	-79.37	0.65	36.78
240	SLE RA 15	104	-59	2718	-82.64	0.65	36.63
240	SLE RA 16	104	-59	2710	-79.37	0.65	36.78
240	SLE RA 17	104	-59	2718	-82.64	0.65	36.63
240	SLE RA 18	109	-62	2823	-77.77	0.68	38.37
240	SLE RA 19	108	-62	2831	-81.04	0.67	38.23
240	SLE RA 20	109	-62	2823	-77.77	0.68	38.37
240	SLE RA 21	108	-62	2831	-81.04	0.67	38.23
240	SLE FR 1	94	-51	2446	-83.12	0.6	33.07
240	SLE FR 2	94	-51	2449	-84.21	0.6	33.02
240	SLE FR 3	94	-51	2446	-83.12	0.6	33.07
240	SLE FR 4	98	-54	2562	-82.6	0.62	34.61
240	SLE FR 5	98	-54	2559	-81.51	0.62	34.66
240	SLE FR 6	101	-57	2634	-80.44	0.64	35.72
240	SLE QP 1	94	-51	2446	-83.12	0.6	33.07
240	SLE QP 2	98	-54	2559	-81.51	0.62	34.66
240	SLD 1	441	-74	2376	-82.53	1.36	154.21
240	SLD 2	396	-74	2377	-82.45	1.35	138.53
240	SLD 3	348	-128	2518	-101.7	1.11	121.66
240	SLD 4	303	-128	2519	-101.62	1.1	105.98
240	SLD 5	358	22	2289	-52.77	1.23	125.38
240	SLD 6	313	22	2289	-52.69	1.22	109.7
240	SLD 7	47	-159	2762	-116.67	0.39	16.88
240	SLD 8	2	-159	2762	-116.59	0.38	1.2
240	SLD 9	194	50	2356	-46.43	0.87	68.12
240	SLD 10	149	50	2356	-46.35	0.86	52.43
240	SLD 11	-116	-130	2829	-110.33	0.02	-40.38
240	SLD 12	-161	-131	2829	-110.26	0.01	-56.07
240	SLD 13	-106	20	2599	-61.41	0.15	-36.67
240	SLD 14	-151	19	2599	-61.33	0.14	-52.35
240	SLD 15	-199	-34	2741	-80.58	-0.11	-69.21
240	SLD 16	-244	-35	2741	-80.5	-0.11	-84.9
240	SLV 1	880	-98	2137	-83.54	2.32	307.77
240	SLV 2	778	-100	2138	-83.36	2.29	272.15
240	SLV 3	666	-224	2466	-128.27	1.73	232.9
240	SLV 4	564	-225	2467	-128.1	1.71	197.28
240	SLV 5	694	123	1933	-14.33	2.03	242.62
240	SLV 6	592	122	1934	-14.16	2.01	206.99
240	SLV 7	-21	-295	3030	-163.45	0.07	-6.96
240	SLV 8	-123	-296	3031	-163.27	0.05	-42.58
240	SLV 9	320	188	2087	0.25	1.2	111.9
240	SLV 10	217	187	2088	0.43	1.17	76.27
240	SLV 11	-395	-231	3184	-148.87	-0.76	-137.68
240	SLV 12	-497	-232	3185	-148.69	-0.78	-173.3
240	SLV 13	-367	116	2651	-34.93	-0.46	-127.96
240	SLV 14	-469	115	2652	-34.75	-0.48	-163.58
240	SLV 15	-582	-9	2980	-79.66	-1.05	-202.83
240	SLV 16	-684	-10	2981	-79.48	-1.07	-238.46
240	CRTFP Ux+	0	0	0	0	0	0
240	CRTFP Ux-	0	0	0	0	0	0
240	CRTFP Uy+	0	0	0	0	0	0
240	CRTFP Uy-	0	0	0	0	0	0
241	SLU 1	89	-42	2353	-90.6	0.29	31.46
241	SLU 2	88	-41	2374	-98.77	0.28	31.09
241	SLU 3	89	-42	2353	-90.6	0.29	31.46
241	SLU 4	89	-42	2366	-95.5	0.28	31.24
241	SLU 5	88	-41	2374	-98.77	0.28	31.09



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
241	SLU 6	89	-42	2353	-90.6	0.29	31.46
241	SLU 7	89	-42	2366	-95.5	0.28	31.24
241	SLU 8	89	-42	2353	-90.6	0.29	31.46
241	SLU 9	89	-42	2366	-95.5	0.28	31.24
241	SLU 10	104	-52	2768	-94.45	0.31	36.55
241	SLU 11	105	-53	2746	-86.28	0.32	36.93
241	SLU 12	104	-52	2759	-91.18	0.31	36.7
241	SLU 13	104	-52	2768	-94.45	0.31	36.55
241	SLU 14	105	-53	2746	-86.28	0.32	36.93
241	SLU 15	104	-52	2759	-91.18	0.31	36.7
241	SLU 16	105	-53	2746	-86.28	0.32	36.93
241	SLU 17	104	-52	2759	-91.18	0.31	36.7
241	SLU 18	111	-57	2915	-84.43	0.33	39.27
241	SLU 19	111	-57	2928	-89.33	0.33	39.04
241	SLU 20	111	-57	2915	-84.43	0.33	39.27
241	SLU 21	111	-57	2928	-89.33	0.33	39.04
241	SLU 22	101	-50	2632	-87.57	0.3	35.6
241	SLU 23	100	-49	2654	-95.74	0.29	35.23
241	SLU 24	101	-50	2632	-87.57	0.3	35.6
241	SLU 25	100	-49	2645	-92.47	0.3	35.38
241	SLU 26	100	-49	2654	-95.74	0.29	35.23
241	SLU 27	101	-50	2632	-87.57	0.3	35.6
241	SLU 28	100	-49	2645	-92.47	0.3	35.38
241	SLU 29	101	-50	2632	-87.57	0.3	35.6
241	SLU 30	100	-49	2645	-92.47	0.3	35.38
241	SLU 31	115	-59	3048	-91.42	0.33	40.69
241	SLU 32	116	-60	3026	-83.25	0.33	41.06
241	SLU 33	116	-60	3039	-88.15	0.33	40.84
241	SLU 34	115	-59	3048	-91.42	0.33	40.69
241	SLU 35	116	-60	3026	-83.25	0.33	41.06
241	SLU 36	116	-60	3039	-88.15	0.33	40.84
241	SLU 37	116	-60	3026	-83.25	0.33	41.06
241	SLU 38	116	-60	3039	-88.15	0.33	40.84
241	SLU 39	123	-65	3195	-81.4	0.35	43.4
241	SLU 40	122	-64	3208	-86.3	0.34	43.18
241	SLU 41	123	-65	3195	-81.4	0.35	43.4
241	SLU 42	122	-64	3208	-86.3	0.34	43.18
241	SLU 43	112	-52	2963	-118.82	0.37	39.48
241	SLU 44	111	-51	2984	-126.98	0.36	39.11
241	SLU 45	112	-52	2963	-118.82	0.37	39.48
241	SLU 46	111	-52	2976	-123.72	0.36	39.26
241	SLU 47	111	-51	2984	-126.98	0.36	39.11
241	SLU 48	112	-52	2963	-118.82	0.37	39.48
241	SLU 49	111	-52	2976	-123.72	0.36	39.26
241	SLU 50	112	-52	2963	-118.82	0.37	39.48
241	SLU 51	111	-52	2976	-123.72	0.36	39.26
241	SLU 52	126	-62	3378	-122.67	0.39	44.57
241	SLU 53	128	-63	3356	-114.5	0.4	44.95
241	SLU 54	127	-62	3369	-119.4	0.39	44.72
241	SLU 55	126	-62	3378	-122.67	0.39	44.57
241	SLU 56	128	-63	3356	-114.5	0.4	44.95
241	SLU 57	127	-62	3369	-119.4	0.39	44.72
241	SLU 58	128	-63	3356	-114.5	0.4	44.95
241	SLU 59	127	-62	3369	-119.4	0.39	44.72
241	SLU 60	134	-67	3525	-112.65	0.41	47.29
241	SLU 61	134	-67	3538	-117.55	0.41	47.06
241	SLU 62	134	-67	3525	-112.65	0.41	47.29
241	SLU 63	134	-67	3538	-117.55	0.41	47.06
241	SLU 64	124	-60	3242	-115.79	0.38	43.62
241	SLU 65	123	-59	3264	-123.95	0.37	43.25
241	SLU 66	124	-60	3242	-115.79	0.38	43.62
241	SLU 67	123	-59	3255	-120.69	0.38	43.4
241	SLU 68	123	-59	3264	-123.95	0.37	43.25
241	SLU 69	124	-60	3242	-115.79	0.38	43.62
241	SLU 70	123	-59	3255	-120.69	0.38	43.4
241	SLU 71	124	-60	3242	-115.79	0.38	43.62
241	SLU 72	123	-59	3255	-120.69	0.38	43.4
241	SLU 73	138	-69	3658	-119.64	0.41	48.71
241	SLU 74	139	-70	3636	-111.47	0.41	49.08
241	SLU 75	139	-70	3649	-116.37	0.41	48.86
241	SLU 76	138	-69	3658	-119.64	0.41	48.71
241	SLU 77	139	-70	3636	-111.47	0.41	49.08
241	SLU 78	139	-70	3649	-116.37	0.41	48.86
241	SLU 79	139	-70	3636	-111.47	0.41	49.08
241	SLU 80	139	-70	3649	-116.37	0.41	48.86
241	SLU 81	146	-75	3805	-109.62	0.43	51.43
241	SLU 82	145	-74	3818	-114.52	0.42	51.2
241	SLU 83	146	-75	3805	-109.62	0.43	51.43
241	SLU 84	145	-74	3818	-114.52	0.42	51.2
241	SLE RA 1	93	-44	2433	-89.73	0.29	32.65
241	SLE RA 2	92	-44	2447	-95.18	0.29	32.4
241	SLE RA 3	93	-44	2433	-89.73	0.29	32.65
241	SLE RA 4	92	-44	2441	-93	0.29	32.5
241	SLE RA 5	92	-44	2447	-95.18	0.29	32.4
241	SLE RA 6	93	-44	2433	-89.73	0.29	32.65
241	SLE RA 7	92	-44	2441	-93	0.29	32.5
241	SLE RA 8	93	-44	2433	-89.73	0.29	32.65
241	SLE RA 9	92	-44	2441	-93	0.29	32.5
241	SLE RA 10	102	-51	2709	-92.3	0.31	36.04



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
241	SLE RA 11	103	-51	2695	-86.85	0.31	36.29
241	SLE RA 12	103	-51	2704	-90.12	0.31	36.14
241	SLE RA 13	102	-51	2709	-92.3	0.31	36.04
241	SLE RA 14	103	-51	2695	-86.85	0.31	36.29
241	SLE RA 15	103	-51	2704	-90.12	0.31	36.14
241	SLE RA 16	103	-51	2695	-86.85	0.31	36.29
241	SLE RA 17	103	-51	2704	-90.12	0.31	36.14
241	SLE RA 18	107	-54	2807	-85.62	0.32	37.85
241	SLE RA 19	107	-54	2816	-88.89	0.32	37.7
241	SLE RA 20	107	-54	2807	-85.62	0.32	37.85
241	SLE RA 21	107	-54	2816	-88.89	0.32	37.7
241	SLE FR 1	93	-44	2433	-89.73	0.29	32.65
241	SLE FR 2	93	-44	2435	-90.82	0.29	32.6
241	SLE FR 3	93	-44	2433	-89.73	0.29	32.65
241	SLE FR 4	97	-47	2548	-89.59	0.3	34.16
241	SLE FR 5	97	-47	2545	-88.5	0.3	34.21
241	SLE FR 6	100	-49	2620	-87.68	0.31	35.25
241	SLE QP 1	93	-44	2433	-89.73	0.29	32.65
241	SLE QP 2	97	-47	2545	-88.5	0.3	34.21
241	SLD 1	439	-70	2350	-89.49	1.07	153.74
241	SLD 2	394	-68	2351	-89.36	1.07	138.05
241	SLD 3	346	-124	2498	-108.23	0.78	121.19
241	SLD 4	301	-123	2499	-108.11	0.77	105.5
241	SLD 5	357	28	2262	-60.41	0.98	124.92
241	SLD 6	312	30	2262	-60.29	0.97	109.24
241	SLD 7	46	-154	2755	-122.89	0	16.42
241	SLD 8	1	-152	2756	-122.77	-0.01	0.74
241	SLD 9	193	58	2334	-54.23	0.61	67.68
241	SLD 10	148	59	2335	-54.11	0.6	51.99
241	SLD 11	-118	-124	2828	-116.71	-0.37	-40.83
241	SLD 12	-163	-123	2828	-116.59	-0.38	-56.51
241	SLD 13	-107	29	2591	-68.89	-0.17	-37.09
241	SLD 14	-152	30	2592	-68.76	-0.18	-52.77
241	SLD 15	-200	-26	2739	-87.63	-0.46	-69.64
241	SLD 16	-245	-24	2740	-87.51	-0.47	-85.32
241	SLV 1	879	-99	2093	-90.44	2.08	307.26
241	SLV 2	777	-95	2095	-90.17	2.06	271.64
241	SLV 3	665	-225	2437	-134.19	1.4	232.38
241	SLV 4	563	-221	2438	-133.91	1.38	196.77
241	SLV 5	692	127	1888	-22.83	1.88	242.15
241	SLV 6	590	131	1889	-22.55	1.86	206.54
241	SLV 7	-22	-293	3033	-168.65	-0.4	-7.44
241	SLV 8	-124	-289	3035	-168.37	-0.42	-43.06
241	SLV 9	318	195	2055	-8.63	1.02	111.47
241	SLV 10	216	199	2057	-8.35	1	75.85
241	SLV 11	-396	-225	3201	-154.44	-1.26	-138.12
241	SLV 12	-498	-222	3202	-154.16	-1.28	-173.74
241	SLV 13	-368	127	2652	-43.09	-0.77	-128.35
241	SLV 14	-471	130	2653	-42.81	-0.79	-163.97
241	SLV 15	-583	1	2995	-86.83	-1.46	-203.23
241	SLV 16	-685	4	2997	-86.55	-1.48	-238.85
241	CRTFP Ux+	0	0	0	0	0	0
241	CRTFP Ux-	0	0	0	0	0	0
241	CRTFP Uy+	0	0	0	0	0	0
241	CRTFP Uy-	0	0	0	0	0	0
242	SLU 1	88	-36	2349	-105.33	-0.06	31.08
242	SLU 2	87	-35	2371	-113.4	-0.07	30.69
242	SLU 3	88	-36	2349	-105.33	-0.06	31.08
242	SLU 4	88	-36	2362	-110.17	-0.07	30.85
242	SLU 5	87	-35	2371	-113.4	-0.07	30.69
242	SLU 6	88	-36	2349	-105.33	-0.06	31.08
242	SLU 7	88	-36	2362	-110.17	-0.07	30.85
242	SLU 8	88	-36	2349	-105.33	-0.06	31.08
242	SLU 9	88	-36	2362	-110.17	-0.07	30.85
242	SLU 10	102	-44	2765	-112.06	-0.1	36.05
242	SLU 11	103	-45	2743	-103.99	-0.09	36.44
242	SLU 12	103	-45	2756	-108.83	-0.1	36.2
242	SLU 13	102	-44	2765	-112.06	-0.1	36.05
242	SLU 14	103	-45	2743	-103.99	-0.09	36.44
242	SLU 15	103	-45	2756	-108.83	-0.1	36.2
242	SLU 16	103	-45	2743	-103.99	-0.09	36.44
242	SLU 17	103	-45	2756	-108.83	-0.1	36.2
242	SLU 18	110	-49	2912	-103.42	-0.11	38.73
242	SLU 19	109	-48	2925	-108.26	-0.11	38.5
242	SLU 20	110	-49	2912	-103.42	-0.11	38.73
242	SLU 21	109	-48	2925	-108.26	-0.11	38.5
242	SLU 22	100	-42	2629	-104.42	-0.09	35.14
242	SLU 23	99	-42	2651	-112.48	-0.1	34.76
242	SLU 24	100	-42	2629	-104.42	-0.09	35.14
242	SLU 25	99	-42	2642	-109.26	-0.1	34.91
242	SLU 26	99	-42	2651	-112.48	-0.1	34.76
242	SLU 27	100	-42	2629	-104.42	-0.09	35.14
242	SLU 28	99	-42	2642	-109.26	-0.1	34.91
242	SLU 29	100	-42	2629	-104.42	-0.09	35.14
242	SLU 30	99	-42	2642	-109.26	-0.1	34.91
242	SLU 31	114	-51	3044	-111.14	-0.13	40.12
242	SLU 32	115	-51	3022	-103.08	-0.12	40.5
242	SLU 33	114	-51	3036	-107.92	-0.13	40.27
242	SLU 34	114	-51	3044	-111.14	-0.13	40.12



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
242	SLU 35	115	-51	3022	-103.08	-0.12	40.5
242	SLU 36	114	-51	3036	-107.92	-0.13	40.27
242	SLU 37	115	-51	3022	-103.08	-0.12	40.5
242	SLU 38	114	-51	3036	-107.92	-0.13	40.27
242	SLU 39	121	-55	3191	-102.5	-0.14	42.8
242	SLU 40	121	-55	3204	-107.34	-0.14	42.57
242	SLU 41	121	-55	3191	-102.5	-0.14	42.8
242	SLU 42	121	-55	3204	-107.34	-0.14	42.57
242	SLU 43	111	-44	2958	-137.24	-0.07	39.01
242	SLU 44	110	-44	2980	-145.31	-0.08	38.62
242	SLU 45	111	-44	2958	-137.24	-0.07	39.01
242	SLU 46	110	-44	2971	-142.08	-0.07	38.77
242	SLU 47	110	-44	2980	-145.31	-0.08	38.62
242	SLU 48	111	-44	2958	-137.24	-0.07	39.01
242	SLU 49	110	-44	2971	-142.08	-0.07	38.77
242	SLU 50	111	-44	2958	-137.24	-0.07	39.01
242	SLU 51	110	-44	2971	-142.08	-0.07	38.77
242	SLU 52	125	-53	3374	-143.97	-0.11	43.98
242	SLU 53	126	-53	3352	-135.9	-0.1	44.36
242	SLU 54	125	-53	3365	-140.74	-0.11	44.13
242	SLU 55	125	-53	3374	-143.97	-0.11	43.98
242	SLU 56	126	-53	3352	-135.9	-0.1	44.36
242	SLU 57	125	-53	3365	-140.74	-0.11	44.13
242	SLU 58	126	-53	3352	-135.9	-0.1	44.36
242	SLU 59	125	-53	3365	-140.74	-0.11	44.13
242	SLU 60	132	-57	3520	-135.33	-0.11	46.66
242	SLU 61	132	-57	3534	-140.17	-0.12	46.43
242	SLU 62	132	-57	3520	-135.33	-0.11	46.66
242	SLU 63	132	-57	3534	-140.17	-0.12	46.43
242	SLU 64	122	-51	3238	-136.33	-0.1	43.07
242	SLU 65	121	-50	3260	-144.4	-0.11	42.69
242	SLU 66	122	-51	3238	-136.33	-0.1	43.07
242	SLU 67	122	-51	3251	-141.17	-0.1	42.84
242	SLU 68	121	-50	3260	-144.4	-0.11	42.69
242	SLU 69	122	-51	3238	-136.33	-0.1	43.07
242	SLU 70	122	-51	3251	-141.17	-0.1	42.84
242	SLU 71	122	-51	3238	-136.33	-0.1	43.07
242	SLU 72	122	-51	3251	-141.17	-0.1	42.84
242	SLU 73	136	-59	3653	-143.06	-0.14	48.05
242	SLU 74	137	-60	3631	-134.99	-0.13	48.43
242	SLU 75	137	-60	3645	-139.83	-0.14	48.2
242	SLU 76	136	-59	3653	-143.06	-0.14	48.05
242	SLU 77	137	-60	3631	-134.99	-0.13	48.43
242	SLU 78	137	-60	3645	-139.83	-0.14	48.2
242	SLU 79	137	-60	3631	-134.99	-0.13	48.43
242	SLU 80	137	-60	3645	-139.83	-0.14	48.2
242	SLU 81	144	-64	3800	-134.42	-0.14	50.73
242	SLU 82	143	-63	3813	-139.26	-0.15	50.5
242	SLU 83	144	-64	3800	-134.42	-0.14	50.73
242	SLU 84	143	-63	3813	-139.26	-0.15	50.5
242	SLE RA 1	92	-38	2429	-105.07	-0.07	32.24
242	SLE RA 2	91	-37	2444	-110.45	-0.08	31.98
242	SLE RA 3	92	-38	2429	-105.07	-0.07	32.24
242	SLE RA 4	91	-38	2438	-108.3	-0.07	32.08
242	SLE RA 5	91	-37	2444	-110.45	-0.08	31.98
242	SLE RA 6	92	-38	2429	-105.07	-0.07	32.24
242	SLE RA 7	91	-38	2438	-108.3	-0.07	32.08
242	SLE RA 8	92	-38	2429	-105.07	-0.07	32.24
242	SLE RA 9	91	-38	2438	-108.3	-0.07	32.08
242	SLE RA 10	101	-43	2706	-109.55	-0.1	35.55
242	SLE RA 11	102	-44	2692	-104.18	-0.09	35.81
242	SLE RA 12	101	-43	2700	-107.4	-0.09	35.66
242	SLE RA 13	101	-43	2706	-109.55	-0.1	35.55
242	SLE RA 14	102	-44	2692	-104.18	-0.09	35.81
242	SLE RA 15	101	-43	2700	-107.4	-0.09	35.66
242	SLE RA 16	102	-44	2692	-104.18	-0.09	35.81
242	SLE RA 17	101	-43	2700	-107.4	-0.09	35.66
242	SLE RA 18	106	-46	2804	-103.79	-0.1	37.34
242	SLE RA 19	106	-46	2813	-107.02	-0.1	37.19
242	SLE RA 20	106	-46	2804	-103.79	-0.1	37.34
242	SLE RA 21	106	-46	2813	-107.02	-0.1	37.19
242	SLE FR 1	92	-38	2429	-105.07	-0.07	32.24
242	SLE FR 2	91	-38	2432	-106.15	-0.07	32.19
242	SLE FR 3	92	-38	2429	-105.07	-0.07	32.24
242	SLE FR 4	96	-40	2544	-105.76	-0.08	33.72
242	SLE FR 5	96	-40	2542	-104.69	-0.08	33.77
242	SLE FR 6	99	-42	2617	-104.43	-0.09	34.79
242	SLE QP 1	92	-38	2429	-105.07	-0.07	32.24
242	SLE QP 2	96	-40	2542	-104.69	-0.08	33.77
242	SLD 1	438	-68	2330	-86	0.76	153.24
242	SLD 2	393	-64	2331	-85.87	0.75	137.57
242	SLD 3	345	-125	2486	-103.64	0.41	120.7
242	SLD 4	300	-121	2487	-103.51	0.4	105.02
242	SLD 5	355	37	2241	-72.38	0.7	124.46
242	SLD 6	310	40	2242	-72.25	0.7	108.78
242	SLD 7	45	-153	2761	-131.17	-0.46	15.97
242	SLD 8	0	-150	2762	-131.04	-0.47	0.3
242	SLD 9	192	69	2321	-78.34	0.31	67.24
242	SLD 10	147	73	2322	-78.21	0.3	51.57



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
242	SLD 11	-119	-121	2841	-137.13	-0.86	-41.24
242	SLD 12	-164	-117	2842	-137	-0.86	-56.92
242	SLD 13	-108	41	2596	-105.87	-0.56	-37.48
242	SLD 14	-153	44	2597	-105.74	-0.57	-53.16
242	SLD 15	-201	-16	2752	-123.51	-0.91	-70.03
242	SLD 16	-246	-13	2753	-123.38	-0.92	-85.7
242	SLV 1	878	-103	2051	-61.47	1.84	306.7
242	SLV 2	775	-94	2053	-61.18	1.82	271.1
242	SLV 3	663	-234	2413	-102.65	1.03	231.83
242	SLV 4	561	-226	2415	-102.35	1.01	196.23
242	SLV 5	691	138	1844	-29.38	1.74	241.66
242	SLV 6	589	146	1847	-29.08	1.72	206.05
242	SLV 7	-23	-301	3051	-166.63	-0.97	-7.9
242	SLV 8	-125	-293	3054	-166.34	-0.99	-43.5
242	SLV 9	317	212	2030	-43.04	0.83	111.04
242	SLV 10	215	221	2032	-42.74	0.81	75.44
242	SLV 11	-397	-227	3237	-180.3	-1.88	-138.52
242	SLV 12	-499	-218	3239	-180	-1.9	-174.12
242	SLV 13	-370	146	2668	-107.02	-1.17	-128.69
242	SLV 14	-472	154	2670	-106.73	-1.19	-164.29
242	SLV 15	-584	14	3030	-148.2	-1.98	-203.56
242	SLV 16	-686	22	3032	-147.9	-2	-239.16
242	CRTFP Ux+	0	0	0	0	0	0
242	CRTFP Ux-	0	0	0	0	0	0
242	CRTFP Uy+	0	0	0	0	0	0
242	CRTFP Uy-	0	0	0	0	0	0
243	SLU 1	87	-30	2358	-129.62	-0.52	30.71
243	SLU 2	86	-31	2380	-137.49	-0.52	30.32
243	SLU 3	87	-30	2358	-129.62	-0.52	30.71
243	SLU 4	87	-30	2371	-134.34	-0.52	30.47
243	SLU 5	86	-31	2380	-137.49	-0.52	30.32
243	SLU 6	87	-30	2358	-129.62	-0.52	30.71
243	SLU 7	87	-30	2371	-134.34	-0.52	30.47
243	SLU 8	87	-30	2358	-129.62	-0.52	30.71
243	SLU 9	87	-30	2371	-134.34	-0.52	30.47
243	SLU 10	101	-38	2776	-141.06	-0.64	35.58
243	SLU 11	102	-37	2754	-133.18	-0.63	35.97
243	SLU 12	101	-38	2767	-137.91	-0.64	35.74
243	SLU 13	101	-38	2776	-141.06	-0.64	35.58
243	SLU 14	102	-37	2754	-133.18	-0.63	35.97
243	SLU 15	101	-38	2767	-137.91	-0.64	35.74
243	SLU 16	102	-37	2754	-133.18	-0.63	35.97
243	SLU 17	101	-38	2767	-137.91	-0.64	35.74
243	SLU 18	108	-40	2923	-134.71	-0.68	38.23
243	SLU 19	108	-41	2936	-139.43	-0.69	37.99
243	SLU 20	108	-40	2923	-134.71	-0.68	38.23
243	SLU 21	108	-41	2936	-139.43	-0.69	37.99
243	SLU 22	99	-35	2639	-132.2	-0.61	34.71
243	SLU 23	98	-36	2661	-140.07	-0.62	34.31
243	SLU 24	99	-35	2639	-132.2	-0.61	34.71
243	SLU 25	98	-36	2652	-136.92	-0.61	34.47
243	SLU 26	98	-36	2661	-140.07	-0.62	34.31
243	SLU 27	99	-35	2639	-132.2	-0.61	34.71
243	SLU 28	98	-36	2652	-136.92	-0.61	34.47
243	SLU 29	99	-35	2639	-132.2	-0.61	34.71
243	SLU 30	98	-36	2652	-136.92	-0.61	34.47
243	SLU 31	112	-43	3057	-143.63	-0.73	39.58
243	SLU 32	113	-43	3035	-135.76	-0.73	39.97
243	SLU 33	113	-43	3048	-140.49	-0.73	39.74
243	SLU 34	112	-43	3057	-143.63	-0.73	39.58
243	SLU 35	113	-43	3035	-135.76	-0.73	39.97
243	SLU 36	113	-43	3048	-140.49	-0.73	39.74
243	SLU 37	113	-43	3035	-135.76	-0.73	39.97
243	SLU 38	113	-43	3048	-140.49	-0.73	39.74
243	SLU 39	120	-46	3205	-137.29	-0.78	42.23
243	SLU 40	119	-46	3218	-142.01	-0.78	41.99
243	SLU 41	120	-46	3205	-137.29	-0.78	42.23
243	SLU 42	119	-46	3218	-142.01	-0.78	41.99
243	SLU 43	110	-37	2969	-167.62	-0.64	38.55
243	SLU 44	108	-38	2991	-175.5	-0.65	38.16
243	SLU 45	110	-37	2969	-167.62	-0.64	38.55
243	SLU 46	109	-38	2982	-172.35	-0.65	38.32
243	SLU 47	108	-38	2991	-175.5	-0.65	38.16
243	SLU 48	110	-37	2969	-167.62	-0.64	38.55
243	SLU 49	109	-38	2982	-172.35	-0.65	38.32
243	SLU 50	110	-37	2969	-167.62	-0.64	38.55
243	SLU 51	109	-38	2982	-172.35	-0.65	38.32
243	SLU 52	123	-45	3386	-179.06	-0.76	43.42
243	SLU 53	124	-45	3364	-171.19	-0.76	43.82
243	SLU 54	124	-45	3378	-175.91	-0.76	43.58
243	SLU 55	123	-45	3386	-179.06	-0.76	43.42
243	SLU 56	124	-45	3364	-171.19	-0.76	43.82
243	SLU 57	124	-45	3378	-175.91	-0.76	43.58
243	SLU 58	124	-45	3364	-171.19	-0.76	43.82
243	SLU 59	124	-45	3378	-175.91	-0.76	43.58
243	SLU 60	131	-48	3534	-172.71	-0.81	46.07
243	SLU 61	130	-48	3547	-177.44	-0.81	45.84
243	SLU 62	131	-48	3534	-172.71	-0.81	46.07
243	SLU 63	130	-48	3547	-177.44	-0.81	45.84



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
243	SLU 64	121	-43	3250	-170.2	-0.73	42.55
243	SLU 65	120	-43	3272	-178.07	-0.74	42.16
243	SLU 66	121	-43	3250	-170.2	-0.73	42.55
243	SLU 67	120	-43	3263	-174.92	-0.74	42.32
243	SLU 68	120	-43	3272	-178.07	-0.74	42.16
243	SLU 69	121	-43	3250	-170.2	-0.73	42.55
243	SLU 70	120	-43	3263	-174.92	-0.74	42.32
243	SLU 71	121	-43	3250	-170.2	-0.73	42.55
243	SLU 72	120	-43	3263	-174.92	-0.74	42.32
243	SLU 73	135	-50	3668	-181.64	-0.86	47.42
243	SLU 74	136	-50	3646	-173.76	-0.85	47.82
243	SLU 75	135	-50	3659	-178.49	-0.85	47.58
243	SLU 76	135	-50	3668	-181.64	-0.86	47.42
243	SLU 77	136	-50	3646	-173.76	-0.85	47.82
243	SLU 78	135	-50	3659	-178.49	-0.85	47.58
243	SLU 79	136	-50	3646	-173.76	-0.85	47.82
243	SLU 80	135	-50	3659	-178.49	-0.85	47.58
243	SLU 81	142	-53	3815	-175.29	-0.9	50.07
243	SLU 82	141	-53	3829	-180.01	-0.9	49.83
243	SLU 83	142	-53	3815	-175.29	-0.9	50.07
243	SLU 84	141	-53	3829	-180.01	-0.9	49.83
243	SLE RA 1	90	-32	2438	-130.36	-0.54	31.85
243	SLE RA 2	90	-32	2453	-135.61	-0.55	31.59
243	SLE RA 3	90	-32	2438	-130.36	-0.54	31.85
243	SLE RA 4	90	-32	2447	-133.51	-0.55	31.7
243	SLE RA 5	90	-32	2453	-135.61	-0.55	31.59
243	SLE RA 6	90	-32	2438	-130.36	-0.54	31.85
243	SLE RA 7	90	-32	2447	-133.51	-0.55	31.7
243	SLE RA 8	90	-32	2438	-130.36	-0.54	31.85
243	SLE RA 9	90	-32	2447	-133.51	-0.55	31.7
243	SLE RA 10	100	-37	2717	-137.98	-0.63	35.1
243	SLE RA 11	100	-36	2702	-132.73	-0.62	35.36
243	SLE RA 12	100	-37	2711	-135.88	-0.62	35.2
243	SLE RA 13	100	-37	2717	-137.98	-0.63	35.1
243	SLE RA 14	100	-36	2702	-132.73	-0.62	35.36
243	SLE RA 15	100	-37	2711	-135.88	-0.62	35.2
243	SLE RA 16	100	-36	2702	-132.73	-0.62	35.36
243	SLE RA 17	100	-37	2711	-135.88	-0.62	35.2
243	SLE RA 18	105	-38	2815	-133.75	-0.66	36.87
243	SLE RA 19	104	-39	2824	-136.9	-0.66	36.71
243	SLE RA 20	105	-38	2815	-133.75	-0.66	36.87
243	SLE RA 21	104	-39	2824	-136.9	-0.66	36.71
243	SLE FR 1	90	-32	2438	-130.36	-0.54	31.85
243	SLE FR 2	90	-32	2441	-131.41	-0.55	31.8
243	SLE FR 3	90	-32	2438	-130.36	-0.54	31.85
243	SLE FR 4	95	-34	2554	-132.42	-0.58	33.31
243	SLE FR 5	95	-34	2551	-131.38	-0.58	33.36
243	SLE FR 6	98	-35	2627	-132.05	-0.6	34.36
243	SLE QP 1	90	-32	2438	-130.36	-0.54	31.85
243	SLE QP 2	95	-34	2551	-131.38	-0.58	33.36
243	SLD 1	437	-68	2318	-113.21	0.35	152.74
243	SLD 2	392	-62	2320	-113.14	0.34	137.08
243	SLD 3	344	-129	2485	-129.21	-0.07	120.21
243	SLD 4	299	-123	2486	-129.14	-0.08	104.55
243	SLD 5	354	48	2229	-101.68	0.35	123.99
243	SLD 6	309	54	2230	-101.61	0.34	108.33
243	SLD 7	44	-158	2783	-155.02	-1.07	15.56
243	SLD 8	-1	-152	2784	-154.95	-1.07	-0.11
243	SLD 9	190	85	2319	-107.8	-0.08	66.82
243	SLD 10	145	91	2320	-107.73	-0.09	51.16
243	SLD 11	-120	-121	2872	-161.14	-1.49	-41.61
243	SLD 12	-165	-115	2873	-161.07	-1.5	-57.28
243	SLD 13	-109	56	2617	-133.61	-1.08	-37.83
243	SLD 14	-154	62	2618	-133.54	-1.08	-53.5
243	SLD 15	-202	-6	2783	-149.61	-1.5	-70.36
243	SLD 16	-247	0	2784	-149.54	-1.51	-86.03
243	SLV 1	876	-110	2012	-89.48	1.56	306.09
243	SLV 2	774	-97	2015	-89.31	1.55	270.51
243	SLV 3	662	-253	2398	-126.87	0.58	231.25
243	SLV 4	560	-239	2400	-126.7	0.56	195.67
243	SLV 5	689	154	1804	-62.15	1.56	241.13
243	SLV 6	587	168	1806	-61.98	1.54	205.55
243	SLV 7	-24	-320	3089	-186.79	-1.72	-8.32
243	SLV 8	-126	-306	3092	-186.63	-1.73	-43.9
243	SLV 9	315	239	2011	-76.12	0.58	110.61
243	SLV 10	213	253	2013	-75.96	0.56	75.04
243	SLV 11	-398	-235	3296	-200.77	-2.7	-138.84
243	SLV 12	-500	-221	3299	-200.6	-2.72	-174.41
243	SLV 13	-370	172	2702	-136.05	-1.72	-128.96
243	SLV 14	-473	185	2705	-135.88	-1.74	-164.53
243	SLV 15	-584	29	3088	-173.44	-2.7	-203.79
243	SLV 16	-687	43	3090	-173.27	-2.72	-239.37
243	CRTFP Ux+	0	0	0	0	0	0
243	CRTFP Ux-	0	0	0	0	0	0
243	CRTFP Uy+	0	0	0	0	0	0
243	CRTFP Uy-	0	0	0	0	0	0
244	SLU 1	86	-25	2382	-165.32	-1.12	30.37
244	SLU 2	85	-27	2404	-172.94	-1.13	29.97
244	SLU 3	86	-25	2382	-165.32	-1.12	30.37



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
244	SLU 4	86	-26	2395	-169.89	-1.13	30.13
244	SLU 5	85	-27	2404	-172.94	-1.13	29.97
244	SLU 6	86	-25	2382	-165.32	-1.12	30.37
244	SLU 7	86	-26	2395	-169.89	-1.13	30.13
244	SLU 8	86	-25	2382	-165.32	-1.12	30.37
244	SLU 9	86	-26	2395	-169.89	-1.13	30.13
244	SLU 10	100	-32	2805	-183.68	-1.36	35.14
244	SLU 11	101	-31	2783	-176.06	-1.36	35.55
244	SLU 12	100	-32	2796	-180.63	-1.36	35.31
244	SLU 13	100	-32	2805	-183.68	-1.36	35.14
244	SLU 14	101	-31	2783	-176.06	-1.36	35.55
244	SLU 15	100	-32	2796	-180.63	-1.36	35.31
244	SLU 16	101	-31	2783	-176.06	-1.36	35.55
244	SLU 17	100	-32	2796	-180.63	-1.36	35.31
244	SLU 18	107	-33	2955	-180.67	-1.46	37.77
244	SLU 19	107	-34	2968	-185.23	-1.46	37.52
244	SLU 20	107	-33	2955	-180.67	-1.46	37.77
244	SLU 21	107	-34	2968	-185.23	-1.46	37.52
244	SLU 22	97	-29	2668	-173.02	-1.3	34.31
244	SLU 23	96	-31	2690	-180.63	-1.31	33.9
244	SLU 24	97	-29	2668	-173.02	-1.3	34.31
244	SLU 25	97	-30	2681	-177.59	-1.31	34.07
244	SLU 26	96	-31	2690	-180.63	-1.31	33.9
244	SLU 27	97	-29	2668	-173.02	-1.3	34.31
244	SLU 28	97	-30	2681	-177.59	-1.31	34.07
244	SLU 29	97	-29	2668	-173.02	-1.3	34.31
244	SLU 30	97	-30	2681	-177.59	-1.31	34.07
244	SLU 31	111	-37	3091	-191.37	-1.54	39.08
244	SLU 32	112	-35	3069	-183.76	-1.54	39.49
244	SLU 33	112	-36	3082	-188.33	-1.54	39.24
244	SLU 34	111	-37	3091	-191.37	-1.54	39.08
244	SLU 35	112	-35	3069	-183.76	-1.54	39.49
244	SLU 36	112	-36	3082	-188.33	-1.54	39.24
244	SLU 37	112	-35	3069	-183.76	-1.54	39.49
244	SLU 38	112	-36	3082	-188.33	-1.54	39.24
244	SLU 39	118	-37	3240	-188.36	-1.64	41.7
244	SLU 40	118	-38	3254	-192.93	-1.64	41.46
244	SLU 41	118	-37	3240	-188.36	-1.64	41.7
244	SLU 42	118	-38	3254	-192.93	-1.64	41.46
244	SLU 43	108	-31	2999	-212.28	-1.4	38.14
244	SLU 44	107	-33	3021	-219.89	-1.41	37.73
244	SLU 45	108	-31	2999	-212.28	-1.4	38.14
244	SLU 46	108	-32	3012	-216.85	-1.41	37.89
244	SLU 47	107	-33	3021	-219.89	-1.41	37.73
244	SLU 48	108	-31	2999	-212.28	-1.4	38.14
244	SLU 49	108	-32	3012	-216.85	-1.41	37.89
244	SLU 50	108	-31	2999	-212.28	-1.4	38.14
244	SLU 51	108	-32	3012	-216.85	-1.41	37.89
244	SLU 52	122	-39	3422	-230.63	-1.64	42.91
244	SLU 53	123	-37	3400	-223.02	-1.64	43.31
244	SLU 54	122	-38	3413	-227.59	-1.64	43.07
244	SLU 55	122	-39	3422	-230.63	-1.64	42.91
244	SLU 56	123	-37	3400	-223.02	-1.64	43.31
244	SLU 57	122	-38	3413	-227.59	-1.64	43.07
244	SLU 58	123	-37	3400	-223.02	-1.64	43.31
244	SLU 59	122	-38	3413	-227.59	-1.64	43.07
244	SLU 60	129	-39	3572	-227.62	-1.74	45.53
244	SLU 61	129	-40	3585	-232.19	-1.74	45.29
244	SLU 62	129	-39	3572	-227.62	-1.74	45.53
244	SLU 63	129	-40	3585	-232.19	-1.74	45.29
244	SLU 64	120	-35	3284	-219.98	-1.58	42.07
244	SLU 65	119	-37	3307	-227.59	-1.58	41.67
244	SLU 66	120	-35	3284	-219.98	-1.58	42.07
244	SLU 67	119	-36	3298	-224.54	-1.58	41.83
244	SLU 68	119	-37	3307	-227.59	-1.58	41.67
244	SLU 69	120	-35	3284	-219.98	-1.58	42.07
244	SLU 70	119	-36	3298	-224.54	-1.58	41.83
244	SLU 71	120	-35	3284	-219.98	-1.58	42.07
244	SLU 72	119	-36	3298	-224.54	-1.58	41.83
244	SLU 73	133	-43	3708	-238.33	-1.82	46.84
244	SLU 74	134	-41	3685	-230.72	-1.81	47.25
244	SLU 75	134	-42	3699	-235.28	-1.82	47
244	SLU 76	133	-43	3708	-238.33	-1.82	46.84
244	SLU 77	134	-41	3685	-230.72	-1.81	47.25
244	SLU 78	134	-42	3699	-235.28	-1.82	47
244	SLU 79	134	-41	3685	-230.72	-1.81	47.25
244	SLU 80	134	-42	3699	-235.28	-1.82	47
244	SLU 81	140	-43	3857	-235.32	-1.91	49.47
244	SLU 82	140	-44	3871	-239.89	-1.92	49.22
244	SLU 83	140	-43	3857	-235.32	-1.91	49.47
244	SLU 84	140	-44	3871	-239.89	-1.92	49.22
244	SLE RA 1	90	-26	2464	-167.52	-1.18	31.5
244	SLE RA 2	89	-27	2479	-172.6	-1.18	31.23
244	SLE RA 3	90	-26	2464	-167.52	-1.18	31.5
244	SLE RA 4	89	-27	2473	-170.57	-1.18	31.34
244	SLE RA 5	89	-27	2479	-172.6	-1.18	31.23
244	SLE RA 6	90	-26	2464	-167.52	-1.18	31.5
244	SLE RA 7	89	-27	2473	-170.57	-1.18	31.34
244	SLE RA 8	90	-26	2464	-167.52	-1.18	31.5



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
244	SLE RA 9	89	-27	2473	-170.57	-1.18	31.34
244	SLE RA 10	99	-31	2746	-179.76	-1.34	34.68
244	SLE RA 11	99	-30	2731	-174.68	-1.33	34.95
244	SLE RA 12	99	-31	2740	-177.73	-1.33	34.79
244	SLE RA 13	99	-31	2746	-179.76	-1.34	34.68
244	SLE RA 14	99	-30	2731	-174.68	-1.33	34.95
244	SLE RA 15	99	-31	2740	-177.73	-1.33	34.79
244	SLE RA 16	99	-30	2731	-174.68	-1.33	34.95
244	SLE RA 17	99	-31	2740	-177.73	-1.33	34.79
244	SLE RA 18	103	-32	2846	-177.75	-1.4	36.43
244	SLE RA 19	103	-32	2854	-180.8	-1.4	36.27
244	SLE RA 20	103	-32	2846	-177.75	-1.4	36.43
244	SLE RA 21	103	-32	2854	-180.8	-1.4	36.27
244	SLE FR 1	90	-26	2464	-167.52	-1.18	31.5
244	SLE FR 2	89	-26	2467	-168.54	-1.18	31.44
244	SLE FR 3	90	-26	2464	-167.52	-1.18	31.5
244	SLE FR 4	94	-28	2581	-171.61	-1.24	32.92
244	SLE FR 5	94	-28	2578	-170.59	-1.24	32.98
244	SLE FR 6	96	-29	2655	-172.64	-1.29	33.96
244	SLE QP 1	90	-26	2464	-167.52	-1.18	31.5
244	SLE QP 2	94	-28	2578	-170.59	-1.24	32.98
244	SLD 1	436	-69	2320	-150.66	-0.18	152.24
244	SLD 2	391	-61	2321	-150.73	-0.19	136.59
244	SLD 3	343	-138	2499	-165.25	-0.7	119.73
244	SLD 4	298	-129	2500	-165.32	-0.7	104.09
244	SLD 5	353	60	2229	-142.46	-0.14	123.53
244	SLD 6	308	69	2230	-142.53	-0.14	107.89
244	SLD 7	43	-167	2825	-191.09	-1.86	15.18
244	SLD 8	-2	-159	2827	-191.16	-1.87	-0.47
244	SLD 9	189	103	2330	-150.02	-0.62	66.42
244	SLD 10	144	112	2331	-150.09	-0.62	50.77
244	SLD 11	-121	-124	2926	-198.65	-2.34	-41.93
244	SLD 12	-166	-116	2928	-198.72	-2.35	-57.58
244	SLD 13	-110	74	2656	-175.86	-1.78	-38.13
244	SLD 14	-155	82	2658	-175.93	-1.79	-53.78
244	SLD 15	-203	5	2835	-190.45	-2.3	-70.64
244	SLD 16	-248	14	2837	-190.52	-2.3	-86.29
244	SLV 1	874	-122	1979	-124.72	1.21	305.43
244	SLV 2	772	-103	1982	-124.88	1.19	269.89
244	SLV 3	661	-279	2395	-158.84	0.01	230.65
244	SLV 4	559	-260	2398	-159	-0.01	195.11
244	SLV 5	688	176	1767	-105.02	1.32	240.57
244	SLV 6	586	195	1770	-105.19	1.31	205.03
244	SLV 7	-25	-349	3152	-218.76	-2.68	-8.7
244	SLV 8	-127	-330	3155	-218.92	-2.7	-44.24
244	SLV 9	314	274	2001	-122.26	0.22	110.19
244	SLV 10	212	293	2004	-122.42	0.2	74.65
244	SLV 11	-398	-251	3386	-235.99	-3.79	-139.08
244	SLV 12	-500	-232	3389	-236.16	-3.81	-174.61
244	SLV 13	-371	205	2759	-182.18	-2.47	-129.16
244	SLV 14	-473	224	2762	-182.34	-2.49	-164.69
244	SLV 15	-585	47	3174	-216.3	-3.68	-203.94
244	SLV 16	-687	66	3177	-216.46	-3.69	-239.47
244	CRTFP Ux+	0	0	0	0	0	0
244	CRTFP Ux-	0	0	0	0	0	0
244	CRTFP Uy+	0	0	0	0	0	0
244	CRTFP Uy-	0	0	0	0	0	0
245	SLU 1	86	-21	2427	-215.24	-1.91	30.06
245	SLU 2	85	-24	2450	-222.56	-1.92	29.65
245	SLU 3	86	-21	2427	-215.24	-1.91	30.06
245	SLU 4	85	-23	2441	-219.63	-1.92	29.81
245	SLU 5	85	-24	2450	-222.56	-1.92	29.65
245	SLU 6	86	-21	2427	-215.24	-1.91	30.06
245	SLU 7	85	-23	2441	-219.63	-1.92	29.81
245	SLU 8	86	-21	2427	-215.24	-1.91	30.06
245	SLU 9	85	-23	2441	-219.63	-1.92	29.81
245	SLU 10	99	-28	2860	-243.24	-2.31	34.74
245	SLU 11	100	-25	2838	-235.92	-2.3	35.16
245	SLU 12	99	-27	2851	-240.31	-2.31	34.91
245	SLU 13	99	-28	2860	-243.24	-2.31	34.74
245	SLU 14	100	-25	2838	-235.92	-2.3	35.16
245	SLU 15	99	-27	2851	-240.31	-2.31	34.91
245	SLU 16	100	-25	2838	-235.92	-2.3	35.16
245	SLU 17	99	-27	2851	-240.31	-2.31	34.91
245	SLU 18	106	-27	3014	-244.78	-2.47	37.34
245	SLU 19	106	-29	3027	-249.17	-2.47	37.09
245	SLU 20	106	-27	3014	-244.78	-2.47	37.34
245	SLU 21	106	-29	3027	-249.17	-2.47	37.09
245	SLU 22	97	-24	2720	-230.04	-2.2	33.94
245	SLU 23	96	-27	2742	-237.36	-2.21	33.53
245	SLU 24	97	-24	2720	-230.04	-2.2	33.94
245	SLU 25	96	-26	2733	-234.43	-2.2	33.69
245	SLU 26	96	-27	2742	-237.36	-2.21	33.53
245	SLU 27	97	-24	2720	-230.04	-2.2	33.94
245	SLU 28	96	-26	2733	-234.43	-2.2	33.69
245	SLU 29	97	-24	2720	-230.04	-2.2	33.94
245	SLU 30	96	-26	2733	-234.43	-2.2	33.69
245	SLU 31	110	-31	3153	-258.04	-2.6	38.62
245	SLU 32	111	-28	3130	-250.72	-2.59	39.04



Nodo Ind.	Cont. N.br.	Reazione a traslazione			Reazione a rotazione		
		x	y	z	x	y	z
245	SLU 33	110	-30	3144	-255.11	-2.59	38.79
245	SLU 34	110	-31	3153	-258.04	-2.6	38.62
245	SLU 35	111	-28	3130	-250.72	-2.59	39.04
245	SLU 36	110	-30	3144	-255.11	-2.59	38.79
245	SLU 37	111	-28	3130	-250.72	-2.59	39.04
245	SLU 38	110	-30	3144	-255.11	-2.59	38.79
245	SLU 39	117	-30	3306	-259.58	-2.75	41.22
245	SLU 40	117	-32	3319	-263.98	-2.76	40.97
245	SLU 41	117	-30	3306	-259.58	-2.75	41.22
245	SLU 42	117	-32	3319	-263.98	-2.76	40.97
245	SLU 43	107	-26	3055	-274.73	-2.39	37.75
245	SLU 44	106	-29	3078	-282.05	-2.4	37.33
245	SLU 45	107	-26	3055	-274.73	-2.39	37.75
245	SLU 46	107	-28	3069	-279.13	-2.39	37.5
245	SLU 47	106	-29	3078	-282.05	-2.4	37.33
245	SLU 48	107	-26	3055	-274.73	-2.39	37.75
245	SLU 49	107	-28	3069	-279.13	-2.39	37.5
245	SLU 50	107	-26	3055	-274.73	-2.39	37.75
245	SLU 51	107	-28	3069	-279.13	-2.39	37.5
245	SLU 52	121	-33	3488	-302.73	-2.78	42.43
245	SLU 53	122	-30	3466	-295.42	-2.77	42.84
245	SLU 54	121	-32	3479	-299.81	-2.78	42.59
245	SLU 55	121	-33	3488	-302.73	-2.78	42.43
245	SLU 56	122	-30	3466	-295.42	-2.77	42.84
245	SLU 57	121	-32	3479	-299.81	-2.78	42.59
245	SLU 58	122	-30	3466	-295.42	-2.77	42.84
245	SLU 59	121	-32	3479	-299.81	-2.78	42.59
245	SLU 60	128	-32	3641	-304.28	-2.94	45.03
245	SLU 61	127	-34	3655	-308.67	-2.95	44.78
245	SLU 62	128	-32	3641	-304.28	-2.94	45.03
245	SLU 63	127	-34	3655	-308.67	-2.95	44.78
245	SLU 64	118	-29	3348	-289.54	-2.67	41.63
245	SLU 65	117	-33	3370	-296.85	-2.68	41.21
245	SLU 66	118	-29	3348	-289.54	-2.67	41.63
245	SLU 67	118	-31	3361	-293.93	-2.68	41.38
245	SLU 68	117	-33	3370	-296.85	-2.68	41.21
245	SLU 69	118	-29	3348	-289.54	-2.67	41.63
245	SLU 70	118	-31	3361	-293.93	-2.68	41.38
245	SLU 71	118	-29	3348	-289.54	-2.67	41.63
245	SLU 72	118	-31	3361	-293.93	-2.68	41.38
245	SLU 73	132	-37	3781	-317.54	-3.07	46.31
245	SLU 74	133	-33	3758	-310.22	-3.06	46.72
245	SLU 75	132	-35	3772	-314.61	-3.07	46.47
245	SLU 76	132	-37	3781	-317.54	-3.07	46.31
245	SLU 77	133	-33	3758	-310.22	-3.06	46.72
245	SLU 78	132	-35	3772	-314.61	-3.07	46.47
245	SLU 79	133	-33	3758	-310.22	-3.06	46.72
245	SLU 80	132	-35	3772	-314.61	-3.07	46.47
245	SLU 81	139	-35	3934	-319.08	-3.23	48.91
245	SLU 82	138	-37	3947	-323.47	-3.23	48.66
245	SLU 83	139	-35	3934	-319.08	-3.23	48.91
245	SLU 84	138	-37	3947	-323.47	-3.23	48.66
245	SLE RA 1	89	-22	2511	-219.47	-1.99	31.17
245	SLE RA 2	88	-24	2526	-224.35	-2	30.89
245	SLE RA 3	89	-22	2511	-219.47	-1.99	31.17
245	SLE RA 4	88	-23	2520	-222.39	-2	31
245	SLE RA 5	88	-24	2526	-224.35	-2	30.89
245	SLE RA 6	89	-22	2511	-219.47	-1.99	31.17
245	SLE RA 7	88	-23	2520	-222.39	-2	31
245	SLE RA 8	89	-22	2511	-219.47	-1.99	31.17
245	SLE RA 9	88	-23	2520	-222.39	-2	31
245	SLE RA 10	98	-27	2799	-238.13	-2.26	34.29
245	SLE RA 11	98	-25	2784	-233.25	-2.25	34.57
245	SLE RA 12	98	-26	2793	-236.18	-2.26	34.4
245	SLE RA 13	98	-27	2799	-238.13	-2.26	34.29
245	SLE RA 14	98	-25	2784	-233.25	-2.25	34.57
245	SLE RA 15	98	-26	2793	-236.18	-2.26	34.4
245	SLE RA 16	98	-25	2784	-233.25	-2.25	34.57
245	SLE RA 17	98	-26	2793	-236.18	-2.26	34.4
245	SLE RA 18	102	-26	2902	-239.16	-2.36	36.02
245	SLE RA 19	102	-27	2911	-242.09	-2.37	35.86
245	SLE RA 20	102	-26	2902	-239.16	-2.36	36.02
245	SLE RA 21	102	-27	2911	-242.09	-2.37	35.86
245	SLE FR 1	89	-22	2511	-219.47	-1.99	31.17
245	SLE FR 2	89	-22	2514	-220.44	-1.99	31.11
245	SLE FR 3	89	-22	2511	-219.47	-1.99	31.17
245	SLE FR 4	93	-23	2631	-226.35	-2.11	32.57
245	SLE FR 5	93	-23	2628	-225.38	-2.1	32.62
245	SLE FR 6	96	-24	2706	-229.32	-2.18	33.59
245	SLE QP 1	89	-22	2511	-219.47	-1.99	31.17
245	SLE QP 2	93	-23	2628	-225.38	-2.1	32.62
245	SLD 1	434	-73	2338	-199.34	-0.86	151.73
245	SLD 2	389	-62	2340	-199.61	-0.87	136.11
245	SLD 3	341	-150	2533	-214.72	-1.5	119.26
245	SLD 4	297	-139	2535	-214.99	-1.51	103.63
245	SLD 5	352	75	2245	-194.14	-0.77	123.07
245	SLD 6	307	86	2246	-194.4	-0.77	107.45
245	SLD 7	42	-182	2895	-245.42	-2.88	14.84
245	SLD 8	-3	-171	2897	-245.69	-2.89	-0.79



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
245	SLD 9	188	125	2360	-205.06	-1.32	66.04
245	SLD 10	143	136	2361	-205.33	-1.33	50.41
245	SLD 11	-121	-132	3010	-256.35	-3.43	-42.2
245	SLD 12	-166	-121	3012	-256.61	-3.44	-57.83
245	SLD 13	-111	93	2721	-235.76	-2.7	-38.39
245	SLD 14	-156	105	2723	-236.03	-2.71	-54.01
245	SLD 15	-204	16	2917	-251.15	-3.34	-70.86
245	SLD 16	-249	28	2918	-251.41	-3.34	-86.48
245	SLV 1	873	-137	1956	-165.42	0.76	304.72
245	SLV 2	771	-112	1960	-166.02	0.74	269.23
245	SLV 3	659	-315	2409	-201.37	-0.72	230.02
245	SLV 4	557	-289	2413	-201.97	-0.74	194.53
245	SLV 5	686	203	1738	-152.65	1	239.97
245	SLV 6	584	228	1742	-153.26	0.98	204.48
245	SLV 7	-25	-389	3248	-272.49	-3.92	-9.03
245	SLV 8	-127	-363	3252	-273.09	-3.94	-44.52
245	SLV 9	313	317	2004	-177.66	-0.27	109.77
245	SLV 10	211	343	2008	-178.26	-0.29	74.28
245	SLV 11	-399	-274	3515	-297.49	-5.19	-139.23
245	SLV 12	-501	-249	3518	-298.1	-5.21	-174.72
245	SLV 13	-372	243	2843	-248.78	-3.47	-129.28
245	SLV 14	-474	269	2847	-249.38	-3.49	-164.78
245	SLV 15	-585	66	3296	-284.73	-4.95	-203.98
245	SLV 16	-687	91	3300	-285.33	-4.97	-239.48
245	CRTFP Ux+	0	0	0	0	0	0
245	CRTFP Ux-	0	0	0	0	0	0
245	CRTFP Uy+	0	0	0	0	0	0
245	CRTFP Uy-	0	0	0	0	0	0
246	SLU 1	85	-18	2499	-283.61	-2.89	29.76
246	SLU 2	84	-23	2522	-290.66	-2.91	29.34
246	SLU 3	85	-18	2499	-283.61	-2.89	29.76
246	SLU 4	84	-21	2513	-287.84	-2.9	29.51
246	SLU 5	84	-23	2522	-290.66	-2.91	29.34
246	SLU 6	85	-18	2499	-283.61	-2.89	29.76
246	SLU 7	84	-21	2513	-287.84	-2.9	29.51
246	SLU 8	85	-18	2499	-283.61	-2.89	29.76
246	SLU 9	84	-21	2513	-287.84	-2.9	29.51
246	SLU 10	98	-25	2947	-324.84	-3.49	34.36
246	SLU 11	99	-20	2924	-317.8	-3.48	34.78
246	SLU 12	98	-23	2938	-322.02	-3.48	34.53
246	SLU 13	98	-25	2947	-324.84	-3.49	34.36
246	SLU 14	99	-20	2924	-317.8	-3.48	34.78
246	SLU 15	98	-23	2938	-322.02	-3.48	34.53
246	SLU 16	99	-20	2924	-317.8	-3.48	34.78
246	SLU 17	98	-23	2938	-322.02	-3.48	34.53
246	SLU 18	105	-21	3106	-332.45	-3.73	36.94
246	SLU 19	104	-25	3120	-336.68	-3.73	36.68
246	SLU 20	105	-21	3106	-332.45	-3.73	36.94
246	SLU 21	104	-25	3120	-336.68	-3.73	36.68
246	SLU 22	96	-20	2802	-308.09	-3.32	33.59
246	SLU 23	95	-25	2825	-315.13	-3.33	33.17
246	SLU 24	96	-20	2802	-308.09	-3.32	33.59
246	SLU 25	95	-23	2816	-312.32	-3.33	33.34
246	SLU 26	95	-25	2825	-315.13	-3.33	33.17
246	SLU 27	96	-20	2802	-308.09	-3.32	33.59
246	SLU 28	95	-23	2816	-312.32	-3.33	33.34
246	SLU 29	96	-20	2802	-308.09	-3.32	33.59
246	SLU 30	95	-23	2816	-312.32	-3.33	33.34
246	SLU 31	109	-28	3250	-349.32	-3.92	38.19
246	SLU 32	110	-22	3227	-342.27	-3.9	38.61
246	SLU 33	109	-26	3241	-346.5	-3.91	38.36
246	SLU 34	109	-28	3250	-349.32	-3.92	38.19
246	SLU 35	110	-22	3227	-342.27	-3.9	38.61
246	SLU 36	109	-26	3241	-346.5	-3.91	38.36
246	SLU 37	110	-22	3227	-342.27	-3.9	38.61
246	SLU 38	109	-26	3241	-346.5	-3.91	38.36
246	SLU 39	116	-24	3409	-356.93	-4.15	40.76
246	SLU 40	115	-27	3423	-361.16	-4.16	40.51
246	SLU 41	116	-24	3409	-356.93	-4.15	40.76
246	SLU 42	115	-27	3423	-361.16	-4.16	40.51
246	SLU 43	106	-22	3145	-360.3	-3.61	37.38
246	SLU 44	105	-27	3168	-367.35	-3.63	36.96
246	SLU 45	106	-22	3145	-360.3	-3.61	37.38
246	SLU 46	106	-25	3159	-364.53	-3.62	37.12
246	SLU 47	105	-27	3168	-367.35	-3.63	36.96
246	SLU 48	106	-22	3145	-360.3	-3.61	37.38
246	SLU 49	106	-25	3159	-364.53	-3.62	37.12
246	SLU 50	106	-22	3145	-360.3	-3.61	37.38
246	SLU 51	106	-25	3159	-364.53	-3.62	37.12
246	SLU 52	120	-30	3593	-401.53	-4.21	41.98
246	SLU 53	121	-25	3570	-394.49	-4.2	42.4
246	SLU 54	120	-28	3584	-398.71	-4.21	42.15
246	SLU 55	120	-30	3593	-401.53	-4.21	41.98
246	SLU 56	121	-25	3570	-394.49	-4.2	42.4
246	SLU 57	120	-28	3584	-398.71	-4.21	42.15
246	SLU 58	121	-25	3570	-394.49	-4.2	42.4
246	SLU 59	120	-28	3584	-398.71	-4.21	42.15
246	SLU 60	127	-26	3752	-409.14	-4.45	44.55
246	SLU 61	126	-29	3766	-413.37	-4.45	44.3



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
246	SLU 62	127	-26	3752	-409.14	-4.45	44.55
246	SLU 63	126	-29	3766	-413.37	-4.45	44.3
246	SLU 64	117	-24	3448	-384.78	-4.04	41.2
246	SLU 65	116	-30	3471	-391.82	-4.06	40.78
246	SLU 66	117	-24	3448	-384.78	-4.04	41.2
246	SLU 67	117	-28	3462	-389.01	-4.05	40.95
246	SLU 68	116	-30	3471	-391.82	-4.06	40.78
246	SLU 69	117	-24	3448	-384.78	-4.04	41.2
246	SLU 70	117	-28	3462	-389.01	-4.05	40.95
246	SLU 71	117	-24	3448	-384.78	-4.04	41.2
246	SLU 72	117	-28	3462	-389.01	-4.05	40.95
246	SLU 73	131	-32	3896	-426.01	-4.64	45.81
246	SLU 74	132	-27	3873	-418.96	-4.62	46.23
246	SLU 75	131	-30	3887	-423.19	-4.63	45.98
246	SLU 76	131	-32	3896	-426.01	-4.64	45.81
246	SLU 77	132	-27	3873	-418.96	-4.62	46.23
246	SLU 78	131	-30	3887	-423.19	-4.63	45.98
246	SLU 79	132	-27	3873	-418.96	-4.62	46.23
246	SLU 80	131	-30	3887	-423.19	-4.63	45.98
246	SLU 81	138	-28	4055	-433.62	-4.87	48.38
246	SLU 82	137	-31	4069	-437.84	-4.88	48.13
246	SLU 83	138	-28	4055	-433.62	-4.87	48.38
246	SLU 84	137	-31	4069	-437.84	-4.88	48.13
246	SLE RA 1	88	-18	2586	-290.6	-3.01	30.85
246	SLE RA 2	87	-22	2601	-295.3	-3.02	30.57
246	SLE RA 3	88	-18	2586	-290.6	-3.01	30.85
246	SLE RA 4	87	-20	2595	-293.42	-3.02	30.69
246	SLE RA 5	87	-22	2601	-295.3	-3.02	30.57
246	SLE RA 6	88	-18	2586	-290.6	-3.01	30.85
246	SLE RA 7	87	-20	2595	-293.42	-3.02	30.69
246	SLE RA 8	88	-18	2586	-290.6	-3.01	30.85
246	SLE RA 9	87	-20	2595	-293.42	-3.02	30.69
246	SLE RA 10	97	-23	2884	-318.09	-3.41	33.92
246	SLE RA 11	97	-20	2869	-313.39	-3.4	34.2
246	SLE RA 12	97	-22	2878	-316.21	-3.41	34.03
246	SLE RA 13	97	-23	2884	-318.09	-3.41	33.92
246	SLE RA 14	97	-20	2869	-313.39	-3.4	34.2
246	SLE RA 15	97	-22	2878	-316.21	-3.41	34.03
246	SLE RA 16	97	-20	2869	-313.39	-3.4	34.2
246	SLE RA 17	97	-22	2878	-316.21	-3.41	34.03
246	SLE RA 18	101	-21	2990	-323.16	-3.57	35.64
246	SLE RA 19	101	-23	3000	-325.98	-3.58	35.47
246	SLE RA 20	101	-21	2990	-323.16	-3.57	35.64
246	SLE RA 21	101	-23	3000	-325.98	-3.58	35.47
246	SLE FR 1	88	-18	2586	-290.6	-3.01	30.85
246	SLE FR 2	88	-19	2589	-291.54	-3.02	30.8
246	SLE FR 3	88	-18	2586	-290.6	-3.01	30.85
246	SLE FR 4	92	-20	2710	-301.31	-3.18	32.23
246	SLE FR 5	92	-19	2707	-300.37	-3.18	32.29
246	SLE FR 6	95	-20	2788	-306.88	-3.29	33.25
246	SLE QP 1	88	-18	2586	-290.6	-3.01	30.85
246	SLE QP 2	92	-19	2707	-300.37	-3.18	32.29
246	SLD 1	433	-80	2379	-262.5	-1.72	151.21
246	SLD 2	388	-66	2381	-262.97	-1.73	135.61
246	SLD 3	340	-167	2594	-283.24	-2.49	118.79
246	SLD 4	295	-153	2596	-283.7	-2.5	103.19
246	SLD 5	350	90	2281	-257.4	-1.56	122.6
246	SLD 6	306	104	2283	-257.86	-1.57	107
246	SLD 7	42	-201	2999	-326.52	-4.15	14.52
246	SLD 8	-3	-187	3001	-326.98	-4.16	-1.08
246	SLD 9	187	149	2413	-273.76	-2.2	65.66
246	SLD 10	142	163	2415	-274.22	-2.21	50.06
246	SLD 11	-122	-143	3131	-342.88	-4.79	-42.43
246	SLD 12	-167	-129	3133	-343.34	-4.8	-58.03
246	SLD 13	-112	115	2818	-317.04	-3.86	-38.61
246	SLD 14	-156	129	2820	-317.5	-3.87	-54.21
246	SLD 15	-204	27	3034	-337.77	-4.63	-71.03
246	SLD 16	-249	41	3036	-338.23	-4.64	-86.64
246	SLV 1	871	-156	1947	-213.05	0.2	303.97
246	SLV 2	769	-124	1951	-214.09	0.18	268.54
246	SLV 3	658	-357	2447	-261.38	-1.61	229.37
246	SLV 4	556	-326	2451	-262.43	-1.63	193.94
246	SLV 5	685	234	1719	-200.5	0.58	239.33
246	SLV 6	583	266	1723	-201.55	0.56	203.9
246	SLV 7	-26	-437	3386	-361.61	-5.44	-9.32
246	SLV 8	-128	-405	3391	-362.66	-5.46	-44.75
246	SLV 9	312	367	2024	-238.08	-0.9	109.33
246	SLV 10	210	399	2028	-239.13	-0.92	73.9
246	SLV 11	-399	-304	3691	-399.19	-6.92	-139.32
246	SLV 12	-501	-272	3696	-400.24	-6.94	-174.75
246	SLV 13	-372	287	2963	-338.31	-4.73	-129.36
246	SLV 14	-474	319	2968	-339.36	-4.76	-164.8
246	SLV 15	-585	86	3463	-386.65	-6.54	-203.96
246	SLV 16	-687	118	3468	-387.69	-6.56	-239.39
246	CRTFP Ux+	0	0	0	0	0	0
246	CRTFP Ux-	0	0	0	0	0	0
246	CRTFP Uy+	0	0	0	0	0	0
246	CRTFP Uy-	0	0	0	0	0	0
247	SLU 1	84	-15	2603	-375.54	-4.06	29.47



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
247	SLU 2	83	-22	2627	-382.4	-4.08	29.05
247	SLU 3	84	-15	2603	-375.54	-4.06	29.47
247	SLU 4	83	-20	2617	-379.66	-4.07	29.22
247	SLU 5	83	-22	2627	-382.4	-4.08	29.05
247	SLU 6	84	-15	2603	-375.54	-4.06	29.47
247	SLU 7	83	-20	2617	-379.66	-4.07	29.22
247	SLU 8	84	-15	2603	-375.54	-4.06	29.47
247	SLU 9	83	-20	2617	-379.66	-4.07	29.22
247	SLU 10	97	-24	3073	-434.68	-4.89	34.01
247	SLU 11	98	-17	3049	-427.81	-4.87	34.43
247	SLU 12	97	-21	3063	-431.93	-4.88	34.17
247	SLU 13	97	-24	3073	-434.68	-4.89	34.01
247	SLU 14	98	-17	3049	-427.81	-4.87	34.43
247	SLU 15	97	-21	3063	-431.93	-4.88	34.17
247	SLU 16	98	-17	3049	-427.81	-4.87	34.43
247	SLU 17	97	-21	3063	-431.93	-4.88	34.17
247	SLU 18	104	-17	3240	-450.21	-5.22	36.55
247	SLU 19	103	-21	3254	-454.33	-5.23	36.3
247	SLU 20	104	-17	3240	-450.21	-5.22	36.55
247	SLU 21	103	-21	3254	-454.33	-5.23	36.3
247	SLU 22	95	-17	2922	-412.99	-4.65	33.25
247	SLU 23	94	-24	2945	-419.86	-4.67	32.83
247	SLU 24	95	-17	2922	-412.99	-4.65	33.25
247	SLU 25	94	-21	2936	-417.11	-4.66	33
247	SLU 26	94	-24	2945	-419.86	-4.67	32.83
247	SLU 27	95	-17	2922	-412.99	-4.65	33.25
247	SLU 28	94	-21	2936	-417.11	-4.66	33
247	SLU 29	95	-17	2922	-412.99	-4.65	33.25
247	SLU 30	94	-21	2936	-417.11	-4.66	33
247	SLU 31	108	-25	3391	-472.13	-5.49	37.79
247	SLU 32	109	-18	3368	-465.27	-5.46	38.21
247	SLU 33	108	-22	3382	-469.39	-5.48	37.95
247	SLU 34	108	-25	3391	-472.13	-5.49	37.79
247	SLU 35	109	-18	3368	-465.27	-5.46	38.21
247	SLU 36	108	-22	3382	-469.39	-5.48	37.95
247	SLU 37	109	-18	3368	-465.27	-5.46	38.21
247	SLU 38	108	-22	3382	-469.39	-5.48	37.95
247	SLU 39	115	-18	3559	-487.67	-5.81	40.33
247	SLU 40	114	-23	3573	-491.79	-5.83	40.08
247	SLU 41	115	-18	3559	-487.67	-5.81	40.33
247	SLU 42	114	-23	3573	-491.79	-5.83	40.08
247	SLU 43	106	-19	3275	-475.35	-5.07	37.02
247	SLU 44	105	-27	3299	-482.22	-5.09	36.6
247	SLU 45	106	-19	3275	-475.35	-5.07	37.02
247	SLU 46	105	-24	3289	-479.47	-5.09	36.76
247	SLU 47	105	-27	3299	-482.22	-5.09	36.6
247	SLU 48	106	-19	3275	-475.35	-5.07	37.02
247	SLU 49	105	-24	3289	-479.47	-5.09	36.76
247	SLU 50	106	-19	3275	-475.35	-5.07	37.02
247	SLU 51	105	-24	3289	-479.47	-5.09	36.76
247	SLU 52	119	-28	3744	-534.5	-5.91	41.55
247	SLU 53	120	-21	3721	-527.63	-5.89	41.97
247	SLU 54	119	-25	3735	-531.75	-5.9	41.72
247	SLU 55	119	-28	3744	-534.5	-5.91	41.55
247	SLU 56	120	-21	3721	-527.63	-5.89	41.97
247	SLU 57	119	-25	3735	-531.75	-5.9	41.72
247	SLU 58	120	-21	3721	-527.63	-5.89	41.97
247	SLU 59	119	-25	3735	-531.75	-5.9	41.72
247	SLU 60	126	-21	3912	-550.03	-6.24	44.1
247	SLU 61	125	-26	3926	-554.15	-6.25	43.84
247	SLU 62	126	-21	3912	-550.03	-6.24	44.1
247	SLU 63	125	-26	3926	-554.15	-6.25	43.84
247	SLU 64	116	-21	3594	-512.81	-5.67	40.8
247	SLU 65	115	-28	3617	-519.68	-5.69	40.38
247	SLU 66	116	-21	3594	-512.81	-5.67	40.8
247	SLU 67	116	-25	3608	-516.93	-5.68	40.54
247	SLU 68	115	-28	3617	-519.68	-5.69	40.38
247	SLU 69	116	-21	3594	-512.81	-5.67	40.8
247	SLU 70	116	-25	3608	-516.93	-5.68	40.54
247	SLU 71	116	-21	3594	-512.81	-5.67	40.8
247	SLU 72	116	-25	3608	-516.93	-5.68	40.54
247	SLU 73	129	-29	4063	-571.95	-6.5	45.33
247	SLU 74	130	-22	4039	-565.09	-6.48	45.75
247	SLU 75	130	-26	4053	-569.21	-6.49	45.5
247	SLU 76	129	-29	4063	-571.95	-6.5	45.33
247	SLU 77	130	-22	4039	-565.09	-6.48	45.75
247	SLU 78	130	-26	4053	-569.21	-6.49	45.5
247	SLU 79	130	-22	4039	-565.09	-6.48	45.75
247	SLU 80	130	-26	4053	-569.21	-6.49	45.5
247	SLU 81	136	-23	4230	-587.49	-6.83	47.88
247	SLU 82	136	-27	4244	-591.61	-6.84	47.62
247	SLU 83	136	-23	4230	-587.49	-6.83	47.88
247	SLU 84	136	-27	4244	-591.61	-6.84	47.62
247	SLE RA 1	87	-16	2694	-386.24	-4.23	30.55
247	SLE RA 2	86	-20	2710	-390.82	-4.24	30.27
247	SLE RA 3	87	-16	2694	-386.24	-4.23	30.55
247	SLE RA 4	87	-18	2704	-388.98	-4.24	30.38
247	SLE RA 5	86	-20	2710	-390.82	-4.24	30.27
247	SLE RA 6	87	-16	2694	-386.24	-4.23	30.55



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
247	SLE RA 7	87	-18	2704	-388.98	-4.24	30.38
247	SLE RA 8	87	-16	2694	-386.24	-4.23	30.55
247	SLE RA 9	87	-18	2704	-388.98	-4.24	30.38
247	SLE RA 10	96	-21	3007	-425.67	-4.78	33.57
247	SLE RA 11	96	-17	2992	-421.09	-4.77	33.85
247	SLE RA 12	96	-19	3001	-423.83	-4.78	33.69
247	SLE RA 13	96	-21	3007	-425.67	-4.78	33.57
247	SLE RA 14	96	-17	2992	-421.09	-4.77	33.85
247	SLE RA 15	96	-19	3001	-423.83	-4.78	33.69
247	SLE RA 16	96	-17	2992	-421.09	-4.77	33.85
247	SLE RA 17	96	-19	3001	-423.83	-4.78	33.69
247	SLE RA 18	100	-17	3119	-436.02	-5	35.27
247	SLE RA 19	100	-20	3128	-438.77	-5.01	35.1
247	SLE RA 20	100	-17	3119	-436.02	-5	35.27
247	SLE RA 21	100	-20	3128	-438.77	-5.01	35.1
247	SLE FR 1	87	-16	2694	-386.24	-4.23	30.55
247	SLE FR 2	87	-17	2698	-387.15	-4.23	30.49
247	SLE FR 3	87	-16	2694	-386.24	-4.23	30.55
247	SLE FR 4	91	-17	2825	-402.09	-4.46	31.91
247	SLE FR 5	91	-16	2822	-401.17	-4.46	31.97
247	SLE FR 6	94	-16	2907	-411.13	-4.62	32.91
247	SLE QP 1	87	-16	2694	-386.24	-4.23	30.55
247	SLE QP 2	91	-16	2822	-401.17	-4.46	31.97
247	SLD 1	432	-88	2447	-345.3	-2.73	150.69
247	SLD 2	387	-71	2449	-345.92	-2.75	135.11
247	SLD 3	339	-187	2688	-376.43	-3.67	118.32
247	SLD 4	294	-170	2690	-377.05	-3.69	102.74
247	SLD 5	349	107	2344	-336.98	-2.51	122.13
247	SLD 6	304	124	2346	-337.6	-2.53	106.55
247	SLD 7	41	-224	3145	-440.75	-5.64	14.23
247	SLD 8	-4	-207	3147	-441.37	-5.66	-1.34
247	SLD 9	186	175	2496	-360.98	-3.26	65.28
247	SLD 10	141	192	2498	-361.6	-3.28	49.7
247	SLD 11	-122	-156	3297	-464.75	-6.39	-42.62
247	SLD 12	-167	-139	3299	-465.37	-6.41	-58.19
247	SLD 13	-112	138	2954	-425.3	-5.24	-38.81
247	SLD 14	-157	155	2956	-425.92	-5.25	-54.38
247	SLD 15	-205	39	3194	-456.43	-6.17	-71.18
247	SLD 16	-250	56	3196	-457.05	-6.19	-86.75
247	SLV 1	869	-178	1954	-272.14	-0.47	303.18
247	SLV 2	767	-139	1959	-273.55	-0.5	267.81
247	SLV 3	656	-407	2513	-344.57	-2.65	228.71
247	SLV 4	555	-368	2518	-345.98	-2.68	193.34
247	SLV 5	683	268	1713	-252.12	0.06	238.65
247	SLV 6	581	307	1718	-253.52	0.03	203.28
247	SLV 7	-26	-493	3574	-493.55	-7.22	-9.57
247	SLV 8	-128	-455	3579	-494.96	-7.25	-44.94
247	SLV 9	310	423	2064	-307.39	-1.68	108.88
247	SLV 10	209	461	2069	-308.79	-1.7	73.51
247	SLV 11	-399	-339	3926	-548.82	-8.95	-139.35
247	SLV 12	-501	-300	3931	-550.22	-8.98	-174.72
247	SLV 13	-372	336	3126	-456.37	-6.24	-129.41
247	SLV 14	-474	375	3131	-457.77	-6.27	-164.78
247	SLV 15	-585	107	3684	-528.8	-8.42	-203.88
247	SLV 16	-687	146	3689	-530.2	-8.45	-239.25
247	CRTFP Ux+	0	0	0	0	0	0
247	CRTFP Ux-	0	0	0	0	0	0
247	CRTFP Uy+	0	0	0	0	0	0
247	CRTFP Uy-	0	0	0	0	0	0
248	SLU 1	83	-13	2745	-495.9	-5.37	29.2
248	SLU 2	82	-23	2769	-502.75	-5.4	28.78
248	SLU 3	83	-13	2745	-495.9	-5.37	29.2
248	SLU 4	83	-19	2759	-500.01	-5.38	28.95
248	SLU 5	82	-23	2769	-502.75	-5.4	28.78
248	SLU 6	83	-13	2745	-495.9	-5.37	29.2
248	SLU 7	83	-19	2759	-500.01	-5.38	28.95
248	SLU 8	83	-13	2745	-495.9	-5.37	29.2
248	SLU 9	83	-19	2759	-500.01	-5.38	28.95
248	SLU 10	96	-23	3243	-578.68	-6.47	33.67
248	SLU 11	97	-13	3219	-571.84	-6.44	34.09
248	SLU 12	97	-19	3233	-575.95	-6.46	33.84
248	SLU 13	96	-23	3243	-578.68	-6.47	33.67
248	SLU 14	97	-13	3219	-571.84	-6.44	34.09
248	SLU 15	97	-19	3233	-575.95	-6.46	33.84
248	SLU 16	97	-13	3219	-571.84	-6.44	34.09
248	SLU 17	97	-19	3233	-575.95	-6.46	33.84
248	SLU 18	103	-14	3422	-604.39	-6.9	36.19
248	SLU 19	102	-19	3437	-608.49	-6.92	35.93
248	SLU 20	103	-14	3422	-604.39	-6.9	36.19
248	SLU 21	102	-19	3437	-608.49	-6.92	35.93
248	SLU 22	94	-14	3084	-550.35	-6.15	32.93
248	SLU 23	93	-23	3108	-557.19	-6.17	32.51
248	SLU 24	94	-14	3084	-550.35	-6.15	32.93
248	SLU 25	93	-19	3098	-554.46	-6.16	32.68
248	SLU 26	93	-23	3108	-557.19	-6.17	32.51
248	SLU 27	94	-14	3084	-550.35	-6.15	32.93
248	SLU 28	93	-19	3098	-554.46	-6.16	32.68
248	SLU 29	94	-14	3084	-550.35	-6.15	32.93
248	SLU 30	93	-19	3098	-554.46	-6.16	32.68



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
248	SLU 31	107	-23	3582	-633.13	-7.25	37.4
248	SLU 32	108	-14	3558	-626.29	-7.22	37.82
248	SLU 33	107	-20	3572	-630.4	-7.24	37.57
248	SLU 34	107	-23	3582	-633.13	-7.25	37.4
248	SLU 35	108	-14	3558	-626.29	-7.22	37.82
248	SLU 36	107	-20	3572	-630.4	-7.24	37.57
248	SLU 37	108	-14	3558	-626.29	-7.22	37.82
248	SLU 38	107	-20	3572	-630.4	-7.24	37.57
248	SLU 39	114	-14	3761	-658.83	-7.68	39.92
248	SLU 40	113	-20	3776	-662.94	-7.7	39.67
248	SLU 41	114	-14	3761	-658.83	-7.68	39.92
248	SLU 42	113	-20	3776	-662.94	-7.7	39.67
248	SLU 43	105	-17	3452	-626	-6.71	36.68
248	SLU 44	104	-26	3476	-632.85	-6.74	36.26
248	SLU 45	105	-17	3452	-626	-6.71	36.68
248	SLU 46	104	-23	3467	-630.11	-6.73	36.42
248	SLU 47	104	-26	3476	-632.85	-6.74	36.26
248	SLU 48	105	-17	3452	-626	-6.71	36.68
248	SLU 49	104	-23	3467	-630.11	-6.73	36.42
248	SLU 50	105	-17	3452	-626	-6.71	36.68
248	SLU 51	104	-23	3467	-630.11	-6.73	36.42
248	SLU 52	117	-27	3950	-708.79	-7.81	41.15
248	SLU 53	118	-17	3926	-701.94	-7.78	41.57
248	SLU 54	118	-23	3941	-706.05	-7.8	41.32
248	SLU 55	117	-27	3950	-708.79	-7.81	41.15
248	SLU 56	118	-17	3926	-701.94	-7.78	41.57
248	SLU 57	118	-23	3941	-706.05	-7.8	41.32
248	SLU 58	118	-17	3926	-701.94	-7.78	41.57
248	SLU 59	118	-23	3941	-706.05	-7.8	41.32
248	SLU 60	124	-17	4129	-734.49	-8.24	43.66
248	SLU 61	124	-23	4144	-738.59	-8.26	43.41
248	SLU 62	124	-17	4129	-734.49	-8.24	43.66
248	SLU 63	124	-23	4144	-738.59	-8.26	43.41
248	SLU 64	115	-18	3791	-680.45	-7.49	40.41
248	SLU 65	114	-27	3815	-687.3	-7.52	39.99
248	SLU 66	115	-18	3791	-680.45	-7.49	40.41
248	SLU 67	115	-23	3806	-684.56	-7.51	40.16
248	SLU 68	114	-27	3815	-687.3	-7.52	39.99
248	SLU 69	115	-18	3791	-680.45	-7.49	40.41
248	SLU 70	115	-23	3806	-684.56	-7.51	40.16
248	SLU 71	115	-18	3791	-680.45	-7.49	40.41
248	SLU 72	115	-23	3806	-684.56	-7.51	40.16
248	SLU 73	128	-27	4289	-763.23	-8.59	44.88
248	SLU 74	129	-18	4265	-756.39	-8.56	45.3
248	SLU 75	128	-23	4280	-760.5	-8.58	45.05
248	SLU 76	128	-27	4289	-763.23	-8.59	44.88
248	SLU 77	129	-18	4265	-756.39	-8.56	45.3
248	SLU 78	128	-23	4280	-760.5	-8.58	45.05
248	SLU 79	129	-18	4265	-756.39	-8.56	45.3
248	SLU 80	128	-23	4280	-760.5	-8.58	45.05
248	SLU 81	135	-18	4468	-788.94	-9.02	47.4
248	SLU 82	134	-23	4483	-793.04	-9.04	47.15
248	SLU 83	135	-18	4468	-788.94	-9.02	47.4
248	SLU 84	134	-23	4483	-793.04	-9.04	47.15
248	SLE RA 1	86	-13	2842	-511.46	-5.59	30.26
248	SLE RA 2	86	-20	2858	-516.02	-5.61	29.98
248	SLE RA 3	86	-13	2842	-511.46	-5.59	30.26
248	SLE RA 4	86	-17	2851	-514.2	-5.6	30.1
248	SLE RA 5	86	-20	2858	-516.02	-5.61	29.98
248	SLE RA 6	86	-13	2842	-511.46	-5.59	30.26
248	SLE RA 7	86	-17	2851	-514.2	-5.6	30.1
248	SLE RA 8	86	-13	2842	-511.46	-5.59	30.26
248	SLE RA 9	86	-17	2851	-514.2	-5.6	30.1
248	SLE RA 10	95	-20	3174	-566.65	-6.32	33.25
248	SLE RA 11	96	-14	3158	-562.08	-6.3	33.52
248	SLE RA 12	95	-17	3167	-564.82	-6.32	33.36
248	SLE RA 13	95	-20	3174	-566.65	-6.32	33.25
248	SLE RA 14	96	-14	3158	-562.08	-6.3	33.52
248	SLE RA 15	95	-17	3167	-564.82	-6.32	33.36
248	SLE RA 16	96	-14	3158	-562.08	-6.3	33.52
248	SLE RA 17	95	-17	3167	-564.82	-6.32	33.36
248	SLE RA 18	99	-14	3293	-583.78	-6.61	34.92
248	SLE RA 19	99	-17	3303	-586.52	-6.62	34.76
248	SLE RA 20	99	-14	3293	-583.78	-6.61	34.92
248	SLE RA 21	99	-17	3303	-586.52	-6.62	34.76
248	SLE FR 1	86	-13	2842	-511.46	-5.59	30.26
248	SLE FR 2	86	-15	2845	-512.37	-5.59	30.21
248	SLE FR 3	86	-13	2842	-511.46	-5.59	30.26
248	SLE FR 4	90	-15	2980	-534.07	-5.9	31.61
248	SLE FR 5	90	-14	2977	-533.16	-5.9	31.66
248	SLE FR 6	93	-14	3068	-547.62	-6.1	32.59
248	SLE QP 1	86	-13	2842	-511.46	-5.59	30.26
248	SLE QP 2	90	-14	2977	-533.16	-5.9	31.66
248	SLD 1	430	-98	2548	-452.79	-3.88	150.17
248	SLD 2	386	-77	2550	-453.54	-3.89	134.62
248	SLD 3	338	-210	2818	-498.96	-4.99	117.86
248	SLD 4	293	-189	2821	-499.7	-5.01	102.32
248	SLD 5	348	124	2437	-438.77	-3.59	121.65
248	SLD 6	303	144	2440	-439.51	-3.61	106.11



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
248	SLD 7	40	-249	3339	-592.65	-7.31	13.96
248	SLD 8	-5	-229	3342	-593.4	-7.33	-1.58
248	SLD 9	185	202	2613	-472.91	-4.47	64.9
248	SLD 10	140	222	2615	-473.66	-4.48	49.36
248	SLD 11	-123	-171	3515	-626.8	-8.18	-42.78
248	SLD 12	-168	-151	3517	-627.55	-8.2	-58.33
248	SLD 13	-113	162	3133	-566.61	-6.78	-38.99
248	SLD 14	-158	183	3136	-567.35	-6.8	-54.54
248	SLD 15	-205	50	3404	-612.77	-7.9	-71.3
248	SLD 16	-250	71	3407	-613.52	-7.91	-86.84
248	SLV 1	867	-204	1983	-347.39	-1.23	302.38
248	SLV 2	766	-157	1989	-349.09	-1.27	267.08
248	SLV 3	655	-461	2611	-454.72	-3.83	228.06
248	SLV 4	553	-415	2617	-456.41	-3.86	192.76
248	SLV 5	681	304	1723	-314.05	-0.56	237.95
248	SLV 6	579	350	1729	-315.75	-0.59	202.65
248	SLV 7	-27	-555	3819	-671.81	-9.19	-9.78
248	SLV 8	-129	-509	3825	-673.5	-9.23	-45.09
248	SLV 9	309	482	2130	-392.81	-2.57	108.41
248	SLV 10	208	528	2136	-394.5	-2.6	73.11
248	SLV 11	-399	-377	4225	-750.56	-11.2	-139.33
248	SLV 12	-501	-331	4231	-752.26	-11.24	-174.63
248	SLV 13	-373	388	3337	-609.9	-7.93	-129.43
248	SLV 14	-474	434	3343	-611.6	-7.97	-164.74
248	SLV 15	-585	130	3966	-717.22	-10.52	-203.76
248	SLV 16	-687	177	3972	-718.92	-10.56	-239.06
248	CRTFP Ux+	0	0	0	0	0	0
248	CRTFP Ux-	0	0	0	0	0	0
248	CRTFP Uy+	0	0	0	0	0	0
248	CRTFP Uy-	0	0	0	0	0	0
249	SLU 1	83	-12	2927	-648.37	-6.72	28.94
249	SLU 2	82	-23	2952	-655.41	-6.76	28.53
249	SLU 3	83	-12	2927	-648.37	-6.72	28.94
249	SLU 4	82	-19	2942	-652.6	-6.75	28.7
249	SLU 5	82	-23	2952	-655.41	-6.76	28.53
249	SLU 6	83	-12	2927	-648.37	-6.72	28.94
249	SLU 7	82	-19	2942	-652.6	-6.75	28.7
249	SLU 8	83	-12	2927	-648.37	-6.72	28.94
249	SLU 9	82	-19	2942	-652.6	-6.75	28.7
249	SLU 10	95	-22	3462	-761.33	-8.11	33.37
249	SLU 11	96	-11	3437	-754.29	-8.07	33.78
249	SLU 12	96	-18	3452	-758.52	-8.09	33.53
249	SLU 13	95	-22	3462	-761.33	-8.11	33.37
249	SLU 14	96	-11	3437	-754.29	-8.07	33.78
249	SLU 15	96	-18	3452	-758.52	-8.09	33.53
249	SLU 16	96	-11	3437	-754.29	-8.07	33.78
249	SLU 17	96	-18	3452	-758.52	-8.09	33.53
249	SLU 18	102	-10	3656	-799.69	-8.64	35.85
249	SLU 19	102	-17	3671	-803.91	-8.66	35.61
249	SLU 20	102	-10	3656	-799.69	-8.64	35.85
249	SLU 21	102	-17	3671	-803.91	-8.66	35.61
249	SLU 22	93	-11	3292	-724.35	-7.7	32.64
249	SLU 23	92	-23	3317	-731.39	-7.74	32.22
249	SLU 24	93	-11	3292	-724.35	-7.7	32.64
249	SLU 25	92	-18	3307	-728.57	-7.72	32.39
249	SLU 26	92	-23	3317	-731.39	-7.74	32.22
249	SLU 27	93	-11	3292	-724.35	-7.7	32.64
249	SLU 28	92	-18	3307	-728.57	-7.72	32.39
249	SLU 29	93	-11	3292	-724.35	-7.7	32.64
249	SLU 30	92	-18	3307	-728.57	-7.72	32.39
249	SLU 31	106	-22	3828	-837.31	-9.08	37.06
249	SLU 32	107	-10	3802	-830.27	-9.04	37.47
249	SLU 33	106	-17	3818	-834.49	-9.06	37.23
249	SLU 34	106	-22	3828	-837.31	-9.08	37.06
249	SLU 35	107	-10	3802	-830.27	-9.04	37.47
249	SLU 36	106	-17	3818	-834.49	-9.06	37.23
249	SLU 37	107	-10	3802	-830.27	-9.04	37.47
249	SLU 38	106	-17	3818	-834.49	-9.06	37.23
249	SLU 39	113	-10	4021	-875.67	-9.61	39.55
249	SLU 40	112	-17	4036	-879.89	-9.64	39.3
249	SLU 41	113	-10	4021	-875.67	-9.61	39.55
249	SLU 42	112	-17	4036	-879.89	-9.64	39.3
249	SLU 43	104	-15	3680	-816.84	-8.41	36.36
249	SLU 44	103	-27	3705	-823.87	-8.45	35.95
249	SLU 45	104	-15	3680	-816.84	-8.41	36.36
249	SLU 46	103	-22	3695	-821.06	-8.43	36.11
249	SLU 47	103	-27	3705	-823.87	-8.45	35.95
249	SLU 48	104	-15	3680	-816.84	-8.41	36.36
249	SLU 49	103	-22	3695	-821.06	-8.43	36.11
249	SLU 50	104	-15	3680	-816.84	-8.41	36.36
249	SLU 51	103	-22	3695	-821.06	-8.43	36.11
249	SLU 52	116	-26	4215	-929.8	-9.79	40.78
249	SLU 53	117	-14	4190	-922.76	-9.75	41.2
249	SLU 54	117	-21	4205	-926.98	-9.77	40.95
249	SLU 55	116	-26	4215	-929.8	-9.79	40.78
249	SLU 56	117	-14	4190	-922.76	-9.75	41.2
249	SLU 57	117	-21	4205	-926.98	-9.77	40.95
249	SLU 58	117	-14	4190	-922.76	-9.75	41.2
249	SLU 59	117	-21	4205	-926.98	-9.77	40.95



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
249	SLU 60	123	-14	4409	-968.15	-10.32	43.27
249	SLU 61	123	-21	4424	-972.38	-10.35	43.02
249	SLU 62	123	-14	4409	-968.15	-10.32	43.27
249	SLU 63	123	-21	4424	-972.38	-10.35	43.02
249	SLU 64	114	-15	4045	-892.81	-9.38	40.05
249	SLU 65	113	-27	4070	-899.85	-9.42	39.64
249	SLU 66	114	-15	4045	-892.81	-9.38	40.05
249	SLU 67	114	-22	4060	-897.04	-9.4	39.81
249	SLU 68	113	-27	4070	-899.85	-9.42	39.64
249	SLU 69	114	-15	4045	-892.81	-9.38	40.05
249	SLU 70	114	-22	4060	-897.04	-9.4	39.81
249	SLU 71	114	-15	4045	-892.81	-9.38	40.05
249	SLU 72	114	-22	4060	-897.04	-9.4	39.81
249	SLU 73	127	-26	4580	-1005.77	-10.76	44.48
249	SLU 74	128	-14	4555	-998.73	-10.72	44.89
249	SLU 75	127	-21	4570	-1002.96	-10.75	44.64
249	SLU 76	127	-26	4580	-1005.77	-10.76	44.48
249	SLU 77	128	-14	4555	-998.73	-10.72	44.89
249	SLU 78	127	-21	4570	-1002.96	-10.75	44.64
249	SLU 79	128	-14	4555	-998.73	-10.72	44.89
249	SLU 80	127	-21	4570	-1002.96	-10.75	44.64
249	SLU 81	134	-14	4774	-1044.13	-11.3	46.96
249	SLU 82	133	-20	4789	-1048.35	-11.32	46.72
249	SLU 83	134	-14	4774	-1044.13	-11.3	46.96
249	SLU 84	133	-20	4789	-1048.35	-11.32	46.72
249	SLE RA 1	86	-12	3031	-670.08	-7	30
249	SLE RA 2	85	-19	3048	-674.77	-7.03	29.72
249	SLE RA 3	86	-12	3031	-670.08	-7	30
249	SLE RA 4	85	-16	3041	-672.9	-7.02	29.83
249	SLE RA 5	85	-19	3048	-674.77	-7.03	29.72
249	SLE RA 6	86	-12	3031	-670.08	-7	30
249	SLE RA 7	85	-16	3041	-672.9	-7.02	29.83
249	SLE RA 8	86	-12	3031	-670.08	-7	30
249	SLE RA 9	85	-16	3041	-672.9	-7.02	29.83
249	SLE RA 10	94	-19	3388	-745.39	-7.92	32.95
249	SLE RA 11	95	-11	3371	-740.69	-7.9	33.22
249	SLE RA 12	94	-16	3381	-743.51	-7.91	33.06
249	SLE RA 13	94	-19	3388	-745.39	-7.92	32.95
249	SLE RA 14	95	-11	3371	-740.69	-7.9	33.22
249	SLE RA 15	94	-16	3381	-743.51	-7.91	33.06
249	SLE RA 16	95	-11	3371	-740.69	-7.9	33.22
249	SLE RA 17	94	-16	3381	-743.51	-7.91	33.06
249	SLE RA 18	99	-11	3517	-770.96	-8.28	34.61
249	SLE RA 19	98	-15	3527	-773.77	-8.3	34.44
249	SLE RA 20	99	-11	3517	-770.96	-8.28	34.61
249	SLE RA 21	98	-15	3527	-773.77	-8.3	34.44
249	SLE FR 1	86	-12	3031	-670.08	-7	30
249	SLE FR 2	85	-13	3035	-671.02	-7.01	29.94
249	SLE FR 3	86	-12	3031	-670.08	-7	30
249	SLE FR 4	89	-13	3180	-701.28	-7.39	31.33
249	SLE FR 5	89	-11	3177	-700.34	-7.38	31.38
249	SLE FR 6	92	-11	3274	-720.52	-7.64	32.3
249	SLE QP 1	86	-12	3031	-670.08	-7	30
249	SLE QP 2	89	-11	3177	-700.34	-7.38	31.38
249	SLD 1	429	-109	2683	-588.55	-5.07	149.67
249	SLD 2	384	-85	2686	-589.43	-5.09	134.15
249	SLD 3	337	-234	2990	-654.22	-6.37	117.43
249	SLD 4	292	-210	2993	-655.1	-6.38	101.92
249	SLD 5	347	140	2563	-566.9	-4.73	121.19
249	SLD 6	302	164	2566	-567.78	-4.75	105.67
249	SLD 7	39	-276	3584	-785.79	-9.03	13.74
249	SLD 8	-5	-252	3587	-786.68	-9.05	-1.78
249	SLD 9	184	229	2766	-614.01	-5.72	64.54
249	SLD 10	139	253	2770	-614.89	-5.74	49.02
249	SLD 11	-123	-187	3788	-832.9	-10.02	-42.91
249	SLD 12	-168	-163	3791	-833.79	-10.04	-58.43
249	SLD 13	-113	187	3361	-745.58	-8.39	-39.16
249	SLD 14	-158	211	3364	-746.47	-8.4	-54.67
249	SLD 15	-206	62	3667	-811.25	-9.68	-71.39
249	SLD 16	-250	86	3671	-812.14	-9.7	-86.91
249	SLV 1	865	-232	2034	-441.77	-2.04	301.6
249	SLV 2	764	-178	2041	-443.78	-2.08	266.36
249	SLV 3	653	-520	2746	-594.38	-5.04	227.45
249	SLV 4	552	-465	2753	-596.39	-5.08	192.21
249	SLV 5	679	339	1752	-390.61	-1.22	237.25
249	SLV 6	578	394	1759	-392.62	-1.26	202.01
249	SLV 7	-27	-619	4125	-899.31	-11.22	-9.93
249	SLV 8	-129	-565	4132	-901.32	-11.26	-45.17
249	SLV 9	308	542	2222	-499.36	-3.51	107.94
249	SLV 10	206	596	2229	-501.38	-3.55	72.7
249	SLV 11	-399	-417	4595	-1008.07	-13.51	-139.25
249	SLV 12	-500	-362	4602	-1010.08	-13.55	-174.49
249	SLV 13	-373	443	3601	-804.3	-9.69	-129.45
249	SLV 14	-474	497	3608	-806.31	-9.73	-164.68
249	SLV 15	-585	155	4313	-956.91	-12.69	-203.6
249	SLV 16	-686	209	4320	-958.92	-12.73	-238.84
249	CRTFP Ux+	0	0	0	0	0	0
249	CRTFP Ux-	0	0	0	0	0	0
249	CRTFP Uy+	0	0	0	-0.01	0	0



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
249	CRTFP Uy-	0	0	0	0.01	0	0
250	SLU 1	71	-9	2700	-709.83	70.32	25.03
250	SLU 2	70	-21	2723	-716.27	70.92	25.02
250	SLU 3	71	-9	2700	-709.83	70.32	25.03
250	SLU 4	70	-16	2714	-713.7	70.68	25.02
250	SLU 5	70	-21	2723	-716.27	70.92	25.02
250	SLU 6	71	-9	2700	-709.83	70.32	25.03
250	SLU 7	70	-16	2714	-713.7	70.68	25.02
250	SLU 8	71	-9	2700	-709.83	70.32	25.03
250	SLU 9	70	-16	2714	-713.7	70.68	25.02
250	SLU 10	82	-19	3199	-837.24	83.18	29.09
250	SLU 11	82	-7	3176	-830.79	82.58	29.1
250	SLU 12	82	-14	3189	-834.66	82.94	29.1
250	SLU 13	82	-19	3199	-837.24	83.18	29.09
250	SLU 14	82	-7	3176	-830.79	82.58	29.1
250	SLU 15	82	-14	3189	-834.66	82.94	29.1
250	SLU 16	82	-7	3176	-830.79	82.58	29.1
250	SLU 17	82	-14	3189	-834.66	82.94	29.1
250	SLU 18	87	-6	3379	-882.63	87.83	30.85
250	SLU 19	87	-13	3393	-886.5	88.2	30.84
250	SLU 20	87	-6	3379	-882.63	87.83	30.85
250	SLU 21	87	-13	3393	-886.5	88.2	30.84
250	SLU 22	80	-8	3041	-796.61	79.09	28.16
250	SLU 23	79	-20	3064	-803.06	79.7	28.15
250	SLU 24	80	-8	3041	-796.61	79.09	28.16
250	SLU 25	79	-15	3055	-800.48	79.46	28.15
250	SLU 26	79	-20	3064	-803.06	79.7	28.15
250	SLU 27	80	-8	3041	-796.61	79.09	28.16
250	SLU 28	79	-15	3055	-800.48	79.46	28.15
250	SLU 29	80	-8	3041	-796.61	79.09	28.16
250	SLU 30	79	-15	3055	-800.48	79.46	28.15
250	SLU 31	91	-18	3539	-924.02	91.96	32.22
250	SLU 32	91	-6	3516	-917.57	91.35	32.23
250	SLU 33	91	-13	3530	-921.44	91.72	32.23
250	SLU 34	91	-18	3539	-924.02	91.96	32.22
250	SLU 35	91	-6	3516	-917.57	91.35	32.23
250	SLU 36	91	-13	3530	-921.44	91.72	32.23
250	SLU 37	91	-6	3516	-917.57	91.35	32.23
250	SLU 38	91	-13	3530	-921.44	91.72	32.23
250	SLU 39	96	-6	3720	-969.41	96.61	33.98
250	SLU 40	96	-13	3734	-973.28	96.97	33.97
250	SLU 41	96	-6	3720	-969.41	96.61	33.98
250	SLU 42	96	-13	3734	-973.28	96.97	33.97
250	SLU 43	89	-12	3394	-893.02	88.41	31.46
250	SLU 44	88	-24	3417	-899.47	89.01	31.45
250	SLU 45	89	-12	3394	-893.02	88.41	31.46
250	SLU 46	88	-19	3408	-896.89	88.77	31.46
250	SLU 47	88	-24	3417	-899.47	89.01	31.45
250	SLU 48	89	-12	3394	-893.02	88.41	31.46
250	SLU 49	88	-19	3408	-896.89	88.77	31.46
250	SLU 50	89	-12	3394	-893.02	88.41	31.46
250	SLU 51	88	-19	3408	-896.89	88.77	31.46
250	SLU 52	100	-22	3892	-1020.43	101.27	35.53
250	SLU 53	101	-10	3869	-1013.99	100.67	35.54
250	SLU 54	100	-17	3883	-1017.85	101.03	35.53
250	SLU 55	100	-22	3892	-1020.43	101.27	35.53
250	SLU 56	101	-10	3869	-1013.99	100.67	35.54
250	SLU 57	100	-17	3883	-1017.85	101.03	35.53
250	SLU 58	101	-10	3869	-1013.99	100.67	35.54
250	SLU 59	100	-17	3883	-1017.85	101.03	35.53
250	SLU 60	106	-9	4073	-1065.83	105.92	37.28
250	SLU 61	105	-16	4087	-1069.69	106.28	37.28
250	SLU 62	106	-9	4073	-1065.83	105.92	37.28
250	SLU 63	105	-16	4087	-1069.69	106.28	37.28
250	SLU 64	98	-11	3734	-979.81	97.18	34.59
250	SLU 65	97	-23	3757	-986.25	97.79	34.58
250	SLU 66	98	-11	3734	-979.81	97.18	34.59
250	SLU 67	97	-18	3748	-983.67	97.54	34.59
250	SLU 68	97	-23	3757	-986.25	97.79	34.58
250	SLU 69	98	-11	3734	-979.81	97.18	34.59
250	SLU 70	97	-18	3748	-983.67	97.54	34.59
250	SLU 71	98	-11	3734	-979.81	97.18	34.59
250	SLU 72	97	-18	3748	-983.67	97.54	34.59
250	SLU 73	109	-21	4232	-1107.21	110.05	38.66
250	SLU 74	110	-9	4210	-1100.77	109.44	38.67
250	SLU 75	109	-16	4223	-1104.63	109.8	38.66
250	SLU 76	109	-21	4232	-1107.21	110.05	38.66
250	SLU 77	110	-9	4210	-1100.77	109.44	38.67
250	SLU 78	109	-16	4223	-1104.63	109.8	38.66
250	SLU 79	110	-9	4210	-1100.77	109.44	38.67
250	SLU 80	109	-16	4223	-1104.63	109.8	38.66
250	SLU 81	115	-9	4413	-1152.61	114.7	40.41
250	SLU 82	114	-16	4427	-1156.48	115.06	40.41
250	SLU 83	115	-9	4413	-1152.61	114.7	40.41
250	SLU 84	114	-16	4427	-1156.48	115.06	40.41
250	SLE RA 1	73	-9	2798	-734.62	72.83	25.92
250	SLE RA 2	73	-16	2813	-738.92	73.23	25.91
250	SLE RA 3	73	-9	2798	-734.62	72.83	25.92
250	SLE RA 4	73	-13	2807	-737.2	73.07	25.92



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
250	SLE RA 5	73	-16	2813	-738.92	73.23	25.91
250	SLE RA 6	73	-9	2798	-734.62	72.83	25.92
250	SLE RA 7	73	-13	2807	-737.2	73.07	25.92
250	SLE RA 8	73	-9	2798	-734.62	72.83	25.92
250	SLE RA 9	73	-13	2807	-737.2	73.07	25.92
250	SLE RA 10	81	-15	3130	-819.56	81.4	28.63
250	SLE RA 11	81	-8	3115	-815.27	81	28.64
250	SLE RA 12	81	-12	3124	-817.84	81.24	28.63
250	SLE RA 13	81	-15	3130	-819.56	81.4	28.63
250	SLE RA 14	81	-8	3115	-815.27	81	28.64
250	SLE RA 15	81	-12	3124	-817.84	81.24	28.63
250	SLE RA 16	81	-8	3115	-815.27	81	28.64
250	SLE RA 17	81	-12	3124	-817.84	81.24	28.63
250	SLE RA 18	84	-7	3250	-849.83	84.5	29.8
250	SLE RA 19	84	-12	3259	-852.4	84.74	29.8
250	SLE RA 20	84	-7	3250	-849.83	84.5	29.8
250	SLE RA 21	84	-12	3259	-852.4	84.74	29.8
250	SLE FR 1	73	-9	2798	-734.62	72.83	25.92
250	SLE FR 2	73	-10	2801	-735.48	72.91	25.92
250	SLE FR 3	73	-9	2798	-734.62	72.83	25.92
250	SLE FR 4	77	-10	2937	-770.04	76.41	27.08
250	SLE FR 5	77	-8	2933	-769.18	76.33	27.08
250	SLE FR 6	79	-8	3024	-792.22	78.66	27.86
250	SLE QP 1	73	-9	2798	-734.62	72.83	25.92
250	SLE QP 2	77	-8	2933	-769.18	76.33	27.08
250	SLD 1	369	-104	2450	-641.67	64.45	132.28
250	SLD 2	331	-80	2453	-642.58	64.52	118.23
250	SLD 3	290	-222	2746	-717.56	71.82	104.55
250	SLD 4	251	-198	2750	-718.47	71.89	90.5
250	SLD 5	298	133	2337	-615.5	61.56	105.61
250	SLD 6	260	157	2340	-616.41	61.63	91.56
250	SLD 7	34	-259	3326	-868.49	86.13	13.2
250	SLD 8	-5	-236	3330	-869.4	86.21	-0.85
250	SLD 9	158	219	2537	-668.97	66.45	55.02
250	SLD 10	120	243	2540	-669.88	66.53	40.97
250	SLD 11	-107	-174	3527	-921.96	91.03	-37.39
250	SLD 12	-145	-150	3530	-922.87	91.1	-51.44
250	SLD 13	-98	182	3117	-819.9	80.76	-36.33
250	SLD 14	-137	206	3121	-820.8	80.84	-50.39
250	SLD 15	-177	64	3414	-895.79	88.14	-64.06
250	SLD 16	-216	88	3417	-896.7	88.21	-78.11
250	SLV 1	745	-225	1813	-474.15	48.82	267.19
250	SLV 2	658	-171	1821	-476.21	48.99	235.28
250	SLV 3	562	-497	2503	-650.5	65.95	203.59
250	SLV 4	475	-443	2510	-652.56	66.12	171.68
250	SLV 5	585	319	1549	-412.49	42.04	206.75
250	SLV 6	497	373	1556	-414.55	42.21	174.84
250	SLV 7	-24	-585	3848	-1000.32	99.13	-5.26
250	SLV 8	-111	-531	3855	-1002.38	99.3	-37.17
250	SLV 9	265	515	2012	-535.98	53.35	91.34
250	SLV 10	177	569	2019	-538.05	53.53	59.43
250	SLV 11	-344	-390	4311	-1123.82	110.45	-120.67
250	SLV 12	-431	-336	4318	-1125.88	110.62	-152.58
250	SLV 13	-322	426	3357	-885.8	86.54	-117.51
250	SLV 14	-409	480	3364	-887.87	86.71	-149.42
250	SLV 15	-504	155	4046	-1062.15	103.67	-181.12
250	SLV 16	-592	209	4054	-1064.22	103.84	-213.02
250	CRTFP Ux+	0	0	0	-0.01	0	0
250	CRTFP Ux-	0	0	0	0.01	0	0
250	CRTFP Uy+	0	0	0	-0.01	0	0
250	CRTFP Uy-	0	0	0	0.01	0	0
252	SLU 1	98	-12	4056	-904.77	711.49	26.62
252	SLU 2	97	-29	4090	-912.21	717.56	29.65
252	SLU 3	98	-12	4056	-904.77	711.49	26.62
252	SLU 4	97	-22	4076	-909.23	715.13	28.44
252	SLU 5	97	-29	4090	-912.21	717.56	29.65
252	SLU 6	98	-12	4056	-904.77	711.49	26.62
252	SLU 7	97	-22	4076	-909.23	715.13	28.44
252	SLU 8	98	-12	4056	-904.77	711.49	26.62
252	SLU 9	97	-22	4076	-909.23	715.13	28.44
252	SLU 10	113	-26	4810	-1071.32	842.9	33.09
252	SLU 11	114	-8	4776	-1063.89	836.82	30.06
252	SLU 12	113	-19	4796	-1068.35	840.47	31.88
252	SLU 13	113	-26	4810	-1071.32	842.9	33.09
252	SLU 14	114	-8	4776	-1063.89	836.82	30.06
252	SLU 15	113	-19	4796	-1068.35	840.47	31.88
252	SLU 16	114	-8	4776	-1063.89	836.82	30.06
252	SLU 17	113	-19	4796	-1068.35	840.47	31.88
252	SLU 18	121	-7	5084	-1132.08	890.53	31.54
252	SLU 19	120	-18	5105	-1136.54	894.18	33.36
252	SLU 20	121	-7	5084	-1132.08	890.53	31.54
252	SLU 21	120	-18	5105	-1136.54	894.18	33.36
252	SLU 22	110	-10	4572	-1018.87	801.21	29.41
252	SLU 23	109	-28	4606	-1026.3	807.29	32.44
252	SLU 24	110	-10	4572	-1018.87	801.21	29.41
252	SLU 25	110	-21	4592	-1023.33	804.86	31.23
252	SLU 26	109	-28	4606	-1026.3	807.29	32.44
252	SLU 27	110	-10	4572	-1018.87	801.21	29.41
252	SLU 28	110	-21	4592	-1023.33	804.86	31.23



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
252	SLU 29	110	-10	4572	-1018.87	801.21	29.41
252	SLU 30	110	-21	4592	-1023.33	804.86	31.23
252	SLU 31	125	-24	5326	-1185.42	932.62	35.88
252	SLU 32	126	-7	5291	-1177.99	926.54	32.85
252	SLU 33	126	-17	5312	-1182.45	930.19	34.67
252	SLU 34	125	-24	5326	-1185.42	932.62	35.88
252	SLU 35	126	-7	5291	-1177.99	926.54	32.85
252	SLU 36	126	-17	5312	-1182.45	930.19	34.67
252	SLU 37	126	-7	5291	-1177.99	926.54	32.85
252	SLU 38	126	-17	5312	-1182.45	930.19	34.67
252	SLU 39	133	-5	5600	-1246.18	980.26	34.33
252	SLU 40	133	-16	5620	-1250.64	983.9	36.15
252	SLU 41	133	-5	5600	-1246.18	980.26	34.33
252	SLU 42	133	-16	5620	-1250.64	983.9	36.15
252	SLU 43	123	-16	5096	-1137.08	894.17	33.65
252	SLU 44	122	-33	5130	-1144.52	900.25	36.68
252	SLU 45	123	-16	5096	-1137.08	894.17	33.65
252	SLU 46	123	-26	5116	-1141.54	897.82	35.47
252	SLU 47	122	-33	5130	-1144.52	900.25	36.68
252	SLU 48	123	-16	5096	-1137.08	894.17	33.65
252	SLU 49	123	-26	5116	-1141.54	897.82	35.47
252	SLU 50	123	-16	5096	-1137.08	894.17	33.65
252	SLU 51	123	-26	5116	-1141.54	897.82	35.47
252	SLU 52	138	-30	5850	-1303.64	1025.58	40.12
252	SLU 53	139	-12	5816	-1296.2	1019.5	37.09
252	SLU 54	139	-23	5836	-1300.66	1023.15	38.91
252	SLU 55	138	-30	5850	-1303.64	1025.58	40.12
252	SLU 56	139	-12	5816	-1296.2	1019.5	37.09
252	SLU 57	139	-23	5836	-1300.66	1023.15	38.91
252	SLU 58	139	-12	5816	-1296.2	1019.5	37.09
252	SLU 59	139	-23	5836	-1300.66	1023.15	38.91
252	SLU 60	146	-11	6124	-1364.39	1073.22	38.57
252	SLU 61	145	-22	6145	-1368.85	1076.86	40.39
252	SLU 62	146	-11	6124	-1364.39	1073.22	38.57
252	SLU 63	145	-22	6145	-1368.85	1076.86	40.39
252	SLU 64	135	-14	5612	-1251.18	983.89	36.44
252	SLU 65	135	-32	5646	-1258.61	989.97	39.47
252	SLU 66	135	-14	5612	-1251.18	983.89	36.44
252	SLU 67	135	-25	5632	-1255.64	987.54	38.26
252	SLU 68	135	-32	5646	-1258.61	989.97	39.47
252	SLU 69	135	-14	5612	-1251.18	983.89	36.44
252	SLU 70	135	-25	5632	-1255.64	987.54	38.26
252	SLU 71	135	-14	5612	-1251.18	983.89	36.44
252	SLU 72	135	-25	5632	-1255.64	987.54	38.26
252	SLU 73	151	-28	6366	-1417.73	1115.3	42.91
252	SLU 74	151	-11	6331	-1410.3	1109.23	39.88
252	SLU 75	151	-21	6352	-1414.76	1112.87	41.7
252	SLU 76	151	-28	6366	-1417.73	1115.3	42.91
252	SLU 77	151	-11	6331	-1410.3	1109.23	39.88
252	SLU 78	151	-21	6352	-1414.76	1112.87	41.7
252	SLU 79	151	-11	6331	-1410.3	1109.23	39.88
252	SLU 80	151	-21	6352	-1414.76	1112.87	41.7
252	SLU 81	158	-9	6640	-1478.49	1162.94	41.36
252	SLU 82	158	-20	6660	-1482.95	1166.59	43.18
252	SLU 83	158	-9	6640	-1478.49	1162.94	41.36
252	SLU 84	158	-20	6660	-1482.95	1166.59	43.18
252	SLE RA 1	101	-11	4203	-937.37	737.12	27.42
252	SLE RA 2	101	-23	4226	-942.33	741.17	29.44
252	SLE RA 3	101	-11	4203	-937.37	737.12	27.42
252	SLE RA 4	101	-18	4217	-940.34	739.55	28.63
252	SLE RA 5	101	-23	4226	-942.33	741.17	29.44
252	SLE RA 6	101	-11	4203	-937.37	737.12	27.42
252	SLE RA 7	101	-18	4217	-940.34	739.55	28.63
252	SLE RA 8	101	-11	4203	-937.37	737.12	27.42
252	SLE RA 9	101	-18	4217	-940.34	739.55	28.63
252	SLE RA 10	112	-21	4706	-1048.4	824.73	31.73
252	SLE RA 11	112	-9	4683	-1043.45	820.68	29.71
252	SLE RA 12	112	-16	4697	-1046.42	823.11	30.92
252	SLE RA 13	112	-21	4706	-1048.4	824.73	31.73
252	SLE RA 14	112	-9	4683	-1043.45	820.68	29.71
252	SLE RA 15	112	-16	4697	-1046.42	823.11	30.92
252	SLE RA 16	112	-9	4683	-1043.45	820.68	29.71
252	SLE RA 17	112	-16	4697	-1046.42	823.11	30.92
252	SLE RA 18	117	-8	4889	-1088.91	856.49	30.7
252	SLE RA 19	116	-15	4902	-1091.88	858.92	31.91
252	SLE RA 20	117	-8	4889	-1088.91	856.49	30.7
252	SLE RA 21	116	-15	4902	-1091.88	858.92	31.91
252	SLE FR 1	101	-11	4203	-937.37	737.12	27.42
252	SLE FR 2	101	-13	4208	-938.36	737.93	27.82
252	SLE FR 3	101	-11	4203	-937.37	737.12	27.42
252	SLE FR 4	106	-13	4413	-983.82	773.74	28.81
252	SLE FR 5	106	-10	4409	-982.83	772.93	28.4
252	SLE FR 6	109	-10	4546	-1013.14	796.8	29.06
252	SLE QP 1	101	-11	4203	-937.37	737.12	27.42
252	SLE QP 2	106	-10	4409	-982.83	772.93	28.4
252	SLD 1	519	-155	3653	-815.88	645.34	131.31
252	SLD 2	465	-119	3658	-817.01	646.16	111.19
252	SLD 3	408	-328	4115	-916.69	724.04	172.9
252	SLD 4	353	-292	4120	-917.82	724.87	152.78



Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
252	SLD 5	418	196	3480	-779.46	614.99	3.23
252	SLD 6	363	232	3485	-780.58	615.82	-16.89
252	SLD 7	47	-381	5019	-1115.5	877.35	141.88
252	SLD 8	-8	-345	5024	-1116.62	878.17	121.76
252	SLD 9	220	324	3793	-849.05	667.69	-64.96
252	SLD 10	165	360	3798	-850.17	668.52	-85.08
252	SLD 11	-151	-252	5333	-1185.09	930.04	73.69
252	SLD 12	-206	-216	5338	-1186.21	930.87	53.57
252	SLD 13	-142	272	4698	-1047.85	820.99	-95.98
252	SLD 14	-196	308	4703	-1048.97	821.82	-116.1
252	SLD 15	-253	99	5160	-1148.66	899.7	-54.38
252	SLD 16	-308	135	5165	-1149.78	900.53	-74.5
252	SLV 1	1050	-338	2659	-596.47	477.58	262.58
252	SLV 2	926	-257	2671	-599.02	479.45	216.89
252	SLV 3	795	-736	3733	-830.69	660.43	357.18
252	SLV 4	670	-655	3744	-833.24	662.31	311.49
252	SLV 5	821	466	2253	-510.79	406.34	-28.83
252	SLV 6	696	548	2264	-513.34	408.22	-74.52
252	SLV 7	-32	-860	5829	-1291.53	1015.85	286.5
252	SLV 8	-156	-779	5841	-1294.09	1017.73	240.81
252	SLV 9	368	758	2977	-671.58	528.14	-184.01
252	SLV 10	244	840	2988	-674.13	530.01	-229.7
252	SLV 11	-485	-569	6554	-1452.32	1137.64	131.32
252	SLV 12	-609	-487	6565	-1454.87	1139.52	85.63
252	SLV 13	-458	634	5074	-1132.43	883.56	-254.69
252	SLV 14	-583	716	5085	-1134.98	885.44	-300.38
252	SLV 15	-714	236	6147	-1366.65	1066.41	-160.09
252	SLV 16	-839	318	6158	-1369.2	1068.29	-205.78
252	CRTFP Ux+	0	0	0	-0.01	0	0
252	CRTFP Ux-	0	0	0	0.01	0	0
252	CRTFP Uy+	0	0	0	-0.01	0.01	0
252	CRTFP Uy-	0	0	0	0.01	-0.01	0

1.3 Pressioni massime sul terreno

Nodo: Nodo che interagisce col terreno.

Ind.: indice del nodo.

Pressione minima: situazione in cui si verifica la pressione minima nel nodo.

Cont.: nome breve della condizione o combinazione di carico a cui si riferisce la pressione minima.

uz: spostamento massimo verticale del nodo. [m]

Valore: pressione minima sul terreno del nodo. [daN/m²]

Pressione massima: situazione in cui si verifica la pressione massima nel nodo.

Cont.: nome breve della condizione o combinazione di carico a cui si riferisce la pressione massima.

uz: spostamento minimo verticale del nodo. [m]

Valore: pressione massima sul terreno del nodo. [daN/m²]

Compressione estrema massima -12629.3 al nodo di indice 229, di coordinate x = 24.73, y = 27.16, z = -1.6, nel contesto SLU 82.

Spostamento estremo minimo -0.0042098 al nodo di indice 229, di coordinate x = 24.73, y = 27.16, z = -1.6, nel contesto SLU 82.

Spostamento estremo massimo 0 al nodo di indice 18, di coordinate x = 32.9, y = 17.9, z = -1.6, nel contesto SLU 1.

Nodo	Pressione minima		Pressione massima	
Ind.	Cont.	uz	Cont.	uz
18	SLU 1	0	SLU 1	0
19	SLU 81	-0.0000915	SLV 11	-0.0000464
21	SLU 81	-0.0002506	SLV 11	-0.0001264
23	SLU 81	-0.0004349	SLV 11	-0.0002178
25	SLU 81	-0.000619	SLV 11	-0.0003071
27	SLU 81	-0.0007883	SLV 11	-0.0003864
29	SLU 81	-0.0009356	SLV 11	-0.000452
31	SLU 81	-0.0010583	SLV 11	-0.0005026
33	SLU 81	-0.0011571	SLV 11	-0.0005391
35	SLU 81	-0.0012346	SLV 11	-0.000563
37	SLV 6	-0.0026558	SLV 11	-0.0005848
40	SLU 81	-0.0012944	SLV 11	-0.0005767
41	SLU 81	-0.0013413	SLV 11	-0.0005833
42	SLU 81	-0.0007105	SLV 4	-0.0002892
43	SLU 81	-0.0014534	SLV 11	-0.0005888
44	SLU 81	-0.0015071	SLV 12	-0.0005888
45	SLU 81	-0.0015689	SLV 12	-0.0005872
46	SLU 81	-0.001642	SLV 12	-0.0005851
47	SLV 6	-0.0017396	SLV 11	-0.0005836
48	SLV 6	-0.0018857	SLV 11	-0.0005843
49	SLV 6	-0.0020624	SLV 11	-0.0005894
50	SLV 6	-0.0022742	SLV 11	-0.0006009
51	SLV 6	-0.0025238	SLV 11	-0.000621
52	SLV 6	-0.0028107	SLV 11	-0.0006507
54	SLV 6	-0.0024733	SLV 11	-0.0006427
56	SLU 81	-0.0009025	SLV 4	-0.0004133
58	SLV 2	-0.0023201	SLV 15	-0.000706
60	SLU 81	-0.0010132	SLV 4	-0.0004751
62	SLU 81	-0.0022279	SLV 15	-0.0007636
64	SLU 82	-0.0011283	SLV 2	-0.0005324
66	SLU 81	-0.0022388	SLV 15	-0.0008324
68	SLU 82	-0.0012491	SLV 2	-0.0005875



Pressione minima				Pressione massima		
Nodo						
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
70	SLU 81	-0.0022935	-6880.5	SLV 15	-0.0009132	-2739.6
72	SLU 82	-0.0013768	-4130.3	SLV 2	-0.0006421	-1926.4
74	SLU 81	-0.0023897	-7169	SLV 16	-0.0010052	-3015.7
76	SLU 82	-0.0015115	-4534.5	SLV 2	-0.0006972	-2091.6
78	SLU 81	-0.0025209	-7562.7	SLV 16	-0.0011065	-3319.6
80	SLU 82	-0.0016521	-4956.4	SLV 2	-0.0007528	-2258.4
82	SLU 81	-0.0026755	-8026.4	SLV 16	-0.0012131	-3639.4
84	SLU 82	-0.0017952	-5385.6	SLV 2	-0.0008082	-2424.7
86	SLU 81	-0.0028345	-8503.4	SLV 16	-0.0013175	-3952.6
88	SLU 82	-0.0019341	-5802.2	SLV 6	-0.0008575	-2572.6
90	SLU 82	-0.0020576	-6172.7	SLV 6	-0.0008959	-2687.6
92	SLU 81	-0.0029699	-8909.6	SLV 16	-0.001408	-4223.9
94	SLU 81	-0.0031782	-9534.5	SLV 16	-0.0014735	-4420.5
95	SLU 81	-0.0030129	-9038.7	SLV 16	-0.0014454	-4336.3
96	SLU 81	-0.0029054	-8716.1	SLV 16	-0.0014421	-4326.2
97	SLU 81	-0.0028308	-8492.5	SLV 16	-0.0014532	-4359.6
98	SLU 81	-0.0027736	-8320.8	SLV 15	-0.0014713	-4413.8
99	SLU 81	-0.0027235	-8170.6	SLV 15	-0.0014909	-4472.6
100	SLU 81	-0.0026744	-8023.2	SLV 13	-0.001509	-4527.1
101	SLU 81	-0.0026228	-7868.3	SLV 13	-0.001523	-4569
102	SLU 82	-0.0025675	-7702.6	SLV 13	-0.00153	-4590
103	SLU 82	-0.0025093	-7528	SLU 1	-0.0014949	-4484.6
104	SLU 82	-0.0024513	-7354	SLU 1	-0.0014584	-4375.2
105	SLU 82	-0.0023999	-7199.8	SLU 1	-0.0014268	-4280.4
106	SLU 82	-0.0023412	-7023.6	SLU 1	-0.0013914	-4174.3
107	SLU 82	-0.0023417	-7025	SLU 1	-0.0013918	-4175.3
108	SLU 82	-0.0023373	-7011.8	SLV 6	-0.0013793	-4137.9
109	SLU 82	-0.0023237	-6971.2	SLV 6	-0.0013405	-4021.5
110	SLU 82	-0.0023006	-6901.7	SLV 6	-0.0012891	-3867.2
111	SLU 82	-0.0022691	-6807.4	SLV 6	-0.0012278	-3683.4
112	SLU 82	-0.0022315	-6694.6	SLV 6	-0.0011595	-3478.5
113	SLU 82	-0.0021908	-6572.5	SLV 6	-0.0010866	-3259.8
114	SLU 82	-0.0021514	-6454.2	SLV 6	-0.0010117	-3035.2
115	SLU 82	-0.0021199	-6359.6	SLV 6	-0.0009381	-2814.4
116	SLU 82	-0.0021056	-6316.9	SLV 6	-0.0008702	-2610.7
119	SLU 81	-0.0030456	-9136.8	SLV 16	-0.0014701	-4410.2
141	SLU 82	-0.0021594	-6478.1	SLV 5	-0.000926	-2777.9
143	SLU 81	-0.0032301	-9690.3	SLV 16	-0.0015299	-4589.7
144	SLU 81	-0.0030748	-9224.4	SLV 16	-0.001503	-4508.9
145	SLU 81	-0.0029673	-8901.9	SLV 16	-0.0014991	-4497.4
146	SLU 81	-0.0028929	-8678.6	SLV 16	-0.0015097	-4529.1
147	SLU 81	-0.0028359	-8507.6	SLV 13	-0.001527	-4581.1
148	SLU 81	-0.0027861	-8358.2	SLV 13	-0.0015457	-4637
149	SLU 82	-0.0027374	-8212.3	SLV 13	-0.0015624	-4687.2
150	SLU 82	-0.0026865	-8059.5	SLV 13	-0.001574	-4722
151	SLU 82	-0.0026318	-7895.5	SLU 1	-0.0015719	-4715.8
152	SLU 82	-0.0025743	-7722.9	SLU 1	-0.0015346	-4603.9
153	SLU 82	-0.002517	-7551.1	SLU 1	-0.0014986	-4495.7
154	SLU 82	-0.0024665	-7399.4	SLU 1	-0.0014675	-4402.5
155	SLU 82	-0.0024237	-7271	SLU 1	-0.0014417	-4325
156	SLU 82	-0.0024252	-7275.7	SLV 6	-0.0014253	-4275.8
157	SLU 82	-0.0024221	-7266.3	SLV 6	-0.0013992	-4197.5
158	SLU 82	-0.0024099	-7229.7	SLV 6	-0.0013605	-4081.5
159	SLU 82	-0.0023882	-7164.7	SLV 6	-0.0013099	-3929.8
160	SLU 82	-0.0023584	-7075.1	SLV 6	-0.0012498	-3749.5
161	SLU 82	-0.0023225	-6967.5	SLV 6	-0.0011828	-3548.4
162	SLU 82	-0.0022836	-6850.9	SLV 6	-0.0011112	-3333.5
163	SLU 82	-0.0022462	-6738.5	SLV 6	-0.0010376	-3112.7
164	SLU 82	-0.0022167	-6650.1	SLV 5	-0.0009649	-2894.8
165	SLU 82	-0.0022033	-6609.8	SLV 5	-0.0008973	-2691.9
167	SLU 81	-0.003058	-9174.1	SLV 16	-0.0014997	-4499.2
169	SLU 81	-0.0030093	-9027.8	SLV 14	-0.0015021	-4506.3
171	SLU 81	-0.0029358	-8807.4	SLV 14	-0.0014923	-4476.8
173	SLU 82	-0.002221	-6662.9	SLV 5	-0.000931	-2793.1
175	SLU 82	-0.002869	-8606.9	SLV 14	-0.0014835	-4450.6
177	SLU 82	-0.002233	-6699	SLV 5	-0.000924	-2772.1
179	SLU 82	-0.0028305	-8491.4	SLV 14	-0.001485	-4455.1
181	SLU 82	-0.002275	-6824.9	SLV 5	-0.0009218	-2765.5
183	SLU 82	-0.0028361	-8508.3	SLV 14	-0.0015032	-4509.7
185	SLU 82	-0.0023577	-7073	SLV 5	-0.0009287	-2786.2
187	SLU 82	-0.0028971	-8691.3	SLV 14	-0.0015437	-4631.1
189	SLU 82	-0.0024907	-7472.1	SLV 5	-0.0009489	-2846.8
191	SLU 82	-0.0030213	-9063.9	SLV 14	-0.0016111	-4833.3
193	SLU 82	-0.0026831	-8049.4	SLV 5	-0.0009866	-2959.9
195	SLU 82	-0.0032136	-9640.7	SLV 14	-0.001709	-5127.1
197	SLU 82	-0.0029432	-8829.5	SLV 5	-0.0010456	-3136.8
199	SLU 82	-0.0034756	-10426.8	SLV 10	-0.0018386	-5515.7
201	SLU 82	-0.0032762	-9828.5	SLV 5	-0.0011285	-3385.6
203	SLU 82	-0.0038047	-11414	SLV 10	-0.0019736	-5920.7
205	SLU 82	-0.0042078	-12623.5	SLV 10	-0.0021695	-6508.6
206	SLU 82	-0.0037904	-11371.3	SLV 10	-0.0019622	-5886.5
207	SLU 82	-0.0034495	-10348.4	SLV 10	-0.0017931	-5379.3
208	SLU 82	-0.0031706	-9511.7	SLV 10	-0.0016548	-4964.5
209	SLU 82	-0.0029509	-8852.7	SLV 10	-0.0015454	-4636.1
210	SLU 82	-0.0027835	-8350.6	SLV 10	-0.0014607	-4382
211	SLU 82	-0.0026597	-7979	SLV 10	-0.0013958	-4187.5
212	SLU 82	-0.0025701	-7710.3	SLV 10	-0.0013458	-4037.3
213	SLU 82	-0.0025063	-7519	SLV 10	-0.0013058	-3917.5
214	SLU 82	-0.0024612	-7383.6	SLV 6	-0.0012722	-3816.5



Nodo		Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore	
215	SLU 82	-0.0024295	-7288.5	SLV 5	-0.0012418	-3725.4	
216	SLU 82	-0.0024079	-7223.8	SLV 5	-0.0012128	-3638.4	
217	SLU 82	-0.0023953	-7186	SLV 5	-0.0011846	-3553.9	
218	SLU 82	-0.0023925	-7177.5	SLV 5	-0.0011574	-3472.2	
219	SLU 82	-0.002402	-7206	SLV 5	-0.0011317	-3395.2	
220	SLU 82	-0.0024281	-7284.2	SLV 5	-0.0011089	-3326.6	
221	SLU 82	-0.002476	-7428.1	SLV 5	-0.0010904	-3271.3	
222	SLU 82	-0.0025519	-7655.8	SLV 5	-0.0010783	-3234.9	
223	SLU 82	-0.002662	-7985.9	SLV 5	-0.0010745	-3223.4	
224	SLU 82	-0.0028114	-8434.3	SLV 5	-0.0010809	-3242.7	
225	SLU 82	-0.0030036	-9010.8	SLV 5	-0.001099	-3297.1	
226	SLU 82	-0.0032377	-9713.1	SLV 5	-0.0011292	-3387.7	
227	SLU 82	-0.0035062	-10518.5	SLV 5	-0.0011698	-3509.4	
229	SLU 82	-0.0042098	-12629.3	SLV 10	-0.0021443	-6432.8	
251	SLU 82	-0.0036797	-11039.1	SLV 5	-0.0012351	-3705.4	

1.4 Cedimenti fondazioni superficiali

Nodo: nodo che interagisce col terreno.

Ind.: indice del nodo.

spostamento nodale massimo: situazione in cui si verifica lo spostamento massimo verticale nel nodo calcolato dal solutore ad elementi finiti. Lo spostamento massimo con segno è quello con valore massimo lungo l'asse Z, dove valori positivi rappresentano spostamenti verso l'alto.

Cont.: nome breve della condizione o combinazione di carico a cui si riferisce lo spostamento.

uz: spostamento verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento è dotato di segno. [m]

Press.: pressione sul terreno corrispondente allo spostamento. Valori positivi indicano trazione, valori negativi indicano compressione. [daN/m²]

spostamento nodale minimo: situazione in cui si verifica lo spostamento minimo verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento minimo con segno è quello con valore minimo lungo l'asse Z, dove valori negativi rappresentano spostamenti verso il basso.

Cont.: nome breve della condizione o combinazione di carico a cui si riferisce lo spostamento.

uz: spostamento verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento è dotato di segno. [m]

Press.: pressione sul terreno corrispondente allo spostamento. Valori positivi indicano trazione, valori negativi indicano compressione. [daN/m²]

Cedimento elastico: cedimento teorico elastico massimo.

Cont.: nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico elastico massimo.

v.: valore del cedimento teorico elastico massimo. [m]

Cedimento edometrico: cedimento teorico edometrico massimo.

Cont.: nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico edometrico massimo.

v.: valore del cedimento teorico edometrico massimo. [m]

Cedimento di consolidazione: cedimento teorico di consolidazione massimo.

Cont.: nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico di consolidazione massimo.

v.: valore del cedimento teorico di consolidazione massimo. [m]

Spostamento estremo minimo -0.0031036 al nodo di indice 229, di coordinate x = 24.73, y = 27.16, z = -1.6, nel contesto SLE rara 19.

Spostamento estremo massimo 0 al nodo di indice 18, di coordinate x = 32.9, y = 17.9, z = -1.6, nel contesto SLE rara 1.

Cedimento elastico estremo massimo 0.0000502 al nodo di indice 206, di coordinate x = 24.79, y = 26.81, z = -1.6, nel contesto SLE rara 19.

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
18	SLE RA 1	0	0	SLE RA 1	0	0						
19	SLD 11	-5.5E-05	-164.4	SLD 6	-6.8E-05	-202.7						
21	SLD 11	-1.5E-04	-449.5	SLD 6	-1.9E-04	-556						
23	SLD 11	-2.6E-04	-778.1	SLD 6	-3.2E-04	-966.8						
25	SLD 11	-3.7E-04	-1103.8	SLD 6	-4.6E-04	-1379.8						
27	SLD 11	-4.7E-04	-1399.7	SLD 6	-5.9E-04	-1763.5						
29	SLD 11	-5.5E-04	-1652.7	SLD 6	-7.0E-04	-2101.9						
31	SLD 11	-6.2E-04	-1858.6	SLD 6	-8.0E-04	-2389.5						
33	SLD 11	-6.7E-04	-2019	SLD 6	-8.8E-04	-2627.2						
35	SLD 11	-7.1E-04	-2138.9	SLD 6	-9.4E-04	-2820.2						
37	SLD 11	-1.2E-03	-3521.3	SLD 6	-2.1E-03	-6200.7						
40	SLD 11	-7.4E-04	-2225.8	SLD 6	-9.9E-04	-2976.3						
41	SLD 11	-7.6E-04	-2288.9	SLD 6	-1.0E-03	-3104.9						
42	SLD 4	-4.0E-04	-1192	SLD 13	-5.7E-04	-1699.1						
43	SLD 11	-8.1E-04	-2426.4	SLD 6	-1.1E-03	-3425.7						
44	SLD 12	-8.3E-04	-2488.2	SLD 5	-1.2E-03	-3581.3						
45	SLD 12	-8.5E-04	-2557.1	SLD 5	-1.3E-03	-3762.1						
46	SLD 12	-8.8E-04	-2638	SLD 5	-1.3E-03	-3975.2						
47	SLD 11	-9.1E-04	-2737.3	SLD 6	-1.4E-03	-4232.3						
48	SLD 11	-9.5E-04	-2863.3	SLD 6	-1.5E-03	-4546.5						
49	SLD 11	-1.0E-03	-3024.9	SLD 6	-1.6E-03	-4930.4						
50	SLD 11	-1.1E-03	-3230.4	SLD 6	-1.8E-03	-5395.1						
51	SLD 11	-1.2E-03	-3486.2	SLD 6	-2.0E-03	-5948.1						
52	SLD 11	-1.3E-03	-3794.5	SLD 6	-2.2E-03	-6589.6						
54	SLD 11	-1.2E-03	-3489.7	SLD 6	-2.0E-03	-5858.3	SLE RA 18	2.62E-07				
56	SLD 4	-5.2E-04	-1567.6	SLD 13	-6.9E-04	-2078.9						
58	SLD 15	-1.2E-03	-3488.7	SLD 2	-1.9E-03	-5589.5						
60	SLD 4	-5.9E-04	-1771.6	SLD 13	-7.7E-04	-2309.8						
62	SLD 15	-1.2E-03	-3527.8	SLD 2	-1.8E-03	-5425						
64	SLD 2	-6.6E-04	-1973.8	SLD 15	-8.5E-04	-2556.9						
66	SLD 15	-1.2E-03	-3628.3	SLD 2	-1.8E-03	-5364.5						
68	SLD 2	-7.3E-04	-2179	SLD 15	-9.4E-04	-2821.8						
70	SLD 15	-1.3E-03	-3792.8	SLD 2	-1.8E-03	-5411.3						
72	SLD 2	-8.0E-04	-2390.7	SLD 15	-1.0E-03	-3105.5						
74	SLD 16	-1.3E-03	-4017.9	SLD 1	-1.9E-03	-5560.2	SLE RA 18	2.28E-06				



Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
76	SLD 2	-8.7E-04	-2610.3	SLD 15	-1.1E-03	-3407.5						
78	SLD 16	-1.4E-03	-4293.9	SLD 1	-1.9E-03	-5795.6	SLE RA 18	6.54E-06				
80	SLD 2	-9.5E-04	-2836.8	SLD 15	-1.2E-03	-3724.6						
82	SLD 16	-1.5E-03	-4602.8	SLD 1	-0.00203	-6089.9	SLE RA 18	0.000018				
84	SLD 2	-1.0E-03	-3065.6	SLD 15	-1.3E-03	-4048.6						
86	SLD 16	-1.6E-03	-4913.9	SLD 1	-2.1E-03	-6400.2	SLE RA 18	3.75E-05				
88	SLD 6	-1.1E-03	-3285.1	SLD 11	-1.5E-03	-4366.2						
90	SLD 6	-1.2E-03	-3471.1	SLD 11	-1.6E-03	-4659.5	SLE RA 19	4.67E-06				
92	SLD 16	-1.7E-03	-5181.2	SLD 1	-2.2E-03	-6663.2	SLE RA 18	2.33E-05				
94	SLD 16	-1.8E-03	-5505	SLD 1	-2.4E-03	-7184.6	SLE RA 18	4.51E-05				
95	SLD 16	-1.8E-03	-5276.2	SLD 1	-2.2E-03	-6732.2	SLE RA 18	2.59E-05				
96	SLD 16	-1.7E-03	-5143.9	SLE RA 18	-2.1E-03	-6415.4	SLE RA 18	2.54E-05				
97	SLD 16	-1.7E-03	-5067.4	SLE RA 18	-2.1E-03	-6246.7	SLE RA 18	2.34E-05				
98	SLD 15	-1.7E-03	-5019.6	SLE RA 18	-2.0E-03	-6116.4	SLE RA 18	4.48E-05				
99	SLD 15	-1.7E-03	-4982.4	SLE RA 18	-2.0E-03	-6002.2	SLE RA 18	3.59E-05				
100	SLD 13	-1.6E-03	-4945.2	SLE RA 18	-2.0E-03	-5890.5	SLE RA 18	2.97E-05				
101	SLE RA 2	-1.6E-03	-4895.1	SLE RA 18	-1.9E-03	-5773.8	SLE RA 19	2.53E-05				
102	SLE RA 1	-1.6E-03	-4782.1	SLE RA 19	-1.9E-03	-5649.8	SLE RA 19	0.000022				
103	SLE RA 1	-1.6E-03	-4666	SLE RA 19	-1.8E-03	-5519.8	SLE RA 19	1.93E-05				
104	SLE RA 1	-1.5E-03	-4553.2	SLE RA 19	-1.8E-03	-5391.1	SLE RA 19	1.61E-05				
105	SLE RA 1	-1.5E-03	-4455.2	SLE RA 19	-1.8E-03	-5277.4	SLE RA 19	1.13E-05				
106	SLE RA 1	-1.4E-03	-4345.3	SLE RA 19	-1.7E-03	-5147.7	SLE RA 19	8.13E-06				
107	SLE RA 1	-1.4E-03	-4346.5	SLE RA 19	-1.7E-03	-5148.7	SLE RA 19	1.03E-05				
108	SLE RA 1	-1.4E-03	-4339.3	SLE RA 19	-1.7E-03	-5139.2	SLE RA 19	1.05E-05				
109	SLE RA 1	-1.4E-03	-4316.2	SLE RA 19	-1.7E-03	-5109.9	SLE RA 19	9.84E-06				
110	SLD 6	-1.4E-03	-4233.2	SLE RA 19	-1.7E-03	-5059.7	SLE RA 19	9.39E-06				
111	SLD 6	-1.4E-03	-4121	SLE RA 19	-1.7E-03	-4991.7	SLE RA 19	9.66E-06				
112	SLD 6	-1.3E-03	-3993.5	SLE RA 19	-1.6E-03	-4910.5	SLE RA 19	1.11E-05				
113	SLD 6	-1.3E-03	-3857.1	SLE RA 19	-1.6E-03	-4822.8	SLE RA 19	1.38E-05				
114	SLD 6	-0.00124	-3719.9	SLD 11	-1.6E-03	-4758.1						
115	SLD 6	-1.2E-03	-3593.4	SLD 11	-1.6E-03	-4774.7						
116	SLD 6	-1.2E-03	-3493.4	SLD 11	-1.6E-03	-4832.3	SLE RA 19	1.23E-06				
119	SLD 16	-1.8E-03	-5346.1	SLD 1	-2.3E-03	-6796.8	SLE RA 18	0.000027				
141	SLD 5	-1.2E-03	-3623.8	SLD 12	-1.6E-03	-4906.6	SLE RA 19	1.11E-05				
143	SLD 16	-1.9E-03	-5636.5	SLD 1	-0.00242	-7260	SLE RA 18	0.000048				
144	SLD 16	-1.8E-03	-5420.8	SLD 1	-2.3E-03	-6835.6	SLE RA 18	2.81E-05				
145	SLD 16	-1.8E-03	-5287.9	SLE RA 18	-2.2E-03	-6552.5	SLE RA 18	2.77E-05				
146	SLD 16	-1.7E-03	-5210.8	SLE RA 18	-2.1E-03	-6384.1	SLE RA 18	2.64E-05				
147	SLD 13	-1.7E-03	-5162.3	SLE RA 18	-2.1E-03	-6254.2	SLE RA 18	4.71E-05				
148	SLD 13	-1.7E-03	-5124.2	SLE RA 18	-2.0E-03	-6140.6	SLE RA 18	3.78E-05				
149	SLD 13	-1.7E-03	-5085.5	SLE RA 19	-0.00201	-6030	SLE RA 18	3.13E-05				
150	SLE RA 1	-1.7E-03	-5016.4	SLE RA 19	-2.0E-03	-5914.8	SLE RA 19	2.67E-05				
151	SLE RA 1	-1.6E-03	-4904.2	SLE RA 19	-1.9E-03	-5792	SLE RA 19	2.33E-05				
152	SLE RA 1	-1.6E-03	-4789.3	SLE RA 19	-1.9E-03	-5663.5	SLE RA 19	2.06E-05				
153	SLE RA 1	-1.6E-03	-4677.9	SLE RA 19	-1.8E-03	-5536.4	SLE RA 19	1.74E-05				
154	SLE RA 1	-1.5E-03	-4581.4	SLE RA 19	-1.8E-03	-5424.5	SLE RA 19	1.26E-05				
155	SLE RA 1	-1.5E-03	-4501.4	SLE RA 19	-1.8E-03	-5329.9	SLE RA 19	9.67E-06				
156	SLE RA 1	-1.5E-03	-4504.7	SLE RA 19	-1.8E-03	-5333.4	SLE RA 19	1.19E-05				
157	SLE RA 1	-1.5E-03	-4499.8	SLE RA 19	-1.8E-03	-5326.6	SLE RA 19	1.21E-05				
158	SLD 6	-1.5E-03	-4447.1	SLE RA 19	-1.8E-03	-5300.3	SLE RA 19	1.15E-05				
159	SLD 6	-1.5E-03	-4359.2	SLE RA 19	-1.8E-03	-5253.4	SLE RA 19	1.11E-05				
160	SLD 6	-1.4E-03	-4250.3	SLE RA 19	-1.7E-03	-5188.9	SLE RA 19	1.15E-05				
161	SLD 6	-1.4E-03	-4126.3	SLE RA 19	-1.7E-03	-5111.4	SLE RA 19	1.28E-05				
162	SLD 6	-1.3E-03	-3993.7	SLE RA 19	-1.7E-03	-5027.8	SLE RA 19	1.52E-05				
163	SLD 6	-1.3E-03	-3860.4	SLD 11	-1.7E-03	-4993.7	SLE RA 19	1.67E-05				
164	SLD 5	-1.2E-03	-3737.4	SLD 12	-1.7E-03	-5015	SLE RA 19	1.26E-05				
165	SLD 5	-1.2E-03	-3638.7	SLD 12	-1.7E-03	-5074.5	SLE RA 19	0.000002				
167	SLD 16	-1.8E-03	-5399.2	SLD 1	-2.3E-03	-6795.9	SLE RA 18	2.71E-05				
169	SLD 14	-1.8E-03	-5349.6	SLD 3	-2.2E-03	-6660.2	SLE RA 18	4.75E-05				
171	SLD 14	-1.8E-03	-5257.3	SLE RA 18	-2.2E-03	-6491.2	SLE RA 18	3.06E-05				
173	SLD 5	-1.2E-03	-3710.6	SLD 12	-1.7E-03	-5101.1						
175	SLD 14	-1.7E-03	-5173.7	SLE RA 19	-2.1E-03	-6345.5	SLE RA 19	1.85E-05				
177	SLD 5	-0.00124	-3720	SLD 12	-1.7E-03	-5156.2						
179	SLD 14	-1.7E-03	-5135	SLE RA 19	-2.1E-03	-6262.4	SLE RA 19	1.21E-05				
181	SLD 5	-1.3E-03	-3768.4	SLD 12	-1.8E-03	-5287.3						
183	SLD 14	-1.7E-03	-5167.2	SLE RA 19	-2.1E-03	-6276.4	SLE RA 19	1.16E-05				
185	SLD 5	-1.3E-03	-3873.1	SLD 12	-1.8E-03	-5518.9						
187	SLD 14	-1.8E-03	-5289.9	SLE RA 19	-2.1E-03	-6412.3	SLE RA 19	1.31E-05				
189	SLD 5	-1.4E-03	-4050.4	SLD 12	-2.0E-03	-5872.7	SLE RA 19	1.85E-06				
191	SLD 14	-1.8E-03	-5518	SLE RA 19	-2.2E-03	-6687.3	SLE RA 19	2.06E-05				
193	SLD 5	-1.4E-03	-4315.9	SLD 12	-2.1E-03	-6369	SLE RA 19	7.11E-06				
195	SLD 14	-2.0E-03	-5861.5	SLE RA 19	-2.4E-03	-7112.2	SLE RA 19	3.26E-05				
197	SLD 5	-1.6E-03	-4684	SLD 12	-2.3E-03	-7026.4	SLE RA 19	1.39E-05				
199	SLD 14	-2.1E-03	-6325	SLE RA 19	-2.6E-03	-7690.8	SLE RA 19	4.56E-05				
201	SLD 5	-1.7E-03	-5164.1	SLD 12	-2.6E-03	-7856.8	SLE RA 19	2.02E-05				
203	SLD 10	-2.3E-03	-6871.4	SLE RA 19	-2.8E-03	-8417	SLE RA 19	5.02E-05				
205	SLD 10	-2.5E-03	-7578.3	SLE RA 19	-3.1E-03	-9306.9	SLE RA 19	3.85E-05				
206	SLD 10	-2.3E-03	-6840.5	SLE RA 19	-2.8E-03	-8385.6	SLE RA 19	5.02E-05				
207	SLD 10	-2.1E-03	-6237.9	SLE RA 19	-2.5E-03	-7632.8	SLE RA 19	0.000044				
208	SLD 10	-1.9E-03	-5744.8	SLE RA 19	-2.3E-03	-7016.9	SLE RA 19	0.000029				
209	SLD 10	-1.8E-03	-5355.3	SLE RA 19	-2.2E-03	-6531.6	SLE RA 19	0.000015				
210	SLD 10	-1.7E-03	-5056.6	SLE RA 19	-2.1E-03	-6161.6	SLE RA 19	9.31E-06				
211	SLD 10	-1.6E-03	-4832.4	SLE RA 19	-2.0E-03	-5887.6	SLE RA 19	5.89E-06				
212	SLD 10	-1.6E-03	-4665.9	SLE RA 19	-1.9E-03	-5689.3	SLE RA 19	3.53E-06				
213	SLD 10	-1.5E-03	-4541.6	SLE RA 19	-1.8E-03	-5547.9	SLE RA 19	1.89E-06				
214	SLD 6	-1.5E-03	-4446.5	SLE RA 19	-1.8E-03	-5447.7	SLE RA 19	7.53E-07				
215	SLD 5	-1.5E-03	-4370.8	SLE RA 19	-1.8E-03	-5377.2						
216	SLD 5	-1.4E-03	-4308.4	SLE RA 19	-1.8E-03	-5329.2						
217	SLD 5	-1.4E-03	-4257.4	SLD 12	-1.8E-03	-5323.8						



Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
218	SLD 5	-1.4E-03	-4218.5	SLD 12	-1.8E-03	-5349.3						
219	SLD 5	-1.4E-03	-4195.5	SLD 12	-1.8E-03	-5407.8						
220	SLD 5	-1.4E-03	-4194.8	SLD 12	-1.8E-03	-5509.4	SLE RA 19	2.56E-07				
221	SLD 5	-1.4E-03	-4224.2	SLD 12	-1.9E-03	-5667	SLE RA 19	1.53E-06				
222	SLD 5	-1.4E-03	-4293	SLD 12	-2.0E-03	-5894.9	SLE RA 19	3.57E-06				
223	SLD 5	-1.5E-03	-4410.6	SLD 12	-2.1E-03	-6207.7	SLE RA 19	6.60E-06				
224	SLD 5	-1.5E-03	-4585.3	SLD 12	-2.2E-03	-6617.9	SLE RA 19	1.08E-05				
225	SLD 5	-1.6E-03	-4822.8	SLD 12	-2.4E-03	-7132.5	SLE RA 19	1.79E-05				
226	SLD 5	-1.7E-03	-5122.6	SLD 12	-2.6E-03	-7749.1	SLE RA 19	2.15E-05				
227	SLD 5	-1.8E-03	-5474.1	SLD 12	-2.8E-03	-8448.5	SLE RA 19	1.82E-05				
229	SLD 10	-2.5E-03	-7547.4	SLE RA 19	-3.1E-03	-9310.9	SLE RA 19	3.82E-05				
251	SLD 5	-1.9E-03	-5753.5	SLD 12	-3.0E-03	-8854.3	SLE RA 19	1.95E-05				

1.5 Baricentri delle rigidezze

Quota: quota alla quale è stato valutato il baricentro delle rigidezze. esprimibile come livello, falda, piano orizzontale alla Z specificata. [m]

Posizione: posizione in pianta del baricentro delle rigidezze.

X: coordinata X. [m]

Y: coordinata Y. [m]

Baricentro masse: posizione in pianta del baricentro delle masse.

X: coordinata X. [m]

Y: coordinata Y. [m]

Distanza: distanza in pianta tra il baricentro delle rigidezze e il baricentro delle masse.

X: coordinata X. [m]

Y: coordinata Y. [m]

Quota	Posizione		Baricentro masse		Distanza	
	X	Y	X	Y	X	Y
Rialzato	28.943	20.198	28.789	22.536	0.154	-2.337
Primo	29.137	20.578	28.834	22.474	0.303	-1.896

1.6 Rigidezze di interpiano

Quota inferiore: quota inferiore dell'interpiano per il quale è stata valutata la rigidezza relativa. esprimibile come livello, falda, piano orizzontale alla Z specificata. [m]

Quota superiore: quota superiore dell'interpiano per il quale è stata valutata la rigidezza relativa. esprimibile come livello, falda, piano orizzontale alla Z specificata. [m]

KUx: rigidezza relativa alla traslazione in direzione globale X. [daN/m]

KUy: rigidezza relativa alla traslazione in direzione globale Y. [daN/m]

Quota inferiore		Quota superiore		KUx	KUy
Fondazione		Rialzato		85857021	55831019
Rialzato		Primo		60719854	53977815

1.7 Risposta modale

Modo: identificativo del modo di vibrare.

Periodo: periodo. [s]

Massa X: massa partecipante in direzione globale X. Il valore è adimensionale.

Massa Y: massa partecipante in direzione globale Y. Il valore è adimensionale.

Massa Z: massa partecipante in direzione globale Z. Il valore è adimensionale.

Massa rot. X: massa rotazionale partecipante attorno la direzione globale X. Il valore è adimensionale.

Massa rot. Y: massa rotazionale partecipante attorno la direzione globale Y. Il valore è adimensionale.

Massa rot. Z: massa rotazionale partecipante attorno la direzione globale Z. Il valore è adimensionale.

Massa sX: massa partecipante in direzione Sisma X. Il valore è adimensionale.

Massa sY: massa partecipante in direzione Sisma Y. Il valore è adimensionale.

Totale masse partecipanti:

Traslazione X: 0.99879

Traslazione Y: 0.999655

Traslazione Z: 0

Rotazione X: 0.94425

Rotazione Y: 0.964808

Rotazione Z: 0.998641

Modo	Periodo	Massa X	Massa Y	Massa Z	Massa rot. X	Massa rot. Y	Massa rot. Z	Massa sX	Massa sY
1	0.614504528	0.000008162	0.03991643	0	0.045653269	0.000008895	0.023733871	0.000008162	0.03991643
2	0.447513249	0.000000962	0.00001819	0	0.000020944	0.000001944	0.000162675	0.000000962	0.00001819
3	0.416557882	0.000167612	0.104276908	0	0.11321496	0.00018501	0.058546358	0.000167612	0.104276908
4	0.406457018	0.000004382	0.029994965	0	0.033271834	0.000005346	0.018255436	0.000004382	0.029994965
5	0.309809501	0.006757533	0.006114202	0	0.005848702	0.007213811	0.000011716	0.006757533	0.006114202
6	0.304892968	0.018027283	0.001970212	0	0.00197463	0.018961865	0.02073714	0.018027283	0.001970212
7	0.296667508	0.00640099	0.000760417	0	0.000728858	0.007231414	0.00362086	0.00640099	0.000760417
8	0.280686362	0.000183711	0.002481907	0	0.002397724	0.000220851	0.000784566	0.000183711	0.002481907



Modo	Periodo	Massa X	Massa Y	Massa Z	Massa rot. X	Massa rot. Y	Massa rot. Z	Massa sX	Massa sY
9	0.271007338	0.001531793	0.001157573	0	0.001152192	0.001675568	0.000003566	0.001531793	0.001157573
10	0.249175065	0.126119076	0.001480048	0	0.001606537	0.135058838	0.034128558	0.126119076	0.001480048
11	0.24405758	0.022011156	0.000133099	0	0.000129577	0.023895468	0.010217403	0.022011156	0.000133099
12	0.223316403	0.001800085	0.000086265	0	0.000096107	0.002083915	0.00039256	0.001800085	0.000086265
13	0.2108341	0.001176683	0.061080204	0	0.062163829	0.001207961	0.029949766	0.001176683	0.061080204
14	0.201498024	0.005896434	0.013707179	0	0.012964232	0.006183483	0.001830116	0.005896434	0.013707179
15	0.198266604	0.000193123	0.000263827	0	0.000031446	0.000296009	0.000010644	0.000193123	0.000263827
16	0.181266182	0.001215322	0.000335259	0	0.000466407	0.00110111	0.000000358	0.001215322	0.000335259
17	0.176044695	0.00445208	0.001172866	0	0.000777415	0.005338675	0.000013735	0.00445208	0.001172866
18	0.158274868	0.025003817	0.190498816	0	0.159721853	0.023446226	0.057613602	0.025003817	0.190498816
19	0.157050911	0.074877112	0.202076432	0	0.172856875	0.070178971	0.029776654	0.074877112	0.202076432
20	0.149021636	0.043086142	0.036071398	0	0.024704196	0.038874948	0.000083146	0.043086142	0.036071398
21	0.144945472	0.000847551	0.017753868	0	0.005361394	0.00029199	0.019381661	0.000847551	0.017753868
22	0.13880676	0.181136968	0.001164825	0	0.00151502	0.162741623	0.062865831	0.181136968	0.001164825
23	0.130998315	0.191157842	0.204887035	0	0.150255129	0.170019577	0.41831248	0.191157842	0.204887035
24	0.122764683	0.12653563	0.034001843	0	0.026406563	0.088705689	0.145678724	0.12653563	0.034001843
25	0.114358053	0.000894174	0.00911787	0	0.006960054	0.000345756	0.008666439	0.000894174	0.00911787
26	0.104482184	0.013058972	0.000761208	0	0.000192209	0.012302064	0.007880353	0.013058972	0.000761208
27	0.095703434	0.000443037	0.00669774	0	0.00166863	0.003318689	0.005962082	0.000443037	0.00669774
28	0.087649747	0.075744023	0.003561782	0	0.002561206	0.089465217	0.012041753	0.075744023	0.003561782
29	0.076507487	0.004547333	0.002592741	0	0.004730603	0.019465907	0.003696387	0.004547333	0.002592741
30	0.068782408	0.007249569	0.000375696	0	0.001183489	0.002554781	0.000139525	0.007249569	0.000375696
31	0.044877482	0.001311115	0.009925214	0	0.034291032	0.000264365	0.003271326	0.001311115	0.009925214
32	0.039679791	0.014342834	0.001056044	0	0.002715582	0.006760028	0.001484018	0.014342834	0.001056044
33	0.034214701	0.00018053	0.014156167	0	0.06364605	0.000665482	0.007134326	0.00018053	0.014156167
34	0.028236289	0.042424124	0.000007213	0	0.001836269	0.064605067	0.012242396	0.042424124	0.000007213
35	0.002968812	0.000002633	0.000000001	0	0.001145615	0.000131079	0.000010616	0.000002633	0.000000001

1.8 Equilibrio globale forze

Contributo: Nome attribuito al sistema risultante.

Fx: Componente X di forza del sistema risultante. [daN]

Fy: Componente Y di forza del sistema risultante. [daN]

Fz: Componente Z di forza del sistema risultante. [daN]

Mx: Componente di momento attorno l'asse X del sistema risultante. [daN*m]

My: Componente di momento attorno l'asse Y del sistema risultante. [daN*m]

Mz: Componente di momento attorno l'asse Z del sistema risultante. [daN*m]

Bilancio in condizione di carico: Pesì strutturali

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-274240.224	-6173624.34	7887762.52	0
Reazioni	0	0	274240.224	6173624.34	-7887762.52	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Permanenti portati

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-59007.791	-1323025.52	1704749.22	0
Reazioni	0	0	59007.791	1323025.52	-1704749.22	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Variabile A

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-54554.62	-1226563.27	1573227.07	0
Reazioni	0	0	54554.62	1226563.27	-1573227.07	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Vento

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	941.186	0	-2808.12	0	27218.5
Reazioni	0	-941.186	0	2808.12	0	-27218.5
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Sisma X SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	94886.855	0	0	0	342074.38	-2128210.55
Reazioni	-94886.855	0	0	0	-342074.38	2128210.55
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Sisma Y SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	94886.855	0	-342074.38	0	2738293.87
Reazioni	0	-94886.855	0	342074.38	0	-2738293.87
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Eccentricità Y per sisma X SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	-22717.71



Contributo	Fx	Fy	Fz	Mx	My	Mz
Reazioni	0	0	0	0	0	22717.71
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Eccentricità X per sisma Y SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	22717.71
Reazioni	0	0	0	0	0	-22717.71
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Sisma X SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	41779.302	0	0	0	150617.58	-937065
Reazioni	-41779.302	0	0	0	-150617.58	937065
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Sisma Y SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	41779.302	0	-150617.58	0	1205688.67
Reazioni	0	-41779.302	0	150617.58	0	-1205688.67
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Eccentricità Y per sisma X SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	-10002.76
Reazioni	0	0	0	0	0	10002.76
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Eccentricità X per sisma Y SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	10002.76
Reazioni	0	0	0	0	0	-10002.76
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Rig Ux

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	1	0	0	0	4.89	-22.47
Reazioni	-1	0	0	0	-4.89	22.47
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Rig Uy

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	1	0	-4.89	0	28.83
Reazioni	0	-1	0	4.89	0	-28.83
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Rig Rz

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	0.01
Reazioni	0	0	0	0	0	-0.01
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

1.9 Risposta di spettro

Spettro: condizione elementare corrispondente allo spettro.

N.b.: nome breve della condizione elementare.

Fx: componente della forza lungo l'asse X. [daN]

Fy: componente della forza lungo l'asse Y. [daN]

Fz: componente della forza lungo l'asse Z. [daN]

Mx: componente della coppia attorno all'asse X. [daN*m]

My: componente della coppia attorno all'asse Y. [daN*m]

Mz: componente della coppia attorno all'asse Z. [daN*m]

Max X: massima reazione lungo l'asse X.

Valore: valore massimo della reazione. [daN]

Angolo: angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]

Max Y: massima reazione lungo l'asse Y.

Valore: valore massimo della reazione. [daN]

Angolo: angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]

Max Z: massima reazione lungo l'asse Z.

Valore: valore massimo della reazione. [daN]

Angolo: angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]



Spettro	Fx	Fy	Fz	Mx	My	Mz	Max X		Max Y		Max Z	
N.b.							Valore	Angolo	Valore	Angolo	Valore	Angolo
SLV X	53049.21	28393.29	0	7.705E04	1.535E05	1.652E06	53528.13	170	57786.94	81	0	0
SLV Y	28393.29	57180.89	0	1.584E05	8.212E04	1.628E06	53528.13	170	57786.94	81	0	0
X SLD	23218.99	12360.32	0	3.351E04	6.715E04	7.263E05	23456.17	170	24956.57	81	0	0
Y SLD	12360.32	24726.18	0	6.843E04	3.572E04	7.101E05	23456.17	170	24956.57	81	0	0

1.10 Annotazioni solutore

Informazioni: informazioni fornite dal solutore al termine del calcolo del modello.

Informazioni

1.11 Statistiche soluzione

Tipo di equazioni	Lineari
Tecnica di soluzione	Intel MKL PARDISO
Numero equazioni	11928
Elemento min. diagonale	6624.07239628
Elemento max diagonale	29966940283933.3
Rapporto max/min	4523945164.11905
Elementi non nulli	439037

TABULATI DI CALCOLO-VERIFICHE
CIVICO 49
STATO DI PROGETTO



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1 Verifiche

1.1 Verifica regolarità strutturale

Le unità di misura elencate nel capitolo sono in [m, daN] ove non espressamente specificato.

Livello:

Descr: descrizione livello.

Quota: quota livello. [m]

Q: quota livello. [m]

Qinf: quota livello precedente. [m]

Comb: combinazione.

A1: a1 (Distribuzione masse).

A1n: a1 numeratore (distanza tra centro massa vs. centro rigidezza [se presente] o centro dell'ingombro del piano). [m]

A1d: a1 denominatore (ingombro del piano nella medesima direzione [x o y globale]). [m]

A1r: a1 rapporto (distanza centro massa/rigidezza su ingombro del piano).

A2: a2 (Distribuzione rigidezze).

A2n: a2 numeratore (rigidezza max [x o y globale]).

A2d: a2 denominatore (rigidezza min [x o y globale]).

A2r: a2 rapporto (rigidezza max/min).

A3: a3 (Forma compatta).

A3n: a3 numeratore (area convessa). [m²]

A3d: a3 denominatore (area piano). [m²]

A3r: a3 rapporto (area convessa/area piano).

B: b (Rapporto lati).

Bn: b numeratore (lato max [x o y globale]). [m]

Bd: b denominatore (lato min [x o y globale]). [m]

Br: b rapporto (lato max/min).

C: c (Rapporto rigidezze piano).

Cn: c numeratore (rigidezza elementi verticali).

Cd: c denominatore (rigidezza piano).

Cr: c rapporto (rigidezza elementi verticali/rigidezza piano).

E1: e1 (Variazione masse).

E1n: e1 numeratore (massa max). [daN]

E1d: e1 denominatore (massa min). [daN]

E1r: e1 rapporto (massa max/min).

E2: e2 (Riduzione rigidezze).

E2n: e2 numeratore (rigidezza relativa alla traslazione KUmax). [daN/m]

E2d: e2 denominatore (rigidezza relativa alla traslazione KUmin). [daN/m]

E2r: e2 rapporto (variazione massima in decremento Kmax/Kmin).

E3: e3 (Incremento rigidezze).

E3n: e3 numeratore (rigidezza relativa alla traslazione KUmax). [daN/m]

E3d: e3 denominatore (rigidezza relativa alla traslazione KUmin). [daN/m]

E3r: e3 rapporto (variazione massima in incremento Kmax/Kmin).

F: f (Rapporto Capacità/Domanda).

Fn: f numeratore (rapporto capacità/domanda massimo [c/d max]). [daN]

Fd: f denominatore (rapporto capacità/domanda minimo [c/d min]). [daN]

Fr: f rapporto (variazione massima [rapporto (c/d max)/(c/d min)]).

G1: g1 (Rastremazione di piano).

G1n: g1 numeratore (L1). [m]

G1d: g1 denominatore (L2). [m]

G1r: g1 rapporto (L1/L2).

G2: g2 (Rastremazione totale).

G2n: g2 numeratore (L0). [m]

G2d: g2 denominatore (Li). [m]

G2r: g2 rapporto (L0/Li).

Capacità/Domanda in X:

VrdX: taglio resistente complessivo in direzione X. [daN]

VedX: taglio agente complessivo in direzione X. [daN]

|Rd/Ed|: |Rd/Ed| (rapporto capacità/domanda in termini di resistenza a taglio).

Capacità/Domanda in Y:

VrdY: taglio resistente complessivo in direzione Y. [daN]

VedY: taglio agente complessivo in direzione Y. [daN]

Verifica regolarità strutturale

Controllo regolarità edificio secondo D.M. 17-01-18 (N.T.C.) §7.2.1 - §C7.2.1

Avvertenze

La seguente procedura valuta la regolarità della costruzione secondo quanto indicato nelle NTC 2018 §7.2.1.

Tali valutazioni sono a carattere puramente informativo e vengono condotte sulla base del modello e delle verifiche presenti alla sua generazione, con le limitazioni



indicate nella manualistica.

In ogni caso l'impostazione di regolarità della costruzione, in pianta ed elevazione, va indicata nelle preferenze di analisi dall'utente utilizzatore del software.

Sintesi dei risultati

Orizzontamenti considerati nella valutazione

Livelli di fondazione o di struttura scatolare non dissipativa: Fondazione(L1),

Livelli di elevazione considerati: Rialzato(L2), Primo(L3),

Regolarità in pianta - NO

L'edificio risulta NON regolare in pianta, in base alle condizioni indicate in NTC 2018 §7.2.1

No - Criterio A1 (Distribuzione masse) NON rispettato, con rapporto massimo 233.7/1004.7=0.2 (limite=0,2) al livello Rialzato

No - Criterio A2 (Distribuzione rigidezze) NON rispettato, con rapporto massimo 858570.2/558310.2=1.5 (limite=1,2) al livello Rialzato

Ok - Criterio A3 (Forma compatta) rispettato, con rapporto massimo 1 (limite=1,05) al livello Rialzato

Ok - Criterio B (Rapporto lati) rispettato, con rapporto massimo 1,01 (limite=4) al livello Primo

Ok - Criterio C (Rapporto rigidezze piano) rispettato, con rapporto massimo 0 (limite=0,1) al livello Rialzato

Regolarità in altezza - NO

L'edificio risulta NON regolare in altezza, in base alle condizioni indicate in NTC 2018 §7.2.1

Ok - Criterio D (Altezza elementi sismoresistenti) rispettato, con rapporto massimo 1 (limite=1,01)

Ok - Criterio E1 (Variazione masse) rispettato, con rapporto massimo 1,04 (limite=1,25) tra il livello Primo ed il precedente

No - Criterio E2 (Riduzione rigidezze) NON rispettato, con rapporto massimo 858570.2/607198.5=1.4 (limite=1,3) tra il livello Primo ed il precedente

Ok - Criterio E3 (Incremento rigidezze) rispettato, con rapporto massimo 1 (limite=1,1) tra il livello Primo ed il precedente

No - Criterio F (Rapporto Capacità/Domanda) NON rispettato, con rapporto massimo 387.9/22.8=17 (limite=1) tra il livello Primo ed il precedente

Ok - Criterio G1 (Rastremazione di piano) rispettato, con rapporto massimo 0 (limite=0,1) tra il livello Primo ed il precedente

Ok - Criterio G2 (Rastremazione totale) rispettato, con rapporto massimo 0 (limite=0,3) tra il livello Primo ed il precedente

Valori per piano

Verifiche di regolarità in pianta

Livello		A1			A2			A3			B			C		
Descr	Quota	A1n	A1d	A1r	A2n	A2d	A2r	A3n	A3d	A3r	Bn	Bd	Br	Cn	Cd	Cr
Rialzato	1.09	2.34	10.05	0.23	858570	558310	1.54	94.4577	94.039	1	10.05	9.92	1.01	0	+∞	0
Primo	4.89	1.9	10.05	0.19	607199	539778	1.12	94.4577	94.0407	1	10.05	9.92	1.01	0	+∞	0

Verifiche di regolarità in elevazione

Rapporto di regolarità per la condizione D (Altezza elementi sismoresistenti): 6.49/6.49=0.01.

Livello			E1			E2			E3			F			G1			G2		
Descr	Q	Qjnf	E1n	E1d	E1r	E2n	E2d	E2r	E3n	E3d	E3r	Fn	Fd	Fr	G1n	G1d	G1r	G2n	G2d	G2r
Primo	4.89	1.09	71281	68272	1.04	85857021	60719854	1.41	85857021	85857021	1	387.9	22.8	17	0	9.92	0	0	9.92	0

Dettaglio delle resistenze di piano a taglio (per valutazione punto F)

Livello			Capacità/Domanda in X			Capacità/Domanda in Y		
Descr	Q	Comb	VrdX	VedX	Rd/Ed	VrdY	VedY	Rd/Ed
Rialzato	1.09	SLV 1	296347	-55267	5.4	557904	-7235	77.1
Rialzato	1.09	SLV 2	296323	-55267	5.4	555913	-7235	76.8
Rialzato	1.09	SLV 3	297714	-53180	5.6	553108	24124	22.9
Rialzato	1.09	SLV 4	297691	-53180	5.6	550589	24124	22.8
Rialzato	1.09	SLV 5	295054	-19747	14.9	540324	-49731	10.9
Rialzato	1.09	SLV 6	295030	-19747	14.9	540290	-49731	10.9
Rialzato	1.09	SLV 7	299613	-12787	23.4	552582	54798	10.1
Rialzato	1.09	SLV 8	299590	-12787	23.4	550270	54798	10
Rialzato	1.09	SLV 9	295313	12787	23.1	540534	-54798	9.9
Rialzato	1.09	SLV 10	295290	12787	23.1	540500	-54798	9.9
Rialzato	1.09	SLV 11	299872	19747	15.2	552722	49731	11.1
Rialzato	1.09	SLV 12	299849	19747	15.2	552445	49731	11.1
Rialzato	1.09	SLV 13	297212	53180	5.6	558534	-24124	23.2
Rialzato	1.09	SLV 14	297188	53180	5.6	559069	-24124	23.2
Rialzato	1.09	SLV 15	298579	55267	5.4	533958	7235	73.8
Rialzato	1.09	SLV 16	298556	55267	5.4	554221	7235	76.6
Primo	4.89	SLV 1	309308	-14212	21.8	491571	-4529	108.5
Primo	4.89	SLV 2	311515	-14212	21.9	500121	-4529	110.4
Primo	4.89	SLV 3	315808	-12739	24.8	499993	1289	387.9
Primo	4.89	SLV 4	317517	-12739	24.9	500002	1289	387.9
Primo	4.89	SLV 5	307091	-6499	47.3	498509	-10183	49
Primo	4.89	SLV 6	309766	-6499	47.7	491543	-10183	48.3
Primo	4.89	SLV 7	321404	-1587	202.6	499957	9211	54.3
Primo	4.89	SLV 8	321406	-1587	202.6	497586	9211	54
Primo	4.89	SLV 9	316158	1587	199.3	495971	-9211	53.8
Primo	4.89	SLV 10	319316	1587	201.2	511495	-9211	55.5
Primo	4.89	SLV 11	321426	6499	49.5	497359	10183	48.8
Primo	4.89	SLV 12	321428	6499	49.5	489954	10183	48.1
Primo	4.89	SLV 13	320707	12739	25.2	505233	-1289	392
Primo	4.89	SLV 14	320709	12739	25.2	494704	-1289	383.8
Primo	4.89	SLV 15	321051	14212	22.6	482130	4529	106.4
Primo	4.89	SLV 16	321053	14212	22.6	444489	4529	98.1

1.2 Verifiche travate C.A.

Le unità di misura elencate nel capitolo sono in [m, daN, deg] ove non espressamente specificato.



N*: indice progressivo della sezione.

Descrizione: descrizione della sezione.

Tipo: tipo di sezione.

Base: base della sezione. [m]

Altezza: altezza della sezione. [m]

Copriferro sup.: distanza del bordo della staffa dalla superficie superiore del getto. [m]

Copriferro inf.: distanza del bordo della staffa dalla superficie inferiore del getto. [m]

Copriferro lat.: distanza del bordo della staffa dalle superfici laterali del getto. [m]

x: distanza da asse appoggio sinistro. [m]

d: altezza utile. [m]

A_f: area di armatura inferiore per unità di lunghezza. [m]

M: momento flettente. [daN*m/m]

Comb: combinazione.

x/d: rapporto tra posizione asse neutro e altezza utile.

Mult: momento ultimo. [daN*m/m]

V: sforzo di taglio. [daN/m]

Vult: sforzo di taglio ultimo. [daN/m]

Verifica: stato di verifica.

A_f: area di armatura. [m²]

Rara: famiglia di combinazione di verifica.

σ_c: tensione di compressione nel calcestruzzo. [daN/m²]

σ_c limite: tensione di compressione limite nel calcestruzzo. [daN/m²]

σ_f: tensione di trazione nell'acciaio. [daN/m²]

σ_f limite: tensione di trazione limite nell'acciaio. [daN/m²]

Quasi permanente: famiglia di combinazione di verifica.

T gravità: taglio dovuto ai carichi gravitazionali. [daN]

T sisma: taglio dovuto a sisma. [daN]

T ultimo: taglio ultimo. [daN]

Comb.: combinazione per indicatore minimo per taglio.

Pga: pga per taglio.

Tr: tempo di ritorno per taglio.

Ind. taglio: indicatore di rischio per taglio.

M gravità: momento dovuto ai carichi gravitazionali. [daN*m]

M sisma: momento dovuto a sisma. [daN*m]

M ultimo: momento ultimo. [daN*m]

Comb.: combinazione per indicatore minimo per momento.

Pga: pga per momento.

Tr: tempo di ritorno per momento.

Ind. momento: indicatore di rischio per momento.

Ver: stato di verifica.

Aste: numero delle aste del tratto in verifica.

Size X: misura dell'impronta al suolo lungo la direzione X locale. [m]

Size Y: misura dell'impronta al suolo lungo la direzione Y locale. [m]

Type: indicazione del tipo di combinazione statica o sismica.

Cond: indicazione della condizione di carico (BT breve termine o LT lungo termine).

γ_R: coefficiente parziale sulla resistenza di progetto.

R_d: resistenza di progetto. [daN]

E_d: azione di progetto. [daN]

R_d/E_d: coefficiente di sicurezza alla capacità portante.

F_x: componente orizzontale del carico lungo x. [daN]

F_y: componente orizzontale del carico lungo y. [daN]

F_z: componente verticale del carico. [daN]

M_x: momento risultante agente attorno x. [daN*m]

M_y: momento risultante agente attorno y. [daN*m]

Inc.x: inclinazione del carico lungo x. [deg]

Inc.y: inclinazione del carico lungo y. [deg]

Ecc.x: eccentricità del carico lungo x. [m]

Ecc.y: eccentricità del carico lungo y. [m]

B': larghezza efficace. [m]

L': lunghezza efficace. [m]

q_d: sovraccarico di progetto. [daN/m²]

γ_s: peso specifico di progetto del suolo. [daN/m³]

Fi: angolo di attrito di progetto. [deg]

Coes: coesione di progetto. [daN/m²]

A_{max}: accelerazione normalizzata max al suolo.

N:

N_q: fattore di capacità portante per il termine di sovraccarico.

N_c: fattore di capacità portante per il termine coesivo.

N_g: fattore di capacità portante per il termine attritivo.

S:

S_q: fattore correttivo di capacità portante per forma (shape), per il termine di sovraccarico.

S_c: fattore correttivo di capacità portante per forma (shape), per il termine coesivo.

S_g: fattore correttivo di capacità portante per forma (shape), per il termine attritivo.

D:



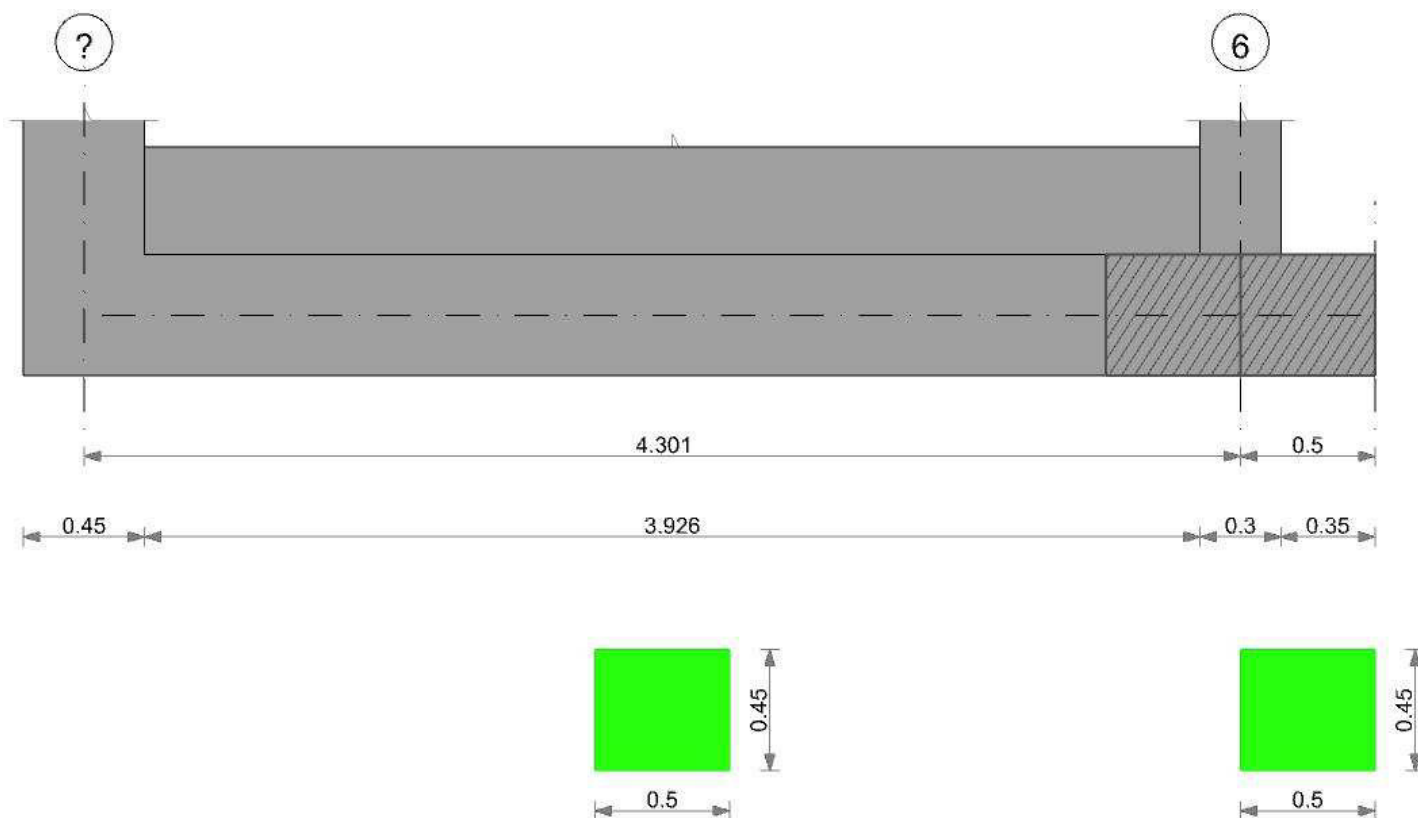
Dq: fattore correttivo di capacità portante per approfondimento (deep), per il termine di sovraccarico.
Dc: fattore correttivo di capacità portante per approfondimento (deep), per il termine coesivo.
Dg: fattore correttivo di capacità portante per approfondimento (deep), per il termine attritivo.
I:
Iq: fattore correttivo di capacità portante per inclinazione del carico, per il termine di sovraccarico.
Ic: fattore correttivo di capacità portante per inclinazione del carico, per il termine coesivo.
Ig: fattore correttivo di capacità portante per inclinazione del carico, per il termine attritivo.
B:
Bq: fattore correttivo di capacità portante per inclinazione della base, per il termine di sovraccarico.
Bc: fattore correttivo di capacità portante per inclinazione della base, per il termine coesivo.
Bg: fattore correttivo di capacità portante per inclinazione della base, per il termine attritivo.
G:
Gq: fattore correttivo di capacità portante per inclinazione del pendio, per il termine di sovraccarico.
Gc: fattore correttivo di capacità portante per inclinazione del pendio, per il termine coesivo.
Gg: fattore correttivo di capacità portante per inclinazione del pendio, per il termine attritivo.
P:
Pq: fattore correttivo di capacità portante per punzonamento, per il termine di sovraccarico.
Pc: fattore correttivo di capacità portante per punzonamento, per il termine coesivo.
Pg: fattore correttivo di capacità portante per punzonamento, per il termine attritivo.
E:
Eq: fattore correttivo di capacità portante per sisma (earthquake), per il termine di sovraccarico.
Ec: fattore correttivo di capacità portante per sisma (earthquake), per il termine coesivo.
Eg: fattore correttivo di capacità portante per sisma (earthquake), per il termine attritivo.
Tipo: tipologia di cedimento considerato (E = elastico, D = edometrico, Z = consolidazione primaria).
Assoluto: cedimento assoluto massimo.
Sa adm: cedimento assoluto ammissibile. [m]
Sa: cedimento assoluto massimo. [m]
Nodo: nodo dove avviene il cedimento assoluto massimo.
Comb.: combinazione.
Differenziale: cedimento differenziale massimo.
Sd adm: cedimento differenziale ammissibile. [m]
Sd: cedimento differenziale massimo. [m]
Nodo I: nodo dove avviene il cedimento differenziale massimo.
Nodo j: nodo dove avviene il cedimento differenziale massimo.
Relativo: cedimento relativo massimo.
Sr adm: cedimento relativo ammissibile. [m]
Sr: cedimento relativo massimo. [m]
Nodo: nodo dove avviene il cedimento relativo massimo.
Rapp. inflessione: rapporto di inflessione (cedimento relativo max su lunghezza complessiva tratta).
RI adm: rapporto di inflessione ammissibile.
RI: rapporto di inflessione (cedimento relativo max su lunghezza complessiva tratta).
Rotazione rigida: rotazione rigida valutata tra primo ed ultimo punto.
RR adm: rotazione rigida ammissibile. [deg]
RR: rotazione rigida massima (tra primo ed ultimo punto). [deg]
Rotazione assoluta: rotazione assoluta dei singoli tratti.
R Adm: rotazione assoluta ammissibile. [deg]
R Max: rotazione assoluta massima. [deg]
Nodo I: dal nodo.
Nodo J: al nodo.
Distorsione angolare positiva: distorsione angolare positiva (concavità verso l'alto).
D+ adm: distorsione angolare ammissibile. [deg]
D+: distorsione angolare massima positiva (concavità verso l'alto). [deg]
Nodo: nodo dove avviene la distorsione angolare massima positiva (concavità verso l'alto).
Distorsione angolare negativa: distorsione angolare negativa (concavità verso il basso).
D- adm: distorsione angolare ammissibile. [deg]
D-: distorsione angolare massima negativa (concavità verso il basso). [deg]
Nodo: nodo dove avviene la distorsione angolare massima negativa (concavità verso il basso).
A sup.: area efficace di armatura longitudinale superiore. [m²]
C.b. sup.: distanza dal bordo del baricentro dell'armatura longitudinale superiore. [m]
A inf.: area efficace di armatura longitudinale inferiore. [m²]
C.b. inf.: distanza dal bordo del baricentro dell'armatura longitudinale inferiore. [m]
M+ela: momento flettente desunto dal solutore che tende le fibre inferiori. [daN*m]
M+des: momento flettente di progetto che tende le fibre inferiori. [daN*m]
M+ult: momento ultimo per trazione delle fibre inferiori. [daN*m]
coeff: coefficiente di sicurezza.
M-ela: momento flettente desunto dal solutore che tende le fibre superiori. [daN*m]
M-des: momento flettente di progetto che tende le fibre superiori. [daN*m]
M-ult: momento ultimo per trazione delle fibre superiori. [daN*m]
A st: area di staffe per unità di lunghezza. [m²]
A sl: area di armatura longitudinale tesa per valutazione resistenza taglio in assenza di armature a taglio. [m²]
A sag: area equivalente di barre piegate per unità di lunghezza. [m²]
Vela: taglio elastico. [daN]
Vdes: taglio di progetto. [daN]
Vrd: resistenza a taglio della sezione senza armature. [daN]



V_{rcd}: sforzo di taglio che produce il cedimento delle bielle. [daN]
V_{rsd}: resistenza a taglio per la presenza delle armature. [daN]
V_{ult}: taglio ultimo. [daN]
cotgθ: cotg dell'angolo di inclinazione dei puntoni in calcestruzzo.
Bordo: bordo interessato dalla fessura.
Rara: famiglia di combinazione per verifica inferiore.
D_{max}: distanza massima tra le fessure. [m]
E_{sm}: dilatazione media delle barre di armatura.
W_d: valore di calcolo di apertura delle fessure. [m]
Frequente: famiglia di combinazione per verifica inferiore.
Quasi permanente: famiglia di combinazione per verifica inferiore.

CIORDOLO 8

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

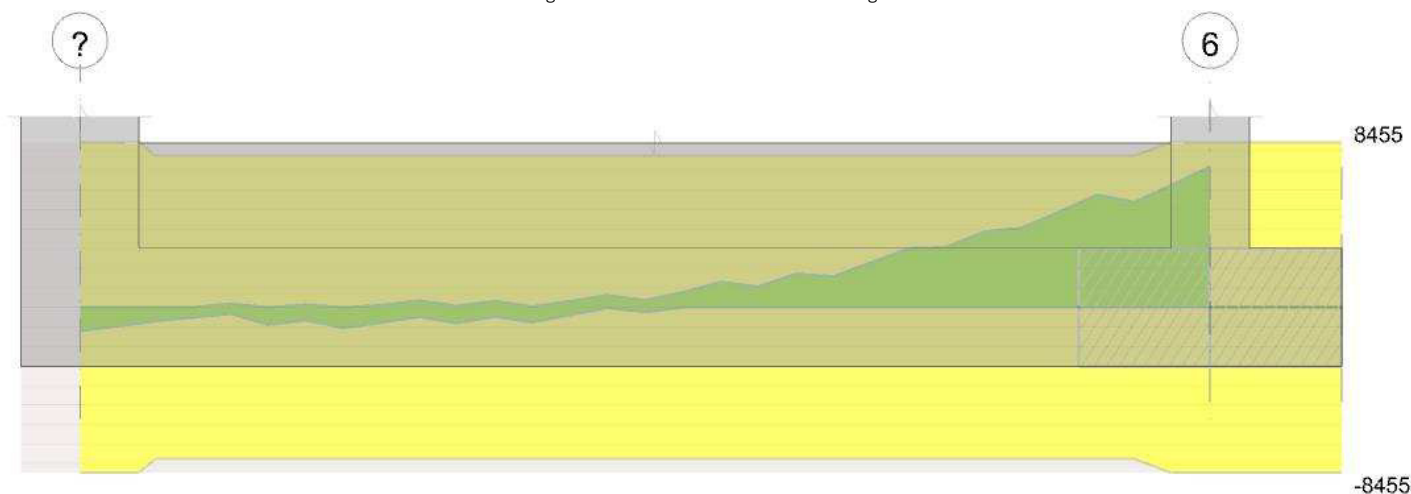
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili ? - 6, sezione R 50x45, aste 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	149	SLV 13	0.087	2758	517	SLV 13	15877	Si
0.23	0.41	0.0002	170	SLV 13	0.087	2758	591	SLV 13	15877	Si
2.15	0.41	0.0002	454	SLU 82	0.018	2837	1578	SLU 82	15877	Si
4.15	0.41	0.0002	814	SLU 82	0.018	2837	2832	SLU 82	15877	Si
4.3	0.41	0.0002	829	SLU 82	0.018	2837	2884	SLU 82	15877	Si

Verifiche delle tensioni di esercizio

x	d	Af	M	Comb	Rara				Quasi permanente				Verifica
					σc	σc limite	σf	σf limite	σc	σc limite	σf	σf limite	
0	0.41	0.00000178	75	SLE RA 18	2162	1494000	26810	36000000	53	SLE QP 2	1533	1120500	Si
0.23	0.41	0.00000178	99	SLE RA 18	2875	1494000	35644	36000000	75	SLE QP 2	2170	1120500	Si
2.15	0.41	0.00000178	326	SLE RA 19	9434	1494000	116983	36000000	276	SLE QP 2	7997	1120500	Si
4.15	0.41	0.00000178	590	SLE RA 19	17057	1494000	211509	36000000	509	SLE QP 2	14729	1120500	Si
4.3	0.41	0.00000178	601	SLE RA 19	17378	1494000	215490	36000000	519	SLE QP 2	15017	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	2	3	159	SLV 13	0.36	1618	1.653	0.53	0.96	27.58	SLV 13	0.36	1618	1.653	Si
0.23	3	3	159	SLV 13	0.36	1618	1.653	0.75	0.95	27.58	SLV 13	0.36	1618	1.653	Si
2.15	10	5	159	SLV 15	0.36	1618	1.653	2.76	1.39	27.58	SLV 15	0.36	1618	1.653	Si
4.15	18	8	159	SLV 11	0.36	1618	1.653	5.09	2.4	27.58	SLV 11	0.36	1618	1.653	Si
4.3	18	9	159	SLV 12	0.36	1618	1.653	5.19	2.46	27.58	SLV 12	0.36	1618	1.653	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
1,2,3,4,5,6,7,8,9,10,11	4.53	1.1	SLU 82	ST	BT	2.3	162292	25098	6.47	Si
1,2,3,4,5,6,7,8,9,10,11	4.53	1.1	SLV 16	SIS	BT	2.3	145748	21157	6.89	Si
1,2,3,4,5,6,7,8,9,10,11	4.53	1.1	SLD 16	SIS	BT	2.3	155804	18909	8.24	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd



Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	345	-25098	1751.47	7736.99	0	1	0.31	0.07	0.96	3.91	1496	2060	0	14430	
0	-1739	-21157	2534.78	5916.82	0	-5	0.28	0.12	0.86	3.97	1496	2060	0	14430	0.07
0	-632	-18909	1754.65	5382.55	0	-2	0.28	0.09	0.91	3.96	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

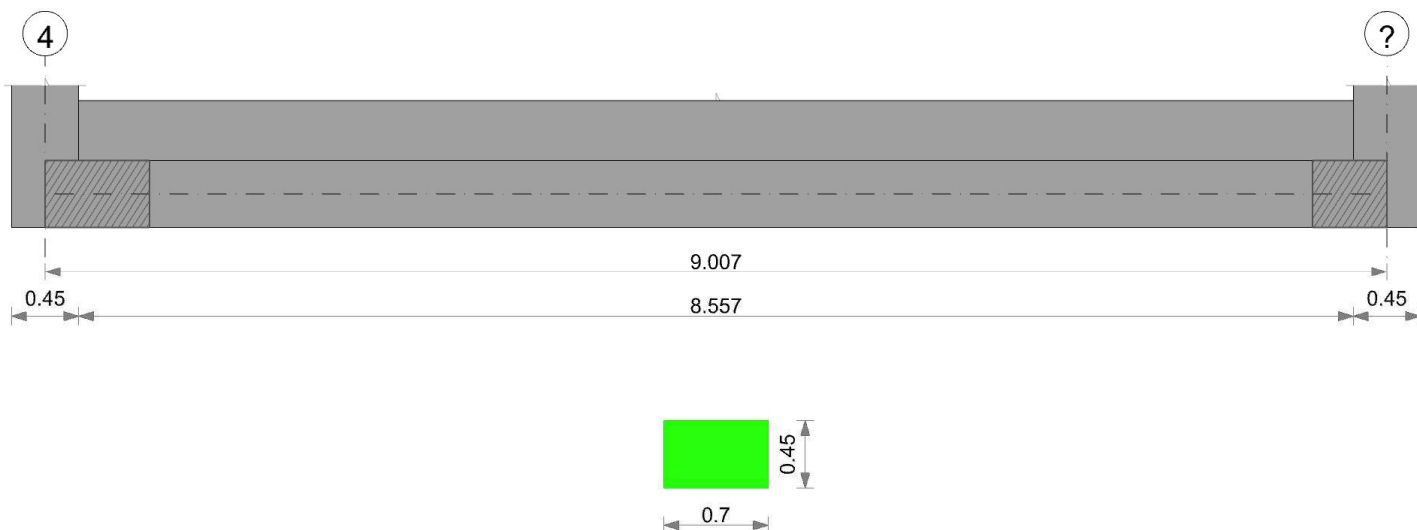
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	141	SLE RA 19	0.05	0	141	42	SLE RA 19	0.05	0	42	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	42	SLE RA 1	0.05	0	42	42	SLE RA 1	0.05	0	42	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	42	SLE RA 1	0.05	0	42	42	SLE RA 1	0.05	0	42	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 19	0.19	0	42	141	SLE RA 19	0.19	0	42	SLE RA 1	0.1	0	42	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	42	141	SLE RA 1	0.19	0	42	SLE RA 1	0.1	0	42	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	42	141	SLE RA 1	0.19	0	42	SLE RA 1	0.1	0	42	SLE RA 1	Si

CORDOLO 1

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



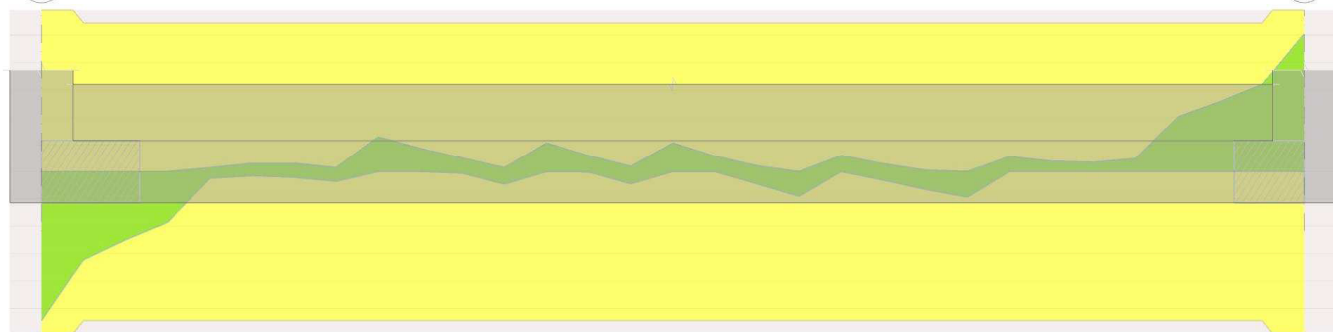
Diagramma verifica stato limite ultimo taglio



4

?

11837



-11837

Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 4 - ?, sezione R 70x45, aste 98, 97, 96, 95, 94, 93, 92, 91, 90, 89, 88, 87, 86, 85, 84, 83, 82, 81, 80, 79, 78, 77

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3352	SLU 82	0.028	5324	8650	SLU 82	15877	Si
0.23	0.41	0.0003	3148	SLU 82	0.028	5324	8123	SLU 82	15877	Si
4.5	0.41	0.0003	1731	SLU 82	0.028	5324	4466	SLU 82	15877	Si
8.78	0.41	0.0003	2633	SLV 12	0.118	5130	6794	SLV 12	15877	Si
9.01	0.41	0.0003	2789	SLV 12	0.118	5130	7198	SLV 12	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σc	σc limite	σf	σf limite	M	Comb	σc	σc limite	
0	0.41	0.00000335	2457	SLE RA 19	69618	1494000	863263	36000000	2187	SLE QP 2	61956	1120500	Si
0.23	0.41	0.00000335	2307	SLE RA 19	65361	1494000	810475	36000000	2052	SLE QP 2	58128	1120500	Si
4.5	0.41	0.00000335	1263	SLE RA 19	35780	1494000	443668	36000000	1109	SLE QP 2	31420	1120500	Si
8.78	0.41	0.00000335	1887	SLE RA 19	53471	1494000	663035	36000000	1664	SLE QP 2	47141	1120500	Si
9.01	0.41	0.00000335	1987	SLE RA 19	56300	1494000	698115	36000000	1753	SLE QP 2	49660	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	56	15	159	SLV 7	0.36	1618	1.653	21.87	5.7	51.3	SLV 7	0.36	1618	1.653	Si
0.23	53	14	159	SLV 7	0.36	1618	1.653	20.52	5.36	51.3	SLV 7	0.36	1618	1.653	Si
4.5	29	9	159	SLV 12	0.36	1618	1.653	11.09	3.54	51.3	SLV 12	0.36	1618	1.653	Si
8.78	43	25	159	SLV 12	0.36	1618	1.653	16.64	9.69	51.3	SLV 12	0.36	1618	1.653	Si
9.01	45	27	159	SLV 12	0.36	1618	1.653	17.53	10.37	51.3	SLV 12	0.36	1618	1.653	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste				Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
98,97,96,95,94,93,92,91,90,89,88,87,86,85,84,83,82,81,80,79,78,77				9.46	1.3	SLU 82	ST	BT	2.3	335095	110017	3.05	Si
98,97,96,95,94,93,92,91,90,89,88,87,86,85,84,83,82,81,80,79,78,77				9.46	1.3	SLV 12	SIS	BT	2.3	297042	91373	3.25	Si
98,97,96,95,94,93,92,91,90,89,88,87,86,85,84,83,82,81,80,79,78,77				9.46	1.3	SLD 7	SIS	BT	2.3	321799	81002	3.97	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	1978	-110017	-22220.17	-15822.84	0	1	-0.14	-0.2	0.9	9.17	1496	2060	0	14430	
0	8959	-91373	-22273.49	13663.8	0	6	0.15	-0.24	0.81	9.16	1496	2060	0	14430	0.07
0	4686	-81002	-17731.22	-9470.91	0	3	-0.12	-0.22	0.86	9.22	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.02	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.02	0	0	0.23	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.02	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

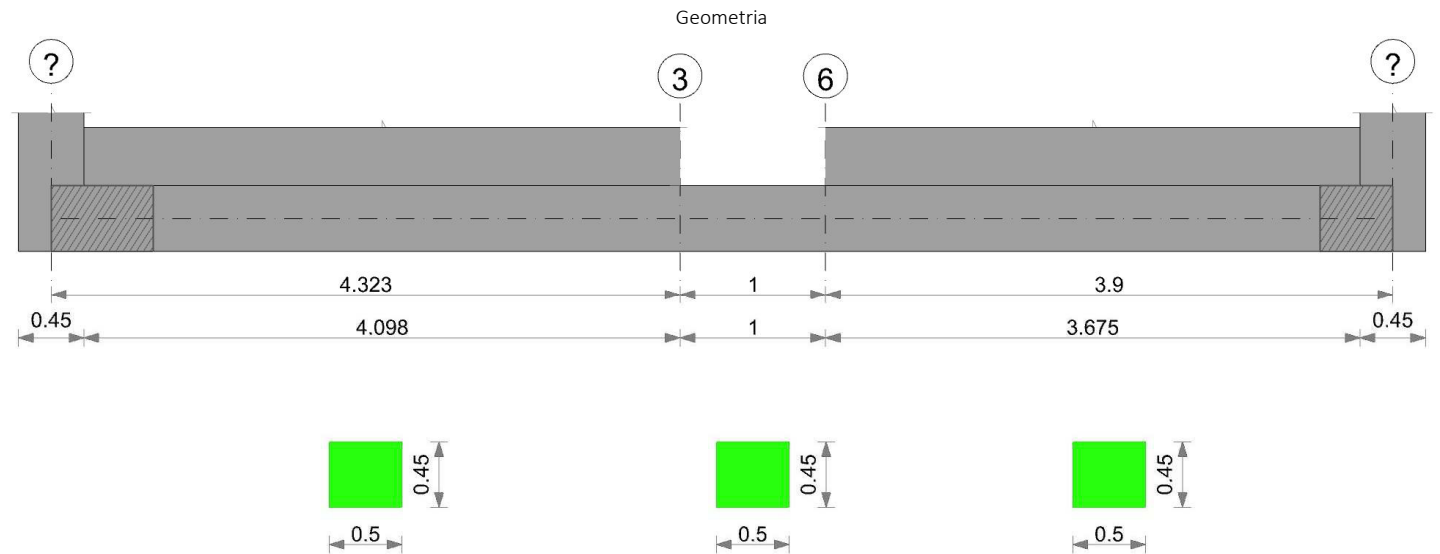
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0	205	SLE RA 19	0.05	0	205	227	SLE RA 19	0.05	0	205	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	205	SLE RA 1	0.05	0	205	205	SLE RA 1	0.05	0	205	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	205	SLE RA 1	0.05	0	205	205	SLE RA 1	0.05	0	205	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Verifiche geotecniche - Rotazioni assolute e differenziali																	
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 19	0.19	0	205	227	SLE RA 19	0.19	0	205	SLE RA 1	0.1	0	205	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	205	227	SLE RA 1	0.19	0	205	SLE RA 1	0.1	0	205	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	205	227	SLE RA 1	0.19	0	205	SLE RA 1	0.1	0	205	SLE RA 1	Si



CORDOLO 2



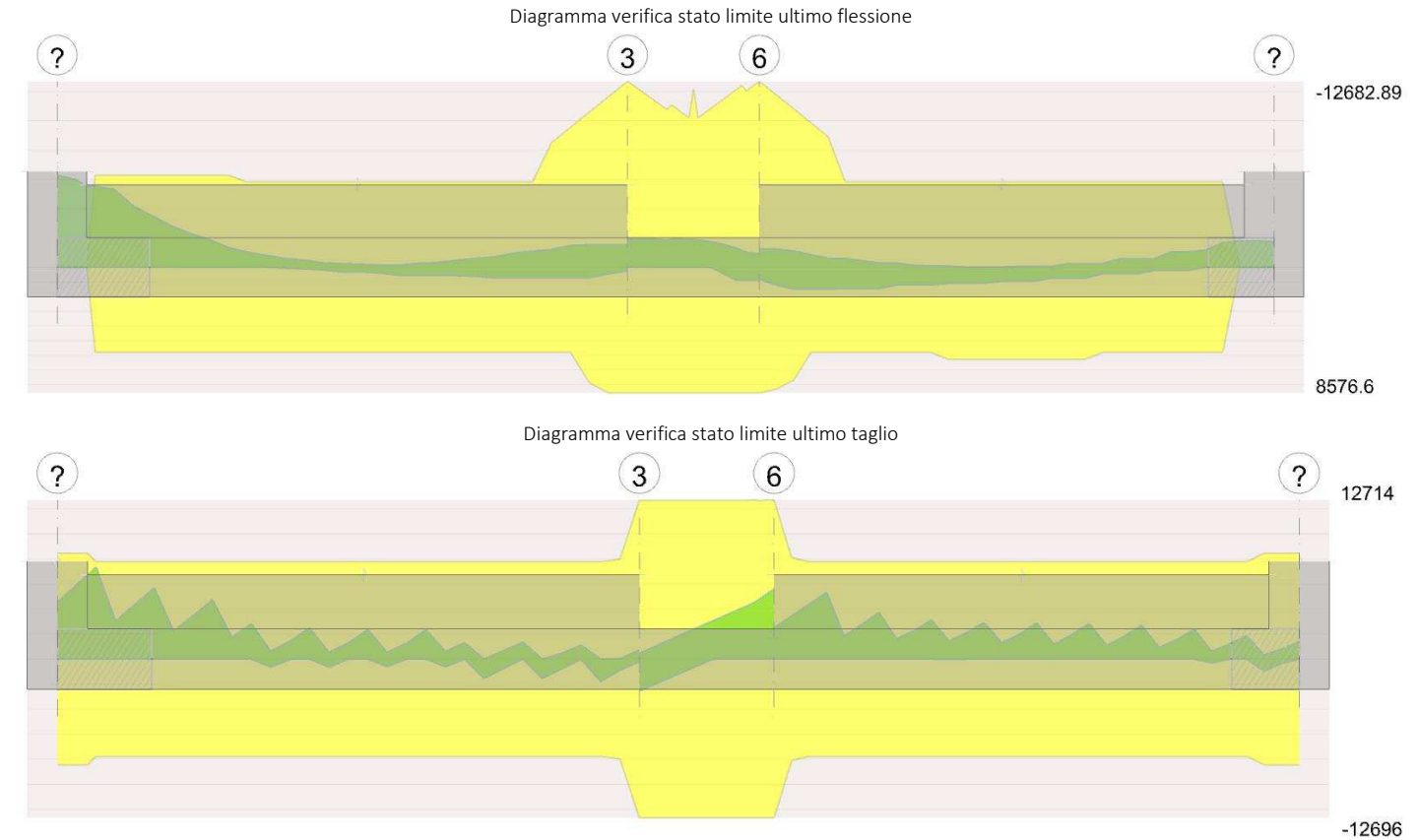
Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035



Output campate

Campata 2 tra i fili 3 - 6, sezione R 50x45, asta 44

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000603	0.051							-1717.48	SLU 81	-1904.97	-13290.66	0.141	6.98	Si
0.47	0.000686	0.052	0.000603	0.051							-1717.11	SLU 82	-1904.54	-10189.25	0.125	5.35	Si
0.5	0.00083	0.052	0.000603	0.051							-1656.21	SLU 82	-1887.23	-12179.05	0.135	6.45	Si
1	0.000911	0.052	0.000603	0.051	229.83	SLU 81	229.83	9082.58	0.122	39.52	128.88	SLU 2	-655.44	-13290.66	0.141	20.28	Si



Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: $\epsilon_{c2} = 0.002$, $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000603	0.051							-1932.78	SLV 1	-1932.78	-12682.89	0.256	6.56	Si
0.33	0.00075	0.052	0.000603	0.051							-1524.87	SLV 3	-1806.87	-10528.57	0.234	5.83	Si
0.5	0.00083	0.052	0.000603	0.051							-1199.99	SLV 7	-1548.4	-11603.71	0.245	7.49	Si
1	0.000911	0.052	0.000603	0.051	904.26	SLV 1	904.26	8575.42	0.206	9.48	-608.11	SLV 16	-913.41	-12682.89	0.256	13.89	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000009	0.000718	0	-1720	SLU 82	-1720	-8487	-63248	-12696	-12696	1	7.38	Si
0.5	0.000009	0.000863	0	1953	SLU 81	1953	9023	63239	12694	12694	1	6.5	Si
1	0.000009	0.000603	0	5586	SLU 81	5586	8014	63336	12714	12714	1	2.28	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000009	0.000718	0	466	SLV 1	466	8487	63248	12696	12696	1	27.26	Si
0	0.000009	0.000718	0	-2549	SLV 16	-2549	-8487	-63248	-12696	-12696	1	4.98	Si
0.5	0.000009	0.000863	0	2841	SLV 1	2841	9023	63239	12694	12694	1	4.47	Si
0.5	0.000009	0.000863	0	-218	SLV 16	-218	-9023	-63239	-12694	-12694	1	58.28	Si
1	0.000009	0.000603	0	5189	SLV 3	5189	8014	63336	12714	12714	1	2.45	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σc	$\sigma c \text{ lim.}$	$\sigma f.$	$\sigma f \text{ lim.}$	Mela	Comb.	Mdes	σc	$\sigma c \text{ lim.}$	$\sigma \text{ FRP}$	$\sigma \text{ FRP lim.}$	
0	-1270.05	18	-1403.75	71518	1494000	1042561	36000000	-1160.24	2	-1270.15	64711	1120500			Si
0.5	-1216.68	19	-1388.34	71037	1494000	1043317	36000000	-1091.02	2	-1250.3	63973	1120500			Si
1	167.67	18	167.67	8302	1494000	128135	36000000	148.07	2	148.07	7332	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	-1042	-1507	-12696	SLV 16	0.36	1618	1.653	-1160.24	772.54	8575.42	SLV 16	0.36	1618	1.653	Si
0.5	1312	1530	12694	SLV 1	0.36	1618	1.653	-780.58	272.45	8575.85	SLV 1	0.36	1618	1.653	Si
1	3644	1545	12714	SLV 3	0.36	1618	1.653	148.07	756.18	8575.42	SLV 1	0.36	1618	1.653	Si

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili ? - 3, sezione R 50x45, aste 55, 54, 53, 52, 51, 50, 49, 48, 47, 46, 45

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb.	x/d	Mult	V	Comb.	Vult	Verifica
0	0.41	0.0002	1738	SLU 81	0.018	2824	5348	SLU 81	15877	Si
0.23	0.41	0.0002	1676	SLU 81	0.018	2824	5156	SLU 81	15877	Si
2.16	0.41	0.0002	1441	SLU 82	0.018	2824	4433	SLU 82	15877	Si
4.32	0.41	0.0005	1254	SLU 82	0.038	7165	3859	SLU 82	16081	Si

Verifiche delle tensioni di esercizio

				Rara						Quasi permanente				Verifica
x	d	Af		M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000177		1271	SLE RA 18	36763	1494000	455860	36000000	1125	SLE QP 2	32533	1120500	Si
0.23	0.41	0.00000177		1224	SLE RA 18	35420	1494000	439211	36000000	1082	SLE QP 2	31296	1120500	Si
2.16	0.41	0.00000177		1047	SLE RA 19	30304	1494000	375773	36000000	913	SLE QP 2	26419	1120500	Si
4.32	0.41	0.00000452		908	SLE RA 19	25344	1494000	314271	36000000	783	SLE QP 2	21862	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	35	12	159	SLV 1	0.36	1618	1.653	11.25	3.93	27.46	SLV 1	0.36	1618	1.653	Si
0.23	33	11	159	SLV 1	0.36	1618	1.653	10.82	3.62	27.46	SLV 1	0.36	1618	1.653	Si
2.16	28	5	159	SLV 4	0.36	1618	1.653	9.13	1.66	27.46	SLV 4	0.36	1618	1.653	Si
4.32	24	2	161	SLV 8	0.36	1618	1.653	7.83	0.68	68.77	SLV 8	0.36	1618	1.653	Si

Campata 2 tra i fili 3 - 6, sezione R 50x45, asta 44

Campata 3 tra i fili 6 - ?, sezione R 50x45, aste 43, 42, 41, 40, 39, 38, 37, 36, 35, 34

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb.	x/d	Mult	V	Comb.	Vult	Verifica
0	0.41	0.0005	1227	SLU 82	0.038	7165	3776	SLU 82	16081	Si
1.95	0.41	0.0002	1186	SLU 82	0.017	2725	3648	SLU 82	15877	Si
3.67	0.41	0.0002	1091	SLU 82	0.017	2725	3356	SLU 82	15877	Si
3.9	0.41	0.0002	1087	SLU 82	0.017	2725	3346	SLU 82	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000452	888	SLE RA 19	24787	1494000	307362	36000000	766	SLE QP 2	21363	1120500	Si
1.95	0.41	0.00000171	858	SLE RA 19	24857	1494000	308228	36000000	740	SLE QP 2	21437	1120500	Si
3.67	0.41	0.00000171	791	SLE RA 19	22895	1494000	283895	36000000	684	SLE QP 2	19808	1120500	Si
3.9	0.41	0.00000171	788	SLE RA 19	22830	1494000	283087	36000000	683	SLE QP 2	19766	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	24	3	161	SLV 7	0.36	1618	1.653	7.66	0.89	68.77	SLV 7	0.36	1618	1.653	Si
1.95	23	6	159	SLV 11	0.36	1618	1.653	7.4	1.86	26.5	SLV 11	0.36	1618	1.653	Si



x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
3.67	21	10	159	SLV 12	0.36	1618	1.653	6.84	3.29	26.5	SLV 12	0.36	1618	1.653	Si
3.9	21	11	159	SLV 12	0.36	1618	1.653	6.83	3.52	26.5	SLV 12	0.36	1618	1.653	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
55,54,53,52,51,50,49,48,47,46,45,44,43,42,41,40,39,38,37,36,35,34	9.67	1.1	SLU 82	ST	BT	2.3	420425	88088	4.77	Si
55,54,53,52,51,50,49,48,47,46,45,44,43,42,41,40,39,38,37,36,35,34	9.67	1.1	SLV 7	SIS	BT	2.3	379031	62878	6.03	Si
55,54,53,52,51,50,49,48,47,46,45,44,43,42,41,40,39,38,37,36,35,34	9.67	1.1	SLD 7	SIS	BT	2.3	402449	60685	6.63	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	1249	-88088	-1000.14	-20195.72	0	1	-0.23	-0.01	1.08	9.21	1496	2060	0	14430	
0	8397	-62878	-4231.85	-7378.54	0	8	-0.12	-0.07	0.97	9.44	1496	2060	0	14430	0.07
0	4071	-60685	-2192.37	-11031.36	0	4	-0.18	-0.04	1.03	9.31	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.02	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.02	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.02	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

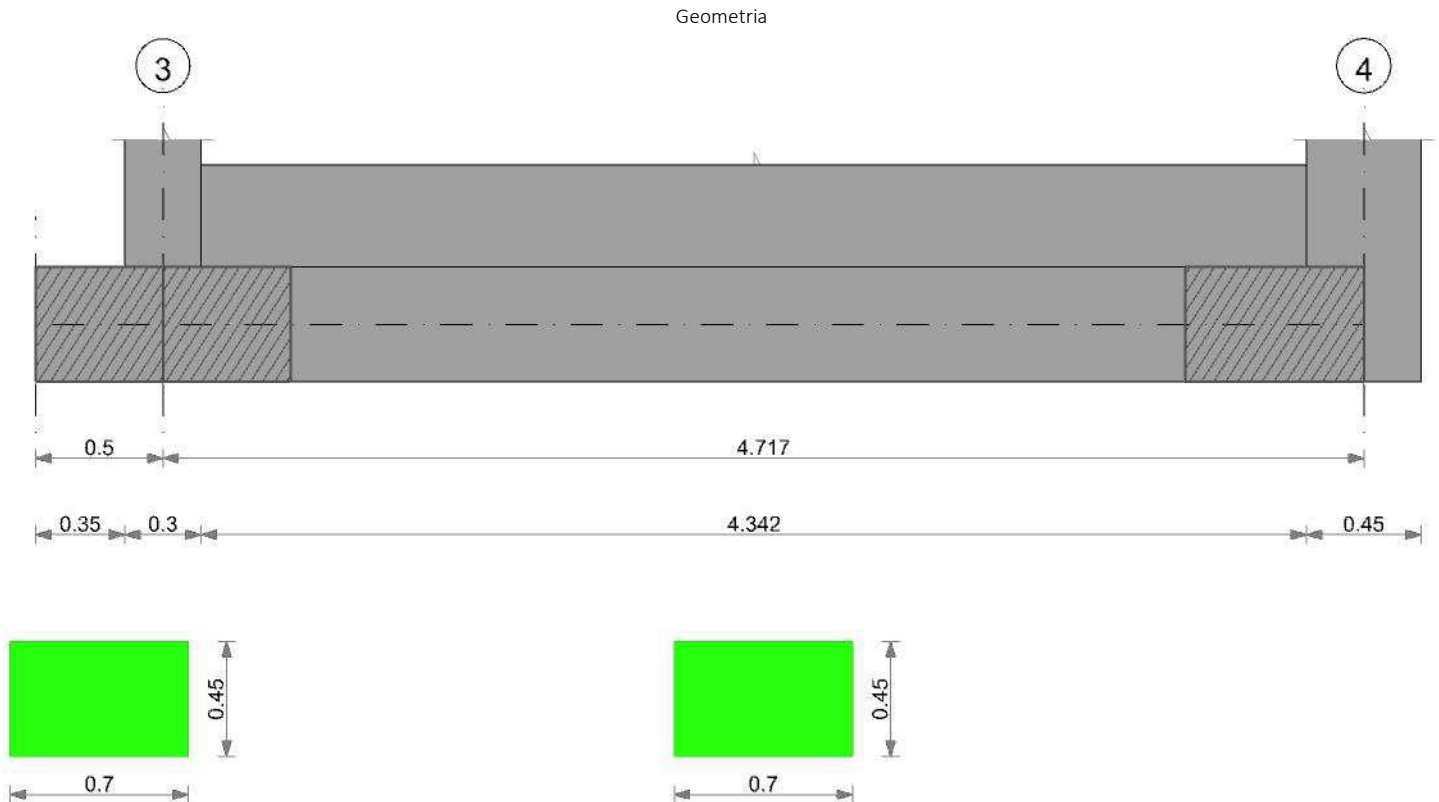
Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	143	SLE RA 18	0.05	0	143	165	SLE RA 18	0.05	0	154	SLE FR 6	0.0033	0	SLE FR 6	Si
D	0.05	0	143	SLE RA 1	0.05	0	143	143	SLE RA 1	0.05	0	154	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	143	SLE RA 1	0.05	0	143	143	SLE RA 1	0.05	0	154	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.
E	0.19	0	SLE RA 18	0.19	0	143	154	SLE RA 18	0.19	0	143	SLE RA 1	0.1	0	154	SLE FR 6
D	0.19	0	SLE RA 1	0.19	0	143	154	SLE RA 1	0.19	0	143	SLE RA 1	0.1	0	154	SLE RA 1
Z	0.19	0	SLE RA 1	0.19	0	143	154	SLE RA 1	0.19	0	143	SLE RA 1	0.1	0	154	SLE RA 1

CORDOLO 3



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 3 - 4, sezione R 70x45, aste 110, 109, 108, 107, 106, 105, 104, 103, 102, 101, 100, 99

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	2305	SLU 81	0.023	4053	5948	SLU 81	15877	Si
0.15	0.41	0.0003	2317	SLU 81	0.023	4053	5979	SLU 81	15877	Si
2.36	0.41	0.0003	2117	SLU 82	0.023	4053	5464	SLU 82	15877	Si
4.49	0.41	0.0003	3148	SLU 82	0.023	4053	8124	SLU 82	15877	Si
4.72	0.41	0.0003	3354	SLU 82	0.023	4053	8654	SLU 82	15877	Si

Verifiche delle tensioni di esercizio

Caratteristiche del materiale			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ_c	σ_c limite	σ_f	σ_f limite	M	Comb	σ_c	σ_c limite	
0	0.41	0.00000254	1683	SLE RA 18	48197	1494000	597648	36000000	1485	SLE QP 2	42536	1120500	Si
0.15	0.41	0.00000254	1692	SLE RA 18	48458	1494000	600878	36000000	1494	SLE QP 2	42771	1120500	Si
2.36	0.41	0.00000254	1548	SLE RA 19	44329	1494000	549676	36000000	1369	SLE QP 2	39209	1120500	Si
4.49	0.41	0.00000254	2307	SLE RA 19	66070	1494000	819262	36000000	2052	SLE QP 2	58753	1120500	Si
4.72	0.41	0.00000254	2458	SLE RA 19	70393	1494000	872873	36000000	2187	SLE QP 2	62630	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	38	13	159	SLV 1	0.36	1618	1.653	14.85	4.99	39.2	SLV 1	0.36	1618	1.653	Si
0.15	39	13	159	SLV 1	0.36	1618	1.653	14.94	4.93	39.2	SLV 1	0.36	1618	1.653	Si
2.36	35	9	159	SLV 3	0.36	1618	1.653	13.69	3.52	39.2	SLV 3	0.36	1618	1.653	Si
4.49	53	14	159	SLV 7	0.36	1618	1.653	20.52	5.45	39.2	SLV 7	0.36	1618	1.653	Si
4.72	56	15	159	SLV 7	0.36	1618	1.653	21.87	5.93	39.2	SLV 7	0.36	1618	1.653	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
110,109,108,107,106,105,104,103,102,101,100,99	4.94	1.3	SLU 82	ST	BT	2.3	212289	63891	3.32	Si
110,109,108,107,106,105,104,103,102,101,100,99	4.94	1.3	SLV 3	SIS	BT	2.3	193484	51290	3.77	Si
110,109,108,107,106,105,104,103,102,101,100,99	4.94	1.3	SLD 3	SIS	BT	2.3	204182	46765	4.37	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd



Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	1234	-63891	-7034.94	7030.09	0	1	0.11	-0.11	1.08	4.72	1496	2060	0	14430	
0	5363	-51290	-7827.82	4480.44	0	6	0.09	-0.15	0.99	4.77	1496	2060	0	14430	0.07
0	2804	-46765	-6045.85	4606.82	0	3	0.1	-0.13	1.04	4.74	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

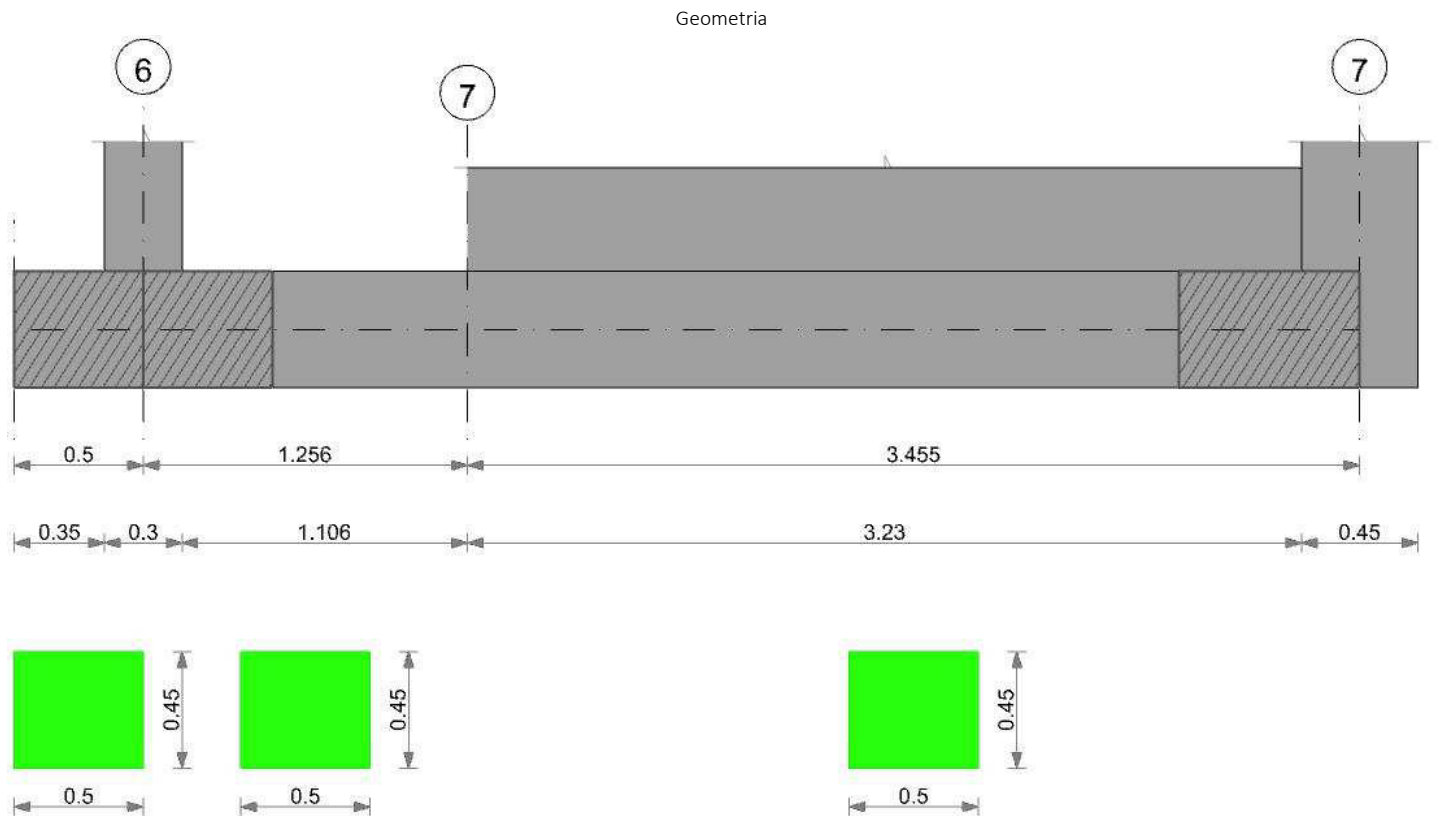
Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	229	SLE RA 19	0.05	0	229	119	SLE RA 2	0.05	0	119	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	119	SLE RA 1	0.05	0	119	119	SLE RA 1	0.05	0	119	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	119	SLE RA 1	0.05	0	119	119	SLE RA 1	0.05	0	119	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 2	0.19	0	119	229	SLE RA 2	0.19	0	119	SLE RA 1	0.1	0	119	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	119	229	SLE RA 1	0.19	0	119	SLE RA 1	0.1	0	119	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	119	229	SLE RA 1	0.19	0	119	SLE RA 1	0.1	0	119	SLE RA 1	Si

CORDOLO 4



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

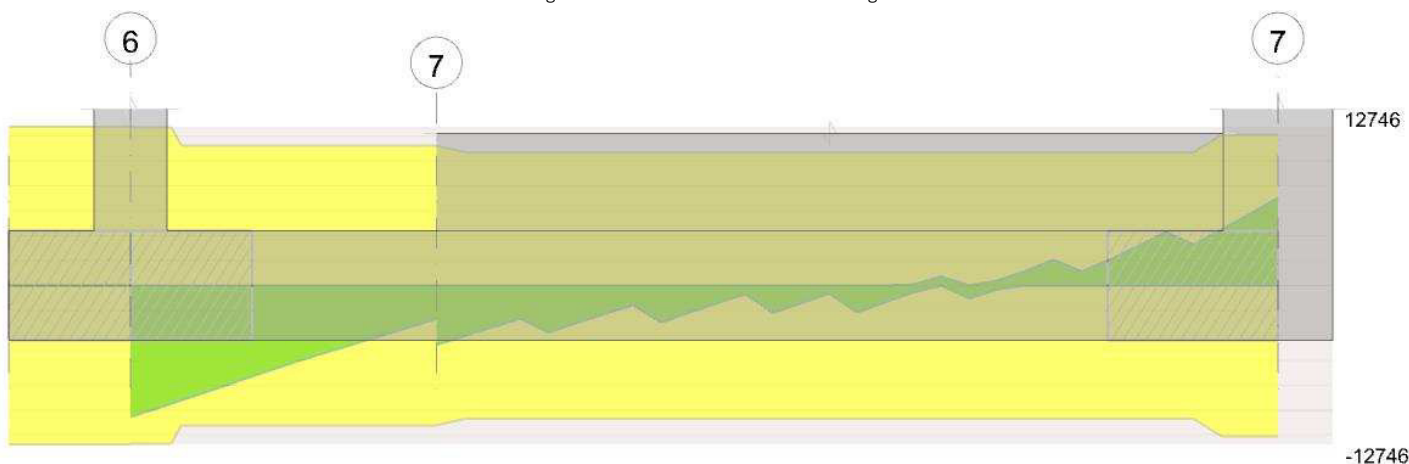
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 6 - 7, sezione R 50x45, asta 122

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.63	0.000509	0.052	0.000509	0.052	1778.6	SLU 82	3042.4	7755.45	0.113	2.55							Si
1.26	0.000509	0.052	0.000509	0.052							-975.3	SLU 82	-975.3	-7755.45	0.113	7.95	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: $\epsilon_{c2} = 0.002$, $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.63	0.000509	0.052	0.000509	0.052	1593.02	SLV 11	2829.32	7266.79	0.197	2.57							Si
1.26	0.000509	0.052	0.000509	0.052	77.64	SLV 6	154.04	7266.79	0.197	47.17	-1321.92	SLV 11	-1321.92	-7266.79	0.197	5.5	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000008	0	0	-10561	SLU 82	-10561	-8455	-71432	-12746	-12746	1	1.21	Si
0.15	0.000008	0	0	-9594	SLU 82	-9594	-8455	-71432	-12689	-12689	1	1.32	Si
0.63	0.000008	0.000509	0	-6459	SLU 82	-6459	-7764	-63178	-11223	-11223	1	1.74	Si
1.26	0.000008	0.000509	0	-2315	SLU 82	-2315	-7764	-63178	-11223	-11223	1	4.85	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcl	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000008	0	0	-10121	SLV 11	-10121	-8455	-71432	-12746	-12746	1	1.26	Si
0.15	0.000008	0	0	-9252	SLV 11	-9252	-8455	-71432	-12689	-12689	1	1.37	Si
0.63	0.000008	0.000509	0	-6424	SLV 11	-6424	-7764	-63178	-11223	-11223	1	1.75	Si
1.26	0.000008	0.000509	0	-2689	SLV 11	-2689	-7764	-63178	-11223	-11223	1	4.17	Si

Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.			
0.15	4080.91	19	4080.91	241832	1494000	0	36000000	3546.86	2	3546.86	210184	1120500					Si
0.63	1286.21	19	2205.85	116675	1494000	1750123	36000000	1104.64	2	1906.93	100864	1120500					Si
1.26	-711.65	19	-711.65	37642	1494000	564627	36000000	-622.14	2	-622.14	32907	1120500					Si

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0.63	-4093	-2330	-11223	SLV 11	0.36	1618	1.653	1906.93	922.39	7266.79	SLV 11	0.36	1618	1.653	Si
1.26	-1407	-1282	-11223	SLV 11	0.36	1618	1.653	-622.14	-699.78	-7266.79	SLV 11	0.36	1618	1.653	Si



Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 6 - 7, sezione R 50x45, asta 122

Campata 3 tra i fili 7 - 7, sezione R 50x45, aste 123, 124, 125, 126, 127, 128, 129, 130

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	860	SLU 82	0.034	6352	2990	SLU 82	15877	Si
1.73	0.41	0.0004	984	SLV 12	0.126	5840	3456	SLU 82	15877	Si
3.23	0.41	0.0004	1503	SLV 12	0.126	5840	5229	SLV 12	15877	Si
3.45	0.41	0.0004	1616	SLV 12	0.126	5840	5622	SLV 12	15877	Si

Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	σc	σc limite	σf	σf limite	M	Comb	σc	σc limite	
0	0.41	0.000004	624	SLE RA 19	17536	1494000	217447	36000000	542	SLE QP 2	15236	1120500	Si
1.73	0.41	0.00000382	724	SLE RA 19	20382	1494000	252742	36000000	634	SLE QP 2	17858	1120500	Si
3.23	0.41	0.00000382	1078	SLE RA 19	30346	1494000	376293	36000000	951	SLE QP 2	26766	1120500	Si
3.45	0.41	0.00000382	1157	SLE RA 19	32582	1494000	404014	36000000	1021	SLE QP 2	28762	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	19	9	159	SLV 12	0.36	1618	1.653	5.42	2.67	61.06	SLV 12	0.36	1618	1.653	Si
1.73	22	12	159	SLV 12	0.36	1618	1.653	6.34	3.5	58.4	SLV 12	0.36	1618	1.653	Si
3.23	33	19	159	SLV 12	0.36	1618	1.653	9.51	5.53	58.4	SLV 12	0.36	1618	1.653	Si
3.45	36	21	159	SLV 12	0.36	1618	1.653	10.21	5.95	58.4	SLV 12	0.36	1618	1.653	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
122,123,124,125,126,127,128,129,130	4.94	1.1	SLU 82	ST	BT	2.3	187511	44633	4.2	Si
122,123,124,125,126,127,128,129,130	4.94	1.1	SLV 12	SIS	BT	2.3	163511	40955	3.99	Si
122,123,124,125,126,127,128,129,130	4.94	1.1	SLD 12	SIS	BT	2.3	176343	34791	5.07	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	1004	-44633	3264.43	7783.61	0	1	0.17	0.07	0.95	4.59	1496	2060	0	14430	
0	-2190	-40955	4662.87	10809.22	0	-3	0.26	0.11	0.87	4.41	1496	2060	0	14430	0.07
0	-575	-34791	3237.75	7621.43	0	-1	0.22	0.09	0.91	4.5	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

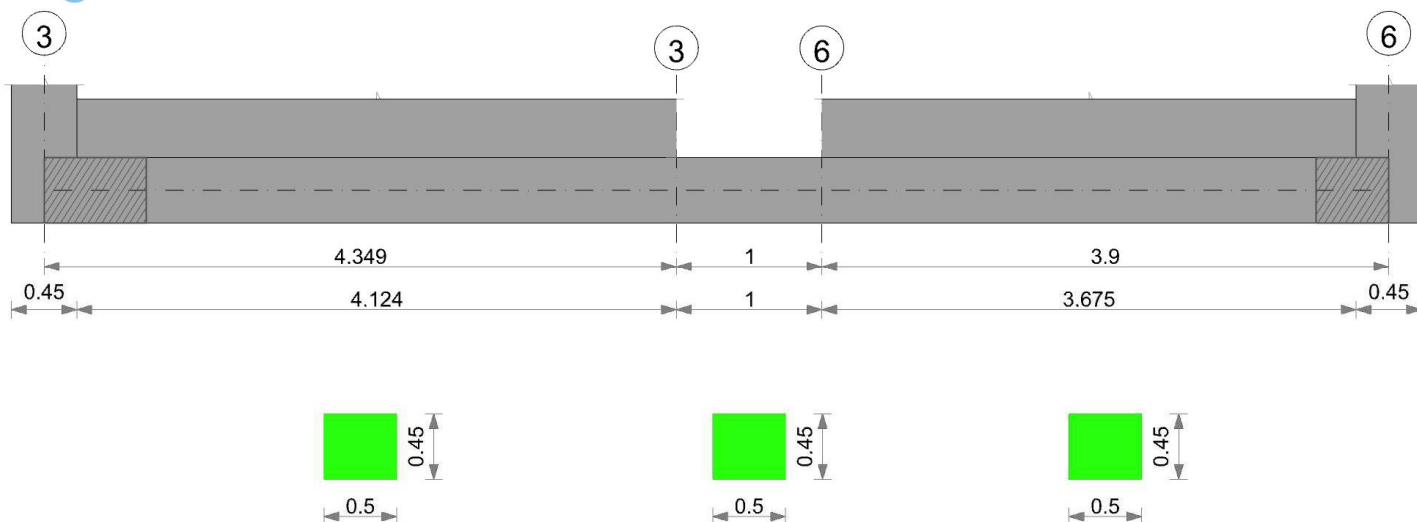
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	251	SLE RA 19	0.05	0	251	173	SLE RA 19	0.05	0	173	SLE RA 19	0.0033	0	SLE RA 19	Si
D	0.05	0	141	SLE RA 1	0.05	0	141	141	SLE RA 1	0.05	0	173	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	141	SLE RA 1	0.05	0	141	141	SLE RA 1	0.05	0	173	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta				Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.
E	0.19	0	SLE FR 4	0.19	0	141	173	SLE RA 19	0.19	0	141	SLE RA 1	0.1	0	173	SLE RA 19
D	0.19	0	SLE RA 1	0.19	0	141	173	SLE RA 1	0.19	0	141	SLE RA 1	0.1	0	173	SLE RA 1
Z	0.19	0	SLE RA 1	0.19	0	141	173	SLE RA 1	0.19	0	141	SLE RA 1	0.1	0	173	SLE RA 1

CORDOLO 5

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

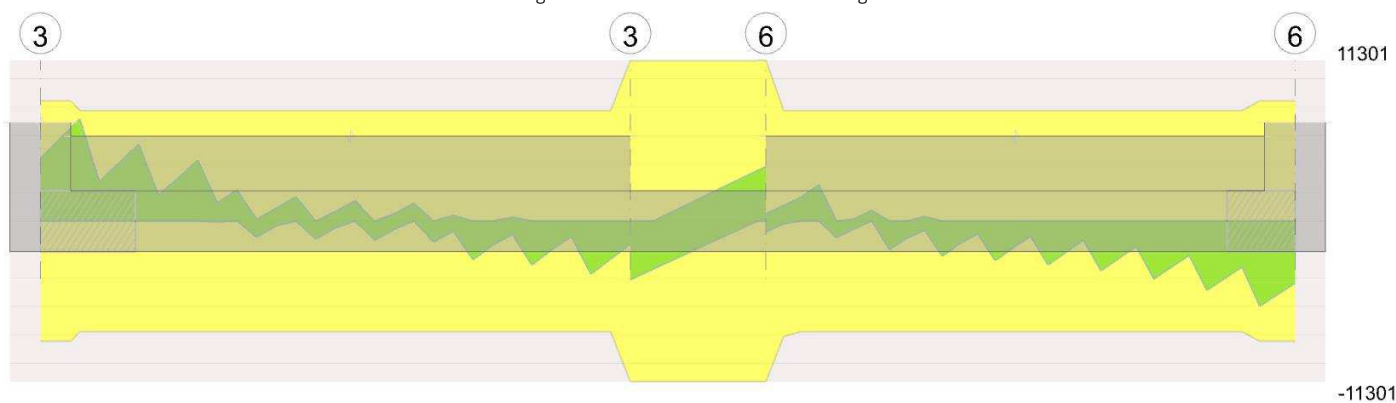
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 3 - 6, sezione R 50x45, asta 22

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000603	0.051							-594.03	SLU 82	-1174.28	-13290.66	0.141	11.32	Si
0.5	0.00083	0.052	0.000603	0.051							-1645.98	SLU 82	-1653.19	-12179.05	0.135	7.37	Si
0.53	0.000686	0.052	0.000603	0.051							-1653.19	SLU 82	-1653.19	-10189.25	0.125	6.16	Si
1	0.000911	0.052	0.000603	0.051							-935.78	SLU 82	-1390.55	-13290.66	0.141	9.56	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: $\epsilon_{c2} = 0.002$, $\epsilon_{yd} = 0.0019$



x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000603	0.051	450.71	SLV 16	450.71	8575.42	0.206	19.03	-1294.7	SLV 1	-1366.49	-12682.89	0.256	9.28	Si
0.5	0.00083	0.052	0.000603	0.051							-1188.77	SLV 7	-1342.39	-11603.71	0.245	8.64	Si
0.53	0.000686	0.052	0.000603	0.051							-1201.3	SLV 12	-1375.84	-9658.42	0.224	7.02	Si
1	0.000911	0.052	0.000603	0.051	236.74	SLV 1	236.74	8575.42	0.206	36.22	-1471.31	SLV 16	-1480.99	-12682.89	0.256	8.56	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000008	0.000718	0	-3887	SLU 82	-3887	-8487	-63248	-11285	-11285	1	2.9	Si
0.5	0.000008	0.000863	0	-334	SLU 82	-334	-9023	-63239	-11284	-11284	1	33.83	Si
1	0.000008	0.000718	0	3171	SLU 82	3171	8487	63248	11285	11285	1	3.56	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000008	0.000603	0	-4128	SLV 16	-4128	-8014	-63336	-11301	-11301	1	2.74	Si
0.5	0.000008	0.000863	0	1536	SLV 1	1536	9023	63239	11284	11284	1	7.35	Si
0.5	0.000008	0.000863	0	-1916	SLV 16	-1916	-9023	-63239	-11284	-11284	1	5.89	Si
1	0.000008	0.000718	0	3837	SLV 3	3837	8487	63248	11285	11285	1	2.94	Si

Verifiche delle tensioni in esercizio

x	Rara								Quasi permanente								Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.		Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.		
0	-445.64	19	-867.48	44196	1494000	644277	36000000		-422	2	-789.61	40229	1120500				Si
0.5	-1209.14	19	-1214.16	62124	1494000	912419	36000000		-1084.24	2	-1088.06	55672	1120500				Si
1	-687.72	19	-1020.6	51997	1494000	757996	36000000		-617.29	2	-912.93	46512	1120500				Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	-2467	-1661	-11301	SLV 16	0.36	1618	1.653	-422	872.71	8575.42	SLV 16	0.36	1618	1.653	Si
0.5	-190	-1726	-11284	SLV 16	0.36	1618	1.653	-977.15	342.13	8575.85	SLV 14	0.36	1618	1.653	Si
1	2055	1781	11285	SLV 3	0.36	1618	1.653	-617.29	854.02	8575.42	SLV 1	0.36	1618	1.653	Si

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 3 - 3, sezione R 50x45, aste 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb.	x/d	Mult	V	Comb.	Vult	Verifica
0	0.41	0.0002	1705	SLU 81	0.018	2808	5247	SLU 81	15877	Si
0.23	0.41	0.0002	1643	SLU 81	0.018	2808	5054	SLU 81	15877	Si
2.17	0.41	0.0002	1402	SLU 81	0.018	2808	4314	SLU 81	15877	Si
4.35	0.41	0.0004	1212	SLU 82	0.034	6379	3729	SLU 82	15877	Si

Verifiche delle tensioni di esercizio

x	d	Af	M	Comb.	σ c	σ c limite	σ f	σ f limite	M	Comb.	σ c	σ c limite	Verifica
0	0.41	0.00000176	1246	SLE RA 18	36066	1494000	447221	36000000	1103	SLE QP 2	31905	1120500	Si
0.23	0.41	0.00000176	1200	SLE RA 18	34721	1494000	430535	36000000	1060	SLE QP 2	30665	1120500	Si
2.17	0.41	0.00000176	1019	SLE RA 18	29482	1494000	365575	36000000	887	SLE QP 2	25677	1120500	Si
4.35	0.41	0.00000402	877	SLE RA 19	24637	1494000	305495	36000000	756	SLE QP 2	21220	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	34	13	159	SLV 1	0.36	1618	1.653	11.03	4.06	27.3	SLV 1	0.36	1618	1.653	Si
0.23	33	12	159	SLV 1	0.36	1618	1.653	10.6	3.76	27.3	SLV 1	0.36	1618	1.653	Si
2.17	27	5	159	SLV 2	0.36	1618	1.653	8.87	1.74	27.3	SLV 2	0.36	1618	1.653	Si
4.35	23	2	159	SLV 8	0.36	1618	1.653	7.56	0	61.33	SLV 16	0.36	1618	1.653	Si

Campata 2 tra i fili 3 - 6, sezione R 50x45, asta 22

Campata 3 tra i fili 6 - 6, sezione R 50x45, aste 21, 20, 19, 18, 17, 16, 15, 14, 13, 12

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb.	x/d	Mult	V	Comb.	Vult	Verifica
0	0.41	0.0004	1175	SLU 82	0.034	6379	3615	SLU 82	15877	Si
1.95	0.41	0.0002	1129	SLU 82	0.017	2725	3474	SLU 82	15877	Si
3.67	0.41	0.0002	1029	SLU 82	0.017	2725	3166	SLU 82	15877	Si
3.9	0.41	0.0002	1025	SLU 82	0.017	2725	3155	SLU 82	15877	Si

Verifiche delle tensioni di esercizio

x	d	Af	M	Comb.	σ c	σ c limite	σ f	σ f limite	M	Comb.	σ c	σ c limite	Verifica
0	0.41	0.00000402	850	SLE RA 19	23868	1494000	295959	36000000	731	SLE QP 2	20531	1120500	Si
1.95	0.41	0.00000171	817	SLE RA 19	23651	1494000	293274	36000000	703	SLE QP 2	20353	1120500	Si
3.67	0.41	0.00000171	745	SLE RA 19	21580	1494000	267588	36000000	643	SLE QP 2	18626	1120500	Si
3.9	0.41	0.00000171	743	SLE RA 19	21511	1494000	266732	36000000	642	SLE QP 2	18581	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	22	2	159	SLV 7	0.36	1618	1.653	7.31	0.68	61.33	SLV 7	0.36	1618	1.653	Si
1.95	22	5	159	SLV 11	0.36	1618	1.653	7.03	1.62	26.5	SLV 11	0.36	1618	1.653	Si
3.67	20	9	159	SLV 11	0.36	1618	1.653	6.43	3.05	26.5	SLV 11	0.36	1618	1.653	Si
3.9	20	10	159	SLV 11	0.36	1618	1.653	6.42	3.28	26.5	SLV 11	0.36	1618	1.653	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa



Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
33,32,31,30,29,28,27,26,25,24,23,22,21,20,19,18,17,16,15,14,13,12	9.7	1.1	SLU 82	ST	BT	2.3	419447	86082	4.87	Si
33,32,31,30,29,28,27,26,25,24,23,22,21,20,19,18,17,16,15,14,13,12	9.7	1.1	SLV 5	SIS	BT	2.3	350134	56279	6.22	Si
33,32,31,30,29,28,27,26,25,24,23,22,21,20,19,18,17,16,15,14,13,12	9.7	1.1	SLD 8	SIS	BT	2.3	401926	58737	6.84	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	1259	-86082	-1005.63	-21540.03	0	1	-0.25	-0.01	1.08	9.2	1496	2060	0	14430	
0	-6749	-56279	2972.04	-35890.37	0	-7	-0.64	0.05	0.99	8.42	1496	2060	0	14430	0.07
0	4109	-58737	-2211.09	-10945.66	0	4	-0.19	-0.04	1.02	9.33	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.02	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.02	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.02	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

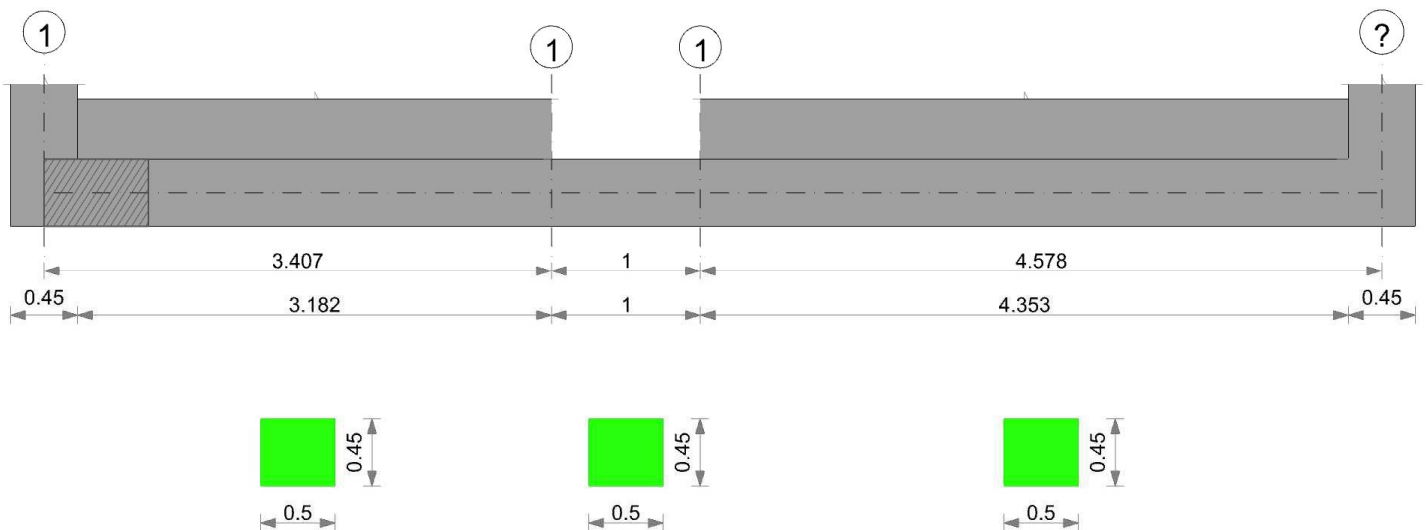
Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0	94	SLE RA 18	0.05	0	94	116	SLE RA 18	0.05	0	105	SLE FR 6	0.0033	0	SLE FR 6	Si
D	0.05	0	94	SLE RA 1	0.05	0	94	94	SLE RA 1	0.05	0	105	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	94	SLE RA 1	0.05	0	94	94	SLE RA 1	0.05	0	105	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 18	0.19	0	94	105	SLE RA 18	0.19	0	94	SLE RA 1	0.1	0	105	SLE FR 6	Si
D	0.19	0	SLE RA 1	0.19	0	94	105	SLE RA 1	0.19	0	94	SLE RA 1	0.1	0	105	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	94	105	SLE RA 1	0.19	0	94	SLE RA 1	0.1	0	105	SLE RA 1	Si

CORDOLO 6

Geometria



Caratteristiche dei materiali

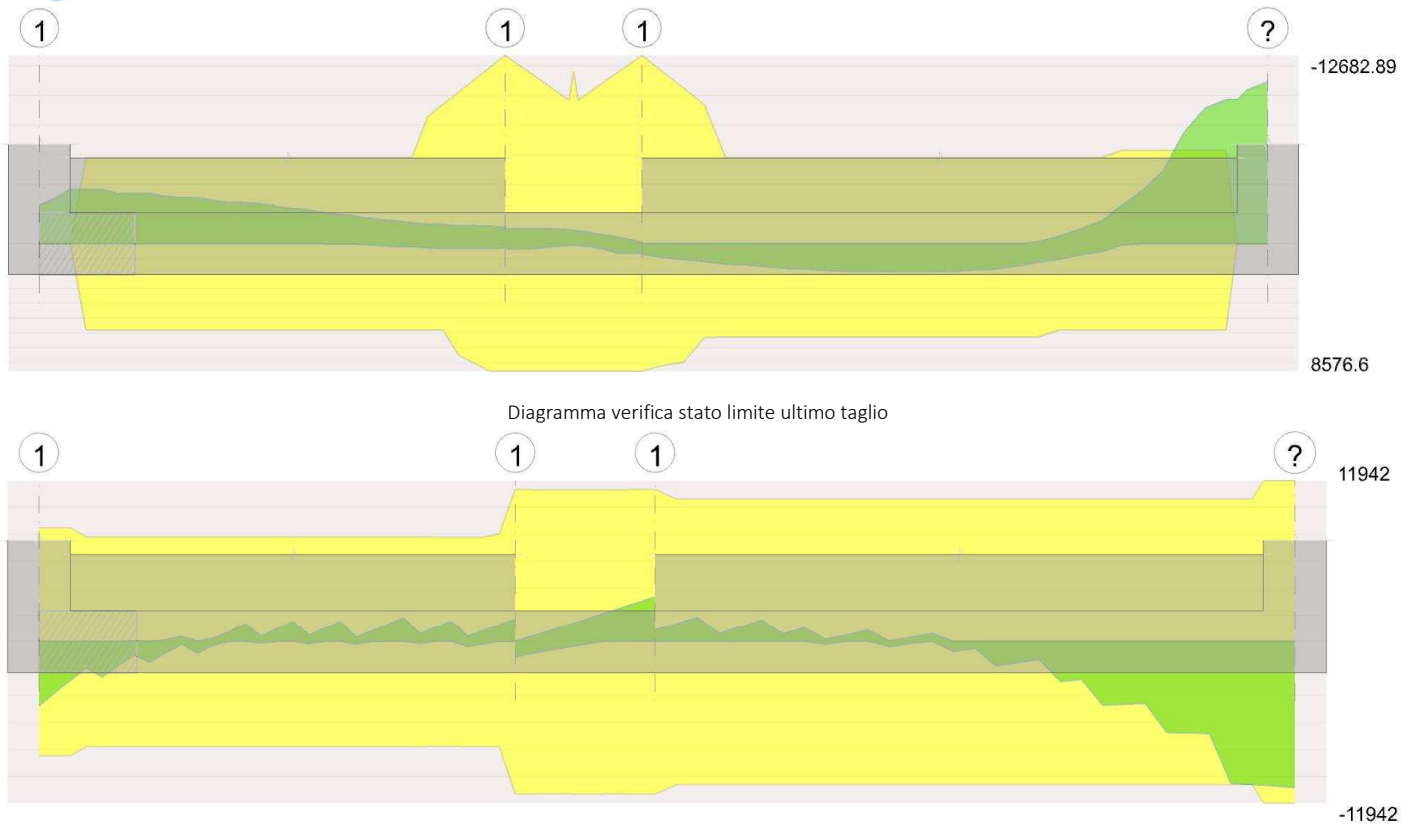
Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Output campate

Campata 2 tra i fili 1 - 1, sezione R 50x45, asta 67

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000603	0.051							-533.25	SLU 81	-625.12	-13290.66	0.141	21.26	Si
0.5	0.00083	0.052	0.000603	0.051							-472.63	SLU 81	-607.39	-12179.05	0.135	20.05	Si
0.83	0.000831	0.052	0.000603	0.051	109.34	SLU 82	555.65	9081.69	0.122	16.34	68.97	SLU 1	-256.19	-12184.71	0.135	47.56	Si
1	0.000911	0.052	0.000603	0.051	555.65	SLU 82	555.65	9082.58	0.122	16.35							Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: $\epsilon_{c2} = 0.002$, $\epsilon_{yd} = 0.0019$

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000603	0.051	336.6	SLV 15	336.6	8575.42	0.206	25.48	-1031.49	SLV 2	-1033.51	-12682.89	0.256	12.27	Si
0.4	0.000718	0.052	0.000603	0.051	67.64	SLV 15	154.39	8576.47	0.21	55.55	-799.31	SLV 2	-971.67	-10094.15	0.229	10.39	Si
0.5	0.00083	0.052	0.000603	0.051	43.33	SLV 15	102.4	8575.85	0.208	83.75	-655.58	SLV 2	-888.78	-11603.71	0.245	13.06	Si
1	0.000911	0.052	0.000603	0.051	636.15	SLV 4	636.15	8575.42	0.206	13.48	95.58	SLV 13	-89.59	-12682.89	0.256	141.56	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrds	Vult	cotgθ	coeff	Verifica
0	0.000008	0.000718	0	-878	SLU 81	-878	-8487	-63248	-11285	-11285	1	12.86	Si
0.5	0.000008	0.000863	0	1103	SLU 81	1103	9023	63239	11284	11284	1	10.23	Si
1	0.000008	0.000603	0	2993	SLU 81	2993	8014	63336	11301	11301	1	3.78	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrzd	Vrds	Vult	cotgθ	coeff	Verifica
0	0.000008	0.000718	0	19	SLV 4	19	8487	63248	11285	11285	1	604.89	Si
0	0.000008	0.000603	0	-1158	SLV 13	-1158	-8014	-63336	-11301	-11301	1	9.76	Si
0.5	0.000008	0.000863	0	1661	SLV 2	1661	9023	63239	11284	11284	1	6.79	Si
0.5	0.000008	0.000603	0	-214	SLV 15	-214	-8014	-63336	-11301	-11301	1	52.91	Si
1	0.000008	0.000603	0	3335	SLV 2	3335	8014	63336	11301	11301	1	3.39	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-390.77	18	-457.77	23323	1494000	339987	36000000	-347.44	2	-406.8	20725	1120500			Si
0.5	-345.57	18	-444.56	22746	1494000	334078	36000000	-306.13	2	-394.71	20196	1120500			Si
1	408.16	19	408.16	20210	1494000	311926	36000000	365.86	2	365.86	18115	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	-570	-588	-11301	SLV 13	0.36	1618	1.653	-347.44	684.04	8575.42	SLV 15	0.36	1618	1.653	Si
0.5	724	937	11284	SLV 2	0.36	1618	1.653	-394.71	494.06	8575.85	SLV 15	0.36	1618	1.653	Si
1	1955	1380	11301	SLV 2	0.36	1618	1.653	365.86	270.28	8575.42	SLV 4	0.36	1618	1.653	Si



Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 1 - 1, sezione R 50x45, aste 76, 75, 74, 73, 72, 71, 70, 69, 68

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1208	SLV 6	0.087	2792	4201	SLV 6	15877	Si
0.23	0.41	0.0002	1121	SLV 6	0.087	2792	3900	SLV 6	15877	Si
1.7	0.41	0.0002	711	SLV 6	0.087	2792	2474	SLV 6	15877	Si
3.41	0.41	0.0004	489	SLV 6	0.129	6133	1702	SLV 6	15877	Si

Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	σc	σc limite	σf	σf limite	M	Comb	σc	σc limite	
0	0.41	0.0000018	761	SLE RA 18	22001	1494000	272807	36000000	672	SLE QP 2	19439	1120500	Si
0.23	0.41	0.0000018	707	SLE RA 18	20459	1494000	253689	36000000	624	SLE QP 2	18052	1120500	Si
1.7	0.41	0.0000018	467	SLE RA 18	13497	1494000	167365	36000000	407	SLE QP 2	11777	1120500	Si
3.41	0.41	0.00000402	346	SLE RA 18	9720	1494000	120527	36000000	298	SLE QP 2	8361	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	23	19	159	SLV 6	0.36	1618	1.653	6.72	5.36	27.92	SLV 6	0.36	1618	1.653	Si
0.23	22	17	159	SLV 6	0.36	1618	1.653	6.24	4.97	27.92	SLV 6	0.36	1618	1.653	Si
1.7	14	11	159	SLV 6	0.36	1618	1.653	4.07	3.04	27.92	SLV 6	0.36	1618	1.653	Si
3.41	10	7	159	SLV 6	0.36	1618	1.653	2.98	1.92	61.33	SLV 6	0.36	1618	1.653	Si

Campata 2 tra i fili 1 - 1, sezione R 50x45, asta 67

Campata 3 tra i fili 1 - ?, sezione R 50x45, aste 66, 65, 64, 63, 62, 61, 60, 59, 58, 57, 56

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	416	SLV 6	0.129	6133	1473	SLU 81	15877	Si
2.29	0.41	0.0004	162	SLV 6	0.125	5756	585	SLU 81	15877	Si
4.35										
4.58										

Verifiche delle tensioni di esercizio

Rara									Quasi permanente				Verifica
x	d	Af	M	Comb	σc	σc limite	σf	σf limite	M	Comb	σc	σc limite	
0	0.41	0.00000402	305	SLE RA 18	8562	1494000	106164	36000000	260	SLE QP 2	7297	1120500	Si
2.29	0.41	0.00000377	116	SLE RA 18	3276	1494000	40628	36000000	88	SLE QP 2	2484	1120500	Si
4.35													
4.58													

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	9	5	159	SLV 6	0.36	1618	1.653	2.6	1.57	61.33	SLV 6	0.36	1618	1.653	Si
2.29	3	3	159	SLV 6	0.36	1618	1.653	0.88	0.74	57.56	SLV 6	0.36	1618	1.653	Si
4.35	6	0	7	SLV 16	0.36	1618	1.653	1.84	0	57.56	SLV 16	0.36	1618	1.653	Si
4.58	6	0	6	SLV 16	0.36	1618	1.653	1.86	0	57.56	SLV 16	0.36	1618	1.653	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste										Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
76,75,74,73,72,71,70,69,68,67,66,65,64,63,62,61,60,59,58,57,56										9.43	1.1	SLU 81	ST	BT	2.3	242318	46871	5.17	Si
76,75,74,73,72,71,70,69,68,67,66,65,64,63,62,61,60,59,58,57,56										9.43	1.1	SLV 5	SIS	BT	2.3	198729	43085	4.61	Si
76,75,74,73,72,71,70,69,68,67,66,65,64,63,62,61,60,59,58,57,56										9.43	1.1	SLD 5	SIS	BT	2.3	224048	37012	6.05	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	54	-46871	7525.29	-49083.67	0	0	-1.05	0.16	0.78	7.34	1496	2060	0	14430	
0	-3462	-43085	8968.62	-53211.51	0	-5	-1.24	0.21	0.68	6.96	1496	2060	0	14430	0.07
0	-1462	-37012	6660.5	-41662.18	0	-2	-1.13	0.18	0.74	7.18	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.02	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.02	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.02	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	52	SLE RA 1	0.05	0	52	52	SLE RA 1	0.05	0	43	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	52	SLE RA 1	0.05	0	52	52	SLE RA 1	0.05	0	43	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	52	SLE RA 1	0.05	0	52	52	SLE RA 1	0.05	0	43	SLE RA 1	0.0033	0	SLE RA 1	Si

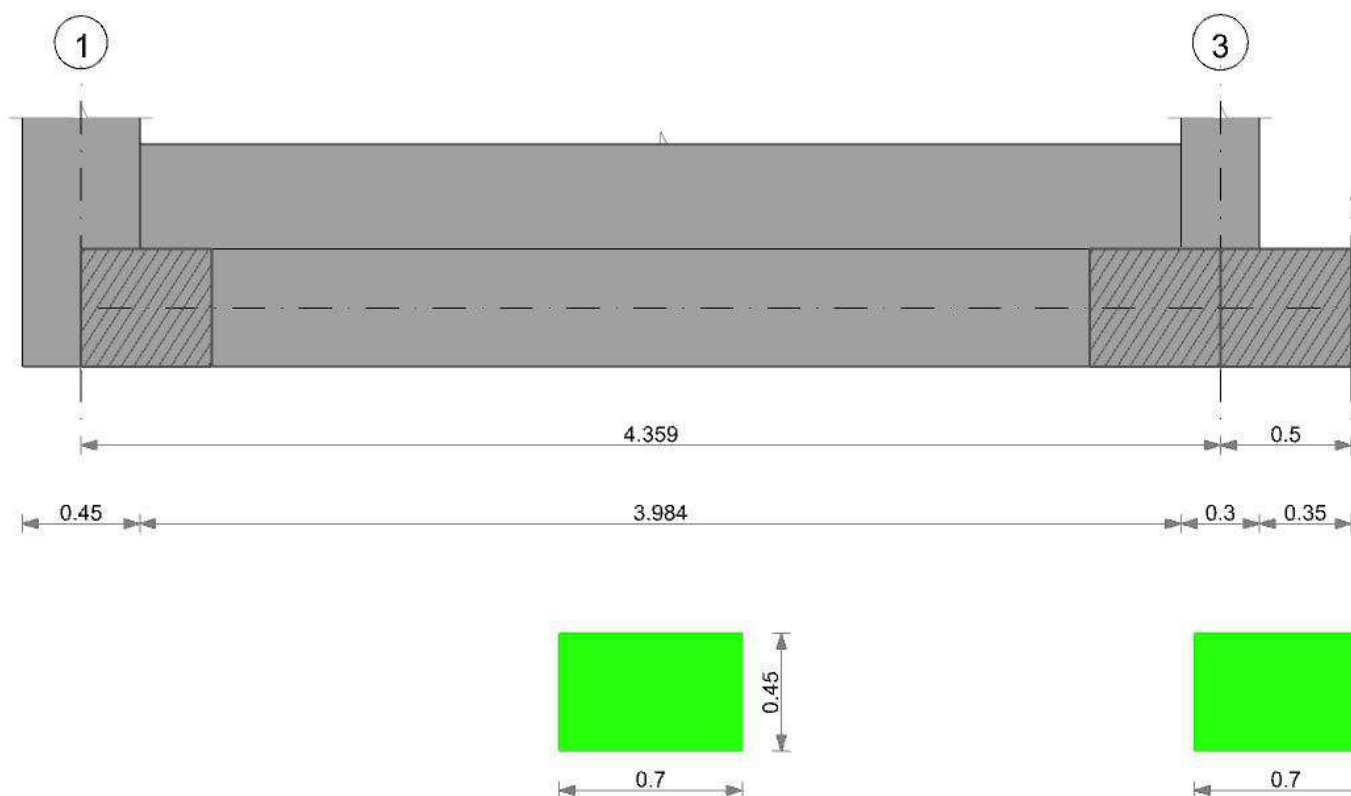
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva					Distorsione angolare negativa					Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.			
E	0.19	0	SLE RA 1	0.19	0	52	43	SLE RA 1	0.19	0	52	SLE RA 1	0.1	0	43	SLE RA 1			Si
D	0.19	0	SLE RA 1	0.19	0	52	43	SLE RA 1	0.19	0	52	SLE RA 1	0.1	0	43	SLE RA 1			Si
Z	0.19	0	SLE RA 1	0.19	0	52	43	SLE RA 1	0.19	0	52	SLE RA 1	0.1	0	43	SLE RA 1			Si



CORDOLO 7

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

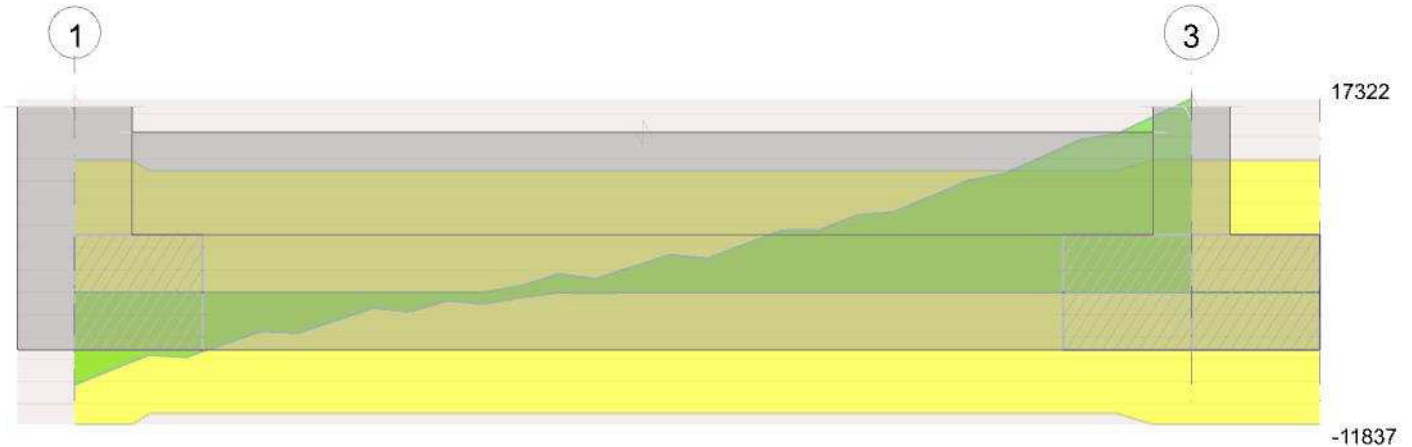
Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione



Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 1 - 3, sezione R 70x45, aste 121, 120, 119, 118, 117, 116, 115, 114, 113, 112, 111

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2055	SLV 6	0.086	2724	5303	SLV 6	15877	Si
0.23	0.41	0.0002	1959	SLV 6	0.086	2724	5055	SLV 6	15877	Si
2.18	0.41	0.0002	1668	SLU 81	0.018	2802	4305	SLU 81	15877	Si
4.21	0.41	0.0002	2289	SLU 81	0.018	2802	5907	SLU 81	15877	Si
4.36	0.41	0.0002	2305	SLU 81	0.018	2802	5948	SLU 81	15877	Si

Verifiche delle tensioni di esercizio

x	d	Af	M	Comb	Rara				Quasi permanente				Verifica
					σc	$\sigma c \text{ limite}$	σf	$\sigma f \text{ limite}$	M	Comb	σc	$\sigma c \text{ limite}$	
0	0.41	0.00000175	1272	SLE RA 18	36803	1494000	456352	36000000	1122	SLE QP 2	32465	1120500	Si
0.23	0.41	0.00000175	1235	SLE RA 18	35725	1494000	442989	36000000	1089	SLE QP 2	31498	1120500	Si
2.18	0.41	0.00000175	1217	SLE RA 18	35205	1494000	436543	36000000	1071	SLE QP 2	30982	1120500	Si
4.21	0.41	0.00000175	1672	SLE RA 18	48370	1494000	599793	36000000	1475	SLE QP 2	42683	1120500	Si
4.36	0.41	0.00000175	1683	SLE RA 18	48705	1494000	603937	36000000	1485	SLE QP 2	42984	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Indicatori di rischio sismico

x	T gravità	T sisma	T ultimo	Comb.	Pga	Tr	Ind. taglio	M gravità	M sisma	M ultimo	Comb.	Pga	Tr	Ind. momento	Ver
0	29	24	159	SLV 6	0.36	1618	1.653	11.22	9.33	27.24	SLV 6	0.36	1618	1.653	Si
0.23	28	22	159	SLV 6	0.36	1618	1.653	10.89	8.7	27.24	SLV 6	0.36	1618	1.653	Si
2.18	28	14	159	SLV 1	0.36	1618	1.653	10.71	5.44	27.24	SLV 1	0.36	1618	1.653	Si
4.21	38	13	159	SLV 1	0.36	1618	1.653	14.75	5.04	27.24	SLV 1	0.36	1618	1.653	Si
4.36	38	13	159	SLV 1	0.36	1618	1.653	14.85	4.99	27.24	SLV 1	0.36	1618	1.653	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	yR	Rd	Ed	Rd/Ed	Verifica
121,120,119,118,117,116,115,114,113,112,111	4.58	1.3	SLU 81	ST	BT	2.3	206755	48288	4.28	Si
121,120,119,118,117,116,115,114,113,112,111	4.58	1.3	SLV 1	SIS	BT	2.3	205017	44180	4.64	Si
121,120,119,118,117,116,115,114,113,112,111	4.58	1.3	SLD 2	SIS	BT	2.3	209060	37764	5.54	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	ys	Fi	Coes	Amax
0	654	-48288	-3957.71	5906.69	0	1	0.12	-0.08	1.14	4.34	1496	2060	0	14430	
0	1833	-44180	-4678.53	-1248.16	0	2	-0.03	-0.11	1.09	4.53	1496	2060	0	14430	0.07
0	1022	-37764	-3509.6	1781.01	0	2	0.05	-0.09	1.11	4.49	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ik	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale				Relativo				Rapp. inflessione				Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo J	Comb.	Sr adm	Sr	Nodo	Comb.	Ri adm	Ri	Comb.	
E	0.05	0	119	SLE RA 18	0.05	0	119	37	SLE RA 18	0.05	0	37	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	37	SLE RA 1	0.05	0	37	37	SLE RA 1	0.05	0	37	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	37	SLE RA 1	0.05	0	37	37	SLE RA 1	0.05	0	37	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta			Distorsione angolare positiva			Distorsione angolare negativa			Verifica
	RR adm	RR	Comb.	R adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	
E	0.19	0	SLE RA 18	0.19	0	37	119	SLE RA 18	0.19	0	37	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	37	119	SLE RA 1	0.19	0	37	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	37	119	SLE RA 1	0.19	0	37	SLE RA 1	Si



1.3 Verifica sismica globale

Le unità di misura elencate nel capitolo sono in [m] ove non espressamente specificato.

Desc.: descrizione.

Stato limite: (muratura) V=Taglio; PF=Pressoflessione; PFFP=Pressoflessione fuori piano; R=Ribaltamento.

Molt.: moltiplicatore minimo della azione sismica che produce lo stato limite.

Comb.: combinazione.

PGA: accelerazione al suolo.

iPGA (ZE): indicatore di rischio sismico in termini di PGA ovvero rapporto tra l'azione sismica massima sopportabile dall'elemento e l'azione sismica massima che si utilizzerebbe nel progetto nuovo (§C8.3).

TR: tempo di ritorno.

(TR/TRrif)^.41: indicatore di rischio sismico in termini di periodo di ritorno.

fa: fattore di accelerazione.

Stato limite: (muratura) V=Taglio; PF=Presso flessione; PFFP=Pressoflessione fuori piano; R=Ribaltamento.

Coeff.s.: coefficiente minimo prodotto dallo stato limite.

Verifica: stato di verifica.

Stato limite: (C.A.) tipologia di verifica analizzata.

Trave: titolo della trave.

Pressoflessione: dati della verifica a pressoflessione.

Coeff.s.: coefficiente di sicurezza a flessione.

ITR: indicatore di rischio sismico in termini di tempo di ritorno.

campata: campata di riferimento.

dist.: ascissa relativa all'inizio della campata. [m]

Taglio: dati della verifica a taglio.

Coeff.s.: coefficiente di sicurezza a taglio.

Maschio: maschio.

Stato limite: (maschio muratura) V=Taglio; PF=Presso flessione; PFFP=Presso flessione fuori piano; R=Ribaltamento.

Trave: trave di collegamento in muratura.

Stato limite: (trave muratura) V=Taglio; F=Flessione.

S. L.: stato limite di riferimento.

TR,C: periodo di ritorno di capacità.

PGA,C: accelerazione di aggancio di capacità.

TR,Rif: periodo di ritorno di riferimento.

PGA,Rif: accelerazione di aggancio di riferimento.

Tipo rottura: tipo di rottura che fornisce il valore minimo degli elementi considerati.

PAM: perdita media annua attesa.

Classe PAM: classe di rischio PAM.

IS-V: indice di sicurezza.

Classe IS-V: classe di rischio IS-V.

Verifica di elementi dotati di indicatori di rischio sismico mediante analisi con fattore q

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.) § C8.7.1

Accelerazioni e tempi di ritorno

Accelerazione di aggancio SLO ($ag/g_{SLO} \cdot S \cdot ST$) PGA,SLOrif = 0.081

Accelerazione di aggancio SLD ($ag/g_{SLD} \cdot S \cdot ST$) PGA,SLDrif = 0.101

Accelerazione di aggancio SLV ($ag/g_{SLV} \cdot S \cdot ST$) PGA,SLVrif = 0.244

Tr,SLOrif = 30 anni

Tr,SLDrif = 50 anni

Tr,SLVrif = 475 anni

Indicatori minimi riferiti al solo materiale muratura

Desc.	Stato limite	Molt.	Comb.	PGA	iPGA (ZE)	TR	(TR/TRrif)^.41	fa
Maschio 26	PF	0.192	SLV 11	0.0414	0.1693	6	0.1666	0.1647
Maschio 2	V	1.727	SLV 12	0.3624	1.4833	1618	1.6529	1.4831
Maschio 23	PFFP	0.828	SLV 6	0.1986	0.8127	274	0.7981	0.8124
Maschio 25	R	1.649	SLV 12	0.3624	1.4833	1618	1.6529	1.4831
Trave di accoppiamento 13	PF	0.858	SLV 10	0.2065	0.8453	304	0.8328	0.8449
Trave di accoppiamento 1	V	0.95	SLV 12	0.2311	0.9458	409	0.9405	0.9451

Coefficienti di sicurezza riferiti al solo materiale muratura

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 1	PF SLU	4.926	SLU 44	Si
Maschio 1	V SLU	3.719	SLU 82	Si
Maschio 1	PF	1.582	SLV 16	Si
Maschio 1	V	3.128	SLV 8	Si
Maschio 1	PFFP	5.045	SLV 15	Si
Maschio 1	R	5.475	SLV 4	Si
Maschio 2	PF SLU	9.482	SLU 44	Si
Maschio 2	V SLU	8.239	SLU 82	Si
Maschio 2	PF	3.442	SLV 12	Si
Maschio 2	V	2.272	SLV 12	Si
Maschio 2	PFFP	12.106	SLV 15	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 2	R	3.668	SLV 2	Si
Maschio 3	PF SLU	22.462	SLU 43	Si
Maschio 3	V SLU	10.457	SLU 81	Si
Maschio 3	PF	8.151	SLV 5	Si
Maschio 3	V	3.897	SLV 5	Si
Maschio 3	PFFP	19.813	SLV 16	Si
Maschio 3	R	3.836	SLV 5	Si
Maschio 4	PF SLU	10.424	SLU 39	Si
Maschio 4	V SLU	8.763	SLU 82	Si
Maschio 4	PF	3.487	SLV 15	Si
Maschio 4	V	7.508	SLV 4	Si
Maschio 4	PFFP	7.888	SLV 15	Si
Maschio 4	R	4.717	SLV 4	Si
Maschio 5	PF SLU	1.349	SLU 81	Si
Maschio 5	V SLU	3.662	SLU 81	Si
Maschio 5	PF	1.179	SLV 15	Si
Maschio 5	V	2.729	SLV 13	Si
Maschio 5	PFFP	19.005	SLV 8	Si
Maschio 5	R	2.6	SLV 13	Si
Maschio 6	PF SLU	5.388	SLU 81	Si
Maschio 6	V SLU	6.107	SLU 81	Si
Maschio 6	PF	4.386	SLV 3	Si
Maschio 6	V	4.274	SLV 1	Si
Maschio 6	PFFP	21.973	SLV 9	Si
Maschio 6	R	3.806	SLV 4	Si
Maschio 7	PF SLU	18.8	SLU 43	Si
Maschio 7	V SLU	14.813	SLU 81	Si
Maschio 7	PF	6.405	SLV 5	Si
Maschio 7	V	3.678	SLV 1	Si
Maschio 7	PFFP	14.597	SLV 5	Si
Maschio 7	R	3.339	SLV 12	Si
Maschio 8	PF SLU	6.508	SLU 82	Si
Maschio 8	V SLU	22.871	SLU 81	Si
Maschio 8	PF	3.421	SLV 1	Si
Maschio 8	V	5.648	SLV 14	Si
Maschio 8	PFFP	10.523	SLV 6	Si
Maschio 8	R	3.665	SLV 11	Si
Maschio 9	PF SLU	9.669	SLU 43	Si
Maschio 9	V SLU	12.317	SLU 44	Si
Maschio 9	PF	4.22	SLV 1	Si
Maschio 9	V	7.22	SLV 16	Si
Maschio 9	PFFP	34.442	SLV 16	Si
Maschio 9	R	1.984	SLV 3	Si
Maschio 10	PF SLU	9.105	SLU 43	Si
Maschio 10	V SLU	7.215	SLU 65	Si
Maschio 10	PF	3.018	SLV 1	Si
Maschio 10	V	5.229	SLV 3	Si
Maschio 10	PFFP	28.851	SLV 5	Si
Maschio 10	R	2.077	SLV 12	Si
Maschio 13	PF SLU	2.526	SLU 82	Si
Maschio 13	V SLU	99.747	SLU 39	Si
Maschio 13	PF	1.6	SLV 3	Si
Maschio 13	V	4.247	SLV 7	Si
Maschio 13	PFFP	10.625	SLV 3	Si
Maschio 13	R	3.762	SLV 10	Si
Maschio 14	PF SLU	6.405	SLU 82	Si
Maschio 14	V SLU	76.276	SLU 82	Si
Maschio 14	PF	1.106	SLV 6	Si
Maschio 14	V	10.906	SLV 10	Si
Maschio 14	PFFP	5.356	SLV 6	Si
Maschio 14	R	4.442	SLV 11	Si
Maschio 15	PF SLU	8.334	SLU 82	Si
Maschio 15	V SLU	4.646	SLU 82	Si
Maschio 15	PF	9.127	SLV 8	Si
Maschio 15	V	5.431	SLV 8	Si
Maschio 15	PFFP	27.34	SLV 13	Si
Maschio 15	R	5.655	SLV 9	Si
Maschio 16	PF SLU	3.39	SLU 44	Si
Maschio 16	V SLU	7.045	SLU 82	Si
Maschio 16	PF	1.527	SLV 12	Si
Maschio 16	V	3.756	SLV 12	Si
Maschio 16	PFFP	1.699	SLV 15	Si
Maschio 16	R	4.731	SLV 4	Si
Maschio 17	PF SLU	19.968	SLU 23	Si
Maschio 17	V SLU	12.314	SLU 81	Si
Maschio 17	PF	1.541	SLV 5	Si
Maschio 17	V	7.353	SLV 5	Si
Maschio 17	PFFP	2.385	SLV 12	Si
Maschio 17	R	4.882	SLV 16	Si
Maschio 18	PF SLU	2.167	SLU 65	Si
Maschio 18	V SLU	12.769	SLU 81	Si
Maschio 18	PF	1.656	SLV 15	Si
Maschio 18	V	6.466	SLV 13	Si
Maschio 18	PFFP	2.217	SLV 4	Si
Maschio 18	R	3.334	SLV 5	Si
Maschio 19	PF SLU	1.759	SLU 81	Si
Maschio 19	V SLU	5.063	SLU 81	Si
Maschio 19	PF	0.633	SLV 5	No
Maschio 19	V	4.048	SLV 1	Si
Maschio 19	PFFP	2.942	SLV 3	Si
Maschio 19	R	2.9	SLV 5	Si



Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 20	PF SLU	3.275	SLU 43	Si
Maschio 20	V SLU	8.476	SLU 81	Si
Maschio 20	PF	1.216	SLV 5	Si
Maschio 20	V	3.709	SLV 1	Si
Maschio 20	PFFP	2.094	SLV 5	Si
Maschio 20	R	2.903	SLV 12	Si
Maschio 21	PF SLU	5.665	SLU 40	Si
Maschio 21	V SLU	30.39	SLU 39	Si
Maschio 21	PF	1.828	SLV 3	Si
Maschio 21	V	10.985	SLV 14	Si
Maschio 21	PFFP	1.736	SLV 6	Si
Maschio 21	R	3.472	SLV 14	Si
Maschio 22	PF SLU	5.929	SLU 81	Si
Maschio 22	V SLU	19.944	SLU 39	Si
Maschio 22	PF	4.139	SLV 1	Si
Maschio 22	V	14.575	SLV 16	Si
Maschio 22	PFFP	3.309	SLV 16	Si
Maschio 22	R	1.713	SLV 5	Si
Maschio 23	PF SLU	7.53	SLU 40	Si
Maschio 23	V SLU	13.442	SLU 44	Si
Maschio 23	PF	4.145	SLV 16	Si
Maschio 23	V	9.926	SLV 1	Si
Maschio 23	PFFP	2.358	SLV 1	Si
Maschio 23	R	1.722	SLV 12	Si
Maschio 25	PF SLU	2.527	SLU 82	Si
Maschio 25	V SLU	27.977	SLU 82	Si
Maschio 25	PF	0	SLV 5	No
Maschio 25	V	7.241	SLV 1	Si
Maschio 25	PFFP	0	SLV 5	No
Maschio 25	R	9.131	SLV 11	Si
Maschio 26	PF SLU	1.659	SLU 82	Si
Maschio 26	V SLU	9.692	SLU 82	Si
Maschio 26	PF	0	SLV 7	No
Maschio 26	V	5.097	SLV 15	Si
Maschio 26	PFFP	3.254	SLV 6	Si
Maschio 26	R	3.753	SLV 2	Si
Maschio 27	PF SLU	5.739	SLU 43	Si
Maschio 27	V SLU	13.795	SLU 81	Si
Maschio 27	PF	1.938	SLV 2	Si
Maschio 27	V	5.459	SLV 6	Si
Maschio 27	PFFP	1.658	SLV 7	Si
Maschio 27	R	5.046	SLV 2	Si

Verifica maschi in muratura

Maschio	Stato limite	Molt.	Comb.	PGA	IPGA (E)	TR	(TR/TRrif)^.41	Verifica
1	PF	1.148	SLV 16	0.279	1.141	704	1.175	Si
	V	3.55	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	1.44	SLV 15	0.347	1.422	1409	1.562	Si
	R	3.451	SLV 4	0.362	1.483	1618	1.653	Si
2	PF	1.93	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.727	SLV 12	0.362	1.483	1618	1.653	Si
	PFFP	2.145	SLV 15	0.362	1.483	1618	1.653	Si
	R	2.671	SLV 2	0.362	1.483	1618	1.653	Si
3	PF	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.72	SLV 12	0.362	1.483	1618	1.653	Si
	PFFP	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	R	3.063	SLV 5	0.362	1.483	1618	1.653	Si
4	PF	1.515	SLV 11	0.362	1.483	1618	1.653	Si
	V	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.819	SLV 15	0.362	1.483	1618	1.653	Si
	R	2.967	SLV 4	0.362	1.483	1618	1.653	Si
5	PF	1.836	SLV 4	0.362	1.483	1618	1.653	Si
	V	3.883	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	2.401	SLV 8	0.362	1.483	1618	1.653	Si
	R	2.109	SLV 13	0.362	1.483	1618	1.653	Si
6	PF	3.884	SLV 5	0.362	1.483	1618	1.653	Si
	V	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	R	3.518	SLV 4	0.362	1.483	1618	1.653	Si
7	PF	2.651	SLV 5	0.362	1.483	1618	1.653	Si
	V	3.306	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.637	SLV 5	0.362	1.483	1618	1.653	Si
	R	2.449	SLV 12	0.362	1.483	1618	1.653	Si
8	PF	2.197	SLV 6	0.362	1.483	1618	1.653	Si
	V	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.967	SLV 6	0.362	1.483	1618	1.653	Si
	R	2.62	SLV 11	0.362	1.483	1618	1.653	Si
9	PF	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.819	SLV 3	0.362	1.483	1618	1.653	Si
10	PF	2.82	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.865	SLV 12	0.362	1.483	1618	1.653	Si
13	PF	1.533	SLV 2	0.362	1.483	1618	1.653	Si
	V	3.917	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	3.297	SLV 3	0.362	1.483	1618	1.653	Si
	R	2.618	SLV 10	0.362	1.483	1618	1.653	Si
14	PF	1.032	SLV 6	0.252	1.031	519	1.037	Si
	V	1.000	SLV 1	0.362	1.483	1618	1.653	Si



Maschio	Stato limite	Molt.	Comb.	PGA	IPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
15	PFFP	1.383	SLV 6	0.334	1.367	1237	1.481	Si
	R	2.671	SLV 11	0.362	1.483	1618	1.653	Si
	PF	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
16	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PF	1.701	SLV 12	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
17	PFFP	1.373	SLV 15	0.332	1.357	1208	1.466	Si
	R	4.053	SLV 4	0.362	1.483	1618	1.653	Si
	PF	1.322	SLV 5	0.32	1.308	1069	1.395	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
18	PFFP	1.914	SLV 12	0.362	1.483	1618	1.653	Si
	R	3.794	SLV 16	0.362	1.483	1618	1.653	Si
	PF	3.977	SLV 4	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
19	PFFP	1.537	SLV 4	0.362	1.483	1618	1.653	Si
	R	2.82	SLV 5	0.362	1.483	1618	1.653	Si
	PF	0.658	SLV 5	0.155	0.633	148	0.62	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
20	PFFP	2.789	SLV 3	0.362	1.483	1618	1.653	Si
	R	2.451	SLV 5	0.362	1.483	1618	1.653	Si
	PF	1.155	SLV 5	0.28	1.148	717	1.184	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
21	PFFP	1.596	SLV 5	0.362	1.483	1618	1.653	Si
	R	2.275	SLV 12	0.362	1.483	1618	1.653	Si
	PF	1.381	SLV 3	0.334	1.365	1231	1.478	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
22	PFFP	1.491	SLV 6	0.36	1.472	1576	1.635	Si
	R	3.089	SLV 14	0.362	1.483	1618	1.653	Si
	PF	2.583	SLV 16	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
23	PFFP	1.873	SLV 16	0.362	1.483	1618	1.653	Si
	R	1.65	SLV 5	0.362	1.483	1618	1.653	Si
	PF	2.192	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
25	PFFP	1.397	SLV 1	0.337	1.381	1277	1.5	Si
	R	1.649	SLV 12	0.362	1.483	1618	1.653	Si
	PF	0.747	SLV 1	0.177	0.727	203	0.706	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
26	PFFP	0.828	SLV 6	0.199	0.813	274	0.798	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PF	0.192	SLV 11	0.041	0.169	6	0.167	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
27	PFFP	1.435	SLV 6	0.346	1.417	1393	1.554	Si
	R	2.743	SLV 2	0.362	1.483	1618	1.653	Si
	PF	1.637	SLV 2	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.141	SLV 7	0.277	1.134	692	1.167	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si

Verifica travi di collegamento in muratura

Trave	Stato limite	Molt.	Comb.	PGA	IPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
1	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.95	SLV 12	0.231	0.946	409	0.941	No
2	F	3.129	SLV 8	0.362	1.483	1618	1.653	Si
	V	1.18	SLV 8	0.286	1.171	761	1.213	Si
3	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.17	SLV 5	0.284	1.162	743	1.201	Si
4	F	3.537	SLV 5	0.362	1.483	1618	1.653	Si
	V	1.307	SLV 5	0.316	1.294	1031	1.374	Si
5	F	3.824	SLV 4	0.362	1.483	1618	1.653	Si
	V	1.48	SLV 13	0.357	1.461	1539	1.619	Si
6	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.475	SLV 3	0.356	1.456	1522	1.612	Si
7	F	2.697	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.689	SLV 1	0.362	1.483	1618	1.653	Si
8	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.926	SLV 16	0.362	1.483	1618	1.653	Si
9	F	3.661	SLV 14	0.362	1.483	1618	1.653	Si
	V	2.502	SLV 3	0.362	1.483	1618	1.653	Si
10	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.098	SLV 1	0.362	1.483	1618	1.653	Si
13	F	0.858	SLV 10	0.207	0.845	304	0.833	No
	V	1.925	SLV 10	0.362	1.483	1618	1.653	Si
14	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.583	SLV 8	0.362	1.483	1618	1.653	Si
15	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.926	SLV 8	0.362	1.483	1618	1.653	Si
16	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.435	SLV 5	0.362	1.483	1618	1.653	Si
17	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.431	SLV 5	0.362	1.483	1618	1.653	Si
18	F	2.454	SLV 5	0.362	1.483	1618	1.653	Si
	V	1.666	SLV 5	0.362	1.483	1618	1.653	Si
19	F	2.321	SLV 5	0.362	1.483	1618	1.653	Si
	V	1.697	SLV 5	0.362	1.483	1618	1.653	Si
20	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.671	SLV 1	0.362	1.483	1618	1.653	Si
21	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	3.239	SLV 3	0.362	1.483	1618	1.653	Si



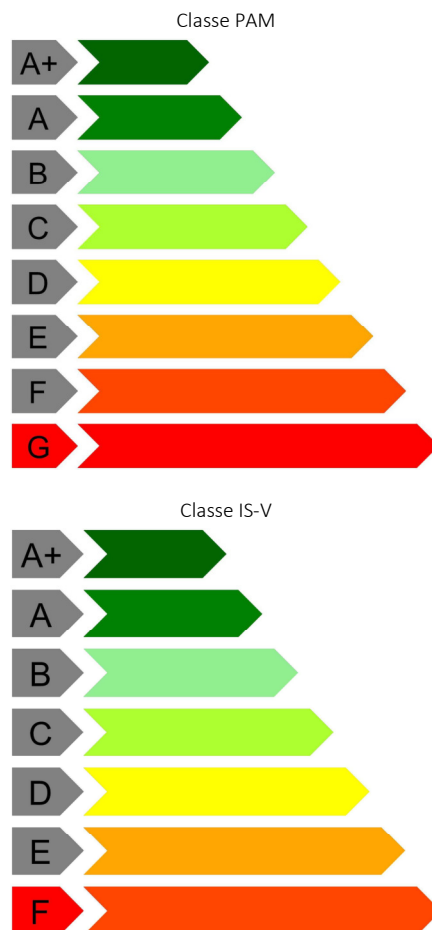
Trave	Stato limite	Molt.	Comb.	PGA	IPGA (ZE)	TR	(TR/TRrif)^.41	Verifica
22	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.958	SLV 1	0.233	0.954	419	0.95	No

Periodi di ritorno e accelerazioni di aggancio per gli Stati Limite

S. L.	TR,C	PGA,C	TR,Rif	PGA,Rif	Tipo rottura
Stato limite di salvaguardia della vita	0	0	475	0.244	flessione travi

Coefficienti relativi alle Linee guida per la classificazione del rischio sismico delle costruzioni secondo il D.M. 24 09/01/2020

TR,C	TR,Rif	PAM	Classe PAM	IS-V	Classe IS-V	Tipo rottura
0	475	8.22	G	0	F	flessione travi



1.4 Verifiche maschi in muratura

Le unità di misura elencate nel capitolo sono in [m, daN, s] ove non espressamente specificato.

X_{ini.}: coordinate del punto iniziale del maschio. [m]

Y_{ini.}: coordinate del punto iniziale del maschio. [m]

X_{fin.}: coordinate del punto finale del maschio. [m]

Y_{fin.}: coordinate del punto finale del maschio. [m]

Quota i.: livello o falda inferiore.

Quota s.: livello o falda superiore.

l: lunghezza del maschio. [m]

Sp.: spessore. [m]

h_{netta}: altezza netta (a filo solai). [m]

h_{ini.}: altezza nel modello al punto iniziale. [m]

h_{fin.}: altezza nel modello al punto finale. [m]

a: distanza tra irrigidimenti laterali. [m]

a.s.,sx: lunghezza di appoggio del solaio di sinistra. [m]

a.s.,dx: lunghezza di appoggio del solaio di destra. [m]

fb: resistenza normalizzata a compressione verticale dei blocchi. [daN/m²]

fk: resistenza caratteristica a compressione della muratura utilizzata. [daN/m²]



fvk0: resistenza caratteristica a taglio in assenza di carichi verticali. [daN/m²]
fmedio: resistenza media a compressione della muratura utilizzata. [daN/m²]
τ0: resistenza media a taglio in assenza di azioni normali [C8.7.1.16]. [daN/m²]
fv0: resistenza media a taglio in assenza di azioni normali [C8.7.1.17]. [daN/m²]
μ: coefficiente di attrito [C8.7.1.17].
φ: coefficiente di ammorsamento o ingranamento secondo Circolare 7 21-01-19 §C8.7.1.3.1.1.
fv,lim: valore massimo della resistenza a taglio che può essere impiegata nel calcolo. [daN/m²]
E: modulo di elasticità longitudinale della muratura utilizzato. [daN/m²]
G: modulo di elasticità tangenziale della muratura utilizzato. [daN/m²]
FC: fattore di confidenza della muratura.
Materiale: descrizione del materiale.
Fu Verticale: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]
Fu Orizzontale: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]
tfv: spessore di calcolo equivalente verticale di uno strato di rinforzo.
tfo: spessore di calcolo equivalente orizzontale di uno strato di rinforzo.
E: modulo di elasticità longitudinale. [daN/m²]
eu: dilatazione a rottura.
Tipo fibra: natura della fibra.
materiale: materiale fibra del rinforzo.
lato applicazione: lato di applicazione del rinforzo.
esposizione: condizione di esposizione secondo CNR-DT 215 §3.2.
ancoraggio verticale iniziale: grado di ancoraggio iniziale dei rinforzi verticali.
ancoraggio verticale finale: grado di ancoraggio finale dei rinforzi verticali.
ancoraggio orizzontale iniziale: grado di ancoraggio iniziale dei rinforzi orizzontali.
ancoraggio orizzontale finale: grado di ancoraggio finale dei rinforzi orizzontali.
strati: numero strati del rinforzo.
verifica taglio: tipo di verifica a taglio.
elim,conv / ε,CNR DT-200: dati relativi ai parametri per il calcolo della deformazione di progetto.
αt: coefficiente che tiene conto della ridotta capacità estensionale delle fibre sollecitate a taglio secondo CNR-DT 215 §4.1.1.
α: coefficiente amplificativo tensione di distacco secondo CNR-DT 215 §3.1 ovvero secondo CNR-DT 200 R1/2013 §5.3.3.
elim,conv: deformazione limite convenzionale del rinforzo FRCM.
ε,fd: deformazione di progetto del rinforzo FRCM ovvero CRM.
γF,d: fattore parziale di sicurezza per stato limite di distacco secondo CNR-DT 200 R1/2013 §3.4.1.
connettori: presenza di connettori per la prevenzione del distacco del rinforzo.
tipo di muratura: tipo di muratura per stato limite di distacco di estremità secondo CNR-DT 200 R1/2013 §5.3.2.
CRM / Fibrenet?: dati relativi ai parametri per il calcolo secondo metodo Fibrenet? ovvero se il materiale è di tipo CRM.
CRM: stabilisce se il rinforzo è di tipo CRM secondo le Linee Guida del C.S.L.P. Ottobre 2019.
intonaco: materiale intonaco FRCM ovvero CRM.
spessore intonaco: spessore intonaco. [m]
tipo blocco fibrenet: tipo blocco muratura per verifica a taglio tipo Fibrenet.
Comb.: combinazione.
Quota: quota della sezione di verifica. [m]
M: momento flettente nel piano. [daN*m]
N: sforzo normale. [daN]
εm: deformazione della muratura.
εm_: deformazione elastica della muratura.
εmu: deformazione ultima della muratura.
df: distanza tra il lembo compresso e la fibra tesa più lontana. [m]
M0d: momento resistente della sezione non rinforzata. [daN*m]
M1d: momento resistente della sezione rinforzata. [daN*m]
MRd: momento resistente della sezione. [daN*m]
c.s.: coefficiente di sicurezza.
incremento > 50%: incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.
Verifica: stato di verifica.
Nmur: aliquota di sforzo normale recepito dalla sola muratura. [daN]
V: taglio nel piano. [daN]
df: distanza tra lembo compresso e baricentro dell'armatura tesa. [m]
l': lunghezza della parte compressa della parete. [m]
σN: tensione media nella zona compressa. [daN/m²]
fvd: resistenza a taglio di calcolo. [daN/m²]
Vt: resistenza a taglio della muratura non rinforzata. [daN]
Vt,f: resistenza a taglio del rinforzo (CNR DT215 4.1a). [daN]
Vt,c: resistenza a taglio per schiacciamento delle bielle (CNR DT215 4.1b). [daN]
Vt,c int.: contributo di resistenza a taglio delle bielle dell'intonaco se considerato. [daN]
Vt,R: resistenza a taglio della sezione rinforzata. [daN]
res. > 50%: incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.
Sa: accelerazione massima adimensionalizzata rispetto a quella di gravità.
M: momento flettente fuori piano. [daN*m]
Coeff.s.: coefficiente di sicurezza.
N top: sforzo normale in sommità. [daN]
N base: sforzo normale al piede. [daN]
V orto: taglio fuori piano. [daN]
α0: moltiplicatore secondo [C8.7.1.1].
M*: massa partecipante al cinematisimo. [daN/(m/s²)]



e*: frazione di massa partecipante della muratura [C8.7.1.5].

a0*: accelerazione spettrale di attivazione del meccanismo [C8.7.1.8]. [m/s²]

aLim: accelerazione limite [C7.2.11]. [m/s²]

Stato limite: pF_SLU=Presso flessione per azioni non sismiche; V_SLU=Taglio per azioni non sismiche; PF_SLV=Presso flessione per azioni sismiche; V_SLV=Taglio per azioni sismiche; PFFP_SLV=Presso flessione fuori piano per azioni sismiche; R_SLV=Ribaltamento per azioni sismiche.

fd: resistenza a compressione di calcolo. [daN/m²]

sa: accelerazione massima, adimensionalizzata rispetto a g, che l'elemento strutturale subisce durante il sisma.

σ0: tensione media di compressione. [daN/m²]

Mc: momento di collasso per azioni perpendicolari al piano. [daN*m]

Maschio 1

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
23.989	19.646	23.909	18.116	L1	L2	1.532	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	-0.21	-1232.65	-7823	-0.0000285	0.0003743	0.0035	1.532	5324.55	6107.9	6107.9	4.96	No	Si
SLU 46	0.19	110.14	-6259	-0.0000149	0.0003743	0.0035	1.532	4366.96	4593.3	4593.3	41.71	No	Si
SLU 52	-0.21	-1397.75	-9159	-0.0000332	0.0003743	0.0035	1.532	6100.46	6949.12	6949.12	4.97	No	Si
SLU 52	0.19	104.4	-7426	-0.0000175	0.0003743	0.0035	1.532	5086.35	5305.59	5305.59	50.82	No	Si
SLU 49	-0.21	-1232.65	-7823	-0.0000285	0.0003743	0.0035	1.532	5324.55	6107.9	6107.9	4.96	No	Si
SLU 49	0.19	110.14	-6259	-0.0000149	0.0003743	0.0035	1.532	4366.96	4593.3	4593.3	41.71	No	Si
SLU 65	-0.21	-1351.13	-8759	-0.0000318	0.0003743	0.0035	1.532	5872.34	6697.69	6697.69	4.96	No	Si
SLU 65	0.19	120.53	-7055	-0.0000168	0.0003743	0.0035	1.532	4861.16	5090.78	5090.78	42.24	No	Si
SLU 68	-0.21	-1351.13	-8759	-0.0000318	0.0003743	0.0035	1.532	5872.34	6697.69	6697.69	4.96	No	Si
SLU 68	0.19	120.53	-7055	-0.0000168	0.0003743	0.0035	1.532	4861.16	5090.78	5090.78	42.24	No	Si
SLU 73	-0.21	-1508.7	-10094	-0.0000364	0.0003743	0.0035	1.532	6620.09	7512.42	7512.42	4.98	No	Si
SLU 73	0.19	104.67	-8229	-0.0000194	0.0003743	0.0035	1.532	5564.35	5758.89	5758.89	55.02	No	Si
SLU 47	-0.21	-1240.19	-7824	-0.0000286	0.0003743	0.0035	1.532	5325.48	6108.9	6108.9	4.93	No	Si
SLU 47	0.19	120.26	-6252	-0.000015	0.0003743	0.0035	1.532	4362.59	4588.69	4588.69	38.16	No	Si
SLU 55	-0.21	-1397.75	-9159	-0.0000332	0.0003743	0.0035	1.532	6100.46	6949.12	6949.12	4.97	No	Si
SLU 55	0.19	104.4	-7426	-0.0000175	0.0003743	0.0035	1.532	5086.35	5305.59	5305.59	50.82	No	Si
SLU 44	-0.21	-1240.19	-7824	-0.0000286	0.0003743	0.0035	1.532	5325.48	6108.9	6108.9	4.93	No	Si
SLU 44	0.19	120.26	-6252	-0.000015	0.0003743	0.0035	1.532	4362.59	4588.69	4588.69	38.16	No	Si
SLU 51	-0.21	-1232.65	-7823	-0.0000285	0.0003743	0.0035	1.532	5324.55	6107.9	6107.9	4.96	No	Si
SLU 51	0.19	110.14	-6259	-0.0000149	0.0003743	0.0035	1.532	4366.96	4593.3	4593.3	41.71	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	-0.21	-459.04	-8191	-0.0000222	0.0005615	0.0035	1.532		6502.37	6502.37	14.17		Si
SLV 5	0.19	-1114.53	-7795	-0.000027	0.0005615	0.0035	1.532		6235.43	6235.43	5.59		Si
SLV 8	-0.21	-1900	-7703	-0.0000338	0.0005615	0.0035	1.532		6172.72	6172.72	3.25		Si
SLV 8	0.19	924.9	-5461	-0.0000201	0.0005615	0.0035	1.532		4135.93	4135.93	4.47		Si
SLV 15	-0.21	-747.86	-3300	-0.0000137	0.0005615	0.0035	1.532		3095.18	3095.18	4.14		Si
SLV 15	0.19	867.86	-1834	-0.0000148	0.0005615	0.0035	1.532		1515.58	1515.58	1.75		Si
SLV 4	-0.21	-1744.48	-10337	-0.0000385	0.0005615	0.0035	1.532		7919.35	7919.35	4.54		Si
SLV 4	0.19	-142.54	-8671	-0.0000205	0.0005615	0.0035	1.532		6822.59	6822.59	47.86		Si
SLV 16	-0.21	-850.82	-3427	-0.0000148	0.0005615	0.0035	1.532		3186.75	3186.75	3.75		Si
SLV 16	0.19	947.28	-1811	-0.0000167	0.0005615	0.0035	1.532		1498.67	1498.67	1.58		Si
SLV 12	-0.21	-1631.9	-5630	-0.0000268	0.0005615	0.0035	1.532		4745.59	4745.59	2.91		Si
SLV 12	0.19	1251.84	-3403	-0.0000192	0.0005615	0.0035	1.532		2668.01	2668.01	2.13		Si
SLV 3	-0.21	-1641.52	-10210	-0.0000373	0.0005615	0.0035	1.532		7837.64	7837.64	4.77		Si
SLV 3	0.19	-221.96	-8694	-0.0000213	0.0005615	0.0035	1.532		6837.85	6837.85	30.81		Si
SLV 7	-0.21	-1797.04	-7576	-0.0000326	0.0005615	0.0035	1.532		6086.09	6086.09	3.39		Si



Comb.	Quota	M	N	em	em ₋	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 7	0.19	845.48	-5484	-0.0000194	0.0005615	0.0035	1.532		4151.89	4151.89	4.91		Si
SLV 11	-0.21	-1528.94	-5503	-0.0000255	0.0005615	0.0035	1.532		4657.36	4657.36	3.05		Si
SLV 11	0.19	1172.42	-3426	-0.0000182	0.0005615	0.0035	1.532		2684.43	2684.43	2.29		Si
SLV 14	-0.21	-449.42	-3611	-0.0000118	0.0005615	0.0035	1.532		3319.52	3319.52	7.39		Si
SLV 14	0.19	359.28	-2505	-0.0000086	0.0005615	0.0035	1.532		2011.79	2011.79	5.6		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-0.21	-1568.69	-10664	-9479	-6585	1.532	1.532	-13750	8778	6051	28547	20644	3907	24551	No	3.73	Si
SLU 82	0.19	87.75	-8739	-7768	-6601	1.532	1.532	-11267	8447	5823	28547	20644	3907	24551	No	3.72	Si
SLU 80	-0.21	-1501.16	-10092	-8971	-6302	1.532	1.532	-13012	8679	5984	28547	20644	3907	24551	No	3.9	Si
SLU 80	0.19	94.55	-8236	-7321	-6317	1.532	1.532	-10619	8360	5764	28547	20644	3907	24551	No	3.89	Si
SLU 76	-0.21	-1508.7	-10094	-8972	-6362	1.532	1.532	-13015	8680	5984	28547	20644	3907	24551	No	3.86	Si
SLU 76	0.19	104.67	-8229	-7314	-6377	1.532	1.532	-10610	8359	5763	28547	20644	3907	24551	No	3.85	Si
SLU 73	-0.21	-1508.7	-10094	-8972	-6362	1.532	1.532	-13015	8680	5984	28547	20644	3907	24551	No	3.86	Si
SLU 73	0.19	104.67	-8229	-7314	-6377	1.532	1.532	-10610	8359	5763	28547	20644	3907	24551	No	3.85	Si
SLU 81	-0.21	-1557.38	-10662	-9477	-6494	1.532	1.532	-13747	8777	6051	28547	20644	3907	24551	No	3.78	Si
SLU 81	0.19	72.57	-8749	-7777	-6511	1.532	1.532	-11281	8449	5824	28547	20644	3907	24551	No	3.77	Si
SLU 78	-0.21	-1501.16	-10092	-8971	-6302	1.532	1.532	-13012	8679	5984	28547	20644	3907	24551	No	3.9	Si
SLU 78	0.19	94.55	-8236	-7321	-6317	1.532	1.532	-10619	8360	5764	28547	20644	3907	24551	No	3.89	Si
SLU 75	-0.21	-1501.16	-10092	-8971	-6302	1.532	1.532	-13012	8679	5984	28547	20644	3907	24551	No	3.9	Si
SLU 75	0.19	94.55	-8236	-7321	-6317	1.532	1.532	-10619	8360	5764	28547	20644	3907	24551	No	3.89	Si
SLU 84	-0.21	-1568.69	-10664	-9479	-6585	1.532	1.532	-13750	8778	6051	28547	20644	3907	24551	No	3.73	Si
SLU 84	0.19	87.75	-8739	-7768	-6601	1.532	1.532	-11267	8447	5823	28547	20644	3907	24551	No	3.72	Si
SLU 83	-0.21	-1557.38	-10662	-9477	-6494	1.532	1.532	-13747	8777	6051	28547	20644	3907	24551	No	3.78	Si
SLU 83	0.19	72.57	-8749	-7777	-6511	1.532	1.532	-11281	8449	5824	28547	20644	3907	24551	No	3.77	Si
SLU 74	-0.21	-1489.85	-10090	-8969	-6211	1.532	1.532	-13009	8679	5983	28547	20644	3907	24551	No	3.95	Si
SLU 74	0.19	79.36	-8246	-7330	-6226	1.532	1.532	-10632	8362	5765	28547	20644	3907	24551	No	3.94	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	-0.21	-1240.12	-10395	-9240	-4748	1.532	1.532	-13403	13097	9029	28547	30966	3907	34873		7.34	Si
SLV 1	0.19	-809.96	-9387	-8344	-5373	1.532	1.532	-12103	12837	8850	28547	30966	3907	34873		6.49	Si
SLV 2	-0.21	-1343.08	-10522	-9353	-5491	1.532	1.532	-13566	13130	9052	28547	30966	3907	34873		6.35	Si
SLV 2	0.19	-730.54	-9364	-8324	-6116	1.532	1.532	-12074	12831	8846	28547	30966	3907	34873		5.7	Si
SLV 4	-0.21	-1744.48	-10337	-9189	-8810	1.532	1.532	-13329	13082	9019	28547	30966	3907	34873		3.96	Si
SLV 4	0.19	-142.54	-8671	-7707	-9422	1.532	1.532	-11180	12653	8723	28547	30966	3907	34873		3.7	Si
SLV 8	-0.21	-1900	-7703	-6847	-10979	1.532	1.532	-9932	12403	8551	28547	30966	3907	34873		3.18	Si
SLV 8	0.19	924.9	-5461	-4854	-11150	1.532	1.532	-7041	11825	8152	28547	30966	3907	34873		3.13	Si
SLV 3	-0.21	-1641.52	-10210	-9076	-8068	1.532	1.532	-13165	13050	8997	28547	30966	3907	34873		4.32	Si
SLV 3	0.19	-221.96	-8694	-7728	-8680	1.532	1.532	-11209	12658	8727	28547	30966	3907	34873		4.02	Si
SLV 12	-0.21	-1631.9	-5630	-5005	-9518	1.532	1.4285	-7812	11979	7700	28547	30966	3907	34873		3.66	Si
SLV 12	0.19	1251.84	-3403	-3025	-9324	1.532	1.1944	-4388	11294	6071	28547	30966	3907	34617		3.71	Si
SLV 11	-0.21	-1528.94	-5503	-4892	-8775	1.532	1.4645	-7448	11906	7847	28547	30966	3907	34873		3.97	Si
SLV 11	0.19	1172.42	-3426	-3045	-8582	1.532	1.2713	-4417	11300	6465	28547	30966	3907	34873		4.06	Si
SLV 15	-0.21	-747.86	-3300	-2933	-3198	1.532	1.532	-4254	11268	7768	28547	30966	3907	34873		10.9	Si
SLV 15	0.19	867.86	-1834	-1630	-2594	1.532	0.8785	-2365	10890	4305	28547	30966	3907	32851		12.66	Si
SLV 7	-0.21	-1797.04	-7576	-6734	-10236	1.532	1.532	-9768	12370	8528	28547	30966	3907	34873		3.41	Si
SLV 7	0.19	845.48	-5484	-4874	-10408	1.532	1.532	-7070	11831	8156	28547	30966	3907	34873		3.35	Si
SLV 16	-0.21	-850.82	-3427	-3046	-3940	1.532	1.532	-4418	11300	7791	28547	30966	3907	34873		8.85	Si
SLV 16	0.19	947.28	-1811	-1610	-3337	1.532	0.7291	-2335	10884	3571	28547	30966	3907	32117		9.63	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.255 Wa 0.08 denominatore 8 $\gamma_M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.24	3106	-2141	93.55	472.01	5.05	Si
SLV 16	179667	0.24	3123	-2153	93.55	474.54	5.07	Si
SLV 13	179667	0.24	4126	-2845	93.55	622.78	6.66	Si
SLV 14	179667	0.24	4143	-2856	93.55	625.27	6.68	Si
SLV 11	179667	0.24	5106	-3520	93.55	765.59	8.18	Si
SLV 12	179667	0.24	5123	-3532	93.55	768.05	8.21	Si
SLV 7	179667	0.24	7841	-5406	93.55	1153.83	12.33	Si
SLV 8	179667	0.24	7858	-5417	93.55	1156.2	12.36	Si
SLV 9	179667	0.24	8507	-5865	93.55	1246.11	13.32	Si
SLV 10	179667	0.24	8524	-5877	93.55	1248.45	13.34	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	α_{Lim}	Verifica
SLV 4	-5943	-9451	44	1.227	871.5	0.921	19.35542	3.53552	Si
SLV 3	-5930	-9417	44	1.229	870.2	0.921	19.38672	3.53552	Si
SLV 2	-5921	-11053	-6	1.235	869.2	0.921	19.49031	3.53552	Si
SLV 1	-5907	-11019	-5	1.237	867.9	0.921	19.52517	3.53552	Si
SLV 8	-4693	-5231	87	1.445	746.4	0.912	23.02528	3.53552	Si
SLV 7	-4680	-5197	88	1.447	745.1	0.912	23.07067	3.53552	Si
SLV 6	-4619	-10572	-77	1.462	739	0.911	23.32241	3.53552	Si
SLV 5	-4606	-10538	-76	1.465	737.7	0.911	23.37292	3.53552	Si
SLV 12	-3599	-3216	75	1.729	638.1	0.902	27.85188	3.53552	Si
SLV 11	-3586	-3182	76	1.733	636.8	0.902	27.91903	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita



dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.926	SLU 44	Si
V_SLU	3.719	SLU 82	Si
PF_SLV	1.582	SLV 16	Si
V_SLV	3.128	SLV 8	Si
PFFP_SLV	5.045	SLV 15	Si
R_SLV	5.475	SLV 4	Si

Maschio 2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
24.232	24.289	24.042	20.644	L1	L2	3.65	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	ϵ_{fd}	$y_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 73	-0.21	-5682.5	-32312	-0.0000402	0.0003743	0.0035	3.6499	47572.8	54011.61	54011.61	9.5	No	Si
SLU 73	0.19	-3540.64	-33192	-0.0000376	0.0003743	0.0035	3.6499	48550.07	55124.86	55124.86	15.57	No	Si
SLU 44	-0.21	-4587.62	-24614	-0.0000306	0.0003743	0.0035	3.6499	38307.67	43500.44	43500.44	9.48	No	Si
SLU 44	0.19	-2856.74	-25324	-0.0000286	0.0003743	0.0035	3.6499	39216.23	44513.07	44513.07	15.58	No	Si
SLU 68	-0.21	-5044.4	-27733	-0.0000345	0.0003743	0.0035	3.6499	42217.21	47885.53	47885.53	9.49	No	Si
SLU 68	0.19	-3138.21	-28504	-0.0000322	0.0003743	0.0035	3.6499	43151.55	48918.6	48918.6	15.59	No	Si
SLU 82	-0.21	-5909.73	-34286	-0.0000426	0.0003743	0.0035	3.6499	49740.74	56518.23	56518.23	9.56	No	Si
SLU 82	0.19	-3734.16	-35213	-0.00004	0.0003743	0.0035	3.6499	50729.37	57707.92	57707.92	15.45	No	Si
SLU 47	-0.21	-4587.62	-24614	-0.0000306	0.0003743	0.0035	3.6499	38307.67	43500.44	43500.44	9.48	No	Si
SLU 47	0.19	-2856.74	-25324	-0.0000286	0.0003743	0.0035	3.6499	39216.23	44513.07	44513.07	15.58	No	Si
SLU 52	-0.21	-5225.72	-29193	-0.0000363	0.0003743	0.0035	3.6499	43974.93	49846.14	49846.14	9.54	No	Si
SLU 52	0.19	-3259.17	-30012	-0.0000339	0.0003743	0.0035	3.6499	44940.14	50954.79	50954.79	15.63	No	Si
SLU 76	-0.21	-5682.5	-32312	-0.0000402	0.0003743	0.0035	3.6499	47572.8	54011.61	54011.61	9.5	No	Si
SLU 76	0.19	-3540.64	-33192	-0.0000376	0.0003743	0.0035	3.6499	48550.07	55124.86	55124.86	15.57	No	Si
SLU 55	-0.21	-5225.72	-29193	-0.0000363	0.0003743	0.0035	3.6499	43974.93	49846.14	49846.14	9.54	No	Si
SLU 55	0.19	-3259.17	-30012	-0.0000339	0.0003743	0.0035	3.6499	44940.14	50954.79	50954.79	15.63	No	Si
SLU 65	-0.21	-5044.4	-27733	-0.0000345	0.0003743	0.0035	3.6499	42217.21	47885.53	47885.53	9.49	No	Si
SLU 65	0.19	-3138.21	-28504	-0.0000322	0.0003743	0.0035	3.6499	43151.55	48918.6	48918.6	15.59	No	Si
SLU 84	-0.21	-5909.73	-34286	-0.0000426	0.0003743	0.0035	3.6499	49740.74	56518.23	56518.23	9.56	No	Si
SLU 84	0.19	-3734.16	-35213	-0.00004	0.0003743	0.0035	3.6499	50729.37	57707.92	57707.92	15.45	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	-0.21	-9195.37	-17261	-0.0000302	0.0005615	0.0035	3.6499		33376.87	33376.87	3.63		Si
SLV 11	0.19	-1819.57	-18148	-0.0000197	0.0005615	0.0035	3.6499		34796.04	34796.04	19.12		Si
SLV 15	-0.21	-6018.48	-12109	-0.0000204	0.0005615	0.0035	3.6499		24842.83	24842.83	4.13		Si
SLV 15	0.19	-3096.76	-13452	-0.0000172	0.0005615	0.0035	3.6499		27054.85	27054.85	8.74		Si
SLV 9	-0.21	1467.55	-21133	-0.000022	0.0005615	0.0035	3.6499		36648.47	36648.47	24.97		Si
SLV 9	0.19	-3737.73	-21852	-0.0000262	0.0005615	0.0035	3.6499		40678.52	40678.52	10.88		Si
SLV 14	-0.21	-3314.21	-13255	-0.0000173	0.0005615	0.0035	3.6499		26729.59	26729.59	8.07		Si
SLV 14	0.19	-3649.39	-14607	-0.0000191	0.0005615	0.0035	3.6499		28964.63	28964.63	7.94		Si
SLV 13	-0.21	-2819.61	-13270	-0.0000166	0.0005615	0.0035	3.6499		26755	26755	9.49		Si
SLV 13	0.19	-3672.22	-14563	-0.0000191	0.0005615	0.0035	3.6499		28892.35	28892.35	7.87		Si
SLV 10	-0.21	972.95	-21118	-0.0000212	0.0005615	0.0035	3.6499		36624.04	36624.04	37.64		Si
SLV 10	0.19	-3714.91	-21895	-0.0000262	0.0005615	0.0035	3.6499		40748.24	40748.24	10.97		Si
SLV 7	-0.21	-8719.34	-22840	-0.0000349	0.0005615	0.0035	3.6499		42259.94	42259.94	4.85		Si
SLV 7	0.19	-1300.27	-23284	-0.0000238	0.0005615	0.0035	3.6499		42972.86	42972.86	33.05		Si
SLV 12	-0.21	-9689.97	-17246	-0.000031	0.0005615	0.0035	3.6499		33351.41	33351.41	3.44		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	0.19	-1796.74	-18191	-0.0000197	0.0005615	0.0035	3.6499		34864.89	34864.89	19.4		Si
SLV 8	-0.21	-9214.14	-22824	-0.0000357	0.0005615	0.0035	3.6499		42235.23	42235.23	4.58		Si
SLV 8	0.19	-1277.45	-23327	-0.0000238	0.0005615	0.0035	3.6499		43042.92	43042.92	33.69		Si
SLV 16	-0.21	-6513.09	-12093	-0.0000211	0.0005615	0.0035	3.6499		24817.52	24817.52	3.81		Si
SLV 16	0.19	-3073.94	-13496	-0.0000172	0.0005615	0.0035	3.6499		27126.86	27126.86	8.82		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-0.21	-5909.73	-34286	-30476	-5342	3.6499	3.6499	-18555	9419	15469	28547	49182	9307	44016	No	8.24	Si
SLU 82	0.19	-3734.16	-35213	-31300	-5341	3.6499	3.6499	-19057	9485	15579	28547	49182	9307	44126	No	8.26	Si
SLU 81	-0.21	-5840.36	-34304	-30492	-5090	3.6499	3.6499	-18565	9420	15472	28547	49182	9307	44018	No	8.65	Si
SLU 81	0.19	-3765.72	-35231	-31316	-5089	3.6499	3.6499	-19067	9487	15581	28547	49182	9307	44128	No	8.67	Si
SLU 63	-0.21	-5452.95	-31167	-27704	-4907	3.6499	3.6499	-16868	9193	15100	28547	49182	9307	43646	No	8.9	Si
SLU 63	0.19	-3452.69	-32033	-28474	-4906	3.6499	3.6499	-17336	9256	15202	28547	49182	9307	43749	No	8.92	Si
SLU 83	-0.21	-5840.36	-34304	-30492	-5090	3.6499	3.6499	-18565	9420	15472	28547	49182	9307	44018	No	8.65	Si
SLU 83	0.19	-3765.72	-35231	-31316	-5089	3.6499	3.6499	-19067	9487	15581	28547	49182	9307	44128	No	8.67	Si
SLU 75	-0.21	-5636.25	-32324	-28732	-5092	3.6499	3.6499	-17493	9277	15237	28547	49182	9307	43783	No	8.6	Si
SLU 75	0.19	-3561.69	-33204	-29515	-5091	3.6499	3.6499	-17970	9340	15341	28547	49182	9307	43888	No	8.62	Si
SLU 78	-0.21	-5636.25	-32324	-28732	-5092	3.6499	3.6499	-17493	9277	15237	28547	49182	9307	43783	No	8.6	Si
SLU 78	0.19	-3561.69	-33204	-29515	-5091	3.6499	3.6499	-17970	9340	15341	28547	49182	9307	43888	No	8.62	Si
SLU 84	-0.21	-5840.36	-34286	-30476	-5342	3.6499	3.6499	-18555	9419	15469	28547	49182	9307	44016	No	8.24	Si
SLU 84	0.19	-3734.16	-35213	-31300	-5341	3.6499	3.6499	-19057	9485	15579	28547	49182	9307	44126	No	8.26	Si
SLU 80	-0.21	-5636.25	-32324	-28732	-5092	3.6499	3.6499	-17493	9277	15237	28547	49182	9307	43783	No	8.6	Si
SLU 80	0.19	-3561.69	-33204	-29515	-5091	3.6499	3.6499	-17970	9340	15341	28547	49182	9307	43888	No	8.62	Si
SLU 76	-0.21	-5682.5	-32312	-28722	-5260	3.6499	3.6499	-17487	9276	15235	28547	49182	9307	43782	No	8.32	Si
SLU 76	0.19	-3540.64	-33192	-29504	-5259	3.6499	3.6499	-17964	9340	15340	28547	49182	9307	43886	No	8.35	Si
SLU 73	-0.21	-5682.5	-32312	-28722	-5260	3.6499	3.6499	-17487	9276	15235	28547	49182	9307	43782	No	8.32	Si
SLU 73	0.19	-3540.64	-33192	-29504	-5259	3.6499	3.6499	-17964	9340	15340	28547	49182	9307	43886	No	8.35	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-0.21	1943.38	-26711	-23743	14753	3.6499	3.6499	-14456	13308	21857	28547	73773	9307	50404		3.42	Si
SLV 5	0.19	-3218.44	-26988	-23989	14150	3.6499	3.6499	-14606	13338	21907	28547	73773	9307	50453		3.57	Si
SLV 6	-0.21	1448.78	-26696	-23730	13462	3.6499	3.6499	-14448	13306	21855	28547	73773	9307	50401		3.74	Si
SLV 6	0.19	-3195.62	-27031	-24028	12859	3.6499	3.6499	-14629	13343	21914	28547	73773	9307	50461		3.92	Si
SLV 15	-0.21	-6018.48	-12109	-10763	-13702	3.6499	3.6499	-6553	11727	19261	28547	73773	9307	47808		3.49	Si
SLV 15	0.19	-3096.76	-13452	-11957	-11733	3.6499	3.6499	-7280	11873	19500	28547	73773	9307	48047		4.09	Si
SLV 7	-0.21	-8719.54	-22840	-20302	-16347	3.6499	3.6499	-12361	12889	21169	28547	73773	9307	49716		3.04	Si
SLV 7	0.19	-1300.27	-23284	-20697	-16921	3.6499	3.6499	-12601	12937	21248	28547	73773	9307	49795		2.94	Si
SLV 10	-0.21	972.95	-21118	-18771	9659	3.6499	3.6499	-11429	12702	20863	28547	73773	9307	49410		5.12	Si
SLV 10	0.19	-3714.91	-21895	-19463	10235	3.6499	3.6499	-11850	12787	21001	28547	73773	9307	49548		4.84	Si
SLV 16	-0.21	-6513.09	-12093	-10750	-14993	3.6499	3.6499	-6545	11726	19259	28547	73773	9307	47805		3.19	Si
SLV 16	0.19	-3073.94	-13496	-11996	-13024	3.6499	3.6499	-7304	11877	19508	28547	73773	9307	48055		3.69	Si
SLV 8	-0.21	-9214.14	-22824	-20288	-17638	3.6499	3.6499	-12352	12887	21166	28547	73773	9307	49713		2.82	Si
SLV 8	0.19	-1277.45	-23327	-20736	-18213	3.6499	3.6499	-12625	12942	21256	28547	73773	9307	49802		2.73	Si
SLV 12	-0.21	-9689.97	-17246	-15330	-21441	3.6499	3.6499	-9334	12283	20175	28547	73773	9307	48721		2.27	Si
SLV 12	0.19	-1796.74	-18191	-16170	-20837	3.6499	3.6499	-9845	12386	20343	28547	73773	9307	48889		2.35	Si
SLV 11	-0.21	-9195.37	-17261	-15344	-20150	3.6499	3.6499	-9342	12285	20178	28547	73773	9307	48724		2.42	Si
SLV 11	0.19	-1819.57	-18148	-16131	-19546	3.6499	3.6499	-9822	12381	20335	28547	73773	9307	48882		2.5	Si
SLV 9	-0.21	1467.55	-21133	-18785	10950	3.6499	3.6499	-11437	12704	20866	28547	73773	9307	49412		4.51	Si
SLV 9	0.19	-3737.73	-21852	-19424	11526	3.6499	3.6499	-11826	12782	20994	28547	73773	9307	49540		4.3	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.255 Wa 0.08 denominatore 8 $\gamma M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.24	7689	-12628	222.88	2698.3	12.11	Si
SLV 16	179667	0.24	7699	-12645	222.88	2701.6	12.12	Si
SLV 13	179667	0.24	8394	-13786	222.88	2931.37	13.15	Si
SLV 14	179667	0.24	8404	-13802	222.88	2934.64	13.17	Si
SLV 11	179667	0.24	10516	-17273	222.88	3618.74	16.24	Si
SLV 12	179667	0.24	10526	-17289	222.88	3621.9	16.25	Si
SLV 9	179667	0.24	12866	-21132	222.88	4354.14	19.54	Si
SLV 10	179667	0.24	12876	-21148	222.88	4357.19	19.55	Si
SLV 7	179667	0.24	13645	-22412	222.88	4592.04	20.6	Si
SLV 8	179667	0.24	13655	-22428	222.88	4595.05	20.62	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	αLim	Verifica
SLV 2	-23228	-25072	258	0.84	2991.8	0.941	12.96961	3.53552	Si
SLV 1	-23149	-25089	256	0.842	2983.7	0.941	13.00675	3.53552	Si
SLV 4	-22378	-23450	456	0.857	2905.7	0.94	13.25098	3.53552	Si
SLV 3	-22298	-23467	454	0.859	2897.6	0.94	13.29024	3.53552	Si
SLV 6	-20142	-23786	-178	0.94	2679.4	0.936	14.60332	3.53552	Si
SLV 5	-20062	-23803	-179	0.943	2671.4	0.935	14.64895	3.53552	Si
SLV 8	-17308	-18379	483	1.04	2393.2	0.929	16.25967	3.53552	Si
SLV 7	-17228	-18396	481	1.043	2385.2	0.929	16.32046	3.53552	Si
SLV 10	-16647	-21062	-353	1.077	2326.5	0.928	16.86693	3.53552	Si
SLV 9	-16567	-21079	-354	1.081	2318.5	0.928	16.92973	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita



dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.482	SLU 44	Si
V_SLU	8.239	SLU 82	Si
PF_SLV	3.442	SLV 12	Si
V_SLV	2.272	SLV 12	Si
PFFP_SLV	12.106	SLV 15	Si
R_SLV	3.668	SLV 2	Si

Maschio 3

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
24.382	27.161	24.284	25.288	L1	L2	1.876	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	-0.21	553.37	-15425	-0.000032	0.0003743	0.0035	1.876	11872.22	12429.74	12429.74	22.46	No	Si
SLU 45	0.19	48.43	-14216	-0.0000266	0.0003743	0.0035	1.876	11128.97	11573.28	11573.28	238.97	No	Si
SLU 46	-0.21	531.33	-15399	-0.0000318	0.0003743	0.0035	1.876	11856.65	12411.31	12411.31	23.36	No	Si
SLU 46	0.19	55.25	-14202	-0.0000266	0.0003743	0.0035	1.876	11120.27	11563.51	11563.51	209.29	No	Si
SLU 66	-0.21	579.56	-17154	-0.0000356	0.0003743	0.0035	1.876	12879.11	13672.63	13672.63	23.59	No	Si
SLU 66	0.19	59.36	-15861	-0.0000298	0.0003743	0.0035	1.876	12132.5	12741.33	12741.33	214.63	No	Si
SLU 50	-0.21	553.37	-15425	-0.000032	0.0003743	0.0035	1.876	11872.22	12429.74	12429.74	22.46	No	Si
SLU 50	0.19	48.43	-14216	-0.0000266	0.0003743	0.0035	1.876	11128.97	11573.28	11573.28	238.97	No	Si
SLU 71	-0.21	579.56	-17154	-0.0000356	0.0003743	0.0035	1.876	12879.11	13672.63	13672.63	23.59	No	Si
SLU 71	0.19	59.36	-15861	-0.0000298	0.0003743	0.0035	1.876	12132.5	12741.33	12741.33	214.63	No	Si
SLU 69	-0.21	579.56	-17154	-0.0000356	0.0003743	0.0035	1.876	12879.11	13672.63	13672.63	23.59	No	Si
SLU 69	0.19	59.36	-15861	-0.0000298	0.0003743	0.0035	1.876	12132.5	12741.33	12741.33	214.63	No	Si
SLU 51	-0.21	531.33	-15399	-0.0000318	0.0003743	0.0035	1.876	11856.65	12411.31	12411.31	23.36	No	Si
SLU 51	0.19	55.25	-14202	-0.0000266	0.0003743	0.0035	1.876	11120.27	11563.51	11563.51	209.29	No	Si
SLU 48	-0.21	553.37	-15425	-0.000032	0.0003743	0.0035	1.876	11872.22	12429.74	12429.74	22.46	No	Si
SLU 48	0.19	48.43	-14216	-0.0000266	0.0003743	0.0035	1.876	11128.97	11573.28	11573.28	238.97	No	Si
SLU 49	-0.21	531.33	-15399	-0.0000318	0.0003743	0.0035	1.876	11856.65	12411.31	12411.31	23.36	No	Si
SLU 49	0.19	55.25	-14202	-0.0000266	0.0003743	0.0035	1.876	11120.27	11563.51	11563.51	209.29	No	Si
SLU 43	-0.21	553.37	-15425	-0.000032	0.0003743	0.0035	1.876	11872.22	12429.74	12429.74	22.46	No	Si
SLU 43	0.19	48.43	-14216	-0.0000266	0.0003743	0.0035	1.876	11128.97	11573.28	11573.28	238.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	-0.21	1488.54	-15083	-0.0000364	0.0005615	0.0035	1.876		12934.1	12934.1	8.69		Si
SLV 6	0.19	-1051.69	-13014	-0.0000299	0.0005615	0.0035	1.876		12076.4	12076.4	11.48		Si
SLV 11	-0.21	-584.81	-11983	-0.0000252	0.0005615	0.0035	1.876		11263.93	11263.93	19.26		Si
SLV 11	0.19	1152.82	-12044	-0.0000287	0.0005615	0.0035	1.876		10653.61	10653.61	9.24		Si
SLV 10	-0.21	1136.45	-13946	-0.0000322	0.0005615	0.0035	1.876		12137.36	12137.36	10.68		Si
SLV 10	0.19	-733.23	-12373	-0.0000268	0.0005615	0.0035	1.876		11570.68	11570.68	15.78		Si
SLV 2	-0.21	1258.86	-15678	-0.0000362	0.0005615	0.0035	1.876		13342.24	13342.24	10.6		Si
SLV 2	0.19	-753.7	-13643	-0.0000293	0.0005615	0.0035	1.876		12574.14	12574.14	16.68		Si
SLV 15	-0.21	-355.13	-11387	-0.0000228	0.0005615	0.0035	1.876		10788.51	10788.51	30.38		Si
SLV 15	0.19	854.82	-11416	-0.0000258	0.0005615	0.0035	1.876		10146.68	10146.68	11.87		Si
SLV 9	-0.21	1245.02	-14069	-0.0000331	0.0005615	0.0035	1.876		12226.38	12226.38	9.82		Si
SLV 9	0.19	-760.15	-12386	-0.0000227	0.0005615	0.0035	1.876		11581.01	11581.01	15.24		Si
SLV 16	-0.21	-463.7	-11264	-0.0000232	0.0005615	0.0035	1.876		10686.42	10686.42	23.05		Si
SLV 16	0.19	881.74	-11402	-0.0000259	0.0005615	0.0035	1.876		10136.01	10136.01	11.5		Si
SLV 12	-0.21	-693.38	-11859	-0.0000256	0.0005615	0.0035	1.876		11167.31	11167.31	16.11		Si



Comb.	Quota	M	N	em	em ₋	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 12	0.19	1179.73	-12031	-0.0000288	0.0005615	0.0035	1.876		10643.14	10643.14	9.02		Si
SLV 1	-0.21	1367.43	-15801	-0.0000371	0.0005615	0.0035	1.876		13426.81	13426.81	9.82		Si
SLV 1	0.19	-780.62	-13656	-0.0000295	0.0005615	0.0035	1.876		12584.55	12584.55	16.12		Si
SLV 5	-0.21	1597.11	-15206	-0.0000373	0.0005615	0.0035	1.876		13018.42	13018.42	8.15		Si
SLV 5	0.19	-1078.61	-13027	-0.0000301	0.0005615	0.0035	1.876		12086.77	12086.77	11.21		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	-0.21	620.87	-19664	-17479	2736	1.876	1.876	-20705	9705	8193	28547	25279	4784	30063	No	10.99	Si
SLU 79	0.19	84.91	-18276	-16245	2762	1.876	1.876	-19243	9510	8029	28547	25279	4784	30063	No	10.89	Si
SLU 62	-0.21	612.39	-19011	-16899	2635	1.876	1.876	-20018	9613	8116	28547	25279	4784	30063	No	11.41	Si
SLU 62	0.19	84.93	-17665	-15702	2660	1.876	1.876	-18600	9424	7956	28547	25279	4784	30063	No	11.3	Si
SLU 60	-0.21	612.39	-19011	-16899	2635	1.876	1.876	-20018	9613	8116	28547	25279	4784	30063	No	11.41	Si
SLU 60	0.19	84.93	-17665	-15702	2660	1.876	1.876	-18600	9424	7956	28547	25279	4784	30063	No	11.3	Si
SLU 77	-0.21	620.87	-19664	-17479	2736	1.876	1.876	-20705	9705	8193	28547	25279	4784	30063	No	10.99	Si
SLU 77	0.19	84.91	-18276	-16245	2762	1.876	1.876	-19243	9510	8029	28547	25279	4784	30063	No	10.89	Si
SLU 82	-0.21	616.54	-20714	-18413	2750	1.876	1.876	-21811	9853	8318	28547	25279	4784	30063	No	10.93	Si
SLU 82	0.19	102.68	-19297	-17153	2773	1.876	1.876	-20318	9654	8150	28547	25279	4784	30063	No	10.84	Si
SLU 81	-0.21	638.58	-20740	-18436	2848	1.876	1.876	-21838	9856	8321	28547	25279	4784	30063	No	10.56	Si
SLU 81	0.19	95.86	-19311	-17165	2875	1.876	1.876	-20333	9656	8151	28547	25279	4784	30063	No	10.46	Si
SLU 83	-0.21	638.58	-20740	-18436	2848	1.876	1.876	-21838	9856	8321	28547	25279	4784	30063	No	10.56	Si
SLU 83	0.19	95.86	-19311	-17165	2875	1.876	1.876	-20333	9656	8151	28547	25279	4784	30063	No	10.46	Si
SLU 75	-0.21	598.84	-19638	-17456	2638	1.876	1.876	-20678	9701	8190	28547	25279	4784	30063	No	11.4	Si
SLU 75	0.19	91.73	-18262	-16233	2660	1.876	1.876	-19229	9508	8027	28547	25279	4784	30063	No	11.3	Si
SLU 84	-0.21	616.54	-20714	-18413	2750	1.876	1.876	-21811	9853	8318	28547	25279	4784	30063	No	10.93	Si
SLU 84	0.19	102.68	-19297	-17153	2773	1.876	1.876	-20318	9654	8150	28547	25279	4784	30063	No	10.84	Si
SLU 74	-0.21	620.87	-19664	-17479	2736	1.876	1.876	-20705	9705	8193	28547	25279	4784	30063	No	10.99	Si
SLU 74	0.19	84.91	-18276	-16245	2762	1.876	1.876	-19243	9510	8029	28547	25279	4784	30063	No	10.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	-0.21	-463.7	-11264	-10013	-4665	1.876	1.876	-11860	12789	10796	28547	37919	4784	39343		8.43	Si
SLV 16	0.19	881.74	-11402	-10136	-4644	1.876	1.876	-12006	12818	10821	28547	37919	4784	39368		8.48	Si
SLV 11	-0.21	-584.81	-11983	-10651	-5720	1.876	1.876	-12617	12940	10924	28547	37919	4784	39471		6.9	Si
SLV 11	0.19	1152.82	-12044	-10706	-5681	1.876	1.876	-12682	12953	10935	28547	37919	4784	39482		6.95	Si
SLV 9	-0.21	1245.02	-14069	-12506	7599	1.876	1.876	-14814	13379	11295	28547	37919	4784	39842		5.24	Si
SLV 9	0.19	-760.15	-12386	-11010	7593	1.876	1.876	-13042	13025	10996	28547	37919	4784	39542		5.21	Si
SLV 6	-0.21	1488.54	-15083	-13407	9582	1.876	1.876	-15881	13593	11475	28547	37919	4784	40022		4.18	Si
SLV 6	0.19	-1051.69	-13014	-11568	9579	1.876	1.876	-13703	13157	11108	28547	37919	4784	39654		4.14	Si
SLV 5	-0.21	1597.11	-15206	-13516	10179	1.876	1.876	-16010	13619	11497	28547	37919	4784	40044		3.93	Si
SLV 5	0.19	-1078.61	-13027	-11580	10175	1.876	1.876	-13717	13160	11110	28547	37919	4784	39656		3.9	Si
SLV 10	-0.21	1136.45	-13946	-12397	7002	1.876	1.876	-14684	13354	11273	28547	37919	4784	39820		5.69	Si
SLV 10	0.19	-733.23	-12373	-10998	6997	1.876	1.876	-13028	13022	10993	28547	37919	4784	39540		5.65	Si
SLV 1	-0.21	1367.43	-15801	-14045	8527	1.876	1.876	-16637	13744	11603	28547	37919	4784	40149		4.71	Si
SLV 1	0.19	-780.62	-13656	-12139	8542	1.876	1.876	-14379	13292	11222	28547	37919	4784	39768		4.66	Si
SLV 12	-0.21	-693.38	-11859	-10542	-6317	1.876	1.876	-12487	12914	10902	28547	37919	4784	39449		6.25	Si
SLV 12	0.19	1179.73	-12031	-10694	-6277	1.876	1.876	-12668	12950	10933	28547	37919	4784	39479		6.29	Si
SLV 3	-0.21	818.48	-15175	-13489	4531	1.876	1.876	-15978	13612	11492	28547	37919	4784	40038		8.84	Si
SLV 3	0.19	-206.73	-13554	-12048	4559	1.876	1.876	-14271	13271	11203	28547	37919	4784	39750		8.72	Si
SLV 2	-0.21	1258.86	-15678	-13936	7931	1.876	1.876	-16508	13718	11581	28547	37919	4784	40128		5.06	Si
SLV 2	0.19	-753.7	-13643	-12127	7945	1.876	1.876	-14365	13290	11219	28547	37919	4784	39766		5	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.255 Wa 0.08 denominatore 8 $\gamma_M = 2$

Comb.	fd	Sa	$\alpha 0$	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.24	13068	-11032	114.56	2269.84	19.81	Si
SLV 15	179667	0.24	13113	-11070	114.56	2276.96	19.88	Si
SLV 14	179667	0.24	13141	-11094	114.56	2281.33	19.91	Si
SLV 13	179667	0.24	13186	-11132	114.56	2288.43	19.98	Si
SLV 12	179667	0.24	14078	-11885	114.56	2427.53	21.19	Si
SLV 11	179667	0.24	14123	-11923	114.56	2434.53	21.25	Si
SLV 10	179667	0.24	14321	-12090	114.56	2465.15	21.52	Si
SLV 9	179667	0.24	14366	-12128	114.56	2472.12	21.58	Si
SLV 8	179667	0.24	15016	-12677	114.56	2571.82	22.45	Si
SLV 7	179667	0.24	15061	-12715	114.56	2578.71	22.51	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 5	-11192	-13165	-220	0.876	1462.1	0.939	13.5628	3.53552	Si
SLV 6	-11163	-13129	-220	0.878	1459.2	0.939	13.59213	3.53552	Si
SLV 1	-11289	-16358	92	0.88	1471.9	0.939	13.61835	3.53552	Si
SLV 2	-11260	-16322	92	0.882	1469	0.939	13.64573	3.53552	Si
SLV 3	-10682	-17351	262	0.905	1410.5	0.937	14.03168	3.53552	Si
SLV 4	-10653	-17315	263	0.906	1407.6	0.937	14.06138	3.53552	Si
SLV 9	-10502	-11421	-317	0.912	1392.3	0.936	14.15658	3.53552	Si
SLV 10	-10473	-11385	-316	0.914	1389.4	0.936	14.18901	3.53552	Si
SLV 7	-9169	-16475	349	1.008	1257.6	0.931	15.73542	3.53552	Si
SLV 8	-9140	-16439	349	1.01	1254.6	0.931	15.77387	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita



dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	22.462	SLU 43	Si
V_SLU	10.457	SLU 81	Si
PF_SLV	8.151	SLV 5	Si
V_SLV	3.897	SLV 5	Si
PFFP_SLV	19.813	SLV 16	Si
R_SLV	3.836	SLV 5	Si

Maschio 4

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
23.909	18.116	27.312	17.939	L1	L2	3.407	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	-1.6	-3021.56	-18407	-0.0000226	0.0004492	0.0035	3.4073	28278.17	35598.66	35598.66	11.78	No	Si
SLU 40	0.6	2621.77	-16399	-0.00002	0.0004492	0.0035	3.4073	25493.19	27396.61	27396.61	10.45	No	Si
SLU 41	-1.6	-3022.09	-18475	-0.0000227	0.0004492	0.0035	3.4073	28371.91	35699.92	35699.92	11.81	No	Si
SLU 41	0.6	2629.68	-16409	-0.00002	0.0004492	0.0035	3.4073	25506.39	27410.66	27410.66	10.42	No	Si
SLU 82	-1.6	-3562.12	-21675	-0.0000267	0.0004492	0.0035	3.4073	32654.76	40421.86	40421.86	11.35	No	Si
SLU 82	0.6	2903.9	-18586	-0.0000226	0.0004492	0.0035	3.4073	28523.69	30666.3	30666.3	10.56	No	Si
SLU 35	-1.6	-2844.28	-17386	-0.0000213	0.0004492	0.0035	3.4073	26870.78	34089.32	34089.32	11.99	No	Si
SLU 35	0.6	2372.91	-15062	-0.0000183	0.0004492	0.0035	3.4073	23597.84	25368.7	25368.7	10.69	No	Si
SLU 32	-1.6	-2844.28	-17386	-0.0000213	0.0004492	0.0035	3.4073	26870.78	34089.32	34089.32	11.99	No	Si
SLU 32	0.6	2372.91	-15062	-0.0000183	0.0004492	0.0035	3.4073	23597.84	25368.7	25368.7	10.69	No	Si
SLU 83	-1.6	-3562.65	-21744	-0.0000268	0.0004492	0.0035	3.4073	32744.43	40517.76	40517.76	11.37	No	Si
SLU 83	0.6	2911.82	-18596	-0.0000226	0.0004492	0.0035	3.4073	28536.53	30680.35	30680.35	10.54	No	Si
SLU 42	-1.6	-3021.56	-18407	-0.0000226	0.0004492	0.0035	3.4073	28278.17	35598.66	35598.66	11.78	No	Si
SLU 42	0.6	2621.77	-16399	-0.00002	0.0004492	0.0035	3.4073	25493.19	27396.61	27396.61	10.45	No	Si
SLU 81	-1.6	-3562.65	-21744	-0.0000268	0.0004492	0.0035	3.4073	32744.43	40517.76	40517.76	11.37	No	Si
SLU 81	0.6	2911.82	-18596	-0.0000226	0.0004492	0.0035	3.4073	28536.53	30680.35	30680.35	10.54	No	Si
SLU 39	-1.6	-3022.09	-18475	-0.0000227	0.0004492	0.0035	3.4073	28371.91	35699.92	35699.92	11.81	No	Si
SLU 39	0.6	2629.68	-16409	-0.00002	0.0004492	0.0035	3.4073	25506.39	27410.66	27410.66	10.42	No	Si
SLU 84	-1.6	-3562.12	-21675	-0.0000267	0.0004492	0.0035	3.4073	32654.76	40421.86	40421.86	11.35	No	Si
SLU 84	0.6	2903.9	-18586	-0.0000226	0.0004492	0.0035	3.4073	28523.69	30666.3	30666.3	10.56	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	-1.6	-5182.28	-23378	-0.0000309	0.0006738	0.0035	3.4073		43638.94	43638.94	8.42		Si
SLV 6	0.6	4146.52	-15173	-0.0000212	0.0006738	0.0035	3.4073		25932.96	25932.96	6.25		Si
SLV 16	-1.6	-758.06	-6390	-0.0000072	0.0006738	0.0035	3.4073		11868.09	11868.09	15.66		Si
SLV 16	0.6	-2935.35	-4649	-0.0000092	0.0006738	0.0035	3.4073		14379.31	14379.31	4.9		Si
SLV 4	-1.6	-4698.01	-17624	-0.0000245	0.0006738	0.0035	3.4073		34936.45	34936.45	7.44		Si
SLV 4	0.6	6873.6	-17431	-0.000028	0.0006738	0.0035	3.4073		29450.93	29450.93	4.28		Si
SLV 14	-1.6	-346.81	-10860	-0.0000108	0.0006738	0.0035	3.4073		24376.79	24376.79	70.29		Si
SLV 14	0.6	-2609.48	-5672	-0.0000096	0.0006738	0.0035	3.4073		16045.31	16045.31	6.15		Si
SLV 3	-1.6	-4330.7	-17646	-0.0000239	0.0006738	0.0035	3.4073		34969.87	34969.87	8.07		Si
SLV 3	0.6	5943.84	-16878	-0.0000259	0.0006738	0.0035	3.4073		28598.83	28598.83	4.81		Si
SLV 2	-1.6	-5802.88	-22094	-0.0000307	0.0006738	0.0035	3.4073		41697.47	41697.47	7.19		Si
SLV 2	0.6	7199.47	-18454	-0.0000295	0.0006738	0.0035	3.4073		31028.53	31028.53	4.31		Si
SLV 13	-1.6	20.5	-10883	-0.0000102	0.0006738	0.0035	3.4073		19145.99	19145.99	934.05		Si
SLV 13	0.6	-3539.24	-5119	-0.0000108	0.0006738	0.0035	3.4073		15145.68	15145.68	4.28		Si
SLV 1	-1.6	-5435.58	-22116	-0.0000301	0.0006738	0.0035	3.4073		41730.89	41730.89	7.68		Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	0.6	6269.71	-17901	-0.0000274	0.0006738	0.0035	3.4073		30176.43	30176.43	4.81		Si
SLV 15	-1.6	1125.37	-6412	-0.0000079	0.0006738	0.0035	3.4073		11904.27	11904.27	10.58		Si
SLV 15	0.6	-3865.11	-4096	-0.0000115	0.0006738	0.0035	2.7259		13479.19	13479.19	3.49		Si
SLV 8	-1.6	-1499.37	-8476	-0.0000104	0.0006738	0.0035	3.4073		20567.58	20567.58	13.72		Si
SLV 8	0.6	3060.28	-11764	-0.0000161	0.0006738	0.0035	3.4073		20546.31	20546.31	6.71		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-1.6	-3562.12	-21675	-17340	-8271	3.4073	3.4073	-11309	9841	15089	81562	55103	17377	72480	No	8.76	Si
SLU 82	0.6	2903.9	-18586	-14869	-7590	3.4073	3.4073	-9698	9626	14760	81562	55103	17377	72480	No	9.55	Si
SLU 81	-1.6	-3562.65	-21744	-17395	-8229	3.4073	3.4073	-11345	9846	15097	81562	55103	17377	72480	No	8.81	Si
SLU 81	0.6	2911.82	-18596	-14877	-7548	3.4073	3.4073	-9702	9627	14761	81562	55103	17377	72480	No	9.6	Si
SLU 80	-1.6	-3384.31	-20585	-16468	-7768	3.4073	3.4073	-10740	9765	14973	81562	55103	17377	72480	No	9.33	Si
SLU 80	0.6	2647.13	-17240	-13792	-7134	3.4073	3.4073	-8995	9533	14616	81562	55103	17377	72480	No	10.16	Si
SLU 83	-1.6	-3562.65	-21744	-17395	-8229	3.4073	3.4073	-11345	9846	15097	81562	55103	17377	72480	No	8.81	Si
SLU 83	0.6	2911.82	-18596	-14877	-7548	3.4073	3.4073	-9702	9627	14761	81562	55103	17377	72480	No	9.6	Si
SLU 78	-1.6	-3384.31	-20585	-16468	-7768	3.4073	3.4073	-10740	9765	14973	81562	55103	17377	72480	No	9.33	Si
SLU 78	0.6	2647.13	-17240	-13792	-7134	3.4073	3.4073	-8995	9533	14616	81562	55103	17377	72480	No	10.16	Si
SLU 84	-1.6	-3562.12	-21675	-17340	-8271	3.4073	3.4073	-11309	9841	15089	81562	55103	17377	72480	No	8.76	Si
SLU 84	0.6	2903.9	-18586	-14869	-7590	3.4073	3.4073	-9698	9626	14760	81562	55103	17377	72480	No	9.55	Si
SLU 75	-1.6	-3384.31	-20585	-16468	-7768	3.4073	3.4073	-10740	9765	14973	81562	55103	17377	72480	No	9.33	Si
SLU 75	0.6	2647.13	-17240	-13792	-7134	3.4073	3.4073	-8995	9533	14616	81562	55103	17377	72480	No	10.16	Si
SLU 73	-1.6	-3383.95	-20540	-16432	-7796	3.4073	3.4073	-10717	9762	14968	81562	55103	17377	72480	No	9.3	Si
SLU 73	0.6	2641.85	-17234	-13787	-7162	3.4073	3.4073	-8992	9532	14616	81562	55103	17377	72480	No	10.12	Si
SLU 79	-1.6	-3384.84	-20654	-16523	-7726	3.4073	3.4073	-10776	9770	14981	81562	55103	17377	72480	No	9.38	Si
SLU 79	0.6	2655.04	-17249	-13800	-7092	3.4073	3.4073	-9000	9533	14617	81562	55103	17377	72480	No	10.22	Si
SLU 76	-1.6	-3383.95	-20540	-16432	-7796	3.4073	3.4073	-10717	9762	14968	81562	55103	17377	72480	No	9.3	Si
SLU 76	0.6	2641.85	-17234	-13787	-7162	3.4073	3.4073	-8992	9532	14616	81562	55103	17377	72480	No	10.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-1.6	-4814.97	-23400	-18720	-4357	3.4073	3.4073	-12209	14942	22910	81562	82654	17377	100032		22.96	Si
SLV 5	0.6	3216.76	-14621	-11697	-2359	3.4073	3.4073	-7628	14026	21506	81562	82654	17377	100032		42.4	Si
SLV 7	-1.6	-1132.06	-8499	-6799	-8852	3.4073	3.4073	-4434	13387	20526	81562	82654	17377	100032		11.3	Si
SLV 7	0.6	2130.52	-11211	-8969	-9278	3.4073	3.4073	-5849	13670	20960	81562	82654	17377	100032		10.78	Si
SLV 8	-1.6	-1499.37	-8476	-6781	-10117	3.4073	3.4073	-4423	13385	20522	81562	82654	17377	100032		9.89	Si
SLV 8	0.6	3060.28	-11764	-9411	-10416	3.4073	3.4073	-6138	13728	21048	81562	82654	17377	100032		9.6	Si
SLV 11	-1.6	-504.76	-5129	-4103	-4755	3.4073	3.4073	-2676	13035	19987	81562	82654	17377	100032		21.04	Si
SLV 11	0.6	-812.16	-7376	-5901	-6044	3.4073	3.4073	-3849	13270	20346	81562	82654	17377	100032		16.55	Si
SLV 6	-1.6	-5182.28	-23378	-18702	-5622	3.4073	3.4073	-12197	14939	22907	81562	82654	17377	100032		17.79	Si
SLV 6	0.6	4146.52	-15173	-12139	-3497	3.4073	3.4073	-7917	14083	21594	81562	82654	17377	100032		28.61	Si
SLV 2	-1.6	-5802.88	-22094	-17675	-11975	3.4073	3.4073	-11528	14806	22701	81562	82654	17377	100032		8.35	Si
SLV 2	0.6	7199.47	-18454	-14763	-9691	3.4073	3.4073	-9628	14426	22119	81562	82654	17377	100032		10.32	Si
SLV 12	-1.6	137.46	-5106	-4085	-6020	3.4073	3.4073	-2664	13033	19983	81562	82654	17377	100032		16.62	Si
SLV 12	0.6	117.6	-7929	-6343	-7182	3.4073	3.4073	-4137	13327	20435	81562	82654	17377	100032		13.93	Si
SLV 1	-1.6	-5435.58	-22116	-17693	-10710	3.4073	3.4073	-11539	14808	22705	81562	82654	17377	100032		9.34	Si
SLV 1	0.6	6269.71	-17901	-14321	-8554	3.4073	3.4073	-9340	14368	22030	81562	82654	17377	100032		11.69	Si
SLV 4	-1.6	-4698.01	-17624	-14099	-13324	3.4073	3.4073	-9195	14339	21986	81562	82654	17377	100032		7.51	Si
SLV 4	0.6	6873.6	-17431	-13945	-11767	3.4073	3.4073	-9094	14319	21955	81562	82654	17377	100032		8.5	Si
SLV 3	-1.6	-4330.7	-17646	-14117	-12059	3.4073	3.4073	-9207	14341	21990	81562	82654	17377	100032		8.3	Si
SLV 3	0.6	5943.84	-16878	-13503	-10630	3.4073	3.4073	-8806	14261	21867	81562	82654	17377	100032		9.41	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota -0.255 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-5803	0.24	211.59	1278.74	2059.28	1669.01	7.89	Si
SLV 16	-6211	0.24	211.59	1366.66	2156.95	1761.81	8.33	Si
SLV 13	-6728	0.24	211.59	1477.61	2280.61	1879.11	8.88	Si
SLV 14	-7136	0.24	211.59	1564.92	2378.06	1971.49	9.32	Si
SLV 11	-8790	0.24	211.59	1915.98	2772.52	2344.25	11.08	Si
SLV 12	-9199	0.24	211.59	2001.95	2869.24	2435.6	11.51	Si
SLV 9	-11874	0.24	211.59	2558.78	3502.38	3030.58	14.32	Si
SLV 7	-12276	0.24	211.59	2641.45	3597.48	3119.47	14.74	Si
SLV 10	-12282	0.24	211.59	2642.73	3598.95	3120.84	14.75	Si
SLV 8	-12684	0.24	211.59	2725.14	3694.05	3209.6	15.17	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	$\alpha 0^*$	aLim	Verifica
SLV 4	-15779	-17624	316	1.065	2196	0.928	16.67573	3.53552	Si
SLV 2	-15447	-22094	477	1.074	2162.5	0.928	16.82608	3.53552	Si
SLV 3	-15303	-17646	315	1.09	2148	0.927	17.08464	3.53552	Si
SLV 1	-14970	-22116	477	1.099	2114.5	0.926	17.24642	3.53552	Si
SLV 8	-12382	-8476	-114	1.285	1854.5	0.919	20.33315	3.53552	Si
SLV 7	-11905	-8499	-114	1.322	1806.7	0.917	20.94882	3.53552	Si
SLV 6	-11275	-23378	425	1.353	1743.7	0.915	21.49652	3.53552	Si
SLV 5	-10798	-23400	424	1.395	1696.1	0.913	22.20062	3.53552	Si
SLV 12	-9138	-5106	-320	1.572	1531.1	0.907	25.19731	3.53552	Si
SLV 11	-8662	-5129	-321	1.63	1483.9	0.905	26.16993	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.424	SLU 39	Si
V_SLU	8.763	SLU 82	Si



Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.487	SLV 15	Si
V_SLV	7.508	SLV 4	Si
PFFP_SLV	7.888	SLV 15	Si
R_SLV	4.717	SLV 4	Si

Maschio 5

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
28.311	17.887	32.679	17.66	L1	L2	4.374	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	ϵ_{fd}	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	-1.6	78987.43	-57791	-0.0001754	0.0004492	0.0035	4.3745	96032.9	107061.99	107061.99	1.36	No	Si
SLU 79	0.6	34099.28	-49606	-0.0000747	0.0004492	0.0035	4.3745	86123.73	94112.07	94112.07	2.76	No	Si
SLU 84	-1.6	82650.11	-60602	-0.0001851	0.0004492	0.0035	4.3745	99154.79	111509.2	111509.2	1.35	No	Si
SLU 84	0.6	35899.91	-52733	-0.0000794	0.0004492	0.0035	4.3745	90053.12	99059.28	99059.28	2.76	No	Si
SLU 83	-1.6	82883.65	-60767	-0.0001858	0.0004492	0.0035	4.3745	99332.86	111769.2	111769.2	1.35	No	Si
SLU 83	0.6	35922.29	-52844	-0.0000796	0.0004492	0.0035	4.3745	90188.82	99234.22	99234.22	2.76	No	Si
SLU 81	-1.6	82883.65	-60767	-0.0001858	0.0004492	0.0035	4.3745	99332.86	111769.2	111769.2	1.35	No	Si
SLU 81	0.6	35922.29	-52844	-0.0000796	0.0004492	0.0035	4.3745	90188.82	99234.22	99234.22	2.76	No	Si
SLU 78	-1.6	78753.9	-57627	-0.0001748	0.0004492	0.0035	4.3745	95845.94	106801.99	106801.99	1.36	No	Si
SLU 78	0.6	34076.91	-49496	-0.0000746	0.0004492	0.0035	4.3745	85981.52	93937.12	93937.12	2.76	No	Si
SLU 74	-1.6	78987.43	-57791	-0.0001754	0.0004492	0.0035	4.3745	96032.9	107061.99	107061.99	1.36	No	Si
SLU 74	0.6	34099.28	-49606	-0.0000747	0.0004492	0.0035	4.3745	86123.73	94112.07	94112.07	2.76	No	Si
SLU 82	-1.6	82650.11	-60602	-0.0001851	0.0004492	0.0035	4.3745	99154.79	111509.2	111509.2	1.35	No	Si
SLU 82	0.6	35899.91	-52733	-0.0000794	0.0004492	0.0035	4.3745	90053.12	99059.28	99059.28	2.76	No	Si
SLU 80	-1.6	78753.9	-57627	-0.0001748	0.0004492	0.0035	4.3745	95845.94	106801.99	106801.99	1.36	No	Si
SLU 80	0.6	34076.91	-49496	-0.0000746	0.0004492	0.0035	4.3745	85981.52	93937.12	93937.12	2.76	No	Si
SLU 77	-1.6	78987.43	-57791	-0.0001754	0.0004492	0.0035	4.3745	96032.9	107061.99	107061.99	1.36	No	Si
SLU 77	0.6	34099.28	-49606	-0.0000747	0.0004492	0.0035	4.3745	86123.73	94112.07	94112.07	2.76	No	Si
SLU 75	-1.6	78753.9	-57627	-0.0001748	0.0004492	0.0035	4.3745	95845.94	106801.99	106801.99	1.36	No	Si
SLU 75	0.6	34076.91	-49496	-0.0000746	0.0004492	0.0035	4.3745	85981.52	93937.12	93937.12	2.76	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 9	-1.6	77668.32	-54301	-0.0001681	0.0006738	0.0035	4.3745		106641.5	106641.5	1.37		Si
SLV 9	0.6	23045.23	-44253	-0.000057	0.0006738	0.0035	4.3745		90011.46	90011.46	3.91		Si
SLV 10	-1.6	75926.5	-53815	-0.0001618	0.0006738	0.0035	4.3745		105864.43	105864.43	1.39		Si
SLV 10	0.6	24520.48	-42990	-0.0000576	0.0006738	0.0035	4.3745		87725.68	87725.68	3.58		Si
SLV 14	-1.6	83577	-51064	-0.0002257	0.0006738	0.0035	4.3745		101467.3	101467.3	1.21		Si
SLV 14	0.6	24518.03	-44473	-0.0000588	0.0006738	0.0035	4.3745		90409.25	90409.25	3.69		Si
SLV 11	-1.6	48939.11	-30794	-0.0001169	0.0006738	0.0035	4.3745		64873.67	64873.67	1.33		Si
SLV 11	0.6	22581.66	-29387	-0.000045	0.0006738	0.0035	4.3745		62148.23	62148.23	2.75		Si
SLV 15	-1.6	76700.05	-44498	-0.000235	0.0006738	0.0035	4.3745		90454.4	90454.4	1.18		Si
SLV 15	0.6	22903.7	-41276	-0.0000545	0.0006738	0.0035	4.3745		84571	84571	3.69		Si
SLV 16	-1.6	74958.24	-44011	-0.0002205	0.0006738	0.0035	4.3745		89574.39	89574.39	1.19		Si
SLV 16	0.6	24378.95	-40013	-0.0000551	0.0006738	0.0035	4.3745		82244.88	82244.88	3.37		Si
SLV 13	-1.6	85318.82	-51550	-0.0002376	0.0006738	0.0035	4.3745		102244.37	102244.37	1.2		Si
SLV 13	0.6	23042.77	-45736	-0.0000582	0.0006738	0.0035	4.3745		92695.03	92695.03	4.02		Si
SLV 5	-1.6	62491.99	-49607	-0.0001217	0.0006738	0.0035	4.3745		99140.16	99140.16	1.59		Si
SLV 5	0.6	22908.27	-38522	-0.0000524	0.0006738	0.0035	4.3745		79487.18	79487.18	3.47		Si
SLV 12	-1.6	47197.29	-30307	-0.0001086	0.0006738	0.0035	4.3745		63931.51	63931.51	1.35		Si
SLV 12	0.6	24056.91	-28124	-0.0000459	0.0006738	0.0035	4.3745		59701.01	59701.01	2.48		Si
SLV 6	-1.6	60750.17	-49121	-0.0001173	0.0006738	0.0035	4.3745		98363.1	98363.1	1.62		Si
SLV 6	0.6	24383.52	-37259	-0.0000529	0.0006738	0.0035	4.3745		77120.69	77120.69	3.16		Si



Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σ_N	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	-1.6	82650.11	-60602	-48482	25358	4.3745	2.4703	-24629	10833	12043	81562	70744	22310	93053	No	3.67	Si
SLU 84	0.6	35899.91	-52733	-42187	24469	4.3745	4.3745	-21431	10833	21326	81562	70744	22310	93053	No	3.8	Si
SLU 78	-1.6	78753.9	-57627	-46102	24065	4.3745	2.4619	-23419	10833	12002	81562	70744	22310	93053	No	3.87	Si
SLU 78	0.6	34076.91	-49496	-39597	23223	4.3745	4.3745	-20115	10833	21326	81562	70744	22310	93053	No	4.01	Si
SLU 79	-1.6	78987.43	-57791	-46233	24120	4.3745	2.4614	-23486	10833	11999	81562	70744	22310	93053	No	3.86	Si
SLU 79	0.6	34099.28	-49606	-39685	23272	4.3745	4.3745	-20160	10833	21326	81562	70744	22310	93053	No	4	Si
SLU 77	-1.6	78987.43	-57791	-46233	24120	4.3745	2.4614	-23486	10833	11999	81562	70744	22310	93053	No	3.86	Si
SLU 77	0.6	34099.28	-49606	-39685	23272	4.3745	4.3745	-20160	10833	21326	81562	70744	22310	93053	No	4	Si
SLU 80	-1.6	78753.9	-57627	-46102	24065	4.3745	2.4619	-23419	10833	12002	81562	70744	22310	93053	No	3.87	Si
SLU 80	0.6	34076.91	-49496	-39597	23223	4.3745	4.3745	-20115	10833	21326	81562	70744	22310	93053	No	4.01	Si
SLU 83	-1.6	82883.65	-60767	-48613	25412	4.3745	2.4698	-24695	10833	12040	81562	70744	22310	93053	No	3.66	Si
SLU 83	0.6	35922.29	-52844	-42275	24518	4.3745	4.3745	-21476	10833	21326	81562	70744	22310	93053	No	3.8	Si
SLU 81	-1.6	82883.65	-60767	-48613	25412	4.3745	2.4698	-24695	10833	12040	81562	70744	22310	93053	No	3.66	Si
SLU 81	0.6	35922.29	-52844	-42275	24518	4.3745	4.3745	-21476	10833	21326	81562	70744	22310	93053	No	3.8	Si
SLU 74	-1.6	78987.43	-57791	-46233	24120	4.3745	2.4614	-23486	10833	11999	81562	70744	22310	93053	No	3.86	Si
SLU 74	0.6	34099.28	-49606	-39685	23272	4.3745	4.3745	-20160	10833	21326	81562	70744	22310	93053	No	4	Si
SLU 75	-1.6	78753.9	-57627	-46102	24065	4.3745	2.4619	-23419	10833	12002	81562	70744	22310	93053	No	3.87	Si
SLU 75	0.6	34076.91	-49496	-39597	23223	4.3745	4.3745	-20115	10833	21326	81562	70744	22310	93053	No	4.01	Si
SLU 82	-1.6	82650.11	-60602	-48482	25358	4.3745	2.4703	-24629	10833	12043	81562	70744	22310	93053	No	3.67	Si
SLU 82	0.6	35899.91	-52733	-42187	24469	4.3745	4.3745	-21431	10833	21326	81562	70744	22310	93053	No	3.8	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σ_N	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	-1.6	76700.05	-44498	-35598	32135	4.3745	1.3907	-58634	16250	10169	81562	106115	22310	91731		2.85	Si
SLV 15	0.6	22903.7	-41276	-33021	29636	4.3745	4.3745	-16774	15855	31211	81562	106115	22310	112772		3.81	Si
SLV 12	-1.6	47197.29	-30307	-24246	16463	4.3745	1.8899	-12317	14963	12726	81562	106115	22310	94287		5.73	Si
SLV 12	0.6	24056.91	-28124	-22499	14554	4.3745	3.9956	-11430	14786	26585	81562	106115	22310	108147		7.43	Si
SLV 9	-1.6	77668.32	-54301	-43441	25876	4.3745	2.2708	-22068	16250	16605	81562	106115	22310	98167		3.79	Si
SLV 9	0.6	23045.23	-44253	-35402	25702	4.3745	4.3745	-17984	16097	31687	81562	106115	22310	113249		4.41	Si
SLV 13	-1.6	85318.82	-51550	-41240	34169	4.3745	1.5965	-20950	16250	11674	81562	106115	22310	93236		2.73	Si
SLV 13	0.6	23042.77	-45736	-36588	32247	4.3745	4.3745	-18587	16217	31924	81562	106115	22310	113486		3.52	Si
SLV 14	-1.6	83577	-51064	-40851	31536	4.3745	1.6516	-20752	16250	12077	81562	106115	22310	93639		2.97	Si
SLV 14	0.6	24518.03	-44473	-35578	29805	4.3745	4.3745	-18074	16115	31722	81562	106115	22310	113284		3.8	Si
SLV 11	-1.6	48939.11	-30794	-24635	19097	4.3745	1.794	-12514	15003	12112	81562	106115	22310	93673		4.91	Si
SLV 11	0.6	22581.66	-29387	-23510	16997	4.3745	4.2565	-11943	14889	28518	81562	106115	22310	110079		6.48	Si
SLV 16	-1.6	74958.24	-44011	-35209	29502	4.3745	1.4523	-55420	16250	10620	81562	106115	22310	92181		3.12	Si
SLV 16	0.6	24378.95	-40013	-32010	27193	4.3745	4.3745	-16261	15752	31009	81562	106115	22310	112570		4.14	Si
SLV 6	-1.6	60750.17	-49121	-39297	14100	4.3745	2.8515	-19963	16250	20852	81562	106115	22310	102413		7.26	Si
SLV 6	0.6	24383.52	-37259	-29807	15038	4.3745	4.3745	-15142	15528	30568	81562	106115	22310	112130		7.46	Si
SLV 10	-1.6	75926.5	-53815	-43052	23243	4.3745	2.3291	-21870	16250	17031	81562	106115	22310	98593		4.24	Si
SLV 10	0.6	24520.48	-42990	-34392	23260	4.3745	4.3745	-17471	15994	31485	81562	106115	22310	113046		4.86	Si
SLV 5	-1.6	62491.99	-49607	-39686	16734	4.3745	2.7825	-20160	16250	20347	81562	106115	22310	101909		6.09	Si
SLV 5	0.6	22908.27	-38522	-30818	17480	4.3745	4.3745	-15655	15631	30770	81562	106115	22310	112332		6.43	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCC D.M. 17-01-18 (N.T.C.)

quota -0.255 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 8	-21028	0.24	271.64	4455.63	5869.56	5162.6	19.01	Si
SLV 4	-21827	0.24	271.64	4614.05	6056.73	5335.39	19.64	Si
SLV 7	-21960	0.24	271.64	4640.2	6087.73	5363.96	19.75	Si
SLV 3	-22759	0.24	271.64	4797.69	6274.93	5536.31	20.38	Si
SLV 12	-26593	0.24	271.64	5542.39	7171.02	6356.71	23.4	Si
SLV 11	-27524	0.24	271.64	5720.49	7387.62	6554.06	24.13	Si
SLV 2	-28077	0.24	271.64	5825.66	7516.15	6670.9	24.56	Si
SLV 1	-29008	0.24	271.64	6002.04	7732.79	6867.42	25.28	Si
SLV 16	-40376	0.24	271.64	8067.9	10367.03	9217.46	33.93	Si
SLV 15	-41307	0.24	271.64	8229.99	10582.22	9406.11	34.63	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	α_0	M*	e*	α_0^*	aLim	Verifica
SLV 13	-42748	-51550	-194	0.605	5099.1	0.957	9.19091	3.53552	Si
SLV 14	-41410	-51064	-185	0.62	4963.1	0.956	9.43356	3.53552	Si
SLV 9	-40157	-54301	572	0.627	4835.7	0.955	9.54087	3.53552	Si
SLV 15	-39725	-44498	-601	0.631	4791.9	0.954	9.61484	3.53552	Si
SLV 10	-38819	-53815	580	0.643	4699.8	0.954	9.80356	3.53552	Si
SLV 16	-38387	-44011	-593	0.649	4656	0.953	9.88861	3.53552	Si
SLV 5	-34913	-49607	821	0.692	4303.1	0.95	10.59235	3.53552	Si
SLV 6	-33575	-49121	830	0.713	4167.4	0.948	10.93023	3.53552	Si
SLV 11	-30081	-30794	-785	0.778	3812.9	0.944	11.9696	3.53552	Si
SLV 12	-28743	-30307	-776	0.806	3677.3	0.943	12.42294	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.349	SLU 81	Si
V_SLU	3.662	SLU 81	Si
PF_SLV	1.179	SLV 15	Si
V_SLV	2.729	SLV 13	Si
PFFP_SLV	19.005	SLV 8	Si
R_SLV	2.6	SLV 13	Si



Maschio 6

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
24.382	27.161	25.828	27.161	L1	L2	1.445	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_ Corti

fb	fk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ϵ_{fd}	γF_d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	ϵ_m _	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	-0.21	903.71	-18394	-0.0000552	0.0003743	0.0035	1.4454	9601.01	10481.56	10481.56	11.6	No	Si
SLU 83	0.19	1948.34	-18432	-0.0000668	0.0003743	0.0035	1.4454	9613.07	10497.22	10497.22	5.39	No	Si
SLU 82	-0.21	909.57	-18422	-0.0000554	0.0003743	0.0035	1.4454	9610.01	10493.24	10493.24	11.54	No	Si
SLU 82	0.19	1947	-18448	-0.0000668	0.0003743	0.0035	1.4454	9618.21	10503.89	10503.89	5.39	No	Si
SLU 80	-0.21	852.21	-17412	-0.000052	0.0003743	0.0035	1.4454	9275.17	10075.67	10075.67	11.82	No	Si
SLU 80	0.19	1820.84	-17397	-0.0000625	0.0003743	0.0035	1.4454	9269.87	10069.33	10069.33	5.53	No	Si
SLU 77	-0.21	846.35	-17384	-0.0000519	0.0003743	0.0035	1.4454	9265.54	10064.14	10064.14	11.89	No	Si
SLU 77	0.19	1822.18	-17381	-0.0000625	0.0003743	0.0035	1.4454	9264.37	10062.74	10062.74	5.52	No	Si
SLU 84	-0.21	909.57	-18422	-0.0000554	0.0003743	0.0035	1.4454	9610.01	10493.24	10493.24	11.54	No	Si
SLU 84	0.19	1947	-18448	-0.0000668	0.0003743	0.0035	1.4454	9618.21	10503.89	10503.89	5.39	No	Si
SLU 74	-0.21	846.35	-17384	-0.0000519	0.0003743	0.0035	1.4454	9265.54	10064.14	10064.14	11.89	No	Si
SLU 74	0.19	1822.18	-17381	-0.0000625	0.0003743	0.0035	1.4454	9264.37	10062.74	10062.74	5.52	No	Si
SLU 75	-0.21	852.21	-17412	-0.000052	0.0003743	0.0035	1.4454	9275.17	10075.67	10075.67	11.82	No	Si
SLU 75	0.19	1820.84	-17397	-0.0000625	0.0003743	0.0035	1.4454	9269.87	10069.33	10069.33	5.53	No	Si
SLU 78	-0.21	852.21	-17412	-0.000052	0.0003743	0.0035	1.4454	9275.17	10075.67	10075.67	11.82	No	Si
SLU 78	0.19	1820.84	-17397	-0.0000625	0.0003743	0.0035	1.4454	9269.87	10069.33	10069.33	5.53	No	Si
SLU 79	-0.21	846.35	-17384	-0.0000519	0.0003743	0.0035	1.4454	9265.54	10064.14	10064.14	11.89	No	Si
SLU 79	0.19	1822.18	-17381	-0.0000625	0.0003743	0.0035	1.4454	9264.37	10062.74	10062.74	5.52	No	Si
SLU 81	-0.21	903.71	-18394	-0.0000552	0.0003743	0.0035	1.4454	9601.01	10481.56	10481.56	11.6	No	Si
SLU 81	0.19	1948.34	-18432	-0.0000668	0.0003743	0.0035	1.4454	9613.07	10497.22	10497.22	5.39	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	ϵ_m _	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	-0.21	1192.88	-13890	-0.0000452	0.0005615	0.0035	1.4454		8911.98	8911.98	7.47		Si
SLV 8	0.19	1662.12	-13211	-0.0000483	0.0005615	0.0035	1.4454		8555.52	8555.52	5.15		Si
SLV 3	-0.21	212.18	-12221	-0.0000312	0.0005615	0.0035	1.4454		8038.74	8038.74	37.89		Si
SLV 3	0.19	1897.68	-12768	-0.0000496	0.0005615	0.0035	1.4454		8323.96	8323.96	4.39		Si
SLV 2	-0.21	-151.51	-11289	-0.0000283	0.0005615	0.0035	1.4454		7918.44	7918.44	52.26		Si
SLV 2	0.19	1613.26	-12206	-0.0000453	0.0005615	0.0035	1.4454		8031.12	8031.12	4.98		Si
SLV 12	-0.21	1513.34	-13959	-0.0000487	0.0005615	0.0035	1.4454		8948.15	8948.15	5.91		Si
SLV 12	0.19	1336.09	-12802	-0.0000439	0.0005615	0.0035	1.4454		8341.79	8341.79	6.24		Si
SLV 4	-0.21	296.42	-12453	-0.0000326	0.0005615	0.0035	1.4454		8159.52	8159.52	27.53		Si
SLV 4	0.19	1811.36	-12890	-0.000049	0.0005615	0.0035	1.4454		8387.66	8387.66	4.63		Si
SLV 11	-0.21	1429.1	-13727	-0.0000472	0.0005615	0.0035	1.4454		8826.21	8826.21	6.18		Si
SLV 11	0.19	1422.42	-12680	-0.0000445	0.0005615	0.0035	1.4454		8278.13	8278.13	5.82		Si
SLV 1	-0.21	-235.75	-11057	-0.0000286	0.0005615	0.0035	1.4454		7777.7	7777.7	32.99		Si
SLV 1	0.19	1699.58	-12084	-0.0000458	0.0005615	0.0035	1.4454		7967.7	7967.7	4.69		Si
SLV 7	-0.21	1108.63	-13658	-0.0000438	0.0005615	0.0035	1.4454		8790.1	8790.1	7.93		Si
SLV 7	0.19	1748.44	-13089	-0.0000489	0.0005615	0.0035	1.4454		8491.69	8491.69	4.86		Si
SLV 15	-0.21	1280.38	-12450	-0.0000425	0.0005615	0.0035	1.4454		8158.07	8158.07	6.37		Si
SLV 15	0.19	810.94	-11405	-0.0000352	0.0005615	0.0035	1.4454		7599.02	7599.02	9.37		Si
SLV 16	-0.21	1364.63	-12682	-0.0000439	0.0005615	0.0035	1.4454		8279.03	8279.03	6.07		Si
SLV 16	0.19	724.61	-11527	-0.0000346	0.0005615	0.0035	1.4454		7668.04	7668.04	10.58		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	-0.21	903.71	-18394	-16350	-3793	1.4454	1.4454	-25138	10296	6697	28547	19477	3686	23163	No	6.11	Si
SLU 81	0.19	1948.34	-18432	-16384	-3771	1.4454	1.4454	-25189	10303	6701	28547	19477	3686	23163	No	6.14	Si
SLU 79	-0.21	846.35	-17384	-15453	-3546	1.4454	1.4454	-23758	10112	6577	28547	19477	3686	23163	No	6.53	Si
SLU 79	0.19	1822.18	-17381	-15450	-3525	1.4454	1.4454	-23753	10112	6577	28547	19477	3686	23163	No	6.57	Si
SLU 75	-0.21	852.21	-17412	-15478	-3506	1.4454	1.4454	-23796	10117	6581	28547	19477	3686	23163	No	6.61	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	0.19	1820.84	-17397	-15464	-3486	1.4454	1.4454	-23775	10114	6579	28547	19477	3686	23163	No	6.64	Si
SLU 74	-0.21	846.35	-17384	-15453	-3546	1.4454	1.4454	-23758	10112	6577	28547	19477	3686	23163	No	6.53	Si
SLU 74	0.19	1822.18	-17381	-15450	-3525	1.4454	1.4454	-23753	10112	6577	28547	19477	3686	23163	No	6.57	Si
SLU 77	-0.21	846.35	-17384	-15453	-3546	1.4454	1.4454	-23758	10112	6577	28547	19477	3686	23163	No	6.53	Si
SLU 77	0.19	1822.18	-17381	-15450	-3525	1.4454	1.4454	-23753	10112	6577	28547	19477	3686	23163	No	6.57	Si
SLU 78	-0.21	852.21	-17412	-15478	-3506	1.4454	1.4454	-23796	10117	6581	28547	19477	3686	23163	No	6.61	Si
SLU 78	0.19	1820.84	-17397	-15464	-3486	1.4454	1.4454	-23775	10114	6579	28547	19477	3686	23163	No	6.64	Si
SLU 84	-0.21	909.57	-18422	-16375	-3753	1.4454	1.4454	-25176	10301	6700	28547	19477	3686	23163	No	6.17	Si
SLU 84	0.19	1947	-18448	-16398	-3731	1.4454	1.4454	-25211	10306	6703	28547	19477	3686	23163	No	6.21	Si
SLU 82	-0.21	909.57	-18422	-16375	-3753	1.4454	1.4454	-25176	10301	6700	28547	19477	3686	23163	No	6.17	Si
SLU 82	0.19	1947	-18448	-16398	-3731	1.4454	1.4454	-25211	10306	6703	28547	19477	3686	23163	No	6.21	Si
SLU 83	-0.21	903.71	-18394	-16350	-3793	1.4454	1.4454	-25138	10296	6697	28547	19477	3686	23163	No	6.11	Si
SLU 83	0.19	1948.34	-18432	-16384	-3771	1.4454	1.4454	-25189	10303	6701	28547	19477	3686	23163	No	6.14	Si
SLU 80	-0.21	852.21	-17412	-15478	-3506	1.4454	1.4454	-23796	10117	6581	28547	19477	3686	23163	No	6.61	Si
SLU 80	0.19	1820.84	-17397	-15464	-3486	1.4454	1.4454	-23775	10114	6579	28547	19477	3686	23163	No	6.64	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	-0.21	212.18	-12221	-10863	-5756	1.4454	1.4454	-16701	13757	8948	28547	29215	3686	32901		5.72	Si
SLV 3	0.19	1897.68	-12768	-11349	-5721	1.4454	1.4454	-17449	13906	9045	28547	29215	3686	32901		5.75	Si
SLV 4	-0.21	296.42	-12453	-11069	-5131	1.4454	1.4454	-17018	13820	8989	28547	29215	3686	32901		6.41	Si
SLV 4	0.19	1811.36	-12890	-11458	-5096	1.4454	1.4454	-17615	13940	9067	28547	29215	3686	32901		6.46	Si
SLV 6	-0.21	-300.22	-10012	-8900	-6500	1.4454	1.4454	-13683	13153	8555	28547	29215	3686	32901		5.06	Si
SLV 6	0.19	1001.78	-10931	-9717	-6458	1.4454	1.4454	-14939	13404	8719	28547	29215	3686	32901		5.09	Si
SLV 2	-0.21	-151.51	-11289	-10035	-7074	1.4454	1.4454	-15428	13502	8782	28547	29215	3686	32901		4.65	Si
SLV 2	0.19	1613.26	-12206	-10850	-7028	1.4454	1.4454	-16681	13753	8945	28547	29215	3686	32901		4.68	Si
SLV 1	-0.21	-235.75	-11057	-9829	-7699	1.4454	1.4454	-15111	13439	8741	28547	29215	3686	32901		4.27	Si
SLV 1	0.19	1699.58	-12084	-10741	-7652	1.4454	1.4454	-16514	13720	8924	28547	29215	3686	32901		4.3	Si
SLV 9	-0.21	-64.01	-9849	-8755	-4690	1.4454	1.4454	-13460	13109	8526	28547	29215	3686	32901		7.01	Si
SLV 9	0.19	762.08	-10401	-9245	-4664	1.4454	1.4454	-14214	13259	8624	28547	29215	3686	32901		7.05	Si
SLV 16	-0.21	1364.63	-12682	-11273	2985	1.4454	1.4454	-17331	13883	9030	28547	29215	3686	32901		11.02	Si
SLV 16	0.19	724.61	-11527	-10247	2968	1.4454	1.4454	-15753	13567	8825	28547	29215	3686	32901		11.09	Si
SLV 12	-0.21	1513.34	-13959	-12408	2411	1.4454	1.4454	-19077	14232	9257	28547	29215	3686	32901		13.65	Si
SLV 12	0.19	1336.09	-12802	-11380	2398	1.4454	1.4454	-17495	13916	9051	28547	29215	3686	32901		13.72	Si
SLV 5	-0.21	-384.47	-9780	-8693	-7125	1.4454	1.4454	-13366	13090	8514	28547	29215	3686	32901		4.62	Si
SLV 5	0.19	1088.1	-10809	-9608	-7083	1.4454	1.4454	-14772	13371	8697	28547	29215	3686	32901		4.65	Si
SLV 10	-0.21	20.24	-10081	-8961	-4066	1.4454	1.4454	-13777	13172	8567	28547	29215	3686	32901		8.09	Si
SLV 10	0.19	675.76	-10523	-9353	-4039	1.4454	1.4454	-14380	13293	8646	28547	29215	3686	32901		8.15	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.255 Wa 0.08 denominatore 8 $\gamma_M = 2$

Comb.	fd	Sa	σ_0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.24	14659	-9535	88.27	1939.42	21.97	Si
SLV 10	179667	0.24	14844	-9655	88.27	1961.19	22.22	Si
SLV 5	179667	0.24	15181	-9874	88.27	2000.84	22.67	Si
SLV 6	179667	0.24	15365	-9994	88.27	2022.42	22.91	Si
SLV 13	179667	0.24	15589	-10139	88.27	2048.5	23.21	Si
SLV 14	179667	0.24	15773	-10259	88.27	2069.94	23.45	Si
SLV 15	179667	0.24	16907	-10997	88.27	2200.38	24.93	Si
SLV 16	179667	0.24	17091	-11117	88.27	2221.35	25.17	Si
SLV 1	179667	0.24	17327	-11270	88.27	2248.11	25.47	Si
SLV 2	179667	0.24	17512	-11390	88.27	2268.93	25.71	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	α_0	M*	e*	α_0^*	aLim	Verifica
SLV 4	-8891	-14133	18	0.87	1153.6	0.94	13.4562	3.53552	Si
SLV 2	-8863	-12853	5	0.874	1150.8	0.94	13.51058	3.53552	Si
SLV 8	-8783	-14494	14	0.879	1142.7	0.939	13.5968	3.53552	Si
SLV 6	-8691	-10230	-33	0.884	1133.4	0.939	13.68408	3.53552	Si
SLV 3	-8699	-14113	18	0.885	1134.1	0.939	13.69662	3.53552	Si
SLV 1	-8671	-12834	4	0.889	1131.4	0.939	13.75272	3.53552	Si
SLV 12	-8663	-13525	-4	0.889	1130.5	0.939	13.76327	3.53552	Si
SLV 10	-8571	-9261	-51	0.892	1121.3	0.938	13.81126	3.53552	Si
SLV 7	-8591	-14474	13	0.894	1123.2	0.939	13.84261	3.53552	Si
SLV 16	-8491	-10902	-41	0.899	1113.1	0.938	13.93096	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.388	SLU 81	Si
V_SLU	6.107	SLU 81	Si
PF_SLV	4.386	SLV 3	Si
V_SLV	4.274	SLV 1	Si
PFFP_SLV	21.973	SLV 9	Si
R_SLV	3.806	SLV 4	Si



Maschio 7

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
26.828	27.161	30.248	27.161	L1	L2	3.42	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_ Corti

fb	fk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ϵ_{fd}	γF_d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	ϵ_m	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	-0.21	-2283.14	-26674	-0.0000313	0.0003743	0.0035	3.4199	37846.13	42923.14	42923.14	18.8	No	Si
SLU 45	0.19	-1409.75	-25247	-0.0000282	0.0003743	0.0035	3.4199	36214.12	41119.95	41119.95	29.17	No	Si
SLU 77	-0.21	-2839.94	-35982	-0.0000425	0.0003743	0.0035	3.4199	47397.13	54108.44	54108.44	19.05	No	Si
SLU 77	0.19	-1723.83	-34538	-0.0000388	0.0003743	0.0035	3.4199	46040.07	52497.15	52497.15	30.45	No	Si
SLU 69	-0.21	-2516.02	-30472	-0.0000358	0.0003743	0.0035	3.4199	41971.65	47670.05	47670.05	18.95	No	Si
SLU 69	0.19	-1541.46	-29029	-0.0000324	0.0003743	0.0035	3.4199	40441.03	45911.72	45911.72	29.78	No	Si
SLU 64	-0.21	-2516.02	-30472	-0.0000358	0.0003743	0.0035	3.4199	41971.65	47670.05	47670.05	18.95	No	Si
SLU 64	0.19	-1541.46	-29029	-0.0000324	0.0003743	0.0035	3.4199	40441.03	45911.72	45911.72	29.78	No	Si
SLU 43	-0.21	-2283.14	-26674	-0.0000313	0.0003743	0.0035	3.4199	37846.13	42923.14	42923.14	18.8	No	Si
SLU 43	0.19	-1409.75	-25247	-0.0000282	0.0003743	0.0035	3.4199	36214.12	41119.95	41119.95	29.17	No	Si
SLU 74	-0.21	-2839.94	-35982	-0.0000425	0.0003743	0.0035	3.4199	47397.13	54108.44	54108.44	19.05	No	Si
SLU 74	0.19	-1723.83	-34538	-0.0000388	0.0003743	0.0035	3.4199	46040.07	52497.15	52497.15	30.45	No	Si
SLU 71	-0.21	-2516.02	-30472	-0.0000358	0.0003743	0.0035	3.4199	41971.65	47670.05	47670.05	18.95	No	Si
SLU 71	0.19	-1541.46	-29029	-0.0000324	0.0003743	0.0035	3.4199	40441.03	45911.72	45911.72	29.78	No	Si
SLU 48	-0.21	-2283.14	-26674	-0.0000313	0.0003743	0.0035	3.4199	37846.13	42923.14	42923.14	18.8	No	Si
SLU 48	0.19	-1409.75	-25247	-0.0000282	0.0003743	0.0035	3.4199	36214.12	41119.95	41119.95	29.17	No	Si
SLU 66	-0.21	-2516.02	-30472	-0.0000358	0.0003743	0.0035	3.4199	41971.65	47670.05	47670.05	18.95	No	Si
SLU 66	0.19	-1541.46	-29029	-0.0000324	0.0003743	0.0035	3.4199	40441.03	45911.72	45911.72	29.78	No	Si
SLU 50	-0.21	-2283.14	-26674	-0.0000313	0.0003743	0.0035	3.4199	37846.13	42923.14	42923.14	18.8	No	Si
SLU 50	0.19	-1409.75	-25247	-0.0000282	0.0003743	0.0035	3.4199	36214.12	41119.95	41119.95	29.17	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	ϵ_m	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	-0.21	-5486.97	-21673	-0.0000313	0.0005615	0.0035	3.4199		37529.05	37529.05	6.84		Si
SLV 2	0.19	-714.41	-20531	-0.0000217	0.0005615	0.0035	3.4199		35816.1	35816.1	50.13		Si
SLV 4	-0.21	-4588	-26342	-0.0000346	0.0005615	0.0035	3.4199		44206.72	44206.72	9.64		Si
SLV 4	0.19	-114.45	-25300	-0.0000255	0.0005615	0.0035	3.4199		42715.01	42715.01	373.22		Si
SLV 3	-0.21	-4931.24	-26317	-0.0000352	0.0005615	0.0035	3.4199		44170.22	44170.22	8.96		Si
SLV 3	0.19	132.45	-25275	-0.0000255	0.0005615	0.0035	3.4199		39980.13	39980.13	301.86		Si
SLV 13	-0.21	634.47	-22017	-0.0000231	0.0005615	0.0035	3.4199		35459.52	35459.52	55.89		Si
SLV 13	0.19	-2303.34	-20845	-0.0000248	0.0005615	0.0035	3.4199		36286.29	36286.29	15.75		Si
SLV 5	-0.21	-4616.37	-16330	-0.0000243	0.0005615	0.0035	3.4199		29568.71	29568.71	6.41		Si
SLV 5	0.19	-1810.01	-15061	-0.0000181	0.0005615	0.0035	3.4199		27586.53	27586.53	15.24		Si
SLV 10	-0.21	-2333.72	-16466	-0.0000204	0.0005615	0.0035	3.4199		29773.63	29773.63	12.76		Si
SLV 10	0.19	-2607.65	-15188	-0.0000196	0.0005615	0.0035	3.4199		27785.01	27785.01	10.66		Si
SLV 9	-0.21	-2676.97	-16440	-0.0000221	0.0005615	0.0035	3.4199		29736.09	29736.09	11.11		Si
SLV 9	0.19	-2360.76	-15162	-0.0000192	0.0005615	0.0035	3.4199		27745.31	27745.31	11.75		Si
SLV 14	-0.21	977.71	-22042	-0.0000237	0.0005615	0.0035	3.4199		35496.79	35496.79	36.31		Si
SLV 14	0.19	-2550.24	-20871	-0.0000253	0.0005615	0.0035	3.4199		36324.43	36324.43	14.24		Si
SLV 1	-0.21	-5830.21	-21648	-0.0000319	0.0005615	0.0035	3.4199		37490.8	37490.8	6.43		Si
SLV 1	0.19	-467.51	-20506	-0.0000212	0.0005615	0.0035	3.4199		35778.01	35778.01	76.53		Si
SLV 6	-0.21	-4273.13	-16355	-0.0000237	0.0005615	0.0035	3.4199		29608.14	29608.14	6.93		Si
SLV 6	0.19	-2056.9	-15086	-0.0000185	0.0005615	0.0035	3.4199		27626.21	27626.21	13.43		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	-0.21	-2811.8	-36116	-32103	-2791	3.4199	3.4199	-20860	9726	14968	28547	46083	8721	43514	No	15.59	Si
SLU 75	0.19	-1696.19	-34673	-30820	-2791	3.4199	3.4199	-20027	9615	14797	28547	46083	8721	43343	No	15.53	Si
SLU 84	-0.21	-2950.63	-38477	-34202	-2943	3.4199	3.4199	-22224	9908	15247	28547	46083	8721	43794	No	14.88	Si
SLU 84	0.19	-1774.35	-37034	-32919	-2943	3.4199	3.4199	-21391	9797	15076	28547	46083	8721	43623	No	14.82	Si
SLU 83	-0.21	-2978.77	-38343	-34083	-2944	3.4199	3.4199	-22147	9897	15231	28547	46083	8721	43778	No	14.87	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	0.19	-1801.99	-36900	-32800	-2944	3.4199	3.4199	-21313	9786	15060	28547	46083	8721	43607	No	14.81	Si
SLU 81	-0.21	-2978.77	-38343	-34083	-2944	3.4199	3.4199	-22147	9897	15231	28547	46083	8721	43778	No	14.87	Si
SLU 81	0.19	-1801.99	-36900	-32800	-2944	3.4199	3.4199	-21313	9786	15060	28547	46083	8721	43607	No	14.81	Si
SLU 77	-0.21	-2839.94	-35982	-31984	-2792	3.4199	3.4199	-20783	9715	14952	28547	46083	8721	43498	No	15.58	Si
SLU 77	0.19	-1723.83	-34538	-30701	-2792	3.4199	3.4199	-19949	9604	14781	28547	46083	8721	43327	No	15.52	Si
SLU 80	-0.21	-2811.8	-36116	-32103	-2791	3.4199	3.4199	-20860	9726	14968	28547	46083	8721	43514	No	15.59	Si
SLU 80	0.19	-1696.19	-34673	-30820	-2791	3.4199	3.4199	-20027	9615	14797	28547	46083	8721	43343	No	15.53	Si
SLU 79	-0.21	-2839.94	-35982	-31984	-2792	3.4199	3.4199	-20783	9715	14952	28547	46083	8721	43498	No	15.58	Si
SLU 79	0.19	-1723.83	-34538	-30701	-2792	3.4199	3.4199	-19949	9604	14781	28547	46083	8721	43327	No	15.52	Si
SLU 74	-0.21	-2839.94	-35982	-31984	-2792	3.4199	3.4199	-20783	9715	14952	28547	46083	8721	43498	No	15.58	Si
SLU 74	0.19	-1723.83	-34538	-30701	-2792	3.4199	3.4199	-19949	9604	14781	28547	46083	8721	43327	No	15.52	Si
SLU 78	-0.21	-2811.8	-36116	-32103	-2791	3.4199	3.4199	-20860	9726	14968	28547	46083	8721	43514	No	15.59	Si
SLU 78	0.19	-1696.19	-34673	-30820	-2791	3.4199	3.4199	-20027	9615	14797	28547	46083	8721	43343	No	15.53	Si
SLU 82	-0.21	-2950.63	-38477	-34202	-2943	3.4199	3.4199	-22224	9908	15247	28547	46083	8721	43794	No	14.88	Si
SLU 82	0.19	-1774.35	-37034	-32919	-2943	3.4199	3.4199	-21391	9797	15076	28547	46083	8721	43623	No	14.82	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-0.21	-4616.37	-16330	-14515	-7737	3.4199	3.4199	-9432	12303	18934	28547	69124	8721	47480		6.14	Si
SLV 5	0.19	-1810.01	-15061	-13387	-6296	3.4199	3.4199	-8699	12156	18708	28547	69124	8721	47255		7.51	Si
SLV 14	-0.21	977.71	-22042	-19593	8056	3.4199	3.4199	-12731	12963	19949	28547	69124	8721	48496		6.02	Si
SLV 14	0.19	-2550.24	-20871	-18552	8453	3.4199	3.4199	-12055	12828	19741	28547	69124	8721	48288		5.71	Si
SLV 6	-0.21	-4273.13	-16355	-14538	-6261	3.4199	3.4199	-9447	12306	18938	28547	69124	8721	47485		7.58	Si
SLV 6	0.19	-2056.9	-15086	-13410	-4821	3.4199	3.4199	-8714	12159	18713	28547	69124	8721	47259		9.8	Si
SLV 16	-0.21	1876.68	-26711	-23743	9325	3.4199	3.4199	-15428	13502	20779	28547	69124	8721	49326		5.29	Si
SLV 16	0.19	-1950.28	-25640	-22791	8864	3.4199	3.4199	-14809	13379	20589	28547	69124	8721	49135		5.54	Si
SLV 15	-0.21	1533.44	-26686	-23721	7850	3.4199	3.4199	-15414	13499	20775	28547	69124	8721	49321		6.28	Si
SLV 15	0.19	-1703.38	-25614	-22768	7388	3.4199	3.4199	-14795	13376	20584	28547	69124	8721	49131		6.65	Si
SLV 2	-0.21	-5486.97	-21673	-19265	-11692	3.4199	3.4199	-12518	12920	19884	28547	69124	8721	48430		4.14	Si
SLV 2	0.19	-714.41	-20531	-18250	-11230	3.4199	3.4199	-11859	12788	19681	28547	69124	8721	48227		4.29	Si
SLV 1	-0.21	-5830.21	-21648	-19242	-13167	3.4199	3.4199	-12503	12917	19879	28547	69124	8721	48426		3.68	Si
SLV 1	0.19	-467.51	-20506	-18227	-12705	3.4199	3.4199	-11844	12785	19676	28547	69124	8721	48223		3.8	Si
SLV 4	-0.21	-4588	-26342	-23415	-10422	3.4199	3.4199	-15215	13460	20714	28547	69124	8721	49260		4.73	Si
SLV 4	0.19	-114.45	-25300	-22489	-10819	3.4199	3.4199	-14613	13339	20529	28547	69124	8721	49075		4.54	Si
SLV 13	-0.21	634.47	-22017	-19571	6580	3.4199	3.4199	-12717	12960	19945	28547	69124	8721	48491		7.37	Si
SLV 13	0.19	-2303.34	-20845	-18529	6977	3.4199	3.4199	-12040	12825	19737	28547	69124	8721	48283		6.92	Si
SLV 3	-0.21	-4931.24	-26317	-23393	-11897	3.4199	3.4199	-15200	13457	20709	28547	69124	8721	49256		4.14	Si
SLV 3	0.19	132.45	-25275	-22467	-12294	3.4199	3.4199	-14599	13336	20524	28547	69124	8721	49071		3.99	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.255 Wa 0.08 denominatore 8 $\gamma_M = 2$

Comb.	fd	Sa	σ_0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.24	9380	-14435	208.84	3048.46	14.6	Si
SLV 6	179667	0.24	9402	-14469	208.84	3055.14	14.63	Si
SLV 9	179667	0.24	9527	-14662	208.84	3093.11	14.81	Si
SLV 10	179667	0.24	9549	-14696	208.84	3099.77	14.84	Si
SLV 1	179667	0.24	12472	-19194	208.84	3965.97	18.99	Si
SLV 2	179667	0.24	12494	-19228	208.84	3972.35	19.02	Si
SLV 13	179667	0.24	12963	-19949	208.84	4107.55	19.67	Si
SLV 14	179667	0.24	12985	-19983	208.84	4113.87	19.7	Si
SLV 3	179667	0.24	15270	-23500	208.84	4758.72	22.79	Si
SLV 4	179667	0.24	15292	-23533	208.84	4764.82	22.82	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	α_0	M*	e*	a0*	aLim	Verifica
SLV 12	-22967	-27823	-1299	0.766	2925.1	0.943	11.80586	3.53552	Si
SLV 11	-22952	-27815	-1299	0.767	2923.6	0.943	11.81217	3.53552	Si
SLV 8	-22907	-26684	-1301	0.768	2919	0.943	11.82977	3.53552	Si
SLV 7	-22891	-26675	-1301	0.768	2917.5	0.943	11.83611	3.53552	Si
SLV 16	-19475	-25289	-483	0.904	2571.4	0.937	14.02749	3.53552	Si
SLV 15	-19459	-25280	-483	0.905	2569.9	0.937	14.0363	3.53552	Si
SLV 4	-19274	-21492	-489	0.911	2551.1	0.936	14.14046	3.53552	Si
SLV 3	-19259	-21483	-489	0.912	2549.6	0.936	14.14943	3.53552	Si
SLV 14	-16421	-21977	215	1.042	2262.9	0.93	16.28417	3.53552	Si
SLV 13	-16406	-21969	215	1.043	2261.4	0.93	16.29611	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	18.8	SLU 43	Si
V_SLU	14.813	SLU 81	Si
PF_SLV	6.405	SLV 5	Si
V_SLV	3.678	SLV 1	Si
PFFP_SLV	14.597	SLV 5	Si
R_SLV	3.339	SLV 12	Si



Maschio 8

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
31.248	27.161	33.371	27.161	L1	L2	2.124	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_ Corti

fb	fk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ϵ_{fd}	γF_d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	-0.21	-2430.16	-19083	-0.0000431	0.0003743	0.0035	2.1238	16290.02	18516.38	18516.38	7.62	No	Si
SLU 80	0.19	-2713.45	-18403	-0.0000433	0.0003743	0.0035	2.1238	15845.75	18002.62	18002.62	6.63	No	Si
SLU 73	-0.21	-2442.07	-19131	-0.0000433	0.0003743	0.0035	2.1238	16320.73	18551.3	18551.3	7.6	No	Si
SLU 73	0.19	-2719.63	-18443	-0.0000434	0.0003743	0.0035	2.1238	15872.65	18033.74	18033.74	6.63	No	Si
SLU 84	-0.21	-2585.61	-20273	-0.000046	0.0003743	0.0035	2.1238	17042.67	19395.25	19395.25	7.5	No	Si
SLU 84	0.19	-2905.32	-19615	-0.0000464	0.0003743	0.0035	2.1238	16630.07	18907.34	18907.34	6.51	No	Si
SLU 83	-0.21	-2567.74	-20202	-0.0000458	0.0003743	0.0035	2.1238	16998.36	19342.1	19342.1	7.53	No	Si
SLU 83	0.19	-2896.05	-19554	-0.0000462	0.0003743	0.0035	2.1238	16591.27	18862.23	18862.23	6.51	No	Si
SLU 78	-0.21	-2430.16	-19083	-0.0000431	0.0003743	0.0035	2.1238	16290.02	18516.38	18516.38	7.62	No	Si
SLU 78	0.19	-2713.45	-18403	-0.0000433	0.0003743	0.0035	2.1238	15845.75	18002.62	18002.62	6.63	No	Si
SLU 81	-0.21	-2567.74	-20202	-0.0000458	0.0003743	0.0035	2.1238	16998.36	19342.1	19342.1	7.53	No	Si
SLU 81	0.19	-2896.05	-19554	-0.0000462	0.0003743	0.0035	2.1238	16591.27	18862.23	18862.23	6.51	No	Si
SLU 82	-0.21	-2585.61	-20273	-0.000046	0.0003743	0.0035	2.1238	17042.67	19395.25	19395.25	7.5	No	Si
SLU 82	0.19	-2905.32	-19615	-0.0000464	0.0003743	0.0035	2.1238	16630.07	18907.34	18907.34	6.51	No	Si
SLU 75	-0.21	-2430.16	-19083	-0.0000431	0.0003743	0.0035	2.1238	16290.02	18516.38	18516.38	7.62	No	Si
SLU 75	0.19	-2713.45	-18403	-0.0000433	0.0003743	0.0035	2.1238	15845.75	18002.62	18002.62	6.63	No	Si
SLU 76	-0.21	-2442.07	-19131	-0.0000433	0.0003743	0.0035	2.1238	16320.73	18551.3	18551.3	7.6	No	Si
SLU 76	0.19	-2719.63	-18443	-0.0000434	0.0003743	0.0035	2.1238	15872.65	18033.74	18033.74	6.63	No	Si
SLU 79	-0.21	-2412.29	-19012	-0.0000429	0.0003743	0.0035	2.1238	16243.85	18463.88	18463.88	7.65	No	Si
SLU 79	0.19	-2704.17	-18341	-0.0000431	0.0003743	0.0035	2.1238	15805.32	17955.88	17955.88	6.64	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	-0.21	-1471.58	-7179	-0.000018	0.0005615	0.0035	2.1238		8560.9	8560.9	5.82		Si
SLV 6	0.19	-1338.21	-6675	-0.0000166	0.0005615	0.0035	2.1238		8074.57	8074.57	6.03		Si
SLV 8	-0.21	-2733.49	-17459	-0.0000409	0.0005615	0.0035	2.1238		18025.55	18025.55	6.59		Si
SLV 8	0.19	-2529.34	-16423	-0.0000382	0.0005615	0.0035	2.1238		17119.52	17119.52	6.77		Si
SLV 2	-0.21	-3186.01	-9825	-0.0000302	0.0005615	0.0035	2.1238		11104.15	11104.15	3.49		Si
SLV 2	0.19	-1972.91	-8503	-0.0000225	0.0005615	0.0035	2.1238		9832.54	9832.54	4.98		Si
SLV 7	-0.21	-2862.18	-17711	-0.000042	0.0005615	0.0035	2.1238		18241.03	18241.03	6.37		Si
SLV 7	0.19	-2431.7	-16580	-0.000038	0.0005615	0.0035	2.1238		17259.18	17259.18	7.1		Si
SLV 12	-0.21	-1642.56	-18275	-0.0000372	0.0005615	0.0035	2.1238		18721.58	18721.58	11.4		Si
SLV 12	0.19	-2342.65	-17781	-0.0000397	0.0005615	0.0035	2.1238		18301.11	18301.11	7.81		Si
SLV 1	-0.21	-3314.7	-10077	-0.0000312	0.0005615	0.0035	2.1238		11341.14	11341.14	3.42		Si
SLV 1	0.19	-1875.27	-8660	-0.0000223	0.0005615	0.0035	2.1238		9983.73	9983.73	5.32		Si
SLV 5	-0.21	-1600.27	-7430	-0.000019	0.0005615	0.0035	2.1238		8801.95	8801.95	5.5		Si
SLV 5	0.19	-1240.58	-6832	-0.0000164	0.0005615	0.0035	2.1238		8228.34	8228.34	6.63		Si
SLV 3	-0.21	-3693.27	-13161	-0.0000381	0.0005615	0.0035	2.1238		14204.23	14204.23	3.85		Si
SLV 3	0.19	-2232.61	-11584	-0.0000288	0.0005615	0.0035	2.1238		12746.07	12746.07	5.71		Si
SLV 4	-0.21	-3564.58	-12909	-0.0000371	0.0005615	0.0035	2.1238		13971.45	13971.45	3.92		Si
SLV 4	0.19	-2330.24	-11427	-0.0000289	0.0005615	0.0035	2.1238		12601.62	12601.62	5.41		Si
SLV 10	-0.21	-380.65	-7994	-0.0000144	0.0005615	0.0035	2.1238		9343.2	9343.2	24.55		Si
SLV 10	0.19	-1151.53	-8033	-0.000018	0.0005615	0.0035	2.1238		9379.85	9379.85	8.15		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	-0.21	-2227.09	-17421	-15485	1380	2.1238	2.1238	-16203	9105	8702	28547	28618	5416	34034	No	24.66	Si
SLU 41	0.19	-2537.42	-16952	-15069	1362	2.1238	2.1238	-15767	9047	8646	28547	28618	5416	34034	No	24.99	Si
SLU 39	-0.21	-2227.09	-17421	-15485	1380	2.1238	2.1238	-16203	9105	8702	28547	28618	5416	34034	No	24.66	Si
SLU 39	0.19	-2537.42	-16952	-15069	1362	2.1238	2.1238	-15767	9047	8646	28547	28618	5416	34034	No	24.99	Si
SLU 81	-0.21	-2567.74	-20202	-17957	1488	2.1238	2.1238	-18790	9450	9031	28547	28618	5416	34034	No	22.87	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	0.19	-2896.05	-19554	-17381	1466	2.1238	2.1238	-18187	9369	8954	28547	28618	5416	34034	No	23.21	Si
SLU 79	-0.21	-2412.29	-19012	-16899	1338	2.1238	2.1238	-17683	9302	8890	28547	28618	5416	34034	No	25.44	Si
SLU 79	0.19	-2704.17	-18341	-16304	1317	2.1238	2.1238	-17059	9219	8811	28547	28618	5416	34034	No	25.84	Si
SLU 77	-0.21	-2412.29	-19012	-16899	1338	2.1238	2.1238	-17683	9302	8890	28547	28618	5416	34034	No	25.44	Si
SLU 77	0.19	-2704.17	-18341	-16304	1317	2.1238	2.1238	-17059	9219	8811	28547	28618	5416	34034	No	25.84	Si
SLU 82	-0.21	-2585.61	-20273	-18021	1439	2.1238	2.1238	-18856	9459	9040	28547	28618	5416	34034	No	23.65	Si
SLU 82	0.19	-2905.32	-19615	-17435	1418	2.1238	2.1238	-18244	9377	8962	28547	28618	5416	34034	No	24	Si
SLU 84	-0.21	-2585.61	-20273	-18021	1439	2.1238	2.1238	-18856	9459	9040	28547	28618	5416	34034	No	23.65	Si
SLU 84	0.19	-2905.32	-19615	-17435	1418	2.1238	2.1238	-18244	9377	8962	28547	28618	5416	34034	No	24	Si
SLU 40	-0.21	-2244.96	-17493	-15549	1331	2.1238	2.1238	-16270	9114	8710	28547	28618	5416	34034	No	25.56	Si
SLU 40	0.19	-2546.69	-17013	-15123	1313	2.1238	2.1238	-15824	9054	8653	28547	28618	5416	34034	No	25.91	Si
SLU 83	-0.21	-2567.74	-20202	-17957	1488	2.1238	2.1238	-18790	9450	9031	28547	28618	5416	34034	No	22.87	Si
SLU 83	0.19	-2896.05	-19554	-17381	1466	2.1238	2.1238	-18187	9369	8954	28547	28618	5416	34034	No	23.21	Si
SLU 74	-0.21	-2412.29	-19012	-16899	1338	2.1238	2.1238	-17683	9302	8890	28547	28618	5416	34034	No	25.44	Si
SLU 74	0.19	-2704.17	-18341	-16304	1317	2.1238	2.1238	-17059	9219	8811	28547	28618	5416	34034	No	25.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	-0.21	-3314.7	-10077	-8957	-3843	2.1238	2.1238	-9372	12291	11747	28547	42927	5416	40293		10.49	Si
SLV 1	0.19	-1875.27	-8660	-7697	-3693	2.1238	2.1238	-8054	12028	11495	28547	42927	5416	40041		10.84	Si
SLV 7	-0.21	-2862.18	-17711	-15743	-3869	2.1238	2.1238	-16472	13711	13104	28547	42927	5416	41650		10.77	Si
SLV 7	0.19	-2431.7	-16580	-14738	-4381	2.1238	2.1238	-15421	13501	12903	28547	42927	5416	41449		9.46	Si
SLV 15	-0.21	-56.82	-15880	-14116	4638	2.1238	2.1238	-14770	13371	12778	28547	42927	5416	41325		8.91	Si
SLV 15	0.19	-1610.32	-16110	-14320	4460	2.1238	2.1238	-14983	13413	12819	28547	42927	5416	41366		9.28	Si
SLV 16	-0.21	71.87	-15628	-13892	5455	2.1238	2.1238	-14536	13324	12734	28547	42927	5416	41280		7.57	Si
SLV 16	0.19	-1707.96	-15953	-14180	5278	2.1238	2.1238	-14838	13384	12791	28547	42927	5416	41338		7.83	Si
SLV 3	-0.21	-3693.27	-13161	-11698	-5491	2.1238	2.1238	-12241	12865	12295	28547	42927	5416	40841		7.44	Si
SLV 3	0.19	-2232.61	-11584	-10297	-5643	2.1238	2.1238	-10774	12572	12015	28547	42927	5416	40561		7.19	Si
SLV 10	-0.21	-380.65	-7994	-7106	5482	2.1238	2.1238	-7435	11904	11376	28547	42927	5416	39923		7.28	Si
SLV 10	0.19	-1151.53	-8033	-7140	5966	2.1238	2.1238	-7471	11911	11383	28547	42927	5416	39930		6.69	Si
SLV 14	-0.21	450.44	-12544	-11150	7104	2.1238	2.1238	-11667	12750	12185	28547	42927	5416	40732		5.73	Si
SLV 14	0.19	-1350.62	-13028	-11581	7227	2.1238	2.1238	-12118	12840	12271	28547	42927	5416	40818		5.65	Si
SLV 4	-0.21	-3564.58	-12909	-11475	-4673	2.1238	2.1238	-12006	12818	12250	28547	42927	5416	40797		8.73	Si
SLV 4	0.19	-2330.24	-11427	-10158	-4825	2.1238	2.1238	-10628	12542	11987	28547	42927	5416	40533		8.4	Si
SLV 13	-0.21	321.75	-12796	-11374	6286	2.1238	2.1238	-11901	12797	12230	28547	42927	5416	40777		6.49	Si
SLV 13	0.19	-1252.99	-13185	-11720	6409	2.1238	2.1238	-12263	12869	12299	28547	42927	5416	40846		6.37	Si
SLV 9	-0.21	-509.34	-8246	-7330	4664	2.1238	2.1238	-7670	11951	11421	28547	42927	5416	39968		8.57	Si
SLV 9	0.19	-1053.89	-8189	-7279	5148	2.1238	2.1238	-7617	11940	11411	28547	42927	5416	39958		7.76	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota -0.255 Wa 0.08 denominatore 8 $\gamma_M = 2$

Comb.	fd	Sa	σ_0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.24	6635	-6341	129.69	1364.76	10.52	Si
SLV 5	179667	0.24	6771	-6471	129.69	1391.51	10.73	Si
SLV 10	179667	0.24	7999	-7645	129.69	1630.03	12.57	Si
SLV 9	179667	0.24	8136	-7775	129.69	1656.25	12.77	Si
SLV 2	179667	0.24	8454	-8080	129.69	1717.35	13.24	Si
SLV 1	179667	0.24	8591	-8210	129.69	1743.4	13.44	Si
SLV 4	179667	0.24	11378	-10874	129.69	2264.44	17.46	Si
SLV 3	179667	0.24	11515	-11005	129.69	2289.37	17.65	Si
SLV 14	179667	0.24	13002	-12426	129.69	2557.89	19.72	Si
SLV 13	179667	0.24	13139	-12557	129.69	2582.19	19.91	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	α_0	M*	e*	a0*	aLim	Verifica
SLV 11	-13710	-18839	8	0.84	1760.5	0.942	12.95806	3.53552	Si
SLV 12	-13465	-18831	7	0.851	1735.7	0.941	13.14934	3.53552	Si
SLV 7	-12762	-17124	-35	0.885	1664.5	0.939	13.70433	3.53552	Si
SLV 8	-12517	-17116	-36	0.899	1639.7	0.938	13.92051	3.53552	Si
SLV 15	-12247	-17285	51	0.913	1612.4	0.937	14.15157	3.53552	Si
SLV 16	-12002	-17277	50	0.927	1587.6	0.937	14.38432	3.53552	Si
SLV 13	-10045	-14239	44	1.061	1390	0.929	16.59209	3.53552	Si
SLV 14	-9800	-14231	44	1.081	1365.3	0.928	16.92007	3.53552	Si
SLV 3	-9087	-11569	-93	1.139	1293.4	0.925	17.88872	3.53552	Si
SLV 4	-8842	-11562	-94	1.162	1268.8	0.924	18.27456	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.508	SLU 82	Si
V_SLU	22.871	SLU 81	Si
PF_SLV	3.421	SLV 1	Si
V_SLV	5.648	SLV 14	Si
PFFP_SLV	10.523	SLV 6	Si
R_SLV	3.665	SLV 11	Si



Maschio 9

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
28.472	22.451	24.136	22.451	L1	L2	4.336	0.3	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ϵ_{fd}	γF_d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	-1.6	14248.83	-91771	-0.0001352	0.0004492	0.0035	4.3357	84068.72	137792.95	137792.95	9.67	No	Si
SLU 81	0.57	-10793.37	-66387	-0.0000943	0.0004492	0.0035	4.3357	83801.11	120397.1	120397.1	11.15	No	Si
SLU 83	-1.6	14248.83	-91771	-0.0001352	0.0004492	0.0035	4.3357	84068.72	137792.95	137792.95	9.67	No	Si
SLU 83	0.57	-10793.37	-66387	-0.0000943	0.0004492	0.0035	4.3357	83801.11	120397.1	120397.1	11.15	No	Si
SLU 43	-1.6	11579.7	-66879	-0.0000963	0.0004492	0.0035	4.3357	83973.27	111960.92	111960.92	9.67	No	Si
SLU 43	0.57	-6188.49	-44567	-0.0000594	0.0004492	0.0035	4.3357	69521.9	91415.83	91415.83	14.77	No	Si
SLU 50	-1.6	11579.7	-66879	-0.0000963	0.0004492	0.0035	4.3357	83973.27	111960.92	111960.92	9.67	No	Si
SLU 50	0.57	-6188.49	-44567	-0.0000594	0.0004492	0.0035	4.3357	69521.9	91415.83	91415.83	14.77	No	Si
SLU 84	-1.6	14204.35	-91769	-0.0001351	0.0004492	0.0035	4.3357	84069.41	137791.23	137791.23	9.7	No	Si
SLU 84	0.57	-10805.15	-66387	-0.0000943	0.0004492	0.0035	4.3357	83801.18	120397.33	120397.33	11.14	No	Si
SLU 82	-1.6	14204.35	-91769	-0.0001351	0.0004492	0.0035	4.3357	84069.41	137791.23	137791.23	9.7	No	Si
SLU 82	0.57	-10805.15	-66387	-0.0000943	0.0004492	0.0035	4.3357	83801.18	120397.33	120397.33	11.14	No	Si
SLU 48	-1.6	11579.7	-66879	-0.0000963	0.0004492	0.0035	4.3357	83973.27	111960.92	111960.92	9.67	No	Si
SLU 48	0.57	-6188.49	-44567	-0.0000594	0.0004492	0.0035	4.3357	69521.9	91415.83	91415.83	14.77	No	Si
SLU 49	-1.6	11535.21	-66877	-0.0000962	0.0004492	0.0035	4.3357	83972.57	111958.44	111958.44	9.71	No	Si
SLU 49	0.57	-6200.27	-44567	-0.0000594	0.0004492	0.0035	4.3357	69522.09	91416.12	91416.12	14.74	No	Si
SLU 45	-1.6	11579.7	-66879	-0.0000963	0.0004492	0.0035	4.3357	83973.27	111960.92	111960.92	9.67	No	Si
SLU 45	0.57	-6188.49	-44567	-0.0000594	0.0004492	0.0035	4.3357	69521.9	91415.83	91415.83	14.77	No	Si
SLU 51	-1.6	11535.21	-66877	-0.0000962	0.0004492	0.0035	4.3357	83972.57	111958.44	111958.44	9.71	No	Si
SLU 51	0.57	-6200.27	-44567	-0.0000594	0.0004492	0.0035	4.3357	69522.09	91416.12	91416.12	14.74	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	-1.6	28382.77	-66458	-0.0001201	0.0006738	0.0035	4.3357		119773.67	119773.67	4.22		Si
SLV 1	0.57	-6344.4	-47546	-0.0000618	0.0006738	0.0035	4.3357		100021.85	100021.85	15.77		Si
SLV 5	-1.6	25483.74	-62521	-0.0001104	0.0006738	0.0035	4.3357		113548.7	113548.7	4.46		Si
SLV 5	0.57	-4157.41	-43862	-0.0000542	0.0006738	0.0035	4.3357		93969.7	93969.7	22.6		Si
SLV 11	-1.6	-5417.26	-55948	-0.0000701	0.0006738	0.0035	4.3357		113181.36	113181.36	20.89		Si
SLV 11	0.57	-8507.34	-38518	-0.0000549	0.0006738	0.0035	4.3357		85010.02	85010.02	9.99		Si
SLV 3	-1.6	21825.2	-65720	-0.0001083	0.0006738	0.0035	4.3357		118606.56	118606.56	5.43		Si
SLV 3	0.57	-7780.82	-47042	-0.0000635	0.0006738	0.0035	4.3357		99193.26	99193.26	12.75		Si
SLV 2	-1.6	27825.76	-66593	-0.0001193	0.0006738	0.0035	4.3357		119988.45	119988.45	4.31		Si
SLV 2	0.57	-6066.56	-47441	-0.0000613	0.0006738	0.0035	4.3357		99849.61	99849.61	16.46		Si
SLV 6	-1.6	24926.73	-62657	-0.0001097	0.0006738	0.0035	4.3357		113763.48	113763.48	4.56		Si
SLV 6	0.57	-3879.57	-43757	-0.0000536	0.0006738	0.0035	4.3357		93797.46	93797.46	24.18		Si
SLV 10	-1.6	15884.28	-58544	-0.0000899	0.0006738	0.0035	4.3357		107260.67	107260.67	6.75		Si
SLV 10	0.57	-3441.43	-40095	-0.0000488	0.0006738	0.0035	4.3357		87745.02	87745.02	25.5		Si
SLV 9	-1.6	16441.29	-58409	-0.0000907	0.0006738	0.0035	4.3357		107045.89	107045.89	6.51		Si
SLV 9	0.57	-3719.27	-40200	-0.0000494	0.0006738	0.0035	4.3357		87926.92	87926.92	23.64		Si
SLV 4	-1.6	21268.2	-65855	-0.0001076	0.0006738	0.0035	4.3357		118821.34	118821.34	5.59		Si
SLV 4	0.57	-7502.98	-46937	-0.0000629	0.0006738	0.0035	4.3357		99021.01	99021.01	13.2		Si
SLV 7	-1.6	3625.18	-60061	-0.000072	0.0006738	0.0035	4.3357		109658.31	109658.31	30.25		Si
SLV 7	0.57	-8945.48	-42181	-0.0000598	0.0006738	0.0035	4.3357		91207.71	91207.71	10.2		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	l'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 43	-1.6	11579.7	-66879	-48639	-4219	4.3357	4.3357	-37394	10833	14091	81562	46744	22112	68856	No	16.32	Si
SLU 43	0.57	-6188.49	-44567	-32412	-5568	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.37	Si
SLU 49	-1.6	11535.21	-66877	-48638	-4233	4.3357	4.3357	-37393	10833	14091	81562	46744	22112	68856	No	16.27	Si
SLU 49	0.57	-6200.27	-44567	-32412	-5581	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.34	Si
SLU 44	-1.6	11505.56	-66875	-48637	-4243	4.3357	4.3357	-37392	10833	14091	81562	46744	22112	68856	No	16.23	Si



Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 44	0.57	-6208.12	-44567	-32413	-5590	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.32	Si
SLU 68	-1.6	12402.54	-75114	-54628	-3655	4.3357	4.3357	-41999	10833	14091	81562	46744	22112	68856	No	18.84	Si
SLU 68	0.57	-7673.56	-51697	-37598	-5173	4.3357	4.3357	-28906	10833	14091	81562	46744	22112	68856	No	13.31	Si
SLU 45	-1.6	11579.7	-66879	-48639	-4219	4.3357	4.3357	-37394	10833	14091	81562	46744	22112	68856	No	16.32	Si
SLU 45	0.57	-6188.49	-44567	-32412	-5568	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.37	Si
SLU 51	-1.6	11535.21	-66877	-48638	-4233	4.3357	4.3357	-37393	10833	14091	81562	46744	22112	68856	No	16.27	Si
SLU 51	0.57	-6200.27	-44567	-32412	-5581	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.34	Si
SLU 48	-1.6	11579.7	-66879	-48639	-4219	4.3357	4.3357	-37394	10833	14091	81562	46744	22112	68856	No	16.32	Si
SLU 48	0.57	-6188.49	-44567	-32412	-5568	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.37	Si
SLU 50	-1.6	11579.7	-66879	-48639	-4219	4.3357	4.3357	-37394	10833	14091	81562	46744	22112	68856	No	16.32	Si
SLU 50	0.57	-6188.49	-44567	-32412	-5568	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.37	Si
SLU 46	-1.6	11535.21	-66877	-48638	-4233	4.3357	4.3357	-37393	10833	14091	81562	46744	22112	68856	No	16.27	Si
SLU 46	0.57	-6200.27	-44567	-32412	-5581	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.34	Si
SLU 47	-1.6	11505.56	-66875	-48637	-4243	4.3357	4.3357	-37392	10833	14091	81562	46744	22112	68856	No	16.23	Si
SLU 47	0.57	-6208.12	-44567	-32413	-5590	4.3357	4.3357	-24919	10833	14091	81562	46744	22112	68856	No	12.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γ_M = 2

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	-1.6	3625.18	-60061	-43680	-4880	4.3357	4.3357	-33582	16250	21137	81562	70116	22112	92228		18.9	Si
SLV 7	0.57	-8945.48	-42181	-30677	-5572	4.3357	4.3357	-23585	16250	21137	81562	70116	22112	92228		16.55	Si
SLV 13	-1.6	-1758.73	-52750	-38363	-9027	4.3357	4.3357	-29494	16250	21137	81562	70116	22112	92228		10.22	Si
SLV 13	0.57	-4883.93	-35339	-25701	-9142	4.3357	4.3357	-19759	16250	21137	81562	70116	22112	92228		10.09	Si
SLV 8	-1.6	3068.18	-60196	-43779	-5604	4.3357	4.3357	-33658	16250	21137	81562	70116	22112	92228		16.46	Si
SLV 8	0.57	-8667.64	-42076	-30601	-6239	4.3357	4.3357	-23526	16250	21137	81562	70116	22112	92228		14.78	Si
SLV 15	-1.6	-8316.29	-52012	-37827	-12051	4.3357	4.3357	-29082	16250	21137	81562	70116	22112	92228		7.65	Si
SLV 15	0.57	-6320.35	-34834	-25334	-11596	4.3357	4.3357	-19477	16250	21137	81562	70116	22112	92228		7.95	Si
SLV 14	-1.6	-2315.73	-52885	-38462	-9750	4.3357	4.3357	-29570	16250	21137	81562	70116	22112	92228		9.46	Si
SLV 14	0.57	-4606.09	-35234	-25625	-9809	4.3357	4.3357	-19701	16250	21137	81562	70116	22112	92228		9.4	Si
SLV 11	-1.6	-5417.26	-55948	-40690	-9818	4.3357	4.3357	-31283	16250	21137	81562	70116	22112	92228		9.39	Si
SLV 11	0.57	-8507.34	-38518	-28013	-9674	4.3357	4.3357	-21537	16250	21137	81562	70116	22112	92228		9.53	Si
SLV 2	-1.6	27825.76	-66593	-48432	6710	4.3357	4.3357	-37235	16250	21137	81562	70116	22112	92228		13.75	Si
SLV 2	0.57	-6066.56	-47441	-34503	3863	4.3357	4.3357	-26526	16250	21137	81562	70116	22112	92228		23.87	Si
SLV 16	-1.6	-8873.3	-52147	-37925	-12774	4.3357	4.3357	-29157	16250	21137	81562	70116	22112	92228		7.22	Si
SLV 16	0.57	-6042.51	-34730	-25258	-12264	4.3357	4.3357	-19419	16250	21137	81562	70116	22112	92228		7.52	Si
SLV 12	-1.6	-5974.27	-56084	-40788	-10542	4.3357	4.3357	-31359	16250	21137	81562	70116	22112	92228		8.75	Si
SLV 12	0.57	-8229.5	-38414	-27937	-10341	4.3357	4.3357	-21478	16250	21137	81562	70116	22112	92228		8.92	Si
SLV 1	-1.6	28382.77	-66458	-48333	7433	4.3357	4.3357	-37159	16250	21137	81562	70116	22112	92228		12.41	Si
SLV 1	0.57	-6344.4	-47546	-34579	4530	4.3357	4.3357	-26585	16250	21137	81562	70116	22112	92228		20.36	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota -0.255 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-41138	0.24	178.53	5105.9	7192.25	6149.08	34.44	Si
SLV 15	-41175	0.24	178.53	5109.49	7197.94	6153.72	34.47	Si
SLV 14	-41649	0.24	178.53	5155.87	7271.16	6213.52	34.8	Si
SLV 13	-41685	0.24	178.53	5159.44	7276.75	6218.09	34.83	Si
SLV 12	-45193	0.24	178.53	5493.85	7813.32	6653.58	37.27	Si
SLV 11	-45229	0.24	178.53	5497.25	7818.91	6658.08	37.29	Si
SLV 10	-46894	0.24	178.53	5650.46	8073.7	6862.08	38.44	Si
SLV 9	-46931	0.24	178.53	5653.78	8079.29	6866.54	38.46	Si
SLV 8	-49179	0.24	178.53	5855.04	8423.46	7139.25	39.99	Si
SLV 7	-49215	0.24	178.53	5858.26	8429.06	7143.66	40.01	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.255 Wa = 0.05 Ta = 0.0403

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-41883	-65720	161	0.597	4756.7	0.969	8.95689	4.51442	Si
SLV 1	-42103	-66458	-22	0.597	4779.1	0.969	8.96237	4.51442	Si
SLV 4	-41791	-65855	161	0.598	4747.4	0.968	8.97391	4.51442	Si
SLV 2	-42012	-66593	-22	0.598	4769.9	0.969	8.97925	4.51442	Si
SLV 5	-38772	-62521	-284	0.634	4440.1	0.966	9.5358	4.51442	Si
SLV 6	-38681	-62657	-284	0.635	4430.8	0.966	9.55534	4.51442	Si
SLV 7	-38037	-60061	326	0.643	4365.3	0.966	9.6812	4.51442	Si
SLV 8	-37946	-60196	326	0.645	4356	0.966	9.70151	4.51442	Si
SLV 9	-35696	-58409	-326	0.679	4127.1	0.964	10.23288	4.51442	Si
SLV 10	-35605	-58544	-327	0.68	4117.8	0.964	10.25571	4.51442	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.669	SLU 43	Si
V_SLU	12.317	SLU 44	Si
PF_SLV	4.22	SLV 1	Si
V_SLV	7.22	SLV 16	Si
PFFP_SLV	34.442	SLV 16	Si
R_SLV	1.984	SLV 3	Si

Maschio 10

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X inl.	Y inl.	X fin.	Y fin.	Quota l.	Quota s.	I	Sp.	h netta	h inl.	h fin.	a	a.s.,sx	a.s.,dx
33.371	22.451	29.472	22.451	L1	L2	3.9	0.3	2.69	2.69	2.69			



Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	Intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 50	-1.6	8645.33	-49145	-0.0000791	0.0004492	0.0035	3.8997	62880.21	78714.61	78714.61	9.1	No	Si
SLU 50	0.57	1140.64	-36295	-0.0000467	0.0004492	0.0035	3.8997	52800.82	60823.39	60823.39	53.32	No	Si
SLU 45	-1.6	8645.33	-49145	-0.0000791	0.0004492	0.0035	3.8997	62880.21	78714.61	78714.61	9.1	No	Si
SLU 45	0.57	1140.64	-36295	-0.0000467	0.0004492	0.0035	3.8997	52800.82	60823.39	60823.39	53.32	No	Si
SLU 47	-1.6	8613.95	-49256	-0.0000792	0.0004492	0.0035	3.8997	62947.37	78833.86	78833.86	9.15	No	Si
SLU 47	0.57	1137.65	-36359	-0.0000468	0.0004492	0.0035	3.8997	52861.53	60911.98	60911.98	53.54	No	Si
SLU 43	-1.6	8645.33	-49145	-0.0000791	0.0004492	0.0035	3.8997	62880.21	78714.61	78714.61	9.1	No	Si
SLU 43	0.57	1140.64	-36295	-0.0000467	0.0004492	0.0035	3.8997	52800.82	60823.39	60823.39	53.32	No	Si
SLU 48	-1.6	8645.33	-49145	-0.0000791	0.0004492	0.0035	3.8997	62880.21	78714.61	78714.61	9.1	No	Si
SLU 48	0.57	1140.64	-36295	-0.0000467	0.0004492	0.0035	3.8997	52800.82	60823.39	60823.39	53.32	No	Si
SLU 46	-1.6	8626.5	-49211	-0.0000792	0.0004492	0.0035	3.8997	62920.55	78786.16	78786.16	9.13	No	Si
SLU 46	0.57	1138.85	-36333	-0.0000467	0.0004492	0.0035	3.8997	52837.26	60876.54	60876.54	53.45	No	Si
SLU 49	-1.6	8626.5	-49211	-0.0000792	0.0004492	0.0035	3.8997	62920.55	78786.16	78786.16	9.13	No	Si
SLU 49	0.57	1138.85	-36333	-0.0000467	0.0004492	0.0035	3.8997	52837.26	60876.54	60876.54	53.45	No	Si
SLU 64	-1.6	9238.83	-55668	-0.0000896	0.0004492	0.0035	3.8997	66273.31	85752.23	85752.23	9.28	No	Si
SLU 64	0.57	2125.32	-42262	-0.0000565	0.0004492	0.0035	3.8997	58041.04	69171.56	69171.56	32.55	No	Si
SLU 51	-1.6	8626.5	-49211	-0.0000792	0.0004492	0.0035	3.8997	62920.55	78786.16	78786.16	9.13	No	Si
SLU 51	0.57	1138.85	-36333	-0.0000467	0.0004492	0.0035	3.8997	52837.26	60876.54	60876.54	53.45	No	Si
SLU 44	-1.6	8613.95	-49256	-0.0000792	0.0004492	0.0035	3.8997	62947.37	78833.86	78833.86	9.15	No	Si
SLU 44	0.57	1137.65	-36359	-0.0000468	0.0004492	0.0035	3.8997	52861.53	60911.98	60911.98	53.54	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	-1.6	21069.57	-37546	-0.0000862	0.0006738	0.0035	3.8997		65400.35	65400.35	3.1		Si
SLV 2	0.57	1768.18	-28246	-0.0000372	0.0006738	0.0035	3.8997		51680.27	51680.27	29.23		Si
SLV 8	-1.6	9815.56	-52253	-0.0000833	0.0006738	0.0035	3.8997		86198.99	86198.99	8.78		Si
SLV 8	0.57	1760.77	-37880	-0.0000491	0.0006738	0.0035	3.8997		65872.9	65872.9	37.41		Si
SLV 4	-1.6	20336.41	-43176	-0.0000922	0.0006738	0.0035	3.8997		73361.58	73361.58	3.61		Si
SLV 4	0.57	1681.05	-31456	-0.000041	0.0006738	0.0035	3.8997		56787.8	56787.8	33.78		Si
SLV 7	-1.6	10455.85	-52343	-0.0000847	0.0006738	0.0035	3.8997		86325.7	86325.7	8.26		Si
SLV 7	0.57	1500.68	-37785	-0.0000485	0.0006738	0.0035	3.8997		65738.34	65738.34	43.81		Si
SLV 6	-1.6	12259.4	-33488	-0.0000638	0.0006738	0.0035	3.8997		59661.56	59661.56	4.87		Si
SLV 6	0.57	2051.19	-27181	-0.0000364	0.0006738	0.0035	3.8997		49939.24	49939.24	24.35		Si
SLV 3	-1.6	20976.7	-43265	-0.0000936	0.0006738	0.0035	3.8997		73488.28	73488.28	3.5		Si
SLV 3	0.57	1420.97	-31360	-0.0000404	0.0006738	0.0035	3.8997		56653.24	56653.24	39.87		Si
SLV 1	-1.6	21709.86	-37635	-0.0000875	0.0006738	0.0035	3.8997		65527.05	65527.05	3.02		Si
SLV 1	0.57	1508.09	-28151	-0.0000366	0.0006738	0.0035	3.8997		51524.7	51524.7	34.17		Si
SLV 5	-1.6	12899.69	-33577	-0.0000651	0.0006738	0.0035	3.8997		59788.27	59788.27	4.63		Si
SLV 5	0.57	1791.1	-27086	-0.0000358	0.0006738	0.0035	3.8997		49783.67	49783.67	27.79		Si
SLV 16	-1.6	-7279.34	-50347	-0.0000758	0.0006738	0.0035	3.8997		91166.73	91166.73	12.52		Si
SLV 16	0.57	2199.23	-39112	-0.0000515	0.0006738	0.0035	3.8997		67615.23	67615.23	30.74		Si
SLV 14	-1.6	-6546.18	-44717	-0.0000671	0.0006738	0.0035	3.8997		83241.41	83241.41	12.72		Si
SLV 14	0.57	2286.36	-35902	-0.0000477	0.0006738	0.0035	3.8997		63076.23	63076.23	27.59		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 70	-1.6	9220	-55735	-40534	8389	3.8997	3.8997	-34648	10833	12674	81562	42043	19888	61932	No	7.38	Si
SLU 70	0.57	2123.53	-42300	-30763	8573	3.8997	3.8997	-26296	10833	12674	81562	42043	19888	61932	No	7.22	Si
SLU 46	-1.6	8626.5	-49211	-35790	8460	3.8997	3.8997	-30592	10833	12674	81562	42043	19888	61932	No	7.32	Si
SLU 46	0.57	1138.85	-36333	-26424	8571	3.8997	3.8997	-22587	10833	12674	81562	42043	19888	61932	No	7.23	Si
SLU 49	-1.6	8626.5	-49211	-35790	8460	3.8997	3.8997	-30592	10833	12674	81562	42043	19888	61932	No	7.32	Si
SLU 49	0.57	1138.85	-36333	-26424	8571	3.8997	3.8997	-22587	10833	12674	81562	42043	19888	61932	No	7.23	Si
SLU 65	-1.6	9207.45	-55779	-40566	8399	3.8997	3.8997	-34675	10833	12674	81562	42043	19888	61932	No	7.37	Si
SLU 65	0.57	2122.33	-42325	-30782	8584	3.8997	3.8997	-26311	10833	12674	81562	42043	19888	61932	No	7.22	Si
SLU 51	-1.6	8626.5	-49211	-35790	8460	3.8997	3.8997	-30592	10833	12674	81562	42043	19888	61932	No	7.32	Si
SLU 51	0.57	1138.85	-36333	-26424	8571	3.8997	3.8997	-22587	10833	12674	81562	42043	19888	61932	No	7.23	Si
SLU 44	-1.6	8613.95	-49256	-35822	8470	3.8997	3.8997	-30620	10833	12674	81562	42043	19888	61932	No	7.31	Si
SLU 44	0.57	1137.65	-36359	-26443	8582	3.8997	3.8997	-22602	10833	12674	81562	42043	19888	61932	No	7.22	Si
SLU 72	-1.6	9220	-55735	-40534	8389	3.8997	3.8997	-34648	10833	12674	81562	42043	19888	61932	No	7.38	Si



Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 72	0.57	2123.53	-42300	-30763	8573	3.8997	3.8997	-26296	10833	12674	81562	42043	19888	61932	No	7.22	Si
SLU 67	-1.6	9220	-55735	-40534	8389	3.8997	3.8997	-34648	10833	12674	81562	42043	19888	61932	No	7.38	Si
SLU 67	0.57	2123.53	-42300	-30763	8573	3.8997	3.8997	-26296	10833	12674	81562	42043	19888	61932	No	7.22	Si
SLU 68	-1.6	9207.45	-55779	-40566	8399	3.8997	3.8997	-34675	10833	12674	81562	42043	19888	61932	No	7.37	Si
SLU 68	0.57	2122.33	-42325	-30782	8584	3.8997	3.8997	-26311	10833	12674	81562	42043	19888	61932	No	7.22	Si
SLU 47	-1.6	8613.95	-49256	-35822	8470	3.8997	3.8997	-30620	10833	12674	81562	42043	19888	61932	No	7.31	Si
SLU 47	0.57	1137.65	-36359	-26443	8582	3.8997	3.8997	-22602	10833	12674	81562	42043	19888	61932	No	7.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	-1.6	21709.86	-37635	-27371	14922	3.8997	3.8997	-23396	16250	19011	81562	63065	19888	82953		5.56	Si
SLV 1	0.57	1508.09	-28151	-20473	13868	3.8997	3.8997	-17500	16000	18718	81562	63065	19888	82953		5.98	Si
SLV 8	-1.6	9815.56	-52253	-38002	10234	3.8997	3.8997	-32484	16250	19011	81562	63065	19888	82953		8.11	Si
SLV 8	0.57	1760.77	-37880	-27549	9641	3.8997	3.8997	-23548	16250	19011	81562	63065	19888	82953		8.6	Si
SLV 3	-1.6	20976.7	-43265	-31466	15864	3.8997	3.8997	-26896	16250	19011	81562	63065	19888	82953		5.23	Si
SLV 3	0.57	1420.97	-31360	-22808	14580	3.8997	3.8997	-19495	16250	19011	81562	63065	19888	82953		5.69	Si
SLV 12	-1.6	1530.83	-54405	-39567	5040	3.8997	3.8997	-33821	16250	19011	81562	63065	19888	82953		16.46	Si
SLV 12	0.57	1916.22	-40177	-29220	5223	3.8997	3.8997	-24976	16250	19011	81562	63065	19888	82953		15.88	Si
SLV 7	-1.6	10455.85	-52343	-38068	10903	3.8997	3.8997	-32539	16250	19011	81562	63065	19888	82953		7.61	Si
SLV 7	0.57	1500.68	-37785	-27480	10255	3.8997	3.8997	-23489	16250	19011	81562	63065	19888	82953		8.09	Si
SLV 11	-1.6	2171.12	-54494	-39632	5709	3.8997	3.8997	-33877	16250	19011	81562	63065	19888	82953		14.53	Si
SLV 11	0.57	1656.13	-40082	-29150	5836	3.8997	3.8997	-24917	16250	19011	81562	63065	19888	82953		14.21	Si
SLV 6	-1.6	12259.4	-33488	-24355	7095	3.8997	3.8997	-20818	16250	19011	81562	63065	19888	82953		11.69	Si
SLV 6	0.57	2051.19	-27181	-19768	7271	3.8997	3.8997	-16897	15879	18577	81562	63065	19888	82953		11.41	Si
SLV 5	-1.6	12899.69	-33577	-24420	7763	3.8997	3.8997	-20873	16250	19011	81562	63065	19888	82953		10.69	Si
SLV 5	0.57	1791.1	-27086	-19699	7884	3.8997	3.8997	-16838	15868	18564	81562	63065	19888	82953		10.52	Si
SLV 2	-1.6	21069.57	-37546	-27306	14254	3.8997	3.8997	-23341	16250	19011	81562	63065	19888	82953		5.82	Si
SLV 2	0.57	1768.18	-28246	-20542	13255	3.8997	3.8997	-17559	16012	18732	81562	63065	19888	82953		6.26	Si
SLV 4	-1.6	20336.41	-43176	-31400	15195	3.8997	3.8997	-26840	16250	19011	81562	63065	19888	82953		5.46	Si
SLV 4	0.57	1681.05	-31456	-22877	13966	3.8997	3.8997	-19554	16250	19011	81562	63065	19888	82953		5.94	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota -0.255 Ta 0.04 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	-30127	0.24	160.58	3884.15	5381.55	4632.85	28.85	Si
SLV 6	-30188	0.24	160.58	3890.67	5391.03	4640.85	28.9	Si
SLV 1	-31800	0.24	160.58	4062.55	5643.75	4853.15	30.22	Si
SLV 2	-31860	0.24	160.58	4068.93	5653.14	4861.04	30.27	Si
SLV 9	-32670	0.24	160.58	4153.82	5779.02	4966.42	30.93	Si
SLV 10	-32730	0.24	160.58	4160.12	5788.42	4974.27	30.98	Si
SLV 3	-35776	0.24	160.58	4470.97	6262.21	5366.59	33.42	Si
SLV 4	-35836	0.24	160.58	4477.01	6271.62	5374.31	33.47	Si
SLV 13	-40274	0.24	160.58	4906.44	6954.7	5930.57	36.93	Si
SLV 14	-40335	0.24	160.58	4912.1	6963.95	5938.03	36.98	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = -0.255 Wa = 0.05 Ta = 0.0403

Comb.	N top	N base	V orto	α_0	M*	e*	a0*	aLim	Verifica
SLV 12	-35513	-54405	283	0.624	4058.7	0.967	9.3753	4.51442	Si
SLV 11	-35438	-54494	283	0.625	4051	0.967	9.39266	4.51442	Si
SLV 8	-34130	-52253	273	0.645	3917.9	0.966	9.70958	4.51442	Si
SLV 7	-34055	-52343	273	0.646	3910.3	0.966	9.72831	4.51442	Si
SLV 16	-34254	-50347	99	0.648	3930.5	0.966	9.74947	4.51442	Si
SLV 15	-34178	-50436	99	0.649	3922.9	0.966	9.76822	4.51442	Si
SLV 14	-31791	-44717	-67	0.691	3679.9	0.964	10.42009	4.51442	Si
SLV 13	-31716	-44806	-67	0.692	3672.3	0.964	10.44175	4.51442	Si
SLV 4	-29644	-43176	68	0.733	3461.4	0.962	11.07723	4.51442	Si
SLV 3	-29568	-43265	68	0.735	3453.8	0.962	11.10191	4.51442	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.105	SLU 43	Si
V_SLU	7.215	SLU 65	Si
PF_SLV	3.018	SLV 1	Si
V_SLV	5.229	SLV 3	Si
PFFP_SLV	28.851	SLV 5	Si
R_SLV	2.077	SLV 12	Si

Maschio 13

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
33.371	22.756	33.371	18.426	L1	L2	4.33	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2



Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv / e,CNR DT-200					CRM / Fibrenet?			
											elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	-1.6	-19378.8	-19028	-0.0000362	0.0004492	0.0035	4.33	37903.79	49731.01	49731.01	2.57	No	Si
SLU 77	0.5	-6377.75	-26405	-0.0000265	0.0004492	0.0035	4.33	50827.98	63552.74	63552.74	9.96	No	Si
SLU 82	-1.6	-20450.6	-20060	-0.0000383	0.0004492	0.0035	4.33	39770.61	51663.8	51663.8	2.53	No	Si
SLU 82	0.5	-6875.58	-27898	-0.0000282	0.0004492	0.0035	4.33	53322.37	66342.01	66342.01	9.65	No	Si
SLU 75	-1.6	-19489.98	-19084	-0.0000364	0.0004492	0.0035	4.33	38005.68	49835.98	49835.98	2.56	No	Si
SLU 75	0.5	-6362.99	-26286	-0.0000264	0.0004492	0.0035	4.33	50627.01	63329.4	63329.4	9.95	No	Si
SLU 81	-1.6	-20339.42	-20004	-0.0000381	0.0004492	0.0035	4.33	39669.72	51558.83	51558.83	2.53	No	Si
SLU 81	0.5	-6890.34	-28017	-0.0000283	0.0004492	0.0035	4.33	53519.85	66553.32	66553.32	9.66	No	Si
SLU 80	-1.6	-19489.98	-19084	-0.0000364	0.0004492	0.0035	4.33	38005.68	49835.98	49835.98	2.56	No	Si
SLU 80	0.5	-6362.99	-26286	-0.0000264	0.0004492	0.0035	4.33	50627.01	63329.4	63329.4	9.95	No	Si
SLU 73	-1.6	-19564.1	-19121	-0.0000366	0.0004492	0.0035	4.33	38073.57	49905.96	49905.96	2.55	No	Si
SLU 73	0.5	-6353.15	-26207	-0.0000263	0.0004492	0.0035	4.33	50492.89	63180.51	63180.51	9.94	No	Si
SLU 78	-1.6	-19489.98	-19084	-0.0000364	0.0004492	0.0035	4.33	38005.68	49835.98	49835.98	2.56	No	Si
SLU 78	0.5	-6362.99	-26286	-0.0000264	0.0004492	0.0035	4.33	50627.01	63329.4	63329.4	9.95	No	Si
SLU 83	-1.6	-20339.42	-20004	-0.0000381	0.0004492	0.0035	4.33	39669.72	51558.83	51558.83	2.53	No	Si
SLU 83	0.5	-6890.34	-28017	-0.0000283	0.0004492	0.0035	4.33	53519.85	66553.32	66553.32	9.66	No	Si
SLU 84	-1.6	-20450.6	-20060	-0.0000383	0.0004492	0.0035	4.33	39770.61	51663.8	51663.8	2.53	No	Si
SLU 84	0.5	-6875.58	-27898	-0.0000282	0.0004492	0.0035	4.33	53322.37	66342.01	66342.01	9.65	No	Si
SLU 76	-1.6	-19564.1	-19121	-0.0000366	0.0004492	0.0035	4.33	38073.57	49905.96	49905.96	2.55	No	Si
SLU 76	0.5	-6353.15	-26207	-0.0000263	0.0004492	0.0035	4.33	50492.89	63180.51	63180.51	9.94	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	-1.6	-15312.2	-6339	-0.0001499	0.0006738	0.0035	3.464		24556.94	24556.94	1.6		Si
SLV 4	0.5	7349.69	-12736	-0.000017	0.0006738	0.0035	4.33		28520.96	28520.96	3.88		Si
SLV 8	-1.6	-20937.12	-14714	-0.0000429	0.0006738	0.0035	3.464		41632.34	41632.34	1.99		Si
SLV 8	0.5	-2416.62	-9584	-0.0000095	0.0006738	0.0035	4.33		31222.89	31222.89	12.92		Si
SLV 15	-1.6	-16247.47	-22412	-0.0000336	0.0006738	0.0035	4.33		56884.34	56884.34	3.5		Si
SLV 15	0.5	-16870.66	-18390	-0.0000318	0.0006738	0.0035	4.33		48983.51	48983.51	2.9		Si
SLV 7	-1.6	-21209.29	-14895	-0.0000435	0.0006738	0.0035	3.464		41994.77	41994.77	1.98		Si
SLV 7	0.5	-2663.23	-8565	-0.000009	0.0006738	0.0035	4.33		29135.91	29135.91	10.94		Si
SLV 12	-1.6	-21136.04	-19482	-0.000039	0.0006738	0.0035	4.33		51143.86	51143.86	2.42		Si
SLV 12	0.5	-9608.74	-11585	-0.0000185	0.0006738	0.0035	4.33		35302.09	35302.09	3.67		Si
SLV 16	-1.6	-15975.29	-22231	-0.0000331	0.0006738	0.0035	4.33		56537.62	56537.62	3.54		Si
SLV 16	0.5	-16624.05	-19408	-0.000032	0.0006738	0.0035	4.33		50998.36	50998.36	3.07		Si
SLV 11	-1.6	-21408.22	-19663	-0.0000395	0.0006738	0.0035	4.33		51501.52	51501.52	2.41		Si
SLV 11	0.5	-9855.35	-10567	-0.0000183	0.0006738	0.0035	4.33		33236.55	33236.55	3.37		Si
SLV 1	-1.6	-10961.95	-4109	-0.000126	0.0006738	0.0035	3.464		19940.26	19940.26	1.82		Si
SLV 1	0.5	8282.08	-16422	-0.0000207	0.0006738	0.0035	4.33		35998.51	35998.51	4.35		Si
SLV 3	-1.6	-15584.37	-6520	-0.0001491	0.0006738	0.0035	3.464		24930.87	24930.87	1.6		Si
SLV 3	0.5	7103.08	-11718	-0.000016	0.0006738	0.0035	4.33		26438.33	26438.33	3.72		Si
SLV 2	-1.6	-10689.77	-3928	-0.000126	0.0006738	0.0035	3.464		19563.14	19563.14	1.83		Si
SLV 2	0.5	8528.69	-17440	-0.0000217	0.0006738	0.0035	4.33		38049.1	38049.1	4.46		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 32	-1.6	-16221.37	-15986	-12789	725	4.33	3.4509	-8277	9437	14655	81562	70025	22083	92108	No	127.02	Si
SLU 32	0.5	-5534.47	-22481	-17985	748	4.33	4.33	-9230	9564	18636	81562	70025	22083	92108	No	123.18	Si
SLU 81	-1.6	-20339.42	-20004	-16003	821	4.33	3.4447	-10390	9719	15065	81562	70025	22083	92108	No	112.17	Si
SLU 81	0.5	-6890.34	-28017	-22414	850	4.33	4.33	-11503	9867	19226	81562	70025	22083	92108	No	108.36	Si
SLU 41	-1.6	-17181.99	-16962	-13569	900	4.33	3.4561	-8771	9503	14779	81562	70025	22083	92108	No	102.36	Si
SLU 41	0.5	-6047.06	-24093	-19274	923	4.33	4.33	-9892	9652	18808	81562	70025	22083	92108	No	99.75	Si
SLU 35	-1.6	-16221.37	-15986	-12789	725	4.33	3.4509	-8277	9437	14655	81562	70025	22083	92108	No	127.02	Si
SLU 35	0.5	-5534.47	-22481	-17985	748	4.33	4.33	-9230	9564	18636	81562	70025	22083	92108	No	123.18	Si
SLU 39	-1.6	-17181.99	-16962	-13569	900	4.33	3.4561	-8771	9503	14779	81562	70025	22083	92108	No	102.36	Si
SLU 39	0.5	-6047.06	-24093	-19274	923	4.33	4.33	-9892	9652	18808	81562	70025	22083	92108	No	99.75	Si
SLU 74	-1.6	-19378.8	-19028	-15222	646	4.33	3.4398	-9894	9653	14941	81562	70025	22083	92108	No	142.49	Si
SLU 74	0.5	-6377.75	-26405	-21124	674	4.33	4.33	-10841	9779	19054	81562	70025	22083	92108	No	136.59	Si
SLU 77	-1.6	-19378.8	-19028	-15222	646	4.33	3.4398	-9894	9653	14941	81562	70025	22083	92108	No	142.49	Si
SLU 77	0.5	-6377.75	-26405	-21124	674	4.33	4.33	-10841	9779	19054	81562	70025	22083	92108	No	136.59	Si
SLU 79	-1.6	-19378.8	-19028	-15222	646	4.33	3.4398	-9894	9653	14941	81562	70025	22083	92108	No	142.49	Si
SLU 79	0.5	-6377.75	-26405	-21124	674	4.33	4.33	-10841	9779	19054	81562	70025	22083	92108	No	136.59	Si
SLU 83	-1.6	-20339.42	-20004	-16003	821	4.33	3.4447	-10390	9719	15065	81562	70025	22083	92108	No	112.17	Si
SLU 83	0.5	-6890.34	-28017	-22414	850	4.33	4.33	-11503	9867	19226	81562	70025	22083	92108	No	108.36	Si
SLU 37	-1.6	-16221.37	-15986	-12789	725	4.33	3.4509	-8277	9437	14655	81562	70025	22083	92108	No	127.02	Si
SLU 37	0.5	-5534.47	-22481	-17985	748	4.33	4.33	-9230	9564	18636	81562	70025	22083	92108	No	123.18	Si



Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	-1.6	-21209.29	-14895	-11916	-19203	3.464	2.2233	0	0	0	81562	84030	17667	81562		4.25	Si
SLV 7	0.5	-2663.23	-8565	-6852	-20623	4.33	4.33	-3517	13203	25727	81562	105038	22083	107289		5.2	Si
SLV 12	-1.6	-21136.04	-19482	-15586	-14571	4.33	3.2404	-10735	14647	21358	81562	105038	22083	102920		7.06	Si
SLV 12	0.5	-9608.74	-11585	-9268	-12981	4.33	4.0069	-5150	13530	24396	81562	105038	22083	105957		8.16	Si
SLV 9	-1.6	-6000.12	-11626	-9301	18098	4.33	4.33	-4773	13455	26217	81562	105038	22083	107778		5.96	Si
SLV 9	0.5	-5925.35	-26247	-20997	19516	4.33	4.33	-10776	14655	28556	81562	105038	22083	110118		5.64	Si
SLV 10	-1.6	-5727.95	-11445	-9156	19684	4.33	4.33	-4699	13440	26188	81562	105038	22083	107749		5.47	Si
SLV 10	0.5	-5678.74	-27265	-21812	21144	4.33	4.33	-11194	14739	28719	81562	105038	22083	110281		5.22	Si
SLV 11	-1.6	-21408.22	-19663	-15730	-16156	4.33	3.2288	-10874	14675	21322	81562	105038	22083	102884		6.37	Si
SLV 11	0.5	-9855.35	-10567	-8453	-14610	4.33	3.6971	-5092	13518	22490	81562	105038	22083	104052		7.12	Si
SLV 8	-1.6	-20937.12	-14714	-11771	-17617	3.464	2.2263	0	0	0	81562	84030	17667	81562		4.63	Si
SLV 8	0.5	-2416.62	-9584	-7667	-18995	4.33	4.33	-3935	13287	25890	81562	105038	22083	107451		5.66	Si
SLV 5	-1.6	-5801.2	-6858	-5487	15052	4.33	3.9576	-3084	13117	23360	81562	105038	22083	104921		6.97	Si
SLV 5	0.5	1266.77	-24245	-19396	13503	4.33	4.33	-9954	14491	28236	81562	105038	22083	109797		8.13	Si
SLV 3	-1.6	-15584.37	-6520	-5216	-10767	3.464	0	0	0	0	81562	84030	17667	81562		7.57	Si
SLV 3	0.5	7103.08	-11718	-9374	-15694	4.33	4.33	-4811	13462	26231	81562	105038	22083	107793		6.87	Si
SLV 6	-1.6	-5529.02	-6678	-5342	16638	4.33	4.0111	-2963	13093	23632	81562	105038	22083	105194		6.32	Si
SLV 6	0.5	1513.38	-25263	-20211	15131	4.33	4.33	-10372	14574	28399	81562	105038	22083	109960		7.27	Si
SLV 14	-1.6	-11352.87	-19820	-15856	11249	4.33	4.33	-8138	14128	27528	81562	105038	22083	109089		9.7	Si
SLV 14	0.5	-15445.05	-24112	-19290	16216	4.33	4.33	-9900	14480	28215	81562	105038	22083	109776		6.77	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota -0.255 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-10580	0.24	268.88	2310.06	3403.86	2856.96	10.63	Si
SLV 1	-10799	0.24	268.88	2356.31	3456.02	2906.17	10.81	Si
SLV 4	-10883	0.24	268.88	2373.96	3475.92	2924.94	10.88	Si
SLV 2	-11101	0.24	268.88	2420.13	3527.77	2973.95	11.06	Si
SLV 7	-12212	0.24	268.88	2653.72	3790.65	3222.18	11.98	Si
SLV 8	-12514	0.24	268.88	2717	3862.17	3289.59	12.23	Si
SLV 5	-12941	0.24	268.88	2806.18	3963.19	3384.68	12.59	Si
SLV 6	-13243	0.24	268.88	2869.18	4034.72	3451.95	12.84	Si
SLV 11	-13829	0.24	268.88	2991.04	4173.46	3582.25	13.32	Si
SLV 12	-14131	0.24	268.88	3053.71	4244.99	3649.35	13.57	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 10	-26815	-11445	-219	0.861	3474.2	0.94	13.30217	3.53552	Si
SLV 9	-25832	-11626	-220	0.886	3374.7	0.939	13.70958	3.53552	Si
SLV 14	-24213	-19820	-586	0.918	3210.9	0.936	14.24748	3.53552	Si
SLV 6	-24564	-6678	82	0.925	3246.3	0.937	14.35133	3.53552	Si
SLV 13	-23230	-20001	-588	0.947	3111.5	0.934	14.72867	3.53552	Si
SLV 5	-23580	-6858	80	0.954	3146.9	0.935	14.83164	3.53552	Si
SLV 16	-19731	-22231	-601	1.07	2758.3	0.928	16.76154	3.53552	Si
SLV 15	-18748	-22412	-602	1.111	2659.3	0.926	17.44762	3.53552	Si
SLV 2	-16707	-3928	415	1.218	2454.2	0.921	19.2201	3.53552	Si
SLV 1	-15724	-4109	413	1.273	2355.6	0.918	20.13574	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.526	SLU 82	Si
V_SLU	99.747	SLU 39	Si
PF_SLV	1.6	SLV 3	Si
V_SLV	4.247	SLV 7	Si
PFFP_SLV	10.625	SLV 3	Si
R_SLV	3.762	SLV 10	Si

Maschio 14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
33.371	27.161	33.371	23.706	L1	L2	3.455	0.45	2.69	2.69	2.69			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em ₋	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	-1.6	-7025.72	-25129	-0.0000355	0.0004492	0.0035	3.455	37667.73	45920.08	45920.08	6.54	No	Si
SLU 75	0.5	-3608.13	-16282	-0.0000211	0.0004492	0.0035	3.455	25716.18	32913.06	32913.06	9.12	No	Si
SLU 78	-1.6	-7025.72	-25129	-0.0000355	0.0004492	0.0035	3.455	37667.73	45920.08	45920.08	6.54	No	Si
SLU 78	0.5	-3608.13	-16282	-0.0000211	0.0004492	0.0035	3.455	25716.18	32913.06	32913.06	9.12	No	Si
SLU 73	-1.6	-7064.69	-25168	-0.0000356	0.0004492	0.0035	3.455	37717	45975.22	45975.22	6.51	No	Si
SLU 73	0.5	-3538.91	-16350	-0.0000211	0.0004492	0.0035	3.455	25813.43	33015.04	33015.04	9.33	No	Si
SLU 76	-1.6	-7064.69	-25168	-0.0000356	0.0004492	0.0035	3.455	37717	45975.22	45975.22	6.51	No	Si
SLU 76	0.5	-3538.91	-16350	-0.0000211	0.0004492	0.0035	3.455	25813.43	33015.04	33015.04	9.33	No	Si
SLU 84	-1.6	-7453.84	-26412	-0.0000375	0.0004492	0.0035	3.455	39282.53	47743.63	47743.63	6.41	No	Si
SLU 84	0.5	-3623.27	-17448	-0.0000223	0.0004492	0.0035	3.455	27372.65	34662.21	34662.21	9.57	No	Si
SLU 83	-1.6	-7395.39	-26353	-0.0000373	0.0004492	0.0035	3.455	39209.93	47660.91	47660.91	6.44	No	Si
SLU 83	0.5	-3727.09	-17346	-0.0000224	0.0004492	0.0035	3.455	27228.78	34509.25	34509.25	9.26	No	Si
SLU 82	-1.6	-7453.84	-26412	-0.0000375	0.0004492	0.0035	3.455	39282.53	47743.63	47743.63	6.41	No	Si
SLU 82	0.5	-3623.27	-17448	-0.0000223	0.0004492	0.0035	3.455	27372.65	34662.21	34662.21	9.57	No	Si
SLU 40	-1.6	-6426.01	-22376	-0.0000318	0.0004492	0.0035	3.455	34100.95	42006.31	42006.31	6.54	No	Si
SLU 40	0.5	-2789.16	-15231	-0.0000188	0.0004492	0.0035	3.455	24201.45	31335.96	31335.96	11.23	No	Si
SLU 81	-1.6	-7395.39	-26353	-0.0000373	0.0004492	0.0035	3.455	39209.93	47660.91	47660.91	6.44	No	Si
SLU 81	0.5	-3727.09	-17346	-0.0000224	0.0004492	0.0035	3.455	27228.78	34509.25	34509.25	9.26	No	Si
SLU 80	-1.6	-7025.72	-25129	-0.0000355	0.0004492	0.0035	3.455	37667.73	45920.08	45920.08	6.54	No	Si
SLU 80	0.5	-3608.13	-16282	-0.0000211	0.0004492	0.0035	3.455	25716.18	32913.06	32913.06	9.12	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em ₋	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	-1.6	-8273.29	-22294	-0.0000344	0.0006738	0.0035	3.455		42591.86	42591.86	5.15		Si
SLV 7	0.5	2801.94	-18845	-0.0000221	0.0006738	0.0035	3.455		32123.38	32123.38	11.46		Si
SLV 11	-1.6	-9034.03	-25505	-0.0000388	0.0006738	0.0035	3.455		47520.21	47520.21	5.26		Si
SLV 11	0.5	925.88	-21184	-0.0000212	0.0006738	0.0035	3.455		35753.4	35753.4	38.62		Si
SLV 8	-1.6	-8130.54	-22342	-0.0000342	0.0006738	0.0035	3.455		42665.77	42665.77	5.25		Si
SLV 8	0.5	2466.61	-18454	-0.0000212	0.0006738	0.0035	3.455		31512.57	31512.57	12.78		Si
SLV 6	-1.6	-408.18	-9230	-0.0000092	0.0006738	0.0035	3.455		22056.2	22056.2	54.04		Si
SLV 6	0.5	-6589.65	-287	-0.0002076	0.0006738	0.0035	2.764		7291.41	7291.41	1.11		Si
SLV 9	-1.6	-1311.67	-12393	-0.0000136	0.0006738	0.0035	3.455		27156.91	27156.91	20.7		Si
SLV 9	0.5	-8130.39	-3017	-0.0001929	0.0006738	0.0035	2.764		11854.54	11854.54	1.46		Si
SLV 5	-1.6	-550.93	-9182	-0.0000094	0.0006738	0.0035	3.455		21978.16	21978.16	39.89		Si
SLV 5	0.5	-6254.32	-678	-0.0001908	0.0006738	0.0035	2.764		7947.65	7947.65	1.27		Si
SLV 12	-1.6	-8891.28	-25553	-0.0000386	0.0006738	0.0035	3.455		47594.11	47594.11	5.35		Si
SLV 12	0.5	590.55	-20793	-0.0000203	0.0006738	0.0035	3.455		35152.06	35152.06	59.52		Si
SLV 13	-1.6	-4902.02	-20728	-0.0000273	0.0006738	0.0035	3.455		40188.32	40188.32	8.2		Si
SLV 13	0.5	-7149.43	-12105	-0.0000228	0.0006738	0.0035	3.455		26695.57	26695.57	3.73		Si
SLV 10	-1.6	-1168.91	-12441	-0.0000134	0.0006738	0.0035	3.455		27234.08	27234.08	23.3		Si
SLV 10	0.5	-8465.71	-2626	-0.0002208	0.0006738	0.0035	2.764		11203.21	11203.21	1.32		Si
SLV 14	-1.6	-4759.27	-20776	-0.0000272	0.0006738	0.0035	3.455		40262.22	40262.22	8.46		Si
SLV 14	0.5	-7484.76	-11714	-0.0000231	0.0006738	0.0035	3.455		26069.04	26069.04	3.48		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 31	-1.6	-6036.85	-21132	-16905	-909	3.455	3.455	-10873	9783	15210	81562	55874	17620	73494	No	80.82	Si
SLU 31	0.5	-2704.8	-14133	-11306	-623	3.455	3.455	-7272	9303	14464	81562	55874	17620	73494	No	117.93	Si
SLU 75	-1.6	-7025.72	-25129	-20103	-850	3.455	3.455	-12930	10057	15637	81562	55874	17620	73494	No	86.42	Si
SLU 75	0.5	-3608.13	-16282	-13026	-501	3.455	3.455	-8378	9450	14693	81562	55874	17620	73494	No	146.64	Si
SLU 42	-1.6	-6426.01	-22376	-17901	-947	3.455	3.455	-11513	9868	15343	81562	55874	17620	73494	No	77.6	Si
SLU 42	0.5	-2789.16	-15231	-12185	-637	3.455	3.455	-7837	9378	14581	81562	55874	17620	73494	No	115.45	Si
SLU 80	-1.6	-7025.72	-25129	-20103	-850	3.455	3.455	-12930	10057	15637	81562	55874	17620	73494	No	86.42	Si
SLU 80	0.5	-3608.13	-16282	-13026	-501	3.455	3.455	-8378	9450	14693	81562	55874	17620	73494	No	146.64	Si
SLU 40	-1.6	-6426.01	-22376	-17901	-947	3.455	3.455	-11513	9868	15343	81562	55874	17620	73494	No	77.6	Si
SLU 40	0.5	-2789.16	-15231	-12185	-637	3.455	3.455	-7837	9378	14581	81562	55874	17620	73494	No	115.45	Si
SLU 34	-1.6	-6036.85	-21132	-16905	-909	3.455	3.455	-10873	9783	15210	81562	55874	17620	73494	No	80.82	Si
SLU 34	0.5	-2704.8	-14133	-11306	-623	3.455	3.455	-7272	9303	14464	81562	55874	17620	73494	No	117.93	Si
SLU 84	-1.6	-7453.84	-26412	-21129	-964	3.455	3.455	-13590	10145	15773	81562	55874	17620	73494	No	76.28	Si
SLU 84	0.5	-3623.27	-17448	-13958	-596	3.455	3.455	-8978	9530	14817	81562	55874	17620	73494	No	123.36	Si
SLU 76	-1.6	-7064.69	-25168	-20134	-926	3.455	3.455	-12950	10060	15641	81562	55874	17620	73494	No	79.38	Si
SLU 76	0.5	-3538.91	-16350	-13080	-582	3.455	3.455	-8413	9455	14700	81562	55874	17620	73494	No	126.19	Si
SLU 73	-1.6	-7064.69	-25168	-20134	-926	3.455	3.455	-12950	10060	15641	81562	55874	17620	73494	No	79.38	Si
SLU 73	0.5	-3538.91	-16350	-13080	-582	3.455	3.455	-8413	9455	14700	81562	55874	17620	73494	No	126.19	Si
SLU 82	-1.6	-7453.84	-26412	-21129	-964	3.455	3.455	-13590	10145	15773	81562	55874	17620	73494	No	76.28	Si
SLU 82	0.5	-3623.27	-17448	-13958	-596	3.455	3.455	-8978	9530	14817	81562	55874	17620	73494	No	123.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	-1.6	-4682.94	-13959	-11167	-5692	3.455	3.455	-7182	13936	21668	81562	83810	17620	101431		17.82	Si
SLV 3	0.5	1820.98	-9757	-7806	-6758	3.455	3.455	-5021	13504	20995	81562	83810	17620	101431		15.01	Si
SLV 7	-1.6	-8273.29	-22294	-17835	-8177	3.455	3.455	-11471	14794	23001	81562	83810	17620	101431		12.4	Si
SLV 7	0.5	2801.94	-18845	-15076	-7742	3.455	3.455	-9697	14439	22449	81562	83810	17620	101431		13.1	Si
SLV 10	-1.6	-1168.91	-12441	-9953	7380	3.455	3.455	-6401	13780	21425	81562	83810	17620	101431		13.74	Si
SLV 10	0.5	-8465.71	-2626	-2101	7440	2.764	0	0	0	0	81562	67048	14096	81145		10.91	Si



Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	-1.6	-4902.02	-20728	-16582	4307	3.455	3.455	-10666	14633	22751	81562	83810	17620	101431		23.55	Si
SLV 13	0.5	-7149.43	-12105	-9684	5868	3.455	3.4106	-6229	13746	21096	81562	83810	17620	101431		17.29	Si
SLV 14	-1.6	-4759.27	-20776	-16621	4895	3.455	3.455	-10690	14638	22758	81562	83810	17620	101431		20.72	Si
SLV 14	0.5	-7484.76	-11714	-9371	6457	3.455	3.2656	-6394	13779	20248	81562	83810	17620	101431		15.71	Si
SLV 4	-1.6	-4540.19	-14007	-11205	-5104	3.455	3.455	-7207	13941	21675	81562	83810	17620	101431		19.87	Si
SLV 4	0.5	1485.66	-9367	-7493	-6169	3.455	3.455	-4820	13464	20933	81562	83810	17620	101431		16.44	Si
SLV 9	-1.6	-1311.67	-12393	-9914	6793	3.455	3.455	-6377	13775	21417	81562	83810	17620	101431		14.93	Si
SLV 9	0.5	-8130.39	-3017	-2414	6851	2.764	0	0	0	0	81562	67048	14096	81145		11.84	Si
SLV 8	-1.6	-8130.54	-22342	-17874	-7589	3.455	3.455	-11496	14799	23009	81562	83810	17620	101431		13.36	Si
SLV 8	0.5	2466.61	-18454	-14763	-7153	3.455	3.455	-9496	14399	22387	81562	83810	17620	101431		14.18	Si
SLV 6	-1.6	-408.18	-9230	-7384	5565	3.455	3.455	-4749	13450	20911	81562	83810	17620	101431		18.23	Si
SLV 6	0.5	-6589.65	-287	-230	4721	2.764	0	0	0	0	81562	67048	14096	81145		17.19	Si
SLV 11	-1.6	-9034.03	-25505	-20404	-6361	3.455	3.455	-13123	15125	23515	81562	83810	17620	101431		15.95	Si
SLV 11	0.5	925.88	-21184	-16947	-5022	3.455	3.455	-10900	14680	22824	81562	83810	17620	101431		20.2	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota -0.255 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 6	-3530	0.24	214.55	784.5	1513.77	1149.14	5.36	Si
SLV 5	-3731	0.24	214.55	828.56	1562.39	1195.47	5.57	Si
SLV 2	-4433	0.24	214.55	981.95	1731.76	1356.86	6.32	Si
SLV 1	-4634	0.24	214.55	1025.72	1779.92	1402.82	6.54	Si
SLV 10	-7368	0.24	214.55	1614.92	2433.78	2024.35	9.44	Si
SLV 9	-7569	0.24	214.55	1657.75	2481.71	2069.73	9.65	Si
SLV 4	-9045	0.24	214.55	1970.42	2833.45	2401.94	11.2	Si
SLV 3	-9245	0.24	214.55	2012.73	2881.05	2446.89	11.41	Si
SLV 14	-17225	0.24	214.55	3641.33	4762.27	4201.8	19.58	Si
SLV 13	-17426	0.24	214.55	3681.04	4809.39	4245.21	19.79	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = -0.255 Wa = 0.08 Ta = 0.0269

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-17474	-25505	-110	1.007	2375.4	0.932	15.70318	3.53552	Si
SLV 12	-17128	-25553	-109	1.022	2340.5	0.931	15.95635	3.53552	Si
SLV 15	-15852	-24661	-512	1.063	2211.8	0.928	16.64623	3.53552	Si
SLV 16	-15505	-24710	-511	1.081	2176.9	0.927	16.93893	3.53552	Si
SLV 7	-14463	-22294	184	1.156	2072	0.924	18.16943	3.53552	Si
SLV 8	-14117	-22342	185	1.176	2037.2	0.923	18.51472	3.53552	Si
SLV 13	-11451	-20728	-562	1.343	1769.9	0.915	21.33408	3.53552	Si
SLV 14	-11105	-20776	-561	1.372	1735.3	0.914	21.82927	3.53552	Si
SLV 3	-5818	-13959	468	2.093	1215.5	0.893	34.04643	3.53552	Si
SLV 4	-5471	-14007	469	2.168	1182.4	0.892	35.31583	3.53552	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.405	SLU 82	Si
V_SLU	76.276	SLU 82	Si
PF_SLV	1.106	SLV 6	Si
V_SLV	10.906	SLV 10	Si
PFFP_SLV	5.356	SLV 6	Si
R_SLV	4.442	SLV 11	Si

Maschio 15

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
23.989	19.646	23.909	18.116	L2	L3	1.532	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	



Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	2.09	-3553.8	-8345	-0.0000544	0.0003743	0.0035	1.532	5632.1	30889.03	30889.03	8.69	No	Si
SLU 76	3.99	3043.27	817	-0.0001081	0.0003743	0.0035	1.532	0	30378.42	30378.42	9.98	No	Si
SLU 82	2.09	-3703.14	-8793	-0.0000568	0.0003743	0.0035	1.532	5892.01	30863.62	30863.62	8.33	No	Si
SLU 82	3.99	3178.25	734	-0.0001128	0.0003743	0.0035	1.532	0	30401.14	30401.14	9.57	No	Si
SLU 84	2.09	-3703.14	-8793	-0.0000568	0.0003743	0.0035	1.532	5892.01	30863.62	30863.62	8.33	No	Si
SLU 84	3.99	3178.25	734	-0.0001128	0.0003743	0.0035	1.532	0	30401.14	30401.14	9.57	No	Si
SLU 80	2.09	-3547.39	-8330	-0.0000543	0.0003743	0.0035	1.532	5623.41	30889.88	30889.88	8.71	No	Si
SLU 80	3.99	3033.98	812	-0.0001077	0.0003743	0.0035	1.532	0	30379.82	30379.82	10.01	No	Si
SLU 75	2.09	-3547.39	-8330	-0.0000543	0.0003743	0.0035	1.532	5623.41	30889.88	30889.88	8.71	No	Si
SLU 75	3.99	3033.98	812	-0.0001077	0.0003743	0.0035	1.532	0	30379.82	30379.82	10.01	No	Si
SLU 77	2.09	-3537.79	-8307	-0.0000542	0.0003743	0.0035	1.532	5610.37	30891.14	30891.14	8.73	No	Si
SLU 77	3.99	3020.05	804	-0.0001072	0.0003743	0.0035	1.532	0	30381.91	30381.91	10.06	No	Si
SLU 83	2.09	-3693.54	-8771	-0.0000566	0.0003743	0.0035	1.532	5879.19	30864.88	30864.88	8.36	No	Si
SLU 83	3.99	3164.31	726	-0.0001123	0.0003743	0.0035	1.532	0	30403.23	30403.23	9.61	No	Si
SLU 81	2.09	-3693.54	-8771	-0.0000566	0.0003743	0.0035	1.532	5879.19	30864.88	30864.88	8.36	No	Si
SLU 81	3.99	3164.31	726	-0.0001123	0.0003743	0.0035	1.532	0	30403.23	30403.23	9.61	No	Si
SLU 73	2.09	-3553.8	-8345	-0.0000544	0.0003743	0.0035	1.532	5632.1	30889.03	30889.03	8.69	No	Si
SLU 73	3.99	3043.27	817	-0.0001081	0.0003743	0.0035	1.532	0	30378.42	30378.42	9.98	No	Si
SLU 78	2.09	-3547.39	-8330	-0.0000543	0.0003743	0.0035	1.532	5623.41	30889.88	30889.88	8.71	No	Si
SLU 78	3.99	3033.98	812	-0.0001077	0.0003743	0.0035	1.532	0	30379.82	30379.82	10.01	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	2.09	-3164.29	-6824	-0.0000484	0.0005615	0.0035	1.532		35436.92	35436.92	11.2		Si
SLV 2	3.99	2583.66	973	-0.0000903	0.0005615	0.0035	1.532		32705.05	32705.05	12.66		Si
SLV 4	2.09	-3669.78	-7712	-0.000057	0.0005615	0.0035	1.532		35728.96	35728.96	9.74		Si
SLV 4	3.99	3237.84	1376	-0.0001144	0.0005615	0.0035	1.532		32559.53	32559.53	10.06		Si
SLV 7	2.09	-3394.88	-7439	-0.0000518	0.0005615	0.0035	1.532		35638.97	35638.97	10.5		Si
SLV 7	3.99	3217.3	1338	-0.0001136	0.0005615	0.0035	1.532		32573.19	32573.19	10.12		Si
SLV 8	2.09	-3720.91	-7777	-0.000058	0.0005615	0.0035	1.532		35750.18	35750.18	9.61		Si
SLV 8	3.99	3557.27	1629	-0.0001264	0.0005615	0.0035	1.532		32465.89	32465.89	9.13		Si
SLV 12	2.09	-3259.24	-6944	-0.0000501	0.0005615	0.0035	1.532		35476.34	35476.34	10.88		Si
SLV 12	3.99	3176.89	1442	-0.0001124	0.0005615	0.0035	1.532		32535.61	32535.61	10.24		Si
SLV 6	2.09	-2035.92	-4816	-0.00003	0.0005615	0.0035	1.532		34776.72	34776.72	17.08		Si
SLV 6	3.99	1376.69	286	-0.0000468	0.0005615	0.0035	1.532		32953.35	32953.35	23.94		Si
SLV 1	2.09	-2838.25	-6486	-0.0000425	0.0005615	0.0035	1.532		35325.71	35325.71	12.45		Si
SLV 1	3.99	2243.7	683	-0.0000777	0.0005615	0.0035	1.532		32809.94	32809.94	14.62		Si
SLV 3	2.09	-3343.75	-7374	-0.0000509	0.0005615	0.0035	1.532		35617.75	35617.75	10.65		Si
SLV 3	3.99	2897.87	1086	-0.0001017	0.0005615	0.0035	1.532		32664.43	32664.43	11.27		Si
SLV 16	2.09	-2130.87	-4936	-0.0000316	0.0005615	0.0035	1.532		34816.13	34816.13	16.34		Si
SLV 16	3.99	1969.92	755	-0.0000684	0.0005615	0.0035	1.532		32783.92	32783.92	16.64		Si
SLV 11	2.09	-2933.2	-6606	-0.0000441	0.0005615	0.0035	1.532		35365.12	35365.12	12.06		Si
SLV 11	3.99	2836.92	1152	-0.0000997	0.0005615	0.0035	1.532		32640.51	32640.51	11.51		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σ_N	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	2.09	-3703.14	-8793	-7035	-6125	1.532	1.0347	-15081	8965	4174	34710	20644	7813	28457	No	4.65	Si
SLU 84	3.99	3178.25	734	587	-6111	1.532	0	7274	10765	0	34710	20644	7813	28457	No	4.66	Si
SLU 80	2.09	-3547.39	-8330	-6664	-5812	1.532	1.0204	-14458	8882	4079	34710	20644	7813	28457	No	4.9	Si
SLU 80	3.99	3033.98	812	650	-5798	1.532	0	8192	10609	0	34710	20644	7813	28457	No	4.91	Si
SLU 83	2.09	-3693.54	-8771	-7017	-6101	1.532	1.0347	-15041	8960	4172	34710	20644	7813	28457	No	4.66	Si
SLU 83	3.99	3164.31	726	581	-6086	1.532	0	7195	10748	0	34710	20644	7813	28457	No	4.68	Si
SLU 82	2.09	-3703.14	-8793	-7035	-6125	1.532	1.0347	-15081	8965	4174	34710	20644	7813	28457	No	4.65	Si
SLU 82	3.99	3178.25	734	587	-6111	1.532	0	7274	10765	0	34710	20644	7813	28457	No	4.66	Si
SLU 75	2.09	-3547.39	-8330	-6664	-5812	1.532	1.0204	-14458	8882	4079	34710	20644	7813	28457	No	4.9	Si
SLU 75	3.99	3033.98	812	650	-5798	1.532	0	8192	10609	0	34710	20644	7813	28457	No	4.91	Si
SLU 79	2.09	-3537.79	-8307	-6646	-5787	1.532	1.0204	-14419	8877	4076	34710	20644	7813	28457	No	4.92	Si
SLU 79	3.99	3020.05	804	643	-5773	1.532	0	8112	10593	0	34710	20644	7813	28457	No	4.93	Si
SLU 73	2.09	-3553.8	-8345	-6676	-5828	1.532	1.0204	-14485	8886	4080	34710	20644	7813	28457	No	4.88	Si
SLU 73	3.99	3043.27	817	654	-5814	1.532	0	8246	10620	0	34710	20644	7813	28457	No	4.89	Si
SLU 78	2.09	-3547.39	-8330	-6664	-5812	1.532	1.0204	-14458	8882	4079	34710	20644	7813	28457	No	4.9	Si
SLU 78	3.99	3033.98	812	650	-5798	1.532	0	8192	10609	0	34710	20644	7813	28457	No	4.91	Si
SLU 76	2.09	-3553.8	-8345	-6676	-5828	1.532	1.0204	-14485	8886	4080	34710	20644	7813	28457	No	4.88	Si
SLU 76	3.99	3043.27	817	654	-5814	1.532	0	8246	10620	0	34710	20644	7813	28457	No	4.89	Si
SLU 81	2.09	-3693.54	-8771	-7017	-6101	1.532	1.0347	-15041	8960	4172	34710	20644	7813	28457	No	4.66	Si
SLU 81	3.99	3164.31	726	581	-6086	1.532	0	7195	10748	0	34710	20644	7813	28457	No	4.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σ_N	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	2.09	-3394.88	-7439	-5951	-6537	1.532	0.9289	-13975	13234	5532	34710	30966	7813	38779		5.93	Si
SLV 7	3.99	3217.3	1338	1071	-5587	1.532	0	14522	16250	0	34710	30966	7813	34710		6.21	Si
SLV 3	2.09	-3343.75	-7374	-5899	-6076	1.532	0.9377	-13740	13186	5564	34710	30966	7813	38779		6.38	Si
SLV 3	3.99	2897.87	1086	868	-5438	1.532	0	11622	15789	0	34710	30966	7813	34710		6.38	Si
SLV 1	2.09	-2838.25	-6486	-5189	-4666	1.532	0.9852	-11561	12743	5649	34710	30966	7813	38779		8.31	Si
SLV 1	3.99	2243.7	683	546	-4524	1.532	0	7146	14582	0	34710	30966	7813	34710		7.67	Si
SLV 11	2.09	-2933.2	-6606	-5285	-5523	1.532	0.9659	-11985	12829	5576	34710	30966	7813	38779		7.02	Si
SLV 11	3.99	2836.92	1152	921	-4802	1.532	0	12496	15689	0	34710	30966	7813	34710		7.23	Si
SLV 6	2.09	-2035.92	-4816	-3853	-2441	1.532	1.0299	-8237	12072	5595	34710	30966	7813	38779		15.88	Si
SLV 6	3.99	1376.69	286	229	-3144	1.532	0	2895	12972	0	34710	30966	7813	34710		11.04	Si
SLV 2	2.09	-3164.29	-6824	-5459	-5269	1.532	0.907	-13078	13055	5328	34710	30966	7813	38779		7.36	Si
SLV 2	3.99	2583.66	973	778	-5127	1.532	0	10458	15221	0	34710	30966	7813	34710		6.77	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	2.09	-2130.87	-4936	-3949	-3299	1.532	1.003	-8648	12155	5486	34710	30966	7813	38779		11.76	Si
SLV 16	3.99	1969.92	755	604	-3422	1.532	0	8179	14102	0	34710	30966	7813	34710		10.14	Si
SLV 4	2.09	-3669.78	-7712	-6170	-6679	1.532	0.8705	-15307	13510	5292	34710	30966	7813	38779		5.81	Si
SLV 4	3.99	3237.84	1376	1101	-6041	1.532	0	14984	16250	0	34710	30966	7813	34710		5.75	Si
SLV 12	2.09	-3259.24	-6944	-5555	-6127	1.532	0.8899	-13523	13147	5265	34710	30966	7813	38779		6.33	Si
SLV 12	3.99	3176.89	1442	1154	-5405	1.532	0	15897	16250	0	34710	30966	7813	34710		6.42	Si
SLV 8	2.09	-3720.91	-7777	-6221	-7141	1.532	0.8626	-15552	13561	5264	34710	30966	7813	38779		5.43	Si
SLV 8	3.99	3557.27	1629	1303	-6191	1.532	0	17912	16250	0	34710	30966	7813	34710		5.61	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 2.99 Ta 0.05 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-2140	0.47	357.92	471.65	19099.57	9785.61	27.34	Si
SLV 14	-2167	0.47	357.92	477.47	19103.25	9790.36	27.35	Si
SLV 9	-2201	0.47	357.92	484.86	19107.93	9796.39	27.37	Si
SLV 10	-2228	0.47	357.92	490.68	19111.61	9801.14	27.38	Si
SLV 15	-2385	0.47	357.92	524.36	19132.97	9828.67	27.46	Si
SLV 16	-2411	0.47	357.92	530.16	19136.65	9833.4	27.47	Si
SLV 5	-2498	0.47	357.92	548.77	19148.49	9848.63	27.52	Si
SLV 6	-2525	0.47	357.92	554.55	19152.18	9853.36	27.53	Si
SLV 11	-3017	0.47	357.92	659.37	19219.27	9939.32	27.77	Si
SLV 12	-3044	0.47	357.92	665.09	19222.95	9944.02	27.78	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeraia = 2.99 Wa = 0.08 Ta = 0.0536

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	190	-3613	-176	3.843	480.7	1	55.85722	9.87673	Si, Trazione
SLV 13	212	-3145	-132	3.881	480.7	1	56.40381	9.87673	Si, Trazione
SLV 10	261	-3724	-177	3.903	480.7	1	56.72353	9.87673	Si, Trazione
SLV 5	260	-4384	-124	3.925	480.7	1	57.04251	9.87673	Si, Trazione
SLV 14	283	-3257	-133	3.942	480.7	1	57.28321	9.87673	Si, Trazione
SLV 6	331	-4496	-125	3.987	480.7	1	57.94193	9.87673	Si, Trazione
SLV 15	300	-3516	-43	3.997	480.7	1	58.08882	9.87673	Si, Trazione
SLV 16	372	-3627	-43	4.061	480.7	1	59.01385	9.87673	Si, Trazione
SLV 11	485	-4848	122	4.128	480.7	1	59.99999	9.87673	Si, Trazione
SLV 1	444	-5716	41	4.129	480.7	1	60.00378	9.87673	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	8.334	SLV 82	Si
V_SLV	4.646	SLV 82	Si
PF_SLV	9.127	SLV 8	Si
V_SLV	5.431	SLV 8	Si
PFFP_SLV	27.34	SLV 13	Si
R_SLV	5.655	SLV 9	Si

Maschio 16

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
24.232	24.289	24.042	20.644	L2	L3	3.65	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato _ Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200						CRM / Fibrenet?				
									αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 49	2.09	-7457.17	-12675	-0.0000233	0.0003743	0.0035	3.6499	21378.26	25420.26	25420.26	3.41	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 49	3.99	4003.14	-7984	-0.0000135	0.0003743	0.0035	3.6499	13875.27	14678.38	14678.38	3.67	No	Si
SLU 50	2.09	-7393.38	-12672	-0.0000232	0.0003743	0.0035	3.6499	21373.56	25415.26	25415.26	3.44	No	Si
SLU 50	3.99	3969.44	-7974	-0.0000134	0.0003743	0.0035	3.6499	13858.84	14661.53	14661.53	3.69	No	Si
SLU 65	2.09	-8280.18	-14585	-0.0000265	0.0003743	0.0035	3.6499	24295.03	28467.29	28467.29	3.44	No	Si
SLU 65	3.99	4463.08	-9081	-0.0000152	0.0003743	0.0035	3.6499	15671.74	16521.24	16521.24	3.7	No	Si
SLU 43	2.09	-7393.38	-12672	-0.0000232	0.0003743	0.0035	3.6499	21373.56	25415.26	25415.26	3.44	No	Si
SLU 43	3.99	3969.44	-7974	-0.0000134	0.0003743	0.0035	3.6499	13858.84	14661.53	14661.53	3.69	No	Si
SLU 44	2.09	-7499.69	-12677	-0.0000234	0.0003743	0.0035	3.6499	21381.39	25423.59	25423.59	3.39	No	Si
SLU 44	3.99	4025.61	-7991	-0.0000135	0.0003743	0.0035	3.6499	13886.23	14689.62	14689.62	3.65	No	Si
SLU 45	2.09	-7393.38	-12672	-0.0000232	0.0003743	0.0035	3.6499	21373.56	25415.26	25415.26	3.44	No	Si
SLU 45	3.99	3969.44	-7974	-0.0000134	0.0003743	0.0035	3.6499	13858.84	14661.53	14661.53	3.69	No	Si
SLU 51	2.09	-7457.17	-12675	-0.0000233	0.0003743	0.0035	3.6499	21378.26	25420.26	25420.26	3.41	No	Si
SLU 51	3.99	4003.14	-7984	-0.0000135	0.0003743	0.0035	3.6499	13875.27	14678.38	14678.38	3.67	No	Si
SLU 48	2.09	-7393.38	-12672	-0.0000232	0.0003743	0.0035	3.6499	21373.56	25415.26	25415.26	3.44	No	Si
SLU 48	3.99	3969.44	-7974	-0.0000134	0.0003743	0.0035	3.6499	13858.84	14661.53	14661.53	3.69	No	Si
SLU 46	2.09	-7457.17	-12675	-0.0000233	0.0003743	0.0035	3.6499	21378.26	25420.26	25420.26	3.41	No	Si
SLU 46	3.99	4003.14	-7984	-0.0000135	0.0003743	0.0035	3.6499	13875.27	14678.38	14678.38	3.67	No	Si
SLU 47	2.09	-7499.69	-12677	-0.0000234	0.0003743	0.0035	3.6499	21381.39	25423.59	25423.59	3.39	No	Si
SLU 47	3.99	4025.61	-7991	-0.0000135	0.0003743	0.0035	3.6499	13886.23	14689.62	14689.62	3.65	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 14	2.09	-5824.95	-9767	-0.0000179	0.0005615	0.0035	3.6499		20903.22	20903.22	3.59		Si
SLV 14	3.99	3294.08	-5819	-0.0000103	0.0005615	0.0035	3.6499		11073.95	11073.95	3.36		Si
SLV 11	2.09	-10606.11	-9922	-0.0000298	0.0005615	0.0035	2.9199		21167.27	21167.27	2		Si
SLV 11	3.99	6713.72	-6339	-0.0000186	0.0005615	0.0035	3.6499		11990.06	11990.06	1.79		Si
SLV 12	2.09	-12121.51	-9960	-0.0000373	0.0005615	0.0035	2.9199		21231.47	21231.47	1.75		Si
SLV 12	3.99	7903.4	-6384	-0.0000246	0.0005615	0.0035	3.6499		12067.31	12067.31	1.53		Si
SLV 3	2.09	-7006.1	-13603	-0.0000233	0.0005615	0.0035	3.6499		27303.83	27303.83	3.9		Si
SLV 3	3.99	3625.97	-8646	-0.0000135	0.0005615	0.0035	3.6499		15986.06	15986.06	4.41		Si
SLV 4	2.09	-8521.49	-13641	-0.0000257	0.0005615	0.0035	3.6499		27366.3	27366.3	3.21		Si
SLV 4	3.99	4815.65	-8691	-0.0000153	0.0005615	0.0035	3.6499		16062.95	16062.95	3.34		Si
SLV 15	2.09	-7256.04	-9089	-0.0000199	0.0005615	0.0035	3.6499		19741.04	19741.04	2.72		Si
SLV 15	3.99	4348.5	-5532	-0.0000119	0.0005615	0.0035	3.6499		10568.4	10568.4	2.43		Si
SLV 16	2.09	-8771.43	-9127	-0.0000239	0.0005615	0.0035	3.6499		19805.89	19805.89	2.26		Si
SLV 16	3.99	5538.17	-5577	-0.000015	0.0005615	0.0035	3.6499		10646.74	10646.74	1.92		Si
SLV 7	2.09	-10531.13	-11276	-0.0000287	0.0005615	0.0035	3.6499		23457.06	23457.06	2.23		Si
SLV 7	3.99	6496.97	-7273	-0.0000176	0.0005615	0.0035	3.6499		13610.2	13610.2	2.09		Si
SLV 8	2.09	-12046.53	-11314	-0.0000339	0.0005615	0.0035	2.9199		23520.75	23520.75	1.95		Si
SLV 8	3.99	7686.64	-7318	-0.0000213	0.0005615	0.0035	3.6499		13687.4	13687.4	1.78		Si
SLV 13	2.09	-4309.56	-9729	-0.0000155	0.0005615	0.0035	3.6499		20838.37	20838.37	4.84		Si
SLV 13	3.99	2104.41	-5775	-0.0000085	0.0005615	0.0035	3.6499		10995.58	10995.58	5.23		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	2.09	-9735.01	-19027	-16913	-7891	3.6499	3.6499	-10297	8317	13661	42820	49182	9307	56481	No	7.16	Si
SLU 82	3.99	5271.84	-11574	-10288	-7892	3.6499	3.6499	-6264	7780	12778	42820	49182	9307	55597	No	7.04	Si
SLU 73	2.09	-9328.33	-17696	-15730	-7553	3.6499	3.6499	-9577	8221	13503	42820	49182	9307	56323	No	7.46	Si
SLU 73	3.99	5044.94	-10831	-9627	-7553	3.6499	3.6499	-5861	7726	12689	42820	49182	9307	55509	No	7.35	Si
SLU 84	2.09	-9735.01	-19027	-16913	-7891	3.6499	3.6499	-10297	8317	13661	42820	49182	9307	56481	No	7.16	Si
SLU 84	3.99	5271.84	-11574	-10288	-7892	3.6499	3.6499	-6264	7780	12778	42820	49182	9307	55597	No	7.04	Si
SLU 75	2.09	-9285.8	-17694	-15728	-7519	3.6499	3.6499	-9576	8221	13503	42820	49182	9307	56323	No	7.49	Si
SLU 75	3.99	5022.47	-10824	-9621	-7519	3.6499	3.6499	-5858	7725	12689	42820	49182	9307	55509	No	7.38	Si
SLU 76	2.09	-9328.33	-17696	-15730	-7553	3.6499	3.6499	-9577	8221	13503	42820	49182	9307	56323	No	7.46	Si
SLU 76	3.99	5044.94	-10831	-9627	-7553	3.6499	3.6499	-5861	7726	12689	42820	49182	9307	55509	No	7.35	Si
SLU 79	2.09	-9222.01	-17691	-15725	-7468	3.6499	3.6499	-9574	8221	13503	42820	49182	9307	56322	No	7.54	Si
SLU 79	3.99	4988.77	-10814	-9612	-7468	3.6499	3.6499	-5853	7725	12688	42820	49182	9307	55507	No	7.43	Si
SLU 81	2.09	-9671.22	-19024	-16910	-7840	3.6499	3.6499	-10296	8317	13661	42820	49182	9307	56480	No	7.2	Si
SLU 81	3.99	5238.13	-11564	-10279	-7841	3.6499	3.6499	-6258	7779	12776	42820	49182	9307	55596	No	7.09	Si
SLU 83	2.09	-9671.22	-19024	-16910	-7840	3.6499	3.6499	-10296	8317	13661	42820	49182	9307	56480	No	7.2	Si
SLU 83	3.99	5238.13	-11564	-10279	-7841	3.6499	3.6499	-6258	7779	12776	42820	49182	9307	55596	No	7.09	Si
SLU 80	2.09	-9285.8	-17694	-15728	-7519	3.6499	3.6499	-9576	8221	13503	42820	49182	9307	56323	No	7.49	Si
SLU 80	3.99	5022.47	-10824	-9621	-7519	3.6499	3.6499	-5858	7725	12689	42820	49182	9307	55509	No	7.38	Si
SLU 78	2.09	-9285.8	-17694	-15728	-7519	3.6499	3.6499	-9576	8221	13503	42820	49182	9307	56323	No	7.49	Si
SLU 78	3.99	5022.47	-10824	-9621	-7519	3.6499	3.6499	-5858	7725	12689	42820	49182	9307	55509	No	7.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	2.09	-5824.95	-9767	-8682	-4823	3.6499	3.6499	-5286	11474	18845	42820	73773	9307	61665		12.78	Si
SLV 14	3.99	3294.08	-5819	-5173	-4969	3.6499	3.6499	-3149	11047	18143	42820	73773	9307	60963		12.27	Si
SLV 11	2.09	-10606.11	-9922	-8820	-9976	2.9199	2.2681	0	0	0	42820	59019	7446	42820		4.29	Si
SLV 11	3.99	6713.72	-6339	-5635	-8401	3.6499	2.2975	-3431	11103	11479	42820	73773	9307	54299		6.46	Si
SLV 8	2.09	-12046.53	-11314	-10057	-11080	2.9199	2.2807	0	0	0	42820	59019	7446	42820		3.86	Si
SLV 8	3.99	7686.64	-7318	-6505	-9684	3.6499	2.3237	-3960	11209	11720	42820	73773	9307	54540		5.63	Si
SLV 4	2.09	-8521.49	-13641	-12125	-6964	3.6499	3.6007	-7382	11893	19271	42820	73773	9307	62090		8.92	Si
SLV 4	3.99	4815.65	-8691	-7725	-6819	3.6499	3.6499	-4704	11357	18654	42820	73773	9307	61474		9.02	Si
SLV 15	2.09	-7256.04	-9089	-8079	-6607	3.6499	3.0798	-5845	11586	16057	42820	73773	9307	58877		8.91	Si
SLV 15	3.99	4348.5	-5532	-4917	-5862	3.6499	3.1167	-2994	11015	15449	42820	73773	9307	58269		9.94	Si
SLV 7	2.09	-10531.13	-11276	-10024	-9656	3.6499	2.6731	-8365	12090	14543	42820	73773	9307	57363		5.94	Si
SLV 7	3.99	6496.97	-7273	-6465	-8261	3.6499	2.7951	-3936	11204	14092	42820	73773	9307	56912		6.89	Si
SLV 16	2.09	-8771.43	-9127	-8113	-8031	3.6499	2.5917	-6978	11812	13776	42820	73773	9307	56596		7.05	Si
SLV 16	3.99	5538.17	-5577	-4957	-7286	3.6499	2.4955	-3018	11020	12376	42820	73773	9307	55195		7.58	Si
SLV 3	2.09	-7006.1	-13603	-12091	-5541	3.6499	3.6499	-7362	11889	19527	42820	73773	9307	62347		11.25	Si
SLV 3	3.99	3625.97	-8646	-7686	-5395	3.6499	3.6499	-4679	11353	18646	42820	73773	9307	61466		11.39	Si
SLV 2	2.09	-5575.01	-14281	-12694	-3757	3.6499	3.6499	-7729	11962	19648	42820	73773	9307	62467		16.63	Si



Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	3.99	2571.55	-8934	-7941	-4502	3.6499	3.6499	-4835	11384	18697	42820	73773	9307	61517		13.66	Si
SLV 12	2.09	-12121.51	-9960	-8853	-11400	2.9199	1.8238	0	0	0	42820	59019	7446	42820		3.76	Si
SLV 12	3.99	7903.4	-6384	-5674	-9824	3.6499	1.7606	-3455	11108	8800	42820	73773	9307	51620		5.25	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.99 Wa 0.08 denominatore 8 $\gamma M = 2$

Comb.	fd	Sa	o0	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.47	4026	-6613	852.71	1448.59	1.7	Si
SLV 16	179667	0.47	4053	-6656	852.71	1457.89	1.71	Si
SLV 13	179667	0.47	4283	-7035	852.71	1538.45	1.8	Si
SLV 14	179667	0.47	4310	-7079	852.71	1547.72	1.82	Si
SLV 11	179667	0.47	5106	-8386	852.71	1823.8	2.14	Si
SLV 12	179667	0.47	5132	-8430	852.71	1832.97	2.15	Si
SLV 9	179667	0.47	5963	-9794	852.71	2117.6	2.48	Si
SLV 10	179667	0.47	5990	-9838	852.71	2126.65	2.49	Si
SLV 7	179667	0.47	6289	-10329	852.71	2228.28	2.61	Si
SLV 8	179667	0.47	6315	-10372	852.71	2237.29	2.62	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.99 Wa = 0.08 Ta = 0.0536

Comb.	N top	N base	V orto	o0	M*	e*	a0*	aLim	Verifica
SLV 4	-1414	-18299	326	2.976	1193.5	0.926	46.72475	9.87673	Si
SLV 3	-1408	-18220	326	2.978	1193.1	0.926	46.75335	9.87673	Si
SLV 2	-1446	-19046	152	2.987	1195.3	0.925	46.94958	9.87673	Si
SLV 1	-1440	-18966	152	2.99	1195	0.925	46.97834	9.87673	Si
SLV 6	-1247	-17685	-215	3.063	1184.3	0.931	47.82695	9.87673	Si
SLV 5	-1241	-17605	-215	3.066	1184	0.931	47.85634	9.87673	Si
SLV 8	-1140	-15197	365	3.089	1178.7	0.934	48.03446	9.87673	Si
SLV 7	-1134	-15117	365	3.091	1178.4	0.935	48.06361	9.87673	Si
SLV 10	-1044	-15772	-355	3.134	1174	0.938	48.55183	9.87673	Si
SLV 9	-1038	-15693	-355	3.136	1173.8	0.938	48.58138	9.87673	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.39	SLU 44	Si
V_SLU	7.045	SLU 82	Si
PF_SLV	1.527	SLV 12	Si
V_SLV	3.756	SLV 12	Si
PFFP_SLV	1.699	SLV 15	Si
R_SLV	4.731	SLV 4	Si

Maschio 17

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
24.382	27.161	24.284	25.288	L2	L3	1.876	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	o0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200						CRM / Fibrenet?				
									αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 23	2.09	162.03	-8808	-0.000017	0.0003743	0.0035	1.876	7415.31	7801.74	7801.74	48.15	No	Si
SLU 23	3.99	132.45	-2682	-0.0000056	0.0003743	0.0035	1.876	2437.47	2644.85	2644.85	19.97	No	Si
SLU 26	2.09	162.03	-8808	-0.000017	0.0003743	0.0035	1.876	7415.31	7801.74	7801.74	48.15	No	Si
SLU 26	3.99	132.45	-2682	-0.0000056	0.0003743	0.0035	1.876	2437.47	2644.85	2644.85	19.97	No	Si
SLU 28	2.09	164.27	-8840	-0.0000171	0.0003743	0.0035	1.876	7439.01	7826.38	7826.38	47.64	No	Si
SLU 28	3.99	115.72	-2681	-0.0000055	0.0003743	0.0035	1.876	2436.36	2643.72	2643.72	22.85	No	Si
SLU 65	2.09	231.62	-10782	-0.0000211	0.0003743	0.0035	1.876	8845.18	9198.47	9198.47	39.71	No	Si
SLU 65	3.99	137.39	-3202	-0.0000065	0.0003743	0.0035	1.876	2891.69	3103.8	3103.8	22.59	No	Si
SLU 76	2.09	166.42	-12449	-0.0000239	0.0003743	0.0035	1.876	9986.18	10340.82	10340.82	62.14	No	Si
SLU 76	3.99	164.43	-3920	-0.000008	0.0003743	0.0035	1.876	3508.95	3733.72	3733.72	22.71	No	Si
SLU 73	2.09	166.42	-12449	-0.0000239	0.0003743	0.0035	1.876	9986.18	10340.82	10340.82	62.14	No	Si
SLU 73	3.99	164.43	-3920	-0.000008	0.0003743	0.0035	1.876	3508.95	3733.72	3733.72	22.71	No	Si
SLU 34	2.09	96.84	-10475	-0.0000198	0.0003743	0.0035	1.876	8628.15	8989.92	8989.92	92.83	No	Si
SLU 34	3.99	159.49	-3400	-0.000007	0.0003743	0.0035	1.876	3062.87	3277.79	3277.79	20.55	No	Si
SLU 68	2.09	231.62	-10782	-0.0000211	0.0003743	0.0035	1.876	8845.18	9198.47	9198.47	39.71	No	Si
SLU 68	3.99	137.39	-3202	-0.0000065	0.0003743	0.0035	1.876	2891.69	3103.8	3103.8	22.59	No	Si
SLU 30	2.09	164.27	-8840	-0.0000171	0.0003743	0.0035	1.876	7439.01	7826.38	7826.38	47.64	No	Si
SLU 30	3.99	115.72	-2681	-0.0000055	0.0003743	0.0035	1.876	2436.36	2643.72	2643.72	22.85	No	Si
SLU 31	2.09	96.84	-10475	-0.0000198	0.0003743	0.0035	1.876	8628.15	8989.92	8989.92	92.83	No	Si
SLU 31	3.99	159.49	-3400	-0.000007	0.0003743	0.0035	1.876	3062.87	3277.79	3277.79	20.55	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	2.09	-311.35	-6920	-0.0000143	0.0005615	0.0035	1.876		7056.24	7056.24	22.66		Si
SLV 7	3.99	899.31	-2898	-0.0000103	0.0005615	0.0035	1.876		2857.1	2857.1	3.18		Si
SLV 16	2.09	-1332.43	-5603	-0.0000178	0.0005615	0.0035	1.876		5930	5930	4.45		Si
SLV 16	3.99	1297.22	-3593	-0.000014	0.0005615	0.0035	1.876		3482.05	3482.05	2.68		Si
SLV 8	2.09	-661.93	-6582	-0.0000157	0.0005615	0.0035	1.876		6767.14	6767.14	10.22		Si
SLV 8	3.99	1224.01	-3206	-0.0000129	0.0005615	0.0035	1.876		3136	3136	2.56		Si
SLV 5	2.09	1625.1	-11858	-0.0000311	0.0005615	0.0035	1.876		10504.17	10504.17	6.46		Si
SLV 5	3.99	-1497.76	-1533	-0.0000996	0.0005615	0.0035	1.5008		2307.84	2307.84	1.54		Si
SLV 12	2.09	-1284.2	-5332	-0.000017	0.0005615	0.0035	1.876		5694.56	5694.56	4.43		Si
SLV 12	3.99	1645.02	-3605	-0.0000168	0.0005615	0.0035	1.876		3492.74	3492.74	2.12		Si
SLV 11	2.09	-933.62	-5671	-0.0000156	0.0005615	0.0035	1.876		5989.3	5989.3	6.42		Si
SLV 11	3.99	1320.32	-3297	-0.0000137	0.0005615	0.0035	1.876		3218.48	3218.48	2.44		Si
SLV 1	2.09	1673.32	-11587	-0.0000309	0.0005615	0.0035	1.876		10286.27	10286.27	6.15		Si
SLV 1	3.99	-1149.97	-1545	-0.0000178	0.0005615	0.0035	1.5008		2318.76	2318.76	2.02		Si
SLV 2	2.09	1322.74	-11249	-0.0000282	0.0005615	0.0035	1.876		10010.9	10010.9	7.57		Si
SLV 2	3.99	-825.27	-1853	-0.0000084	0.0005615	0.0035	1.876		2597.86	2597.86	3.15		Si
SLV 6	2.09	1274.52	-11519	-0.0000284	0.0005615	0.0035	1.876		10230.85	10230.85	8.03		Si
SLV 6	3.99	-1173.07	-1841	-0.0000137	0.0005615	0.0035	1.5008		2586.98	2586.98	2.21		Si
SLV 9	2.09	1002.82	-10608	-0.0000251	0.0005615	0.0035	1.876		9489.79	9489.79	9.46		Si
SLV 9	3.99	-1076.75	-1932	-0.0000114	0.0005615	0.0035	1.5008		2669.47	2669.47	2.48		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	2.09	140.72	-13196	-11729	2362	1.876	1.876	-13894	8797	7426	42820	25279	4784	30063	No	12.73	Si
SLU 84	3.99	159.29	-4226	-3756	2415	1.876	1.876	-4449	7538	6363	42820	25279	4784	30063	No	12.45	Si
SLU 74	2.09	172.03	-12529	-11137	2261	1.876	1.876	-13192	8703	7347	42820	25279	4784	30063	No	13.3	Si
SLU 74	3.99	122.6	-3916	-3481	2237	1.876	1.876	-4124	7494	6327	42820	25279	4784	30063	No	13.44	Si
SLU 82	2.09	140.72	-13196	-11729	2362	1.876	1.876	-13894	8797	7426	42820	25279	4784	30063	No	12.73	Si
SLU 82	3.99	159.29	-4226	-3756	2415	1.876	1.876	-4449	7538	6363	42820	25279	4784	30063	No	12.45	Si
SLU 78	2.09	168.67	-12481	-11094	2182	1.876	1.876	-13142	8697	7342	42820	25279	4784	30063	No	13.78	Si
SLU 78	3.99	147.7	-3918	-3483	2236	1.876	1.876	-4126	7495	6327	42820	25279	4784	30063	No	13.45	Si
SLU 81	2.09	144.09	-13243	-11772	2441	1.876	1.876	-13944	8804	7432	42820	25279	4784	30063	No	12.31	Si
SLU 81	3.99	134.19	-4224	-3755	2416	1.876	1.876	-4447	7537	6363	42820	25279	4784	30063	No	12.44	Si
SLU 79	2.09	172.03	-12529	-11137	2261	1.876	1.876	-13192	8703	7347	42820	25279	4784	30063	No	13.3	Si
SLU 79	3.99	122.6	-3916	-3481	2237	1.876	1.876	-4124	7494	6327	42820	25279	4784	30063	No	13.44	Si
SLU 75	2.09	168.67	-12481	-11094	2182	1.876	1.876	-13142	8697	7342	42820	25279	4784	30063	No	13.78	Si
SLU 75	3.99	147.7	-3918	-3483	2236	1.876	1.876	-4126	7495	6327	42820	25279	4784	30063	No	13.45	Si
SLU 77	2.09	172.03	-12529	-11137	2261	1.876	1.876	-13192	8703	7347	42820	25279	4784	30063	No	13.3	Si
SLU 77	3.99	122.6	-3916	-3481	2237	1.876	1.876	-4124	7494	6327	42820	25279	4784	30063	No	13.44	Si
SLU 80	2.09	168.67	-12481	-11094	2182	1.876	1.876	-13142	8697	7342	42820	25279	4784	30063	No	13.78	Si
SLU 80	3.99	147.7	-3918	-3483	2236	1.876	1.876	-4126	7495	6327	42820	25279	4784	30063	No	13.45	Si
SLU 83	2.09	144.09	-13243	-11772	2441	1.876	1.876	-13944	8804	7432	42820	25279	4784	30063	No	12.31	Si
SLU 83	3.99	134.19	-4224	-3755	2416	1.876	1.876	-4447	7537	6363	42820	25279	4784	30063	No	12.44	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	oN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	2.09	1002.82	-10608	-9430	4349	1.876	1.876	-11170	12651	10680	42820	37919	4784	42703		9.82	Si
SLV 9	3.99	-1076.75	-1932	-1717	3301	1.5008	1.1419	0	0	0	42820	30335	3827	34162		10.35	Si
SLV 16	2.09	-1332.43	-5603	-4980	-2268	1.876	1.876	-5899	11597	9790	42820	37919	4784	42703		18.83	Si
SLV 16	3.99	1297.22	-3593	-3194	-1680	1.876	1.7308	-3783	11173	8702	42820	37919	4784	42703		25.42	Si
SLV 6	2.09	1274.52	-11519	-10239	5133	1.876	1.876	-12129	12842	10842	42820	37919	4784	42703		8.32	Si
SLV 6	3.99	-1173.07	-1841	-1636	3922	1.5008	0.902	0	0	0	42820	30335	3827	34162		8.71	Si
SLV 12	2.09	-1284.2	-5332	-4740	-2851	1.876	1.876	-5615	11540	9742	42820	37919	4784	42703		14.98	Si
SLV 12	3.99	1645.02	-3605	-3204	-1673	1.876	1.445	-3795	11176	7267	42820	37919	4784	42703		25.53	Si
SLV 1	2.09	1673.32	-11587	-10300	5224	1.876	1.876	-12201	12857	10854	42820	37919	4784	42703		8.17	Si
SLV 1	3.99	-1149.97	-1545	-1373	4603	1.5008	0.5805	0	0	0	42820	30335	3827	34162		7.42	Si
SLV 2	2.09	1322.74	-11249	-9999	4550	1.876	1.876	-11844	12785	10794	42820	37919	4784	42703		9.38	Si
SLV 2	3.99	-825.27	-1853	-1647	3929	1.876	1.4776	-2479	10912	7256	42820	37919	4784	42703		10.87	Si
SLV 5	2.09	1625.1	-11858	-10540	5807	1.876	1.876	-12485	12914	10902	42820	37919	4784	42703		7.35	Si
SLV 5	3.99	-1497.76	-1533	-1362	4596	1.5008	0	0	0	0	42820	30335	3827	34162		7.43	Si
SLV 10	2.09	652.24	-10270	-9129	3675	1.876	1.876	-10813	12579	10620	42820	37919	4784	42703		11.62	Si
SLV 10	3.99	-752.06	-2240	-1991	2626	1.876	1.8067	-2358	10888	8852	42820	37919	4784	42703		16.26	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	2.09	1092.39	-10106	-8983	3267	1.876	1.876	-10641	12545	10590	42820	37919	4784	42703		13.07	Si
SLV 3	3.99	-430.85	-1954	-1737	3313	1.876	1.876	-2058	10828	9141	42820	37919	4784	42703		12.89	Si
SLV 4	2.09	741.81	-9767	-8682	2592	1.876	1.876	-10284	12474	10530	42820	37919	4784	42703		16.47	Si
SLV 4	3.99	-106.15	-2262	-2011	2639	1.876	1.876	-2382	10893	9196	42820	37919	4784	42703		16.18	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.99 Wa 0.08 denominatore 8 yM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.47	5716	-4826	438.29	1045.13	2.38	Si
SLV 11	179667	0.47	5736	-4842	438.29	1048.58	2.39	Si
SLV 16	179667	0.47	5945	-5019	438.29	1085.28	2.48	Si
SLV 15	179667	0.47	5965	-5035	438.29	1088.72	2.48	Si
SLV 8	179667	0.47	6148	-5190	438.29	1120.77	2.56	Si
SLV 7	179667	0.47	6168	-5207	438.29	1124.2	2.56	Si
SLV 14	179667	0.47	6573	-5549	438.29	1194.78	2.73	Si
SLV 13	179667	0.47	6593	-5566	438.29	1198.19	2.73	Si
SLV 4	179667	0.47	7384	-6234	438.29	1334.8	3.05	Si
SLV 3	179667	0.47	7404	-6250	438.29	1338.16	3.05	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.99 Wa = 0.08 Ta = 0.0536

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-553	-7052	-221	3.108	604.2	0.937	48.2177	9.87673	Si
SLV 12	-542	-7465	-87	3.157	603.7	0.938	48.93418	9.87673	Si
SLV 15	-473	-7174	-221	3.18	600.5	0.943	49.01749	9.87673	Si
SLV 14	-425	-7935	-206	3.23	598.5	0.947	49.56636	9.87673	Si
SLV 11	-462	-7586	-87	3.231	600	0.944	49.74491	9.87673	Si
SLV 13	-345	-8056	-206	3.308	595.4	0.954	50.37023	9.87673	Si
SLV 8	-405	-8701	43	3.299	597.7	0.949	50.53604	9.87673	Si
SLV 7	-325	-8823	42	3.38	594.7	0.957	51.35254	9.87673	Si
SLV 4	-96	-11174	210	3.578	589.2	0.985	52.81661	9.87673	Si
SLV 10	-117	-10407	-39	3.611	589.5	0.982	53.46318	9.87673	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	19.968	SLV 23	Si
V_SLV	12.314	SLV 81	Si
PF_SLV	1.541	SLV 5	Si
V_SLV	7.353	SLV 5	Si
PFFP_SLV	2.385	SLV 12	Si
R_SLV	4.882	SLV 16	Si

Maschio 18

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota s.	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
23.909	18.116	32.679	17.66	L2	L3	8.782	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, yM = 3

Verifica condotta secondo CNR-DT 215



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 67	1.09	80461.51	-40459	-0.0000368	0.0004492	0.0035	8.7818	162765.49	174403.06	174403.06	2.17	No	Si
SLU 67	4.89	1115.29	-10932	-0.0000042	0.0004492	0.0035	8.7818	46913.17	54584.35	54584.35	48.94	No	Si
SLU 69	1.09	80569.95	-40523	-0.0000368	0.0004492	0.0035	8.7818	162998.96	174652.97	174652.97	2.17	No	Si
SLU 69	4.89	1110.61	-10935	-0.0000042	0.0004492	0.0035	8.7818	46928.37	54599.52	54599.52	49.16	No	Si
SLU 70	1.09	80461.51	-40459	-0.0000368	0.0004492	0.0035	8.7818	162765.49	174403.06	174403.06	2.17	No	Si
SLU 70	4.89	1115.29	-10932	-0.0000042	0.0004492	0.0035	8.7818	46913.17	54584.35	54584.35	48.94	No	Si
SLU 84	1.09	98747.94	-50861	-0.0000457	0.0004492	0.0035	8.7818	199802.31	214419.51	214419.51	2.17	No	Si
SLU 84	4.89	1415.12	-23515	-0.0000089	0.0004492	0.0035	8.7818	98224.7	106805.06	106805.06	75.47	No	Si
SLU 68	1.09	80389.22	-40416	-0.0000368	0.0004492	0.0035	8.7818	162609.8	174236.44	174236.44	2.17	No	Si
SLU 68	4.89	1118.42	-10929	-0.0000042	0.0004492	0.0035	8.7818	46903.03	54574.23	54574.23	48.8	No	Si
SLU 72	1.09	80461.51	-40459	-0.0000368	0.0004492	0.0035	8.7818	162765.49	174403.06	174403.06	2.17	No	Si
SLU 72	4.89	1115.29	-10932	-0.0000042	0.0004492	0.0035	8.7818	46913.17	54584.35	54584.35	48.94	No	Si
SLU 71	1.09	80569.95	-40523	-0.0000368	0.0004492	0.0035	8.7818	162998.96	174652.97	174652.97	2.17	No	Si
SLU 71	4.89	1110.61	-10935	-0.0000042	0.0004492	0.0035	8.7818	46928.37	54599.52	54599.52	49.16	No	Si
SLU 66	1.09	80569.95	-40523	-0.0000368	0.0004492	0.0035	8.7818	162998.96	174652.97	174652.97	2.17	No	Si
SLU 66	4.89	1110.61	-10935	-0.0000042	0.0004492	0.0035	8.7818	46928.37	54599.52	54599.52	49.16	No	Si
SLU 64	1.09	80569.95	-40523	-0.0000368	0.0004492	0.0035	8.7818	162998.96	174652.97	174652.97	2.17	No	Si
SLU 64	4.89	1110.61	-10935	-0.0000042	0.0004492	0.0035	8.7818	46928.37	54599.52	54599.52	49.16	No	Si
SLU 65	1.09	80389.22	-40416	-0.0000368	0.0004492	0.0035	8.7818	162609.8	174236.44	174236.44	2.17	No	Si
SLU 65	4.89	1118.42	-10929	-0.0000042	0.0004492	0.0035	8.7818	46903.03	54574.23	54574.23	48.8	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	1.09	94245.86	-35553	-0.0000444	0.0006738	0.0035	8.7818		157346.16	157346.16	1.67		Si
SLV 16	4.89	1993.12	-10300	-0.0000042	0.0006738	0.0035	8.7818		52132.33	52132.33	26.16		Si
SLV 5	1.09	59951.97	-34652	-0.0000028	0.0006738	0.0035	8.7818		153657.59	153657.59	2.56		Si
SLV 5	4.89	938.09	-10185	-0.0000039	0.0006738	0.0035	8.7818		51642.89	51642.89	55.05		Si
SLV 12	1.09	67327.15	-30113	-0.0000301	0.0006738	0.0035	8.7818		135082.25	135082.25	2.01		Si
SLV 12	4.89	828.26	-9762	-0.0000037	0.0006738	0.0035	8.7818		49833.81	49833.81	60.17		Si
SLV 13	1.09	100346.74	-38440	-0.0000469	0.0006738	0.0035	8.7818		169025.12	169025.12	1.68		Si
SLV 13	4.89	2050.84	-10525	-0.0000043	0.0006738	0.0035	8.7818		53087.89	53087.89	25.89		Si
SLV 11	1.09	70548.9	-31104	-0.0000316	0.0006738	0.0035	8.7818		139138.89	139138.89	1.97		Si
SLV 11	4.89	570.81	-9789	-0.0000037	0.0006738	0.0035	8.7818		49947.22	49947.22	87.5		Si
SLV 7	1.09	50354.85	-28335	-0.0000232	0.0006738	0.0035	8.7818		127800.3	127800.3	2.54		Si
SLV 7	4.89	-112.47	-9526	-0.0000035	0.0006738	0.0035	8.7818		87610.73	87610.73	778.94		Si
SLV 9	1.09	80146.02	-37421	-0.0000359	0.0006738	0.0035	8.7818		164917.93	164917.93	2.06		Si
SLV 9	4.89	1621.38	-10449	-0.0000042	0.0006738	0.0035	8.7818		52764.21	52764.21	32.54		Si
SLV 10	1.09	76924.27	-36429	-0.0000345	0.0006738	0.0035	8.7818		160922.86	160922.86	2.09		Si
SLV 10	4.89	1878.83	-10422	-0.0000042	0.0006738	0.0035	8.7818		52651.26	52651.26	28.02		Si
SLV 15	1.09	97467.61	-36545	-0.0000461	0.0006738	0.0035	8.7818		161388.5	161388.5	1.66		Si
SLV 15	4.89	1735.67	-10327	-0.0000042	0.0006738	0.0035	8.7818		52245.27	52245.27	30.1		Si
SLV 14	1.09	97125	-37448	-0.0000453	0.0006738	0.0035	8.7818		165030.06	165030.06	1.7		Si
SLV 14	4.89	2308.29	-10498	-0.0000044	0.0006738	0.0035	8.7818		52974.95	52974.95	22.95		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	1.09	93262.01	-47740	-38192	11519	8.7818	7.3121	-9664	9622	31661	122342	142018	44787	154003	No	13.37	Si
SLU 80	4.89	1325.17	-19740	-15792	11385	8.7818	8.7818	-3996	8866	35037	122342	142018	44787	157380	No	13.82	Si
SLU 75	1.09	93262.01	-47740	-38192	11519	8.7818	7.3121	-9664	9622	31661	122342	142018	44787	154003	No	13.37	Si
SLU 75	4.89	1325.17	-19740	-15792	11385	8.7818	8.7818	-3996	8866	35037	122342	142018	44787	157380	No	13.82	Si
SLU 79	1.09	93370.45	-47804	-38243	11599	8.7818	7.3132	-9677	9624	31671	122342	142018	44787	154013	No	13.28	Si
SLU 79	4.89	1320.49	-19744	-15795	11466	8.7818	8.7818	-3997	8866	35038	122342	142018	44787	157380	No	13.73	Si
SLU 83	1.09	98856.38	-50925	-40740	12095	8.7818	7.3491	-10309	9708	32105	122342	142018	44787	154447	No	12.77	Si
SLU 83	4.89	1410.43	-23519	-18815	11950	8.7818	8.7818	-4761	8968	35440	122342	142018	44787	157783	No	13.2	Si
SLU 81	1.09	98856.38	-50925	-40740	12095	8.7818	7.3491	-10309	9708	32105	122342	142018	44787	154447	No	12.77	Si
SLU 81	4.89	1410.43	-23519	-18815	11950	8.7818	8.7818	-4761	8968	35440	122342	142018	44787	157783	No	13.2	Si
SLU 82	1.09	98747.94	-50861	-40689	12015	8.7818	7.3481	-10296	9706	32095	122342	142018	44787	154437	No	12.85	Si
SLU 82	4.89	1415.12	-23515	-18812	11869	8.7818	8.7818	-4760	8968	35440	122342	142018	44787	157782	No	13.29	Si
SLU 84	1.09	98747.94	-50861	-40689	12015	8.7818	7.3481	-10296	9706	32095	122342	142018	44787	154437	No	12.85	Si
SLU 84	4.89	1415.12	-23515	-18812	11869	8.7818	8.7818	-4760	8968	35440	122342	142018	44787	157782	No	13.29	Si
SLU 77	1.09	93370.45	-47804	-38243	11599	8.7818	7.3132	-9677	9624	31671	122342	142018	44787	154013	No	13.28	Si
SLU 77	4.89	1320.49	-19744	-15795	11466	8.7818	8.7818	-3997	8866	35038	122342	142018	44787	157380	No	13.73	Si
SLU 78	1.09	93262.01	-47740	-38192	11519	8.7818	7.3121	-9664	9622	31661	122342	142018	44787	154003	No	13.37	Si
SLU 78	4.89	1325.17	-19740	-15792	11385	8.7818	8.7818	-3996	8866	35037	122342	142018	44787	157380	No	13.82	Si
SLU 74	1.09	93370.45	-47804	-38243	11599	8.7818	7.3132	-9677	9624	31671	122342	142018	44787	154013	No	13.28	Si
SLU 74	4.89	1320.49	-19744	-15795	11466	8.7818	8.7818	-3997	8866	35038	122342	142018	44787	157380	No	13.73	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	1.09	26932.38	-26325	-21060	-7828	8.7818	8.7818	-5329	13566	53610	122342	213027	44787	175952		22.48	Si
SLV 4	4.89	-284.49	-9423	-7538	-1555	8.7818	8.7818	-1908	12882	50905	122342	213027	44787	173248		111.45	Si
SLV 13	1.09	100346.74	-38440	-30752	24148	8.7818	5.3412	-7782	14056	33785	122342	213027	44787	156128		6.47	Si
SLV 13	4.89	2050.84	-10525	-8420	17703	8.7818	8.7818	-2131	12926	51082	122342	213027	44787	173424		9.8	Si
SLV 5	1.09	59951.97	-34652	-27722	11852	8.7818	7.9824	-7015	13903	49940	122342	213027	44787	172283		14.54	Si
SLV 5	4.89	938.09	-10185	-8148	11781	8.7818	8.7818	-2062	12912	51027	122342	213027	44787	173370		14.72	Si
SLV 6	1.09	56730.23	-33661	-26928	9592	8.7818	8.1166	-6814	13863	50634	122342	213027	44787	172976		18.03	Si
SLV 6	4.89	1195.54	-10159	-8127	9532	8.7818	8.7818	-2057	12911	51023	122342	213027	44787	173366		18.19	Si
SLV 14	1.09	97125	-37448	-29959	21888	8.7818	5.392	-7581	14016	34009	122342	213027	44787	156351		7.14	Si
SLV 14	4.89	2308.29	-10498	-8398	15454	8.7818	8.7818	-2125	12925	51077	122342	213027	44787	173420		11.22	Si
SLV 9	1.09	80146.02	-37421	-29936	19608	8.7818	6.7474	-7575	14015	42555	122342	213027	44787	164897		8.41	Si
SLV 9	4.89	1621.38	-10449	-8359	16036	8.7818	8.7818	-2115	12923	51069	122342	213027	44787	173412		10.81	Si
SLV 15	1.09	97467.61	-36545	-29236	20284	8.7818	5.1715	-7398	13980	32533	122342	213027	44787	154875		7.64	Si
SLV 15	4.89	1735.67	-10327	-8261	14877	8.7818	8.7818	-2091	12918	51050	122342	213027	44787	173392		11.65	Si
SLV 10	1.09	76924.27	-36429	-29143	17348	8.7818	6.8379	-7375	13975	43002	122342	213027	44787	165344		9.53	Si
SLV 10	4.89	1878.83	-10422	-8338	13786	8.7818	8.7818	-2110	12922	51065	122342	213027	44787	173408		12.58	Si



Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	1.09	70548.9	-31104	-24883	6727	8.7818	6.3682	-6297	13759	39430	122342	213027	44787	161772		24.05	Si
SLV 11	4.89	570.81	-9789	-7831	6617	8.7818	8.7818	-1982	12896	50964	122342	213027	44787	173306		26.19	Si
SLV 16	1.09	94245.86	-35553	-28443	18024	8.7818	5.2202	-7197	13939	32745	122342	213027	44787	155088		8.6	Si
SLV 16	4.89	1993.12	-10300	-8240	12628	8.7818	8.7818	-2085	12917	51046	122342	213027	44787	173388		13.73	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRMC D.M. 17-01-18 (N.T.C.)

quota 2.99 Ta 0.05 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 4	-16333	0.47	2086.32	3592.15	5659.16	4625.65	2.22	Si
SLV 3	-16790	0.47	2086.32	3690.27	5768.52	4729.39	2.27	Si
SLV 2	-16925	0.47	2086.32	3719.18	5800.76	4759.97	2.28	Si
SLV 1	-17382	0.47	2086.32	3817.13	5910.11	4863.62	2.33	Si
SLV 8	-17981	0.47	2086.32	3945.27	6053.38	4999.33	2.4	Si
SLV 7	-18438	0.47	2086.32	4042.93	6162.43	5102.68	2.45	Si
SLV 6	-19953	0.47	2086.32	4365.84	6523.68	5444.76	2.61	Si
SLV 12	-19985	0.47	2086.32	4372.51	6531.17	5451.84	2.61	Si
SLV 5	-20410	0.47	2086.32	4462.93	6632.64	5547.78	2.66	Si
SLV 11	-20442	0.47	2086.32	4469.6	6640.12	5554.86	2.66	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.99 Wa = 0.08 Ta = 0.0536

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-10185	-34652	3694	2.018	3379.6	0.891	32.92792	9.87673	Si
SLV 6	-10159	-33661	3696	2.02	3377.3	0.891	32.9613	9.87673	Si
SLV 9	-10449	-37421	2884	2.031	3402.2	0.891	33.14117	9.87673	Si
SLV 10	-10422	-36429	2885	2.033	3399.9	0.891	33.17455	9.87673	Si
SLV 11	-9789	-31104	-3720	2.051	3345.7	0.891	33.43214	9.87673	Si
SLV 12	-9762	-30113	-3719	2.053	3343.5	0.891	33.46869	9.87673	Si
SLV 15	-10327	-36545	-2354	2.063	3391.7	0.891	33.66247	9.87673	Si
SLV 16	-10300	-35553	-2353	2.065	3389.4	0.891	33.69872	9.87673	Si
SLV 7	-9526	-28335	-2910	2.109	3323.4	0.892	34.35949	9.87673	Si
SLV 8	-9499	-27344	-2908	2.111	3321.2	0.892	34.39733	9.87673	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.167	SLU 65	Si
V_SLU	12.769	SLU 81	Si
PF_SLV	1.656	SLV 15	Si
V_SLV	6.466	SLV 13	Si
PFFP_SLV	2.217	SLV 4	Si
R_SLV	3.334	SLV 5	Si

Maschio 19

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	I	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
24.382	27.161	25.828	27.161	L2	L3	1.445	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	ϵ_{fd}	y_F,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 70	2.09	-1561.82	-5427	-0.0000286	0.0003743	0.0035	1.4454	3600.62	4168.79	4168.79	2.67	No	Si
SLU 70	3.99	2236.38	-5678	-0.0000401	0.0003743	0.0035	1.4454	3751.44	3945.61	3945.61	1.76	No	Si
SLU 71	2.09	-1588.95	-5417	-0.0000289	0.0003743	0.0035	1.4454	3594.43	4162.44	4162.44	2.62	No	Si
SLU 71	3.99	2251.58	-5717	-0.0000404	0.0003743	0.0035	1.4454	3774.99	3970.08	3970.08	1.76	No	Si
SLU 66	2.09	-1588.95	-5417	-0.0000289	0.0003743	0.0035	1.4454	3594.43	4162.44	4162.44	2.62	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 66	3.99	2251.58	-5717	-0.0000404	0.0003743	0.0035	1.4454	3774.99	3970.08	3970.08	1.76	No	Si
SLU 69	2.09	-1588.95	-5417	-0.0000289	0.0003743	0.0035	1.4454	3594.43	4162.44	4162.44	2.62	No	Si
SLU 69	3.99	2251.58	-5717	-0.0000404	0.0003743	0.0035	1.4454	3774.99	3970.08	3970.08	1.76	No	Si
SLU 81	2.09	-2009.9	-6920	-0.000037	0.0003743	0.0035	1.4454	4478.65	5092.75	5092.75	2.53	No	Si
SLU 81	3.99	3202.7	-8577	-0.0000583	0.0003743	0.0035	1.4454	5395.79	5632.74	5632.74	1.76	No	Si
SLU 84	2.09	-1982.76	-6931	-0.0000367	0.0003743	0.0035	1.4454	4484.51	5099.02	5099.02	2.57	No	Si
SLU 84	3.99	3187.5	-8538	-0.000058	0.0003743	0.0035	1.4454	5374.7	5612.46	5612.46	1.76	No	Si
SLU 67	2.09	-1561.82	-5427	-0.0000286	0.0003743	0.0035	1.4454	3600.62	4168.79	4168.79	2.67	No	Si
SLU 67	3.99	2236.38	-5678	-0.0000401	0.0003743	0.0035	1.4454	3751.44	3945.61	3945.61	1.76	No	Si
SLU 82	2.09	-1982.76	-6931	-0.0000367	0.0003743	0.0035	1.4454	4484.51	5099.02	5099.02	2.57	No	Si
SLU 82	3.99	3187.5	-8538	-0.000058	0.0003743	0.0035	1.4454	5374.7	5612.46	5612.46	1.76	No	Si
SLU 83	2.09	-2009.9	-6920	-0.000037	0.0003743	0.0035	1.4454	4478.65	5092.75	5092.75	2.53	No	Si
SLU 83	3.99	3202.7	-8577	-0.0000583	0.0003743	0.0035	1.4454	5395.79	5632.74	5632.74	1.76	No	Si
SLU 64	2.09	-1588.95	-5417	-0.0000289	0.0003743	0.0035	1.4454	3594.43	4162.44	4162.44	2.62	No	Si
SLU 64	3.99	2251.58	-5717	-0.0000404	0.0003743	0.0035	1.4454	3774.99	3970.08	3970.08	1.76	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, $\gamma_M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	2.09	-3034.44	-2182	-0.0016134	0.0005615	0.0035	1.1563		2046.21	2046.21	0.67		No
SLV 1	3.99	3538.72	-6644	-0.0000826	0.0005615	0.0035	1.4454		4656.27	4656.27	1.32		Si
SLV 2	2.09	-2836.96	-2626	-0.0010294	0.0005615	0.0035	1.1563		2352.41	2352.41	0.83		No
SLV 2	3.99	3319.7	-6442	-0.0000729	0.0005615	0.0035	1.4454		4525.04	4525.04	1.36		Si
SLV 5	2.09	-3234.59	-2182	-0.0019169	0.0005615	0.0035	1.1563		2046.86	2046.86	0.63		No
SLV 5	3.99	3556.62	-6938	-0.0000778	0.0005615	0.0035	1.4454		4846.91	4846.91	1.36		Si
SLV 10	2.09	-2301.82	-3528	-0.0001096	0.0005615	0.0035	1.1563		2969.35	2969.35	1.29		Si
SLV 10	3.99	2605.96	-5959	-0.000048	0.0005615	0.0035	1.4454		4210.7	4210.7	1.62		Si
SLV 7	2.09	-211.79	-5183	-0.0000142	0.0005615	0.0035	1.4454		4072.26	4072.26	19.23		Si
SLV 7	3.99	1066.65	-3510	-0.0000189	0.0005615	0.0035	1.4454		2575.05	2575.05	2.41		Si
SLV 4	2.09	-1930.11	-3526	-0.000046	0.0005615	0.0035	1.1563		2968.17	2968.17	1.54		Si
SLV 4	3.99	2572.7	-5414	-0.0000504	0.0005615	0.0035	1.4454		3851.42	3851.42	1.5		Si
SLV 9	2.09	-2499.31	-3083	-0.0004259	0.0005615	0.0035	1.1563		2666.25	2666.25	1.07		Si
SLV 9	3.99	2824.98	-6161	-0.0000539	0.0005615	0.0035	1.4454		4342.6	4342.6	1.54		Si
SLV 13	2.09	-583.49	-5185	-0.0000178	0.0005615	0.0035	1.4454		4073.4	4073.4	6.98		Si
SLV 13	3.99	1099.9	-4055	-0.0000202	0.0005615	0.0035	1.4454		2944.6	2944.6	2.68		Si
SLV 3	2.09	-2127.6	-3082	-0.0001508	0.0005615	0.0035	1.1563		2665.07	2665.07	1.25		Si
SLV 3	3.99	2791.72	-5616	-0.0000577	0.0005615	0.0035	1.4454		3985.03	3985.03	1.43		Si
SLV 6	2.09	-3037.1	-2627	-0.0012762	0.0005615	0.0035	1.1563		2353.05	2353.05	0.77		No
SLV 6	3.99	3337.6	-6736	-0.0000693	0.0005615	0.0035	1.4454		4715.63	4715.63	1.41		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma_M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σ_N	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	2.09	-2009.9	-6920	-6151	-4558	1.4454	1.2968	-10609	8359	4878	42820	19477	3686	23163	No	5.08	Si
SLU 81	3.99	3202.7	-8577	-7624	-4575	1.4454	1.0479	-11721	8507	4012	42820	19477	3686	23163	No	5.06	Si
SLU 78	2.09	-1856.48	-6479	-5759	-4155	1.4454	1.3086	-9841	8257	4862	42820	19477	3686	23163	No	5.57	Si
SLU 78	3.99	2902.16	-7680	-6826	-4154	1.4454	1.0344	-10495	8344	3884	42820	19477	3686	23163	No	5.58	Si
SLU 79	2.09	-1883.61	-6469	-5750	-4187	1.4454	1.2946	-9929	8268	4817	42820	19477	3686	23163	No	5.53	Si
SLU 79	3.99	2917.36	-7719	-6861	-4204	1.4454	1.0343	-10549	8351	3887	42820	19477	3686	23163	No	5.51	Si
SLU 82	2.09	-1982.76	-6931	-6160	-4526	1.4454	1.3098	-10522	8347	4920	42820	19477	3686	23163	No	5.12	Si
SLU 82	3.99	3187.5	-8538	-7589	-4525	1.4454	1.0481	-11668	8500	4009	42820	19477	3686	23163	No	5.12	Si
SLU 77	2.09	-1883.61	-6469	-5750	-4187	1.4454	1.2946	-9929	8268	4817	42820	19477	3686	23163	No	5.53	Si
SLU 77	3.99	2917.36	-7719	-6861	-4204	1.4454	1.0343	-10549	8351	3887	42820	19477	3686	23163	No	5.51	Si
SLU 84	2.09	-1982.76	-6931	-6160	-4526	1.4454	1.3098	-10522	8347	4920	42820	19477	3686	23163	No	5.12	Si
SLU 84	3.99	3187.5	-8538	-7589	-4525	1.4454	1.0481	-11668	8500	4009	42820	19477	3686	23163	No	5.12	Si
SLU 74	2.09	-1883.61	-6469	-5750	-4187	1.4454	1.2946	-9929	8268	4817	42820	19477	3686	23163	No	5.53	Si
SLU 74	3.99	2917.36	-7719	-6861	-4204	1.4454	1.0343	-10549	8351	3887	42820	19477	3686	23163	No	5.51	Si
SLU 75	2.09	-1856.48	-6479	-5759	-4155	1.4454	1.3086	-9841	8257	4862	42820	19477	3686	23163	No	5.57	Si
SLU 75	3.99	2902.16	-7680	-6826	-4154	1.4454	1.0344	-10495	8344	3884	42820	19477	3686	23163	No	5.58	Si
SLU 80	2.09	-1856.48	-6479	-5759	-4155	1.4454	1.3086	-9841	8257	4862	42820	19477	3686	23163	No	5.57	Si
SLU 80	3.99	2902.16	-7680	-6826	-4154	1.4454	1.0344	-10495	8344	3884	42820	19477	3686	23163	No	5.58	Si
SLU 83	2.09	-2009.9	-6920	-6151	-4558	1.4454	1.2968	-10609	8359	4878	42820	19477	3686	23163	No	5.08	Si
SLU 83	3.99	3202.7	-8577	-7624	-4575	1.4454	1.0479	-11721	8507	4012	42820	19477	3686	23163	No	5.06	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma_M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	2.09	-386.01	-5629	-5004	-459	1.4454	1.4454	-7693	11955	7776	42820	29215	3686	32901		71.6	Si
SLV 14	3.99	880.88	-3853	-3425	-1305	1.4454	1.4454	-5265	11470	7460	42820	29215	3686	32901		25.2	Si
SLV 10	2.09	-2301.82	-3528	-3136	-4275	1.1563	0.2107	0	0	0	42820	23372	2949	26321		6.16	Si
SLV 10	3.99	2605.96	-5959	-5297	-4557	1.4454	0.8561	-8143	12045	4640	42820	29215	3686	32901		7.22	Si
SLV 3	2.09	-2127.6	-3082	-2739	-4904	1.1563	0.0969	0	0	0	42820	23372	2949	26321		5.37	Si
SLV 3	3.99	2791.72	-5616	-4992	-4081	1.4454	0.6767	-7674	11952	3640	42820	29215	3686	32901		8.06	Si
SLV 4	2.09	-1930.11	-3526	-3134	-4439	1.1563	0.526	0	0	0	42820	23372	2949	26321		5.93	Si
SLV 4	3.99	2572.7	-5414	-4812	-3617	1.4454	0.7424	-7398	11896	3974	42820	29215	3686	32901		9.1	Si
SLV 13	2.09	-583.49	-5185	-4609	-924	1.4454	1.4454	-7085	11834	7697	42820	29215	3686	32901		35.59	Si
SLV 13	3.99	1099.9	-4055	-3604	-1770	1.4454	1.3543	-5541	11525	7024	42820	29215	3686	32901		18.59	Si
SLV 9	2.09	-2499.31	-3083	-2741	-4740	1.1563	0	0	0	0	42820	23372	2949	26321		5.55	Si
SLV 9	3.99	2824.98	-6161	-5476	-5022	1.4454	0.7925	-8419	12101	4315	42820	29215	3686	32901		6.55	Si
SLV 6	2.09	-3037.1	-2627	-2335	-5948	1.1563	0	0	0	0	42820	23372	2949	26321		4.43	Si
SLV 6	3.99	3337.6	-6736	-5987	-5733	1.4454	0.6815	-9205	12258	3759	42820	29215	3686	32901		5.74	Si
SLV 2	2.09	-2836.96	-2626	-2334	-6037	1.1563	0	0	0	0	42820	23372	2949	26321		4.36	Si
SLV 2	3.99	3319.7	-6442	-5726	-5227	1.4454	0.6221	-8804	12177	3409	42820	29215	3686	32901		6.29	Si
SLV 5	2.09	-3234.59	-2182	-1940	-6413	1.1563	0	0	0	0	42820	23372	2949	26321		4.1	Si
SLV 5	3.99	3556.62	-6938	-6167	-6198	1.4454	0.6302	-9481	12313	3492	42820	29215	3686	32901		5.31	Si
SLV 1	2.09	-3034.44	-2182	-1939	-6502	1.1563	0	0	0	0	42820	23372	2949	26321		4.05	Si
SLV 1	3.99	3538.72	-6644	-5936	-5692	1.4454	0.5703	-9080	12233	3139	42820	29215	3686	32901		5.78	Si



Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.99 Wa 0.08 denominatore 8 $\gamma_M = 2$

Comb.	fd	Sa	σ_0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.47	7119	-4631	337.69	993.32	2.94	Si
SLV 1	179667	0.47	7124	-4633	337.69	993.89	2.94	Si
SLV 7	179667	0.47	7197	-4681	337.69	1003.65	2.97	Si
SLV 5	179667	0.47	7212	-4691	337.69	1005.55	2.98	Si
SLV 11	179667	0.47	7268	-4728	337.69	1013.07	3	Si
SLV 9	179667	0.47	7283	-4737	337.69	1014.96	3.01	Si
SLV 4	179667	0.47	7308	-4753	337.69	1018.26	3.02	Si
SLV 2	179667	0.47	7312	-4756	337.69	1018.83	3.02	Si
SLV 15	179667	0.47	7356	-4785	337.69	1024.7	3.03	Si
SLV 13	179667	0.47	7360	-4787	337.69	1025.27	3.04	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.99 Wa = 0.08 Ta = 0.0536

Comb.	N top	N base	V orto	α_0	M*	e*	a0*	aLim	Verifica
SLV 5	-2579	-5115	115	1.753	637.2	0.889	28.64265	9.87673	Si
SLV 6	-2524	-5395	115	1.773	632.1	0.889	28.96959	9.87673	Si
SLV 1	-2495	-5277	66	1.793	629.4	0.889	29.31033	9.87673	Si
SLV 2	-2440	-5557	66	1.814	624.3	0.889	29.65005	9.87673	Si
SLV 9	-2401	-5304	93	1.823	620.7	0.889	29.80012	9.87673	Si
SLV 10	-2345	-5584	93	1.844	615.7	0.889	30.15142	9.87673	Si
SLV 3	-2245	-5605	3	1.905	606.5	0.889	31.14118	9.87673	Si
SLV 4	-2190	-5884	3	1.928	601.5	0.889	31.51894	9.87673	Si
SLV 13	-1900	-5907	-6	2.058	575.7	0.889	33.62612	9.87673	Si
SLV 14	-1845	-6187	-6	2.085	570.8	0.89	34.06151	9.87673	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.759	SLU 81	Si
V_SLU	5.063	SLU 81	Si
PF_SLV	0.633	SLV 5	No
V_SLV	4.048	SLV 1	Si
PFFP_SLV	2.942	SLV 3	Si
R_SLV	2.9	SLV 5	Si

Maschio 20

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
26.828	27.161	30.248	27.161	L2	L3	3.42	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	ϵ_{fd}	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 51	2.09	-5613.16	-13994	-0.0000239	0.0003743	0.0035	3.4199	21791.91	25488.8	25488.8	4.54	No	Si
SLU 51	3.99	3421.94	-6531	-0.0000124	0.0003743	0.0035	3.4199	10702.09	11392.25	11392.25	3.33	No	Si
SLU 46	2.09	-5613.16	-13994	-0.0000239	0.0003743	0.0035	3.4199	21791.91	25488.8	25488.8	4.54	No	Si
SLU 46	3.99	3421.94	-6531	-0.0000124	0.0003743	0.0035	3.4199	10702.09	11392.25	11392.25	3.33	No	Si



Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	2.09	-5665.37	-13934	-0.0000239	0.0003743	0.0035	3.4199	21708	25402.14	25402.14	4.48	No	Si
SLU 48	3.99	3449.4	-6471	-0.0000124	0.0003743	0.0035	3.4199	10608.46	11296.75	11296.75	3.27	No	Si
SLU 47	2.09	-5578.36	-14034	-0.0000239	0.0003743	0.0035	3.4199	21847.8	25546.59	25546.59	4.58	No	Si
SLU 47	3.99	3403.64	-6571	-0.0000124	0.0003743	0.0035	3.4199	10764.47	11455.91	11455.91	3.37	No	Si
SLU 44	2.09	-5578.36	-14034	-0.0000239	0.0003743	0.0035	3.4199	21847.8	25546.59	25546.59	4.58	No	Si
SLU 44	3.99	3403.64	-6571	-0.0000124	0.0003743	0.0035	3.4199	10764.47	11455.91	11455.91	3.37	No	Si
SLU 45	2.09	-5665.37	-13934	-0.0000239	0.0003743	0.0035	3.4199	21708	25402.14	25402.14	4.48	No	Si
SLU 45	3.99	3449.4	-6471	-0.0000124	0.0003743	0.0035	3.4199	10608.46	11296.75	11296.75	3.27	No	Si
SLU 1	2.09	-4529.99	-11294	-0.0000192	0.0003743	0.0035	3.4199	17920.31	21442.65	21442.65	4.73	No	Si
SLU 1	3.99	2763.35	-5534	-0.0000102	0.0003743	0.0035	3.4199	9128.08	9794.38	9794.38	3.54	No	Si
SLU 50	2.09	-5665.37	-13934	-0.0000239	0.0003743	0.0035	3.4199	21708	25402.14	25402.14	4.48	No	Si
SLU 50	3.99	3449.4	-6471	-0.0000124	0.0003743	0.0035	3.4199	10608.46	11296.75	11296.75	3.27	No	Si
SLU 49	2.09	-5613.16	-13994	-0.0000239	0.0003743	0.0035	3.4199	21791.91	25488.8	25488.8	4.54	No	Si
SLU 49	3.99	3421.94	-6531	-0.0000124	0.0003743	0.0035	3.4199	10702.09	11392.25	11392.25	3.33	No	Si
SLU 43	2.09	-5665.37	-13934	-0.0000239	0.0003743	0.0035	3.4199	21708	25402.14	25402.14	4.48	No	Si
SLU 43	3.99	3449.4	-6471	-0.0000124	0.0003743	0.0035	3.4199	10608.46	11296.75	11296.75	3.27	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	2.09	-1227.92	-15885	-0.0000179	0.0005615	0.0035	3.4199		28874.26	28874.26	23.51		Si
SLV 8	3.99	2510.29	-10548	-0.0000148	0.0005615	0.0035	3.4199		17968.2	17968.2	7.16		Si
SLV 9	2.09	-8721.97	-10442	-0.000027	0.0005615	0.0035	3.4199		20418.13	20418.13	2.34		Si
SLV 9	3.99	3583.17	-4216	-0.000011	0.0005615	0.0035	3.4199		7699.66	7699.66	2.15		Si
SLV 7	2.09	-2193.61	-15874	-0.0000196	0.0005615	0.0035	3.4199		28857.06	28857.06	13.16		Si
SLV 7	3.99	3407.1	-10537	-0.0000163	0.0005615	0.0035	3.4199		17950.76	17950.76	5.27		Si
SLV 1	2.09	-12728.34	-12123	-0.000042	0.0005615	0.0035	2.7359		23028.93	23028.93	1.81		Si
SLV 1	3.99	8201.94	-6197	-0.0000366	0.0005615	0.0035	3.4199		10960.97	10960.97	1.34		Si
SLV 2	2.09	-11762.64	-12134	-0.0000374	0.0005615	0.0035	2.7359		23045.9	23045.9	1.96		Si
SLV 2	3.99	7305.13	-6208	-0.0000263	0.0005615	0.0035	3.4199		10978.87	10978.87	1.5		Si
SLV 3	2.09	-9730.9	-13789	-0.0000312	0.0005615	0.0035	3.4199		25607.8	25607.8	2.63		Si
SLV 3	3.99	7376.21	-8132	-0.0000229	0.0005615	0.0035	3.4199		14103.8	14103.8	1.91		Si
SLV 10	2.09	-7756.28	-10453	-0.0000244	0.0005615	0.0035	3.4199		20435.49	20435.49	2.63		Si
SLV 10	3.99	2686.35	-4227	-0.0000888	0.0005615	0.0035	3.4199		7717.8	7717.8	2.87		Si
SLV 5	2.09	-12185.07	-10321	-0.0000446	0.0005615	0.0035	2.7359		20226.61	20226.61	1.66		Si
SLV 5	3.99	6159.53	-4089	-0.0000461	0.0005615	0.0035	3.4199		7489.7	7489.7	1.22		Si
SLV 4	2.09	-8765.2	-13800	-0.0000291	0.0005615	0.0035	3.4199		25624.87	25624.87	2.92		Si
SLV 4	3.99	6479.4	-8143	-0.0000201	0.0005615	0.0035	3.4199		14121.46	14121.46	2.18		Si
SLV 6	2.09	-11219.37	-10332	-0.0000378	0.0005615	0.0035	2.7359		20243.99	20243.99	1.8		Si
SLV 6	3.99	5262.72	-4100	-0.0000217	0.0005615	0.0035	3.4199		7507.92	7507.92	1.43		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	2.09	-7170.5	-20537	-18255	-6090	3.4199	3.4199	-11862	8526	13121	42820	46083	8721	54804	No	9	Si
SLU 75	3.99	4413.75	-13000	-11555	-6090	3.4199	3.4199	-7509	7946	12228	42820	46083	8721	54804	No	9	Si
SLU 81	2.09	-7610.63	-22347	-19864	-6466	3.4199	3.4199	-12907	8665	13336	42820	46083	8721	54804	No	8.48	Si
SLU 81	3.99	4687.57	-14809	-13164	-6466	3.4199	3.4199	-8554	8085	12442	42820	46083	8721	54804	No	8.48	Si
SLU 78	2.09	-7170.5	-20537	-18255	-6090	3.4199	3.4199	-11862	8526	13121	42820	46083	8721	54804	No	9	Si
SLU 78	3.99	4413.75	-13000	-11555	-6090	3.4199	3.4199	-7509	7946	12228	42820	46083	8721	54804	No	9	Si
SLU 83	2.09	-7610.63	-22347	-19864	-6466	3.4199	3.4199	-12907	8665	13336	42820	46083	8721	54804	No	8.48	Si
SLU 83	3.99	4687.57	-14809	-13164	-6466	3.4199	3.4199	-8554	8085	12442	42820	46083	8721	54804	No	8.48	Si
SLU 77	2.09	-7222.71	-20478	-18202	-6132	3.4199	3.4199	-11828	8521	13114	42820	46083	8721	54804	No	8.94	Si
SLU 77	3.99	4441.21	-12940	-11502	-6132	3.4199	3.4199	-7474	7941	12221	42820	46083	8721	54804	No	8.94	Si
SLU 82	2.09	-7558.42	-22407	-19917	-6424	3.4199	3.4199	-12942	8670	13343	42820	46083	8721	54804	No	8.53	Si
SLU 82	3.99	4660.11	-14869	-13217	-6424	3.4199	3.4199	-8588	8090	12449	42820	46083	8721	54804	No	8.53	Si
SLU 74	2.09	-7222.71	-20478	-18202	-6132	3.4199	3.4199	-11828	8521	13114	42820	46083	8721	54804	No	8.94	Si
SLU 74	3.99	4441.21	-12940	-11502	-6132	3.4199	3.4199	-7474	7941	12221	42820	46083	8721	54804	No	8.94	Si
SLU 80	2.09	-7170.5	-20537	-18255	-6090	3.4199	3.4199	-11862	8526	13121	42820	46083	8721	54804	No	9	Si
SLU 80	3.99	4413.75	-13000	-11555	-6090	3.4199	3.4199	-7509	7946	12228	42820	46083	8721	54804	No	9	Si
SLU 84	2.09	-7558.42	-22407	-19917	-6424	3.4199	3.4199	-12942	8670	13343	42820	46083	8721	54804	No	8.53	Si
SLU 84	3.99	4660.11	-14869	-13217	-6424	3.4199	3.4199	-8588	8090	12449	42820	46083	8721	54804	No	8.53	Si
SLU 79	2.09	-7222.71	-20478	-18202	-6132	3.4199	3.4199	-11828	8521	13114	42820	46083	8721	54804	No	8.94	Si
SLU 79	3.99	4441.21	-12940	-11502	-6132	3.4199	3.4199	-7474	7941	12221	42820	46083	8721	54804	No	8.94	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	2.09	2778.45	-14204	-12626	3113	3.4199	3.4199	-8204	12058	18556	42820	69124	8721	61376		19.72	Si
SLV 16	3.99	-2108.49	-8567	-7615	1737	3.4199	3.4199	-4948	11406	17554	42820	69124	8721	60374		34.76	Si
SLV 1	2.09	-12728.34	-12123	-10776	-11546	2.7359	1.9801	0	0	0	42820	55300	6977	42820		3.71	Si
SLV 1	3.99	8201.94	-6197	-5509	-10170	3.4199	1.1594	-3580	11133	5808	42820	69124	8721	48628		4.78	Si
SLV 7	2.09	-2193.61	-15874	-14110	-3476	3.4199	3.4199	-9169	12250	18853	42820	69124	8721	61673		17.74	Si
SLV 7	3.99	3407.1	-10537	-9366	-3341	3.4199	3.4199	-6086	11634	17904	42820	69124	8721	60724		18.18	Si
SLV 6	2.09	-11219.37	-10332	-9184	-8518	2.7359	1.8722	0	0	0	42820	55300	6977	42820		5.03	Si
SLV 6	3.99	5262.72	-4100	-3644	-7874	3.4199	1.2786	-2368	10890	6266	42820	69124	8721	49086		6.23	Si
SLV 9	2.09	-8721.97	-10442	-9282	-5937	3.4199	2.6241	-7886	11994	14163	42820	69124	8721	56983		9.6	Si
SLV 9	3.99	3583.17	-4216	-3747	-6073	3.4199	2.5799	-2435	10904	12659	42820	69124	8721	55479		9.14	Si
SLV 5	2.09	-12185.07	-10321	-9174	-9499	2.7359	1.588	0	0	0	42820	55300	6977	42820		4.51	Si
SLV 5	3.99	6159.53	-4089	-3634	-8854	3.4199	0.6102	-13299	13078	3591	42820	69124	8721	46411		5.24	Si
SLV 3	2.09	-9730.9	-13789	-12257	-9739	3.4199	3.0127	-9080	12233	16584	42820	69124	8721	59404		6.1	Si
SLV 3	3.99	7376.21	-8132	-7228	-8516	3.4199	2.4086	-4697	11356	12309	42820	69124	8721	55128		6.47	Si
SLV 2	2.09	-11762.64	-12134	-10786	-10566	2.7359	2.2217	0	0	0	42820	55300	6977	42820		4.05	Si
SLV 2	3.99	7305.13	-6208	-5518	-9189	3.4199	1.5998	-3586	11134	8015	42820	69124	8721	50835		5.53	Si
SLV 4	2.09	-8765.2	-13800	-12267	-8759	3.4199	3.2244	-8487	12114	17577	42820	69124	8721	60397		6.9	Si
SLV 4	3.99	6479.4	-8143	-7238	-7535	3.4199	2.7427	-4703	11357	14017	42820	69124	8721	56837		7.54	Si
SLV 10	2.09	-7756.28	-10453	-9292	-4957	3.4199	2.9039	-7134	11844	15476	42820	69124	8721	58296		11.76	Si
SLV 10	3.99	2686.35	-4227	-3757	-5092	3.4199	3.2231	-2441	10905	15816	42820	69124	8721	58636		11.51	Si



Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.99 Wa 0.08 denominatore 8 yM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.47	4995	-7687	798.98	1673.02	2.09	Si
SLV 6	179667	0.47	5002	-7698	798.98	1675.34	2.1	Si
SLV 9	179667	0.47	5074	-7809	798.98	1698.62	2.13	Si
SLV 10	179667	0.47	5081	-7820	798.98	1700.93	2.13	Si
SLV 1	179667	0.47	6302	-9699	798.98	2092.12	2.62	Si
SLV 2	179667	0.47	6309	-9710	798.98	2094.39	2.62	Si
SLV 13	179667	0.47	6566	-10105	798.98	2175.78	2.72	Si
SLV 14	179667	0.47	6573	-10116	798.98	2178.04	2.73	Si
SLV 3	179667	0.47	7501	-11544	798.98	2469.9	3.09	Si
SLV 4	179667	0.47	7509	-11555	798.98	2472.14	3.09	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non é atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.99 Wa = 0.08 Ta = 0.0536

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-5023	-16848	-2092	1.754	1409	0.889	28.66992	9.87673	Si
SLV 11	-5022	-16839	-2092	1.754	1408.9	0.889	28.67312	9.87673	Si
SLV 8	-4991	-16733	-2081	1.76	1406.2	0.889	28.772	9.87673	Si
SLV 7	-4990	-16724	-2081	1.76	1406.1	0.889	28.77522	9.87673	Si
SLV 16	-4568	-14321	-638	1.98	1368.5	0.889	32.35445	9.87673	Si
SLV 15	-4567	-14311	-638	1.98	1368.4	0.889	32.3582	9.87673	Si
SLV 4	-4463	-13937	-602	2.004	1359.2	0.89	32.74833	9.87673	Si
SLV 3	-4462	-13927	-602	2.005	1359.1	0.89	32.75215	9.87673	Si
SLV 10	-3618	-9242	2099	2.021	1286.5	0.892	32.91546	9.87673	Si
SLV 9	-3617	-9233	2099	2.021	1286.4	0.892	32.91958	9.87673	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.275	SLU 43	Si
V_SLU	8.476	SLU 81	Si
PF_SLV	1.216	SLV 5	Si
V_SLV	3.709	SLV 1	Si
PFFP_SLV	2.094	SLV 5	Si
R_SLV	2.903	SLV 12	Si

Maschio 21

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
31.248	27.161	33.371	27.161	L2	L3	2.124	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, yM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 82	2.09	-1324.86	-10044	-0.0000223	0.0003743	0.0035	2.1238	9564.58	11073.35	11073.35	8.36	No	Si
SLU 82	3.99	-1381.76	-7068	-0.0000176	0.0003743	0.0035	2.1238	6960.68	8334.96	8334.96	6.03	No	Si
SLU 42	2.09	-1105.35	-8703	-0.0000019	0.0003743	0.0035	2.1238	8414.63	9855.64	9855.64	8.92	No	Si
SLU 42	3.99	-1412.39	-6717	-0.0000172	0.0003743	0.0035	2.1238	6640.63	8001.25	8001.25	5.67	No	Si



Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 39	2.09	-1078.67	-8672	-0.0000189	0.0003743	0.0035	2.1238	8388.09	9828.25	9828.25	9.11	No	Si
SLU 39	3.99	-1411.59	-6720	-0.0000172	0.0003743	0.0035	2.1238	6643.13	8003.84	8003.84	5.67	No	Si
SLU 84	2.09	-1324.86	-10044	-0.0000223	0.0003743	0.0035	2.1238	9564.58	11073.35	11073.35	8.36	No	Si
SLU 84	3.99	-1381.76	-7068	-0.0000176	0.0003743	0.0035	2.1238	6960.68	8334.96	8334.96	6.03	No	Si
SLU 34	2.09	-1057.69	-7998	-0.0000176	0.0003743	0.0035	2.1238	7794.91	9209.61	9209.61	8.71	No	Si
SLU 34	3.99	-1144.92	-5753	-0.0000144	0.0003743	0.0035	2.1238	5747.88	7087.43	7087.43	6.19	No	Si
SLU 83	2.09	-1298.18	-10013	-0.0000221	0.0003743	0.0035	2.1238	9538.93	11045.67	11045.67	8.51	No	Si
SLU 83	3.99	-1380.96	-7071	-0.0000176	0.0003743	0.0035	2.1238	6963.16	8337.57	8337.57	6.04	No	Si
SLU 31	2.09	-1057.69	-7998	-0.0000176	0.0003743	0.0035	2.1238	7794.91	9209.61	9209.61	8.71	No	Si
SLU 31	3.99	-1144.92	-5753	-0.0000144	0.0003743	0.0035	2.1238	5747.88	7087.43	7087.43	6.19	No	Si
SLU 41	2.09	-1078.67	-8672	-0.0000189	0.0003743	0.0035	2.1238	8388.09	9828.25	9828.25	9.11	No	Si
SLU 41	3.99	-1411.59	-6720	-0.0000172	0.0003743	0.0035	2.1238	6643.13	8003.84	8003.84	5.67	No	Si
SLU 81	2.09	-1298.18	-10013	-0.0000221	0.0003743	0.0035	2.1238	9538.93	11045.67	11045.67	8.51	No	Si
SLU 81	3.99	-1380.96	-7071	-0.0000176	0.0003743	0.0035	2.1238	6963.16	8337.57	8337.57	6.04	No	Si
SLU 40	2.09	-1105.35	-8703	-0.000019	0.0003743	0.0035	2.1238	8414.63	9855.64	9855.64	8.92	No	Si
SLU 40	3.99	-1412.39	-6717	-0.0000172	0.0003743	0.0035	2.1238	6640.63	8001.25	8001.25	5.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	2.09	-2877.75	-7892	-0.0000256	0.0005615	0.0035	2.1238		9245.12	9245.12	3.21		Si
SLV 3	3.99	1414.94	-2240	-0.0000117	0.0005615	0.0035	2.1238		2586.3	2586.3	1.83		Si
SLV 9	2.09	287.18	-3381	-0.0000666	0.0005615	0.0035	2.1238		3760	3760	13.09		Si
SLV 9	3.99	-1447.8	-3743	-0.0000124	0.0005615	0.0035	2.1238		5154.9	5154.9	3.56		Si
SLV 10	2.09	593.37	-2961	-0.0000073	0.0005615	0.0035	2.1238		3328.61	3328.61	5.61		Si
SLV 10	3.99	-1786.68	-3856	-0.0000144	0.0005615	0.0035	2.1238		5268.61	5268.61	2.95		Si
SLV 15	2.09	359.6	-6472	-0.0000119	0.0005615	0.0035	2.1238		6858.59	6858.59	19.07		Si
SLV 15	3.99	-1656.48	-4325	-0.0000143	0.0005615	0.0035	2.1238		5741.41	5741.41	3.47		Si
SLV 2	2.09	-2082.04	-5816	-0.0000186	0.0005615	0.0035	2.1238		7229.89	7229.89	3.47		Si
SLV 2	3.99	676.22	-2421	-0.0000668	0.0005615	0.0035	2.1238		2772.58	2772.58	4.1		Si
SLV 16	2.09	665.78	-6052	-0.0000126	0.0005615	0.0035	2.1238		6444.47	6444.47	9.68		Si
SLV 16	3.99	-1995.37	-4438	-0.0000163	0.0005615	0.0035	2.1238		5854.81	5854.81	2.93		Si
SLV 1	2.09	-2388.22	-6236	-0.0000207	0.0005615	0.0035	2.1238		7643.98	7643.98	3.2		Si
SLV 1	3.99	1015.1	-2308	-0.000083	0.0005615	0.0035	2.1238		2656.59	2656.59	2.62		Si
SLV 4	2.09	-2571.57	-7472	-0.0000235	0.0005615	0.0035	2.1238		8842.16	8842.16	3.44		Si
SLV 4	3.99	1076.06	-2352	-0.000087	0.0005615	0.0035	2.1238		2702.29	2702.29	2.51		Si
SLV 13	2.09	849.13	-4816	-0.0000114	0.0005615	0.0035	2.1238		5212.27	5212.27	6.14		Si
SLV 13	3.99	-2056.32	-4394	-0.0000166	0.0005615	0.0035	2.1238		5810.12	5810.12	2.83		Si
SLV 14	2.09	1155.31	-4396	-0.0000121	0.0005615	0.0035	2.1238		4788.16	4788.16	4.14		Si
SLV 14	3.99	-2395.2	-4506	-0.0000191	0.0005615	0.0035	2.1238		5923.53	5923.53	2.47		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	αN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 32	2.09	-1013.23	-7947	-7064	867	2.1238	2.1238	-7392	7930	7579	42820	28618	5416	34034	No	39.26	Si
SLU 32	3.99	-1143.59	-5758	-5118	880	2.1238	2.1238	-5355	7658	7319	42820	28618	5416	34034	No	38.66	Si
SLU 42	2.09	-1105.35	-8703	-7736	1082	2.1238	2.1238	-8094	8024	7668	42820	28618	5416	34034	No	31.46	Si
SLU 42	3.99	-1412.39	-6717	-5971	1080	2.1238	2.1238	-6248	7777	7433	42820	28618	5416	34034	No	31.51	Si
SLU 41	2.09	-1078.67	-8672	-7709	1105	2.1238	2.1238	-8066	8020	7665	42820	28618	5416	34034	No	30.79	Si
SLU 41	3.99	-1411.59	-6720	-5973	1120	2.1238	2.1238	-6250	7778	7433	42820	28618	5416	34034	No	30.39	Si
SLU 39	2.09	-1078.67	-8672	-7709	1105	2.1238	2.1238	-8066	8020	7665	42820	28618	5416	34034	No	30.79	Si
SLU 39	3.99	-1411.59	-6720	-5973	1120	2.1238	2.1238	-6250	7778	7433	42820	28618	5416	34034	No	30.39	Si
SLU 81	2.09	-1298.18	-10013	-8901	1012	2.1238	2.1238	-9313	8186	7824	42820	28618	5416	34034	No	33.64	Si
SLU 81	3.99	-1380.96	-7071	-6285	1029	2.1238	2.1238	-6577	7821	7475	42820	28618	5416	34034	No	33.09	Si
SLU 84	2.09	-1324.86	-10044	-8928	988	2.1238	2.1238	-9342	8190	7827	42820	28618	5416	34034	No	34.45	Si
SLU 84	3.99	-1381.76	-7068	-6283	989	2.1238	2.1238	-6574	7821	7475	42820	28618	5416	34034	No	34.42	Si
SLU 82	2.09	-1324.86	-10044	-8928	988	2.1238	2.1238	-9342	8190	7827	42820	28618	5416	34034	No	34.45	Si
SLU 82	3.99	-1381.76	-7068	-6283	989	2.1238	2.1238	-6574	7821	7475	42820	28618	5416	34034	No	34.42	Si
SLU 40	2.09	-1105.35	-8703	-7736	1082	2.1238	2.1238	-8094	8024	7668	42820	28618	5416	34034	No	31.46	Si
SLU 40	3.99	-1412.39	-6717	-5971	1080	2.1238	2.1238	-6248	7777	7433	42820	28618	5416	34034	No	31.51	Si
SLU 83	2.09	-1298.18	-10013	-8901	1012	2.1238	2.1238	-9313	8186	7824	42820	28618	5416	34034	No	33.64	Si
SLU 83	3.99	-1380.96	-7071	-6285	1029	2.1238	2.1238	-6577	7821	7475	42820	28618	5416	34034	No	33.09	Si
SLU 35	2.09	-1013.23	-7947	-7064	867	2.1238	2.1238	-7392	7930	7579	42820	28618	5416	34034	No	39.26	Si
SLU 35	3.99	-1143.59	-5758	-5118	880	2.1238	2.1238	-5355	7658	7319	42820	28618	5416	34034	No	38.66	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	2.09	1155.31	-4396	-3908	4401	2.1238	2.1238	-4089	11234	10737	42820	42927	5416	48343		10.99	Si
SLV 14	3.99	-2395.2	-4506	-4006	3343	2.1238	1.5912	-5608	11538	8262	42820	42927	5416	48343		14.46	Si
SLV 16	2.09	665.78	-6052	-5380	3182	2.1238	2.1238	-5629	11543	11031	42820	42927	5416	48343		15.19	Si
SLV 16	3.99	-1995.37	-4438	-3945	2234	2.1238	1.8369	-4783	11373	9401	42820	42927	5416	48343		21.64	Si
SLV 4	2.09	-2571.57	-7472	-6642	-3241	2.1238	2.1238	-6950	11807	11284	42820	42927	5416	48343		14.92	Si
SLV 4	3.99	1076.06	-2352	-2091	-2161	2.1238	1.8133	-2188	10854	8857	42820	42927	5416	48343		22.37	Si
SLV 13	2.09	849.13	-4816	-4281	3764	2.1238	2.1238	-4480	11313	10811	42820	42927	5416	48343		12.84	Si
SLV 13	3.99	-2056.32	-4394	-3906	2706	2.1238	1.7816	-4882	11393	9134	42820	42927	5416	48343		17.86	Si
SLV 10	2.09	593.37	-2961	-2632	3574	2.1238	2.1238	-2754	10968	10482	42820	42927	5416	48343		13.53	Si
SLV 10	3.99	-1786.68	-3856	-3428	3099	2.1238	1.7957	-4250	11267	9104	42820	42927	5416	48343		15.6	Si
SLV 7	2.09	-2315.81	-9327	-8291	-3051	2.1238	2.1238	-8675	12152	11613	42820	42927	5416	48343		15.84	Si
SLV 7	3.99	806.42	-2890	-2569	-2554	2.1238	2.1238	-2688	10954	10469	42820	42927	5416	48343		18.93	Si
SLV 15	2.09	359.6	-6472	-5753	2545	2.1238	2.1238	-6020	11621	11106	42820	42927	5416	48343		18.99	Si
SLV 15	3.99	-1656.48	-4325	-3845	1597	2.1238	2.0368	-4203	11257	10318	42820	42927	5416	48343		30.27	Si
SLV 3	2.09	-2877.75	-7892	-7015	-3878	2.1238	2.0918	-7341	11885	11187	42820	42927	5416	48343		12.47	Si
SLV 3	3.99	1414.94	-2240	-1991	-2798	2.1238	1.2903	-2083	10833	6290	42820	42927	5416	48343		17.28	Si
SLV 9	2.09	287.18	-3381	-3006	2937	2.1238	2.1238	-3145	11046	10556	42820	42927	5416	48343		16.46	Si
SLV 9	3.99	-1447.8	-3743	-3327	2462	2.1238	2.0254	-3656	11148	10161	42820	42927	5416	48343		19.63	Si
SLV 1	2.09	-2388.22	-6236	-5543	-2659	2.1238	2.0368	-6064	11630	10659	42820	42927	5416	48343		18.18	Si
SLV 1	3.99	1015.1	-2308	-2051	-1689	2.1238	1.8662	-2147	10846	9108	42820	42927	5416	48343		28.63	Si



Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.99 Wa 0.08 denominatore 8 $\gamma_M = 2$

Comb.	fd	Sa	σ_0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.47	4116	-3934	496.18	861.27	1.74	Si
SLV 5	179667	0.47	4277	-4087	496.18	893.9	1.8	Si
SLV 10	179667	0.47	4385	-4191	496.18	915.93	1.85	Si
SLV 2	179667	0.47	4501	-4301	496.18	939.27	1.89	Si
SLV 9	179667	0.47	4546	-4345	496.18	948.44	1.91	Si
SLV 1	179667	0.47	4661	-4455	496.18	971.73	1.96	Si
SLV 4	179667	0.47	5099	-4873	496.18	1059.92	2.14	Si
SLV 3	179667	0.47	5260	-5027	496.18	1092.1	2.2	Si
SLV 14	179667	0.47	5398	-5159	496.18	1119.69	2.26	Si
SLV 13	179667	0.47	5558	-5312	496.18	1151.75	2.32	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.99 Wa = 0.08 Ta = 0.0536

Comb.	N top	N base	V orto	α_0	M*	e*	a0*	aLim	Verifica
SLV 14	-2536	-6279	270	2.101	823.6	0.89	34.29531	9.87673	Si
SLV 13	-2509	-6590	270	2.111	821.3	0.891	34.44261	9.87673	Si
SLV 16	-2525	-8171	145	2.127	822.6	0.891	34.71018	9.87673	Si
SLV 15	-2498	-8482	145	2.136	820.3	0.891	34.85952	9.87673	Si
SLV 10	-2415	-3355	270	2.145	813.2	0.891	34.98001	9.87673	Si
SLV 9	-2388	-3666	270	2.155	810.9	0.891	35.13245	9.87673	Si
SLV 12	-2377	-9662	-146	2.181	809.9	0.891	35.5567	9.87673	Si
SLV 11	-2350	-9973	-146	2.191	807.7	0.892	35.71468	9.87673	Si
SLV 8	-2261	-9047	-271	2.202	800.2	0.892	35.87764	9.87673	Si
SLV 6	-2299	-2741	145	2.21	803.4	0.892	36.01851	9.87673	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.665	SLU 40	Si
V_SLU	30.39	SLU 39	Si
PF_SLV	1.828	SLV 3	Si
V_SLV	10.985	SLV 14	Si
PFFP_SLV	1.736	SLV 6	Si
R_SLV	3.472	SLV 14	Si

Maschio 22

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
28.572	22.451	24.136	22.451	L2	L3	4.436	0.3	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									α_t	α	elim,conv	ϵ_{fd}	$\gamma_{f,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{m+}	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 81	1.09	-6471.2	-39593	-0.0000524	0.0004492	0.0035	4.4357	66428.27	86016.63	86016.63	13.29	No	Si
SLU 81	3.19	-12546.99	-32563	-0.0000536	0.0004492	0.0035	4.4357	57756.79	74393.71	74393.71	5.93	No	Si
SLU 41	1.09	-5523.11	-33950	-0.0000446	0.0004492	0.0035	4.4357	59574.66	76774.99	76774.99	13.9	No	Si
SLU 41	3.19	-11517.51	-29313	-0.0000483	0.0004492	0.0035	4.4357	53291.2	68813.43	68813.43	5.97	No	Si



Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	1.09	-6018.23	-37010	-0.0000488	0.0004492	0.0035	4.4357	63398.35	81845.99	81845.99	13.6	No	Si
SLU 77	3.19	-11156.82	-29409	-0.0000479	0.0004492	0.0035	4.4357	53427.34	68978.37	68978.37	6.18	No	Si
SLU 82	1.09	-6489.36	-39595	-0.0000524	0.0004492	0.0035	4.4357	66431.24	86020.84	86020.84	13.26	No	Si
SLU 82	3.19	-12535.14	-32559	-0.0000536	0.0004492	0.0035	4.4357	57750.77	74385.94	74385.94	5.93	No	Si
SLU 83	1.09	-6471.2	-39593	-0.0000524	0.0004492	0.0035	4.4357	66428.27	86016.63	86016.63	13.29	No	Si
SLU 83	3.19	-12546.99	-32563	-0.0000536	0.0004492	0.0035	4.4357	57756.79	74393.71	74393.71	5.93	No	Si
SLU 40	1.09	-5541.27	-33953	-0.0000446	0.0004492	0.0035	4.4357	59578.02	76779.46	76779.46	13.86	No	Si
SLU 40	3.19	-11505.66	-29308	-0.0000483	0.0004492	0.0035	4.4357	53284.79	68805.66	68805.66	5.98	No	Si
SLU 84	1.09	-6489.36	-39595	-0.0000524	0.0004492	0.0035	4.4357	66431.24	86020.84	86020.84	13.26	No	Si
SLU 84	3.19	-12535.14	-32559	-0.0000536	0.0004492	0.0035	4.4357	57750.77	74385.94	74385.94	5.93	No	Si
SLU 42	1.09	-5541.27	-33953	-0.0000446	0.0004492	0.0035	4.4357	59578.02	76779.46	76779.46	13.86	No	Si
SLU 42	3.19	-11505.66	-29308	-0.0000483	0.0004492	0.0035	4.4357	53284.79	68805.66	68805.66	5.98	No	Si
SLU 74	1.09	-6018.23	-37010	-0.0000488	0.0004492	0.0035	4.4357	63398.35	81845.99	81845.99	13.6	No	Si
SLU 74	3.19	-11156.82	-29409	-0.0000479	0.0004492	0.0035	4.4357	53427.34	68978.37	68978.37	6.18	No	Si
SLU 39	1.09	-5523.11	-33950	-0.0000446	0.0004492	0.0035	4.4357	59574.66	76774.99	76774.99	13.9	No	Si
SLU 39	3.19	-11517.51	-29313	-0.0000483	0.0004492	0.0035	4.4357	53291.2	68813.43	68813.43	5.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	1.09	-1007.67	-27064	-0.0000298	0.0006738	0.0035	4.4357		66212.3	66212.3	65.71		Si
SLV 6	3.19	-12132.42	-21749	-0.0000402	0.0006738	0.0035	4.4357		56059.3	56059.3	4.62		Si
SLV 1	1.09	-1810.25	-28841	-0.0000329	0.0006738	0.0035	4.4357		69540.65	69540.65	38.41		Si
SLV 1	3.19	-14295.41	-23329	-0.0000451	0.0006738	0.0035	4.4357		59166.77	59166.77	4.14		Si
SLV 9	1.09	-2159.5	-25033	-0.0000293	0.0006738	0.0035	4.4357		62407.46	62407.46	28.9		Si
SLV 9	3.19	-8504.55	-19258	-0.0000323	0.0006738	0.0035	4.4357		51162.02	51162.02	6.02		Si
SLV 5	1.09	-1207.64	-27167	-0.0000302	0.0006738	0.0035	4.4357		66404.1	66404.1	54.99		Si
SLV 5	3.19	-12359.32	-21866	-0.0000407	0.0006738	0.0035	4.4357		56290.08	56290.08	4.55		Si
SLV 4	1.09	-3078.67	-28040	-0.0000339	0.0006738	0.0035	4.4357		68040.68	68040.68	22.1		Si
SLV 4	3.19	-11873.25	-21858	-0.00004	0.0006738	0.0035	4.4357		56273.67	56273.67	4.74		Si
SLV 11	1.09	-7054.1	-22705	-0.0000339	0.0006738	0.0035	4.4357		57940.16	57940.16	8.21		Si
SLV 11	3.19	-1187.01	-14745	-0.000017	0.0006738	0.0035	4.4357		42254.79	42254.79	35.6		Si
SLV 12	1.09	-6854.13	-22603	-0.0000335	0.0006738	0.0035	4.4357		57738.82	57738.82	8.42		Si
SLV 12	3.19	-960.11	-14628	-0.0000166	0.0006738	0.0035	4.4357		42016.82	42016.82	43.76		Si
SLV 10	1.09	-1959.53	-24931	-0.0000289	0.0006738	0.0035	4.4357		62215.65	62215.65	31.75		Si
SLV 10	3.19	-8277.65	-19141	-0.0000318	0.0006738	0.0035	4.4357		50931.24	50931.24	6.15		Si
SLV 2	1.09	-1610.29	-28739	-0.0000325	0.0006738	0.0035	4.4357		69348.85	69348.85	43.07		Si
SLV 2	3.19	-14068.51	-23211	-0.0000446	0.0006738	0.0035	4.4357		58935.99	58935.99	4.19		Si
SLV 3	1.09	-3278.63	-28143	-0.0000343	0.0006738	0.0035	4.4357		68232.49	68232.49	20.81		Si
SLV 3	3.19	-12100.14	-21975	-0.0000404	0.0006738	0.0035	4.4357		56504.45	56504.45	4.67		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 40	1.09	-5541.27	-33953	-24693	3445	4.4357	4.4357	-18556	10808	14382	122342	47822	22622	70444	No	20.45	Si
SLU 40	3.19	-11505.66	-29308	-21315	3511	4.4357	4.4357	-16018	10469	13931	122342	47822	22622	70444	No	20.06	Si
SLU 84	1.09	-6489.36	-39595	-28797	2551	4.4357	4.4357	-21640	10833	14416	122342	47822	22622	70444	No	27.61	Si
SLU 84	3.19	-12535.14	-32559	-23679	2628	4.4357	4.4357	-17794	10706	14246	122342	47822	22622	70444	No	26.8	Si
SLU 83	1.09	-6471.2	-39593	-28795	2574	4.4357	4.4357	-21639	10833	14416	122342	47822	22622	70444	No	27.37	Si
SLU 83	3.19	-12546.99	-32563	-23682	2649	4.4357	4.4357	-17797	10706	14247	122342	47822	22622	70444	No	26.59	Si
SLU 39	1.09	-5523.11	-33950	-24691	3467	4.4357	4.4357	-18555	10807	14381	122342	47822	22622	70444	No	20.32	Si
SLU 39	3.19	-11517.51	-29313	-21318	3532	4.4357	4.4357	-16020	10469	13932	122342	47822	22622	70444	No	19.94	Si
SLU 81	1.09	-6471.2	-39593	-28795	2574	4.4357	4.4357	-21639	10833	14416	122342	47822	22622	70444	No	27.37	Si
SLU 81	3.19	-12546.99	-32563	-23682	2649	4.4357	4.4357	-17797	10706	14247	122342	47822	22622	70444	No	26.59	Si
SLU 35	1.09	-5070.14	-31367	-22813	2422	4.4357	4.4357	-17143	10619	14131	122342	47822	22622	70444	No	29.09	Si
SLU 35	3.19	-10127.34	-26159	-19024	2482	4.4357	4.4357	-14296	10240	13626	122342	47822	22622	70444	No	28.38	Si
SLU 82	1.09	-6489.36	-39595	-28797	2551	4.4357	4.4357	-21640	10833	14416	122342	47822	22622	70444	No	27.61	Si
SLU 82	3.19	-12535.14	-32559	-23679	2628	4.4357	4.4357	-17794	10706	14246	122342	47822	22622	70444	No	26.8	Si
SLU 37	1.09	-5070.14	-31367	-22813	2422	4.4357	4.4357	-17143	10619	14131	122342	47822	22622	70444	No	29.09	Si
SLU 37	3.19	-10127.34	-26159	-19024	2482	4.4357	4.4357	-14296	10240	13626	122342	47822	22622	70444	No	28.38	Si
SLU 41	1.09	-5523.11	-33950	-24691	3467	4.4357	4.4357	-18555	10807	14381	122342	47822	22622	70444	No	20.32	Si
SLU 41	3.19	-11517.51	-29313	-21318	3532	4.4357	4.4357	-16020	10469	13932	122342	47822	22622	70444	No	19.94	Si
SLU 42	1.09	-5541.27	-33953	-24693	3445	4.4357	4.4357	-18556	10808	14382	122342	47822	22622	70444	No	20.45	Si
SLU 42	3.19	-11505.66	-29308	-21315	3511	4.4357	4.4357	-16018	10469	13931	122342	47822	22622	70444	No	20.06	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	1.09	-1207.64	-27167	-19757	4788	4.4357	4.4357	-14847	15469	20585	122342	71734	22622	94356		19.71	Si
SLV 5	3.19	-12359.32	-21866	-15902	4427	4.4357	4.4357	-11950	14890	19814	122342	71734	22622	94356		21.32	Si
SLV 12	1.09	-6854.13	-22603	-16438	-5403	4.4357	4.4357	-12353	14971	19922	122342	71734	22622	94356		17.46	Si
SLV 12	3.19	-960.11	-14628	-10638	-4946	4.4357	4.4357	-7994	14099	18762	122342	71734	22622	94356		19.08	Si
SLV 11	1.09	-7054.1	-22705	-16513	-5374	4.4357	4.4357	-12409	14982	19936	122342	71734	22622	94356		17.56	Si
SLV 11	3.19	-1187.01	-14745	-10724	-4917	4.4357	4.4357	-8059	14112	18779	122342	71734	22622	94356		19.19	Si
SLV 15	1.09	-6451.49	-21031	-15295	-6445	4.4357	4.4357	-11494	14799	19693	122342	71734	22622	94356		14.64	Si
SLV 15	3.19	-749.08	-13282	-9660	-5623	4.4357	4.4357	-7259	13952	18566	122342	71734	22622	94356		16.78	Si
SLV 13	1.09	-4983.11	-21729	-15803	-4311	4.4357	4.4357	-11876	14875	19794	122342	71734	22622	94356		21.88	Si
SLV 13	3.19	-1446.18	-14636	-10644	-3606	4.4357	4.4357	-7999	14100	18763	122342	71734	22622	94356		26.16	Si
SLV 16	1.09	-6251.52	-20928	-15220	-6474	4.4357	4.4357	-11438	14788	19678	122342	71734	22622	94356		14.57	Si
SLV 16	3.19	-975.98	-13165	-9574	-5651	4.4357	4.4357	-7195	13939	18549	122342	71734	22622	94356		16.7	Si
SLV 1	1.09	-1810.25	-28841	-20975	5859	4.4357	4.4357	-15762	15652	20829	122342	71734	22622	94356		16.1	Si
SLV 1	3.19	-14295.41	-23329	-16966	5132	4.4357	4.4357	-12750	15050	20027	122342	71734	22622	94356		18.38	Si
SLV 6	1.09	-1007.67	-27064	-19683	4759	4.4357	4.4357	-14791	15458	20570	122342	71734	22622	94356		19.83	Si
SLV 6	3.19	-12132.42	-21749	-15817	4398	4.4357	4.4357	-11886	14877	19797	122342	71734	22622	94356		21.45	Si
SLV 14	1.09	-4783.14	-21627	-15728	-4341	4.4357	4.4357	-11820	14864	19780	122342	71734	22622	94356		21.74	Si
SLV 14	3.19	-1219.28	-14519	-10559	-3635	4.4357	4.4357	-7935	14087	18746	122342	71734	22622	94356		25.96	Si
SLV 2	1.09	-1610.29	-28739	-20901	5830	4.4357	4.4357	-15707	15641	20814	122342	71734	22622	94356		16.19	Si
SLV 2	3.19	-14068.51	-23211	-16881	5104	4.4357	4.4357	-12686	15037	20010	122342	71734	22622	94356		18.49	Si



Verifica a pressoflessione fuori piano muratura rinforzata con FRDM D.M. 17-01-18 (N.T.C.)

quota 2.99 Ta 0.08 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-13165	0.47	698.78	1868.11	2756.83	2312.47	3.31	Si
SLV 15	-13282	0.47	698.78	1883.81	2775.93	2329.87	3.33	Si
SLV 14	-14519	0.47	698.78	2048.15	2977.23	2512.69	3.6	Si
SLV 12	-14628	0.47	698.78	2062.55	2994.94	2528.74	3.62	Si
SLV 13	-14636	0.47	698.78	2063.65	2996.29	2529.97	3.62	Si
SLV 11	-14745	0.47	698.78	2078.03	3014	2546.02	3.64	Si
SLV 8	-17235	0.47	698.78	2402.62	3418.42	2910.52	4.17	Si
SLV 7	-17353	0.47	698.78	2417.73	3437.34	2927.54	4.19	Si
SLV 10	-19141	0.47	698.78	2645.78	3725.19	3185.48	4.56	Si
SLV 9	-19258	0.47	698.78	2660.61	3744.09	3202.35	4.58	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.99 Wa = 0.05 Ta = 0.0804

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 5	-10221	-27167	-720	1.69	1780	0.904	27.17141	15.86546	Si
SLV 6	-10208	-27064	-721	1.691	1778.7	0.904	27.19676	15.86546	Si
SLV 1	-10462	-28841	-174	1.699	1803.8	0.904	27.30769	15.86546	Si
SLV 2	-10448	-28739	-174	1.701	1802.4	0.904	27.33278	15.86546	Si
SLV 3	-10331	-28143	267	1.708	1790.9	0.904	27.45366	15.86546	Si
SLV 4	-10318	-28040	267	1.709	1789.6	0.904	27.4792	15.86546	Si
SLV 9	-9884	-25033	-749	1.726	1746.8	0.903	27.79328	15.86546	Si
SLV 10	-9871	-24931	-749	1.728	1745.5	0.903	27.8198	15.86546	Si
SLV 7	-9786	-24839	748	1.738	1737.2	0.902	27.98912	15.86546	Si
SLV 8	-9773	-24736	748	1.739	1735.9	0.902	28.01613	15.86546	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.929	SLU 81	Si
V_SLU	19.944	SLU 39	Si
PF_SLV	4.139	SLV 1	Si
V_SLV	14.575	SLV 16	Si
PFFP_SLV	3.309	SLV 16	Si
R_SLV	1.713	SLV 5	Si

Maschio 23

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
33.371	22.451	29.372	22.451	L2	L3	4	0.3	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	$\tau 0$	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRDM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRDM in combinazioni non sismiche, $\gamma M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 42	1.09	3590.33	-26555	-0.0000378	0.0004492	0.0035	3.9997	43486.59	48423.09	48423.09	13.49	No	Si
SLU 42	3.19	5533.65	-22053	-0.0000358	0.0004492	0.0035	3.9997	37468.82	41669.16	41669.16	7.53	No	Si
SLU 19	1.09	3343.17	-24298	-0.0000346	0.0004492	0.0035	3.9997	40538.92	45138.95	45138.95	13.5	No	Si
SLU 19	3.19	4377.77	-19072	-0.0000301	0.0004492	0.0035	3.9997	33178.66	36663.3	36663.3	8.37	No	Si
SLU 34	1.09	3289.13	-24559	-0.0000348	0.0004492	0.0035	3.9997	40887.33	45519.21	45519.21	13.84	No	Si
SLU 34	3.19	4445.99	-19430	-0.0000307	0.0004492	0.0035	3.9997	33707.3	37269.62	37269.62	8.38	No	Si
SLU 82	1.09	4201.44	-31054	-0.0000446	0.0004492	0.0035	3.9997	48948.62	54970.52	54970.52	13.08	No	Si
SLU 82	3.19	5349.67	-24113	-0.000038	0.0004492	0.0035	3.9997	40290.73	44869.3	44869.3	8.39	No	Si
SLU 31	1.09	3289.13	-24559	-0.0000348	0.0004492	0.0035	3.9997	40887.33	45519.21	45519.21	13.84	No	Si
SLU 31	3.19	4445.99	-19430	-0.0000307	0.0004492	0.0035	3.9997	33707.3	37269.62	37269.62	8.38	No	Si



Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 40	1.09	3590.33	-26555	-0.0000378	0.0004492	0.0035	3.9997	43486.59	48423.09	48423.09	13.49	No	Si
SLU 40	3.19	5533.65	-22053	-0.0000358	0.0004492	0.0035	3.9997	37468.82	41669.16	41669.16	7.53	No	Si
SLU 21	1.09	3343.17	-24298	-0.0000346	0.0004492	0.0035	3.9997	40538.92	45138.95	45138.95	13.5	No	Si
SLU 21	3.19	4377.77	-19072	-0.0000301	0.0004492	0.0035	3.9997	33178.66	36663.3	36663.3	8.37	No	Si
SLU 41	1.09	3584.21	-26533	-0.0000378	0.0004492	0.0035	3.9997	43458.56	48391.12	48391.12	13.5	No	Si
SLU 41	3.19	5519.85	-22036	-0.0000358	0.0004492	0.0035	3.9997	37444.97	41640.84	41640.84	7.54	No	Si
SLU 39	1.09	3584.21	-26533	-0.0000378	0.0004492	0.0035	3.9997	43458.56	48391.12	48391.12	13.5	No	Si
SLU 39	3.19	5519.85	-22036	-0.0000358	0.0004492	0.0035	3.9997	37444.97	41640.84	41640.84	7.54	No	Si
SLU 84	1.09	4201.44	-31054	-0.0000446	0.0004492	0.0035	3.9997	48948.62	54970.52	54970.52	13.08	No	Si
SLU 84	3.19	5349.67	-24113	-0.000038	0.0004492	0.0035	3.9997	40290.73	44869.3	44869.3	8.39	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 1	1.09	4918.78	-16524	-0.0000278	0.0006738	0.0035	3.9997		32850.36	32850.36	6.68		Si
SLV 1	3.19	-4979.39	-7864	-0.0000177	0.0006738	0.0035	3.9997		24374.44	24374.44	4.9		Si
SLV 13	1.09	512.8	-20591	-0.0000248	0.0006738	0.0035	3.9997		40064.52	40064.52	78.13		Si
SLV 13	3.19	6300.53	-15760	-0.0000293	0.0006738	0.0035	3.9997		31469.02	31469.02	4.99		Si
SLV 6	1.09	3937.66	-15872	-0.0000253	0.0006738	0.0035	3.9997		31671.54	31671.54	8.04		Si
SLV 6	3.19	-3269.97	-8434	-0.0000154	0.0006738	0.0035	3.9997		25440.96	25440.96	7.78		Si
SLV 11	1.09	1249.59	-23249	-0.0000292	0.0006738	0.0035	3.9997		44688.35	44688.35	35.76		Si
SLV 11	3.19	6808.45	-17329	-0.000032	0.0006738	0.0035	3.9997		34290.03	34290.03	5.04		Si
SLV 14	1.09	640.15	-20714	-0.0000252	0.0006738	0.0035	3.9997		40279.19	40279.19	62.92		Si
SLV 14	3.19	6461.31	-15898	-0.0000297	0.0006738	0.0035	3.9997		31719.37	31719.37	4.91		Si
SLV 2	1.09	5046.13	-16646	-0.0000281	0.0006738	0.0035	3.9997		33071.87	33071.87	6.55		Si
SLV 2	3.19	-4818.61	-8003	-0.0000176	0.0006738	0.0035	3.9997		24633.84	24633.84	5.11		Si
SLV 12	1.09	1376.95	-23372	-0.0000296	0.0006738	0.0035	3.9997		44899.61	44899.61	32.61		Si
SLV 12	3.19	6969.23	-17467	-0.0000325	0.0006738	0.0035	3.9997		34536.52	34536.52	4.96		Si
SLV 5	1.09	3810.31	-15750	-0.0000249	0.0006738	0.0035	3.9997		31450.04	31450.04	8.25		Si
SLV 5	3.19	-3430.74	-8295	-0.0000155	0.0006738	0.0035	3.9997		25181.57	25181.57	7.34		Si
SLV 15	1.09	141.12	-22475	-0.0000263	0.0006738	0.0035	3.9997		43352.8	43352.8	307.2		Si
SLV 15	3.19	8357.1	-17759	-0.0000353	0.0006738	0.0035	3.9997		35057.01	35057.01	4.19		Si
SLV 16	1.09	268.48	-22598	-0.0000267	0.0006738	0.0035	3.9997		43564.06	43564.06	162.26		Si
SLV 16	3.19	8517.87	-17898	-0.0000358	0.0006738	0.0035	3.9997		35303.5	35303.5	4.14		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	1.09	2940.8	-22112	-16081	4725	3.9997	3.9997	-13402	10120	12143	122342	43121	20398	63520	No	13.44	Si
SLU 47	3.19	546.76	-12361	-8990	4669	3.9997	3.9997	-7492	9332	11198	122342	43121	20398	63520	No	13.6	Si
SLU 68	1.09	3187.96	-24368	-17722	3523	3.9997	3.9997	-14770	10303	12362	122342	43121	20398	63520	No	18.03	Si
SLU 68	3.19	1702.65	-15343	-11158	3460	3.9997	3.9997	-9299	9573	11487	122342	43121	20398	63520	No	18.36	Si
SLU 44	1.09	2940.8	-22112	-16081	4725	3.9997	3.9997	-13402	10120	12143	122342	43121	20398	63520	No	13.44	Si
SLU 44	3.19	546.76	-12361	-8990	4669	3.9997	3.9997	-7492	9332	11198	122342	43121	20398	63520	No	13.6	Si
SLU 43	1.09	2930.61	-22075	-16055	4723	3.9997	3.9997	-13380	10117	12140	122342	43121	20398	63520	No	13.45	Si
SLU 43	3.19	523.76	-12333	-8969	4669	3.9997	3.9997	-7475	9330	11195	122342	43121	20398	63520	No	13.6	Si
SLU 45	1.09	2930.61	-22075	-16055	4723	3.9997	3.9997	-13380	10117	12140	122342	43121	20398	63520	No	13.45	Si
SLU 45	3.19	523.76	-12333	-8969	4669	3.9997	3.9997	-7475	9330	11195	122342	43121	20398	63520	No	13.6	Si
SLU 48	1.09	2930.61	-22075	-16055	4723	3.9997	3.9997	-13380	10117	12140	122342	43121	20398	63520	No	13.45	Si
SLU 48	3.19	523.76	-12333	-8969	4669	3.9997	3.9997	-7475	9330	11195	122342	43121	20398	63520	No	13.6	Si
SLU 46	1.09	2936.72	-22097	-16071	4724	3.9997	3.9997	-13393	10119	12142	122342	43121	20398	63520	No	13.45	Si
SLU 46	3.19	537.56	-12350	-8982	4669	3.9997	3.9997	-7485	9331	11197	122342	43121	20398	63520	No	13.6	Si
SLU 50	1.09	2930.61	-22075	-16055	4723	3.9997	3.9997	-13380	10117	12140	122342	43121	20398	63520	No	13.45	Si
SLU 50	3.19	523.76	-12333	-8969	4669	3.9997	3.9997	-7475	9330	11195	122342	43121	20398	63520	No	13.6	Si
SLU 49	1.09	2936.72	-22097	-16071	4724	3.9997	3.9997	-13393	10119	12142	122342	43121	20398	63520	No	13.45	Si
SLU 49	3.19	537.56	-12350	-8982	4669	3.9997	3.9997	-7485	9331	11197	122342	43121	20398	63520	No	13.6	Si
SLU 51	1.09	2936.72	-22097	-16071	4724	3.9997	3.9997	-13393	10119	12142	122342	43121	20398	63520	No	13.45	Si
SLU 51	3.19	537.56	-12350	-8982	4669	3.9997	3.9997	-7485	9331	11197	122342	43121	20398	63520	No	13.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	1.09	640.15	-20714	-15064	-3222	3.9997	3.9997	-12555	15011	18012	122342	64682	20398	85080		26.41	Si
SLV 14	3.19	6461.31	-15898	-11563	-2543	3.9997	3.9997	-9636	14427	17311	122342	64682	20398	85080		33.45	Si
SLV 1	1.09	4918.78	-16524	-12017	8572	3.9997	3.9997	-10015	14503	17402	122342	64682	20398	85080		9.93	Si
SLV 1	3.19	-4979.39	-7864	-5719	7632	3.9997	3.9997	-4767	13453	16143	122342	64682	20398	85080		11.15	Si
SLV 4	1.09	4674.46	-18530	-13477	7845	3.9997	3.9997	-11231	14746	17694	122342	64682	20398	85080		10.85	Si
SLV 4	3.19	-2762.04	-10002	-7274	7071	3.9997	3.9997	-6062	13712	16454	122342	64682	20398	85080		12.03	Si
SLV 13	1.09	512.8	-20591	-14975	-3191	3.9997	3.9997	-12480	14996	17994	122342	64682	20398	85080		26.67	Si
SLV 13	3.19	6300.53	-15760	-11462	-2512	3.9997	3.9997	-9552	14410	17291	122342	64682	20398	85080		33.87	Si
SLV 5	1.09	3810.31	-15750	-11454	5266	3.9997	3.9997	-9546	14409	17290	122342	64682	20398	85080		16.16	Si
SLV 5	3.19	-3430.74	-8295	-6033	4699	3.9997	3.9997	-5028	13506	16205	122342	64682	20398	85080		18.1	Si
SLV 6	1.09	3937.66	-15872	-11543	5235	3.9997	3.9997	-9620	14424	17307	122342	64682	20398	85080		16.25	Si
SLV 6	3.19	-3269.97	-8434	-6133	4668	3.9997	3.9997	-5112	13522	16225	122342	64682	20398	85080		18.23	Si
SLV 15	1.09	141.12	-22475	-16345	-3886	3.9997	3.9997	-13622	15224	18268	122342	64682	20398	85080		21.89	Si
SLV 15	3.19	8357.1	-17759	-12916	-3042	3.9997	3.9997	-10764	14653	17582	122342	64682	20398	85080		27.97	Si
SLV 16	1.09	268.48	-22598	-16435	-3917	3.9997	3.9997	-13697	15239	18266	122342	64682	20398	85080		21.72	Si
SLV 16	3.19	8517.87	-17898	-13017	-3073	3.9997	3.9997	-10848	14670	17602	122342	64682	20398	85080		27.69	Si
SLV 3	1.09	4547.1	-18408	-13388	7876	3.9997	3.9997	-11157	14731	17676	122342	64682	20398	85080		10.8	Si
SLV 3	3.19	-2922.82	-9864	-7174	7102	3.9997	3.9997	-5979	13696	16433	122342	64682	20398	85080		11.98	Si
SLV 2	1.09	5046.13	-16646	-12107	8540	3.9997	3.9997	-10090	14518	17420	122342	64682	20398	85080		9.96	Si
SLV 2	3.19	-4818.61	-8003	-5820	7600	3.9997	3.9997	-4851	13470	16163	122342	64682	20398	85080		11.19	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 2.99 Ta 0.08 Wa 0.05 denominatore



Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-8003	0.47	630.09	1156.72	1856.5	1506.61	2.39	Si
SLV 5	-8295	0.47	630.09	1197.33	1904.6	1550.96	2.46	Si
SLV 6	-8434	0.47	630.09	1216.52	1927.33	1571.92	2.49	Si
SLV 3	-9864	0.47	630.09	1413.2	2162.21	1787.71	2.84	Si
SLV 4	-10002	0.47	630.09	1432.09	2184.96	1808.52	2.87	Si
SLV 9	-10664	0.47	630.09	1522.01	2293.44	1907.72	3.03	Si
SLV 10	-10802	0.47	630.09	1540.75	2316.01	1928.38	3.06	Si
SLV 7	-14960	0.47	630.09	2091.35	2992.18	2541.76	4.03	Si
SLV 8	-15098	0.47	630.09	2109.27	3014.68	2561.98	4.07	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.99 $W_a = 0.05$ $T_a = 0.0804$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 12	-9182	-23372	584	1.699	1601.6	0.904	27.32427	15.86546	Si
SLV 11	-9166	-23249	584	1.701	1600.1	0.904	27.35705	15.86546	Si
SLV 16	-9296	-22598	171	1.715	1612.9	0.904	27.57878	15.86546	Si
SLV 15	-9281	-22475	171	1.717	1611.4	0.904	27.6116	15.86546	Si
SLV 8	-8869	-22152	587	1.738	1570.9	0.902	27.99808	15.86546	Si
SLV 14	-9082	-20714	-180	1.742	1591.8	0.903	28.02936	15.86546	Si
SLV 7	-8854	-22029	586	1.741	1569.4	0.902	28.03246	15.86546	Si
SLV 13	-9067	-20591	-180	1.744	1590.3	0.903	28.06277	15.86546	Si
SLV 10	-8468	-17092	-586	1.793	1531.5	0.901	28.91871	15.86546	Si
SLV 9	-8453	-16970	-586	1.795	1530	0.901	28.95483	15.86546	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.53	SLV 40	Si
V_SLV	13.442	SLV 44	Si
PF_SLV	4.145	SLV 16	Si
V_SLV	9.926	SLV 1	Si
PFFP_SLV	2.358	SLV 1	Si
R_SLV	1.722	SLV 12	Si

Maschio 25

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota l.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
33.202	18.238	32.526	17.49	Z medio 309 cm	L3	1.008	0.45	1.8	1.8	1.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	t0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche, $\gamma_M = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	3.09	-465.21	-1936	-0.0000166	0.0003743	0.0035	1.0077	934.79	1175.57	1175.57	2.53	No	Si
SLU 84	4.89	96.83	-1620	-0.0000073	0.0003743	0.0035	1.0077	787.62	858.16	858.16	8.86	No	Si
SLU 76	3.09	-426.79	-1789	-0.0000152	0.0003743	0.0035	1.0077	866.43	1106.68	1106.68	2.59	No	Si
SLU 76	4.89	84.71	-1352	-0.0000062	0.0003743	0.0035	1.0077	661.49	730.93	730.93	8.63	No	Si
SLU 39	3.09	-415.58	-1706	-0.0000148	0.0003743	0.0035	1.0077	827.62	1067.76	1067.76	2.57	No	Si
SLU 39	4.89	91.64	-1607	-0.0000072	0.0003743	0.0035	1.0077	781.66	852.11	852.11	9.3	No	Si
SLU 41	3.09	-415.58	-1706	-0.0000148	0.0003743	0.0035	1.0077	827.62	1067.76	1067.76	2.57	No	Si
SLU 41	4.89	91.64	-1607	-0.0000072	0.0003743	0.0035	1.0077	781.66	852.11	852.11	9.3	No	Si
SLU 40	3.09	-417.97	-1710	-0.0000149	0.0003743	0.0035	1.0077	829.87	1070.01	1070.01	2.56	No	Si
SLU 40	4.89	92.63	-1607	-0.0000072	0.0003743	0.0035	1.0077	781.73	852.18	852.18	9.2	No	Si
SLU 82	3.09	-465.21	-1936	-0.0000166	0.0003743	0.0035	1.0077	934.79	1175.57	1175.57	2.53	No	Si
SLU 82	4.89	96.83	-1620	-0.0000073	0.0003743	0.0035	1.0077	787.62	858.16	858.16	8.86	No	Si
SLU 73	3.09	-426.79	-1789	-0.0000152	0.0003743	0.0035	1.0077	866.43	1106.68	1106.68	2.59	No	Si
SLU 73	4.89	84.71	-1352	-0.0000062	0.0003743	0.0035	1.0077	661.49	730.93	730.93	8.63	No	Si
SLU 83	3.09	-462.81	-1932	-0.0000165	0.0003743	0.0035	1.0077	932.57	1173.32	1173.32	2.54	No	Si



Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLU 83	4.89	95.84	-1620	-0.0000073	0.0003743	0.0035	1.0077	787.55	858.09	858.09	8.95	No	Si
SLU 81	3.09	-462.81	-1932	-0.0000165	0.0003743	0.0035	1.0077	932.57	1173.32	1173.32	2.54	No	Si
SLU 81	4.89	95.84	-1620	-0.0000073	0.0003743	0.0035	1.0077	787.55	858.09	858.09	8.95	No	Si
SLU 42	3.09	-417.97	-1710	-0.0000149	0.0003743	0.0035	1.0077	829.87	1070.01	1070.01	2.56	No	Si
SLU 42	4.89	92.63	-1607	-0.0000072	0.0003743	0.0035	1.0077	781.73	852.18	852.18	9.2	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, $\gamma M = 2$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	em	em_	emu	df	M0d	M1d	MRd	c.s.	Incremento > 50%	Verifica
SLV 13	3.09	-227.65	-1653	-0.00001	0.0005615	0.0035	1.0077		1049.45	1049.45	4.61		Si
SLV 13	4.89	-266.4	-610	-0.0000198	0.0005615	0.0035	0.8062		542.74	542.74	2.04		Si
SLV 14	3.09	-199.29	-1594	-0.0000093	0.0005615	0.0035	1.0077		1021.35	1021.35	5.13		Si
SLV 14	4.89	-278.01	-606	-0.0000272	0.0005615	0.0035	0.8062		541.19	541.19	1.95		Si
SLV 2	3.09	-172.4	-28	-0.0002622	0.0005615	0.0035	0.8062		255.99	255.99	1.48		Si
SLV 2	4.89	373.96	-394	-0.0025789	0.0005615	0.0035	0.8062		264.39	264.39	0.71		No
SLV 4	3.09	-306.95	-654	-0.0000353	0.0005615	0.0035	0.8062		564.71	564.71	1.84		Si
SLV 4	4.89	358.17	-729	-0.0001046	0.0005615	0.0035	0.8062		429.86	429.86	1.2		Si
SLV 5	3.09	-53.21	95	0.0278735	0.0005615	0.0035	0.8062		0	0	0		No
SLV 5	4.89	175.8	-81	-0.001809	0.0005615	0.0035	0.8062		108.92	108.92	0.62		No
SLV 3	3.09	-335.31	-713	-0.0000393	0.0005615	0.0035	0.8062		593.45	593.45	1.77		Si
SLV 3	4.89	369.79	-732	-0.0001749	0.0005615	0.0035	0.8062		431.41	431.41	1.17		Si
SLV 16	3.09	-333.83	-2220	-0.0000141	0.0005615	0.0035	1.0077		1321.15	1321.15	3.96		Si
SLV 16	4.89	-293.8	-941	-0.000011	0.0005615	0.0035	0.8062		704.64	704.64	2.4		Si
SLV 7	3.09	-501.69	-1992	-0.0000178	0.0005615	0.0035	1.0077		1211.92	1211.92	2.42		Si
SLV 7	4.89	123.18	-1196	-0.0000064	0.0005615	0.0035	1.0077		659.11	659.11	5.35		Si
SLV 6	3.09	-24.84	154	0	0.0005615	0.0035	0.8062		0	0	0		No
SLV 6	4.89	164.18	-78	-0.001604	0.0005615	0.0035	0.8062		107.35	107.35	0.65		No
SLV 1	3.09	-200.77	-87	-0.0002282	0.0005615	0.0035	0.8062		285.4	285.4	1.42		Si
SLV 1	4.89	385.57	-397	-0.0028503	0.0005615	0.0035	0.8062		265.95	265.95	0.69		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, $\gamma M = 3$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	3.09	-426.79	-1789	-1590	-520	1.0077	0.7958	-4453	7538	2700	19031	13579	2570	16149	No	31.07	Si
SLU 76	4.89	84.71	-1352	-1202	-352	1.0077	1.0077	-2651	7298	3309	19031	13579	2570	16149	No	45.84	Si
SLU 40	3.09	-417.97	-1710	-1520	-535	1.0077	0.7785	-4351	7525	2636	19031	13579	2570	16149	No	30.18	Si
SLU 40	4.89	92.63	-1607	-1429	-349	1.0077	1.0077	-3151	7365	3340	19031	13579	2570	16149	No	46.23	Si
SLU 41	3.09	-415.58	-1706	-1516	-529	1.0077	0.7806	-4327	7521	2642	19031	13579	2570	16149	No	30.52	Si
SLU 41	4.89	91.64	-1607	-1429	-346	1.0077	1.0077	-3151	7365	3340	19031	13579	2570	16149	No	46.64	Si
SLU 82	3.09	-465.21	-1936	-1721	-577	1.0077	0.7909	-4852	7591	2702	19031	13579	2570	16149	No	27.98	Si
SLU 82	4.89	96.83	-1620	-1440	-385	1.0077	1.0077	-3175	7368	3341	19031	13579	2570	16149	No	41.93	Si
SLU 42	3.09	-417.97	-1710	-1520	-535	1.0077	0.7785	-4351	7525	2636	19031	13579	2570	16149	No	30.18	Si
SLU 42	4.89	92.63	-1607	-1429	-349	1.0077	1.0077	-3151	7365	3340	19031	13579	2570	16149	No	46.23	Si
SLU 39	3.09	-415.58	-1706	-1516	-529	1.0077	0.7806	-4327	7521	2642	19031	13579	2570	16149	No	30.52	Si
SLU 39	4.89	91.64	-1607	-1429	-346	1.0077	1.0077	-3151	7365	3340	19031	13579	2570	16149	No	46.64	Si
SLU 81	3.09	-462.81	-1932	-1717	-571	1.0077	0.7928	-4828	7588	2707	19031	13579	2570	16149	No	28.27	Si
SLU 81	4.89	95.84	-1620	-1440	-382	1.0077	1.0077	-3175	7368	3341	19031	13579	2570	16149	No	42.27	Si
SLU 73	3.09	-426.79	-1789	-1590	-520	1.0077	0.7958	-4453	7538	2700	19031	13579	2570	16149	No	31.07	Si
SLU 73	4.89	84.71	-1352	-1202	-352	1.0077	1.0077	-2651	7298	3309	19031	13579	2570	16149	No	45.84	Si
SLU 84	3.09	-465.21	-1936	-1721	-577	1.0077	0.7909	-4852	7591	2702	19031	13579	2570	16149	No	27.98	Si
SLU 84	4.89	96.83	-1620	-1440	-385	1.0077	1.0077	-3175	7368	3341	19031	13579	2570	16149	No	41.93	Si
SLU 83	3.09	-462.81	-1932	-1717	-571	1.0077	0.7928	-4828	7588	2707	19031	13579	2570	16149	No	28.27	Si
SLU 83	4.89	95.84	-1620	-1440	-382	1.0077	1.0077	-3175	7368	3341	19031	13579	2570	16149	No	42.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, $\gamma M = 2$

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	3.09	-362.19	-2279	-2026	-457	1.0077	1.0077	-4467	11310	5129	19031	20369	2570	22938		50.24	Si
SLV 15	4.89	-282.19	-944	-839	2062	0.8062	0.615	0	0	0	19031	16295	2056	18351		8.9	Si
SLV 16	3.09	-333.83	-2220	-1974	-389	1.0077	1.0077	-4352	11287	5118	19031	20369	2570	22938		58.98	Si
SLV 16	4.89	-293.8	-941	-836	2102	0.8062	0.5749	0	0	0	19031	16295	2056	18351		8.73	Si
SLV 3	3.09	-335.31	-713	-634	-399	0.8062	0.1007	0	0	0	19031	16295	2056	18351		45.99	Si
SLV 3	4.89	369.79	-732	-651	-1825	0.8062	0	0	0	0	19031	16295	2056	18351		10.06	Si
SLV 5	3.09	-53.21	95	85	-29	0.8062	0	0	0	0	19031	16295	2056	18351		627.58	Si
SLV 5	4.89	175.8	-81	-72	-2002	0.8062	0	0	0	0	19031	16295	2056	18351		9.17	Si
SLV 6	3.09	-24.84	154	137	38	0.8062	1.0077	0	0	0	19031	16295	2056	18351		477.45	Si
SLV 6	4.89	164.18	-78	-69	-1963	0.8062	0	0	0	0	19031	16295	2056	18351		9.35	Si
SLV 13	3.09	-227.65	-1653	-1469	-277	1.0077	1.0077	-3240	11065	5018	19031	20369	2570	22938		82.92	Si
SLV 13	4.89	-266.4	-610	-542	1353	0.8062	0.2005	0	0	0	19031	16295	2056	18351		13.56	Si
SLV 14	3.09	-199.29	-1594	-1417	-209	1.0077	1.0077	-3125	11042	5007	19031	20369	2570	22938		109.77	Si
SLV 14	4.89	-278.01	-606	-539	1392	0.8062	0.1362	0	0	0	19031	16295	2056	18351		13.18	Si
SLV 4	3.09	-306.95	-654	-582	-331	0.8062	0.1044	0	0	0	19031	16295	2056	18351		55.38	Si
SLV 4	4.89	358.17	-729	-648	-1786	0.8062	0.037	0	0	0	19031	16295	2056	18351		10.28	Si
SLV 2	3.09	-172.4	-28	-25	-151	0.8062	0	0	0	0	19031	16295	2056	18351		121.21	Si
SLV 2	4.89	373.96	-394	-350	-2495	0.8062	0	0	0	0	19031	16295	2056	18351		7.35	Si
SLV 1	3.09	-200.77	-87	-77	-219	0.8062	0	0	0	0	19031	16295	2056	18351		83.77	Si
SLV 1	4.89	385.57	-397	-353	-2534	0.8062	0	0	0	0	19031	16295	2056	18351		7.24	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.99 Wa 0.08 denominatore 8 $\gamma M = 2$

Comb.	fd	Sa	$\sigma 0$	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.54	0	-188	62.31	0	0	No, $e > t/2$
SLV 5	179667	0.54	0	-44	62.31	0	0	No, $e > t/2$
SLV 6	179667	0.54	0	-31	62.31	0	0	No, $e > t/2$
SLV 9	179667	0.54	0	-201	62.31	0	0	No, $e > t/2$
SLV 2	179667	0.54	1328	-602	62.31	134.34	2.16	Si
SLV 1	179667	0.54	1356	-615	62.31	137.16	2.2	Si
SLV 14	179667	0.54	2486	-1127	62.31	249.53	4	Si



Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.54	2514	-1140	62.31	252.3	4.05	Si
SLV 4	179667	0.54	2756	-1250	62.31	276.11	4.43	Si
SLV 3	179667	0.54	2784	-1262	62.31	278.87	4.48	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.99 $W_a = 0.08$ $T_a = 0.012$

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-1260	-2461	93	2.962	249.2	0.896	48.05645	5.26306	Si
SLV 12	-1257	-2403	92	2.967	248.9	0.896	48.14055	5.26306	Si
SLV 7	-1196	-1992	102	3.051	243.1	0.895	49.561	5.26306	Si
SLV 8	-1193	-1933	101	3.056	242.8	0.895	49.65024	5.26306	Si
SLV 15	-944	-2279	16	3.542	219.1	0.89	57.81058	5.26306	Si
SLV 16	-941	-2220	15	3.549	218.8	0.89	57.92767	5.26306	Si
SLV 3	-732	-713	48	4.015	199.4	0.889	65.63973	5.26306	Si
SLV 4	-729	-654	47	4.024	199.2	0.889	65.78762	5.26306	Si
SLV 13	-610	-1653	-40	4.374	188.5	0.89	71.45226	5.26306	Si
SLV 14	-606	-1594	-41	4.384	188.3	0.89	71.6003	5.26306	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.527	SLV 82	Si
V_SLV	27.977	SLV 82	Si
PF_SLV	0	SLV 5	No
V_SLV	7.241	SLV 1	Si
PFFP_SLV	0	SLV 5	No
R_SLV	9.131	SLV 11	Si

Maschio 26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota l.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
33.371	18.426	33.202	18.238	L2	L3	0.253	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, $\gamma_m = 3$

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 82	1.09	-129	-2433	-0.0000805	0.0003743	0.0035	0.2026	243.43	260.33	260.33	2.02	No	Si
SLV 82	3.09	208.79	-3512	-0.0001366	0.0003743	0.0035	0.2026	310.06	346.32	346.32	1.66	No	Si
SLV 39	1.09	-118.64	-1993	-0.0000716	0.0003743	0.0035	0.2026	208.97	219.58	219.58	1.85	No	Si
SLV 39	3.09	187.64	-3087	-0.0001199	0.0003743	0.0035	0.2026	286.86	315.17	315.17	1.68	No	Si
SLV 42	1.09	-119.8	-1962	-0.0000722	0.0003743	0.0035	0.2026	206.42	216.69	216.69	1.81	No	Si
SLV 42	3.09	189.15	-3089	-0.000121	0.0003743	0.0035	0.2026	287.01	315.37	315.37	1.67	No	Si
SLV 81	1.09	-127.84	-2463	-0.0000803	0.0003743	0.0035	0.2026	245.67	262.99	262.99	2.06	No	Si
SLV 81	3.09	207.28	-3509	-0.0001355	0.0003743	0.0035	0.2026	309.94	346.14	346.14	1.67	No	Si
SLV 73	1.09	-115.74	-2363	-0.0000735	0.0003743	0.0035	0.2026	238.25	253.99	253.99	2.19	No	Si
SLV 73	3.09	190.48	-3256	-0.0001227	0.0003743	0.0035	0.2026	296.55	328.22	328.22	1.72	No	Si
SLV 76	1.09	-115.74	-2363	-0.0000735	0.0003743	0.0035	0.2026	238.25	253.99	253.99	2.19	No	Si
SLV 76	3.09	190.48	-3256	-0.0001227	0.0003743	0.0035	0.2026	296.55	328.22	328.22	1.72	No	Si
SLV 83	1.09	-127.84	-2463	-0.0000803	0.0003743	0.0035	0.2026	245.67	262.99	262.99	2.06	No	Si
SLV 83	3.09	207.28	-3509	-0.0001355	0.0003743	0.0035	0.2026	309.94	346.14	346.14	1.67	No	Si



Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 41	1.09	-118.64	-1993	-0.0000716	0.0003743	0.0035	0.2026	208.97	219.58	219.58	1.85	No	Si
SLU 41	3.09	187.64	-3087	-0.0001199	0.0003743	0.0035	0.2026	286.86	315.17	315.17	1.68	No	Si
SLU 84	1.09	-129	-2433	-0.0000805	0.0003743	0.0035	0.2026	243.43	260.33	260.33	2.02	No	Si
SLU 84	3.09	208.79	-3512	-0.0001366	0.0003743	0.0035	0.2026	310.06	346.32	346.32	1.66	No	Si
SLU 40	1.09	-119.8	-1962	-0.0000722	0.0003743	0.0035	0.2026	206.42	216.69	216.69	1.81	No	Si
SLU 40	3.09	189.15	-3089	-0.000121	0.0003743	0.0035	0.2026	287.01	315.37	315.37	1.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	1.09	-385.72	1421	0	0.0005615	0.0035	0.2026		0	0	0		No
SLV 16	3.09	275.32	-3272	-0.0002005	0.0005615	0.0035	0.2026		353.69	353.69	1.28		Si
SLV 12	1.09	-323.47	1968	0	0.0005615	0.0035	0.2026		0	0	0		No
SLV 12	3.09	358.67	-3286	-0.0046581	0.0005615	0.0035	0.2026		354.94	354.94	0.99		No
SLV 15	1.09	-399.38	1723	0	0.0005615	0.0035	0.2026		0	0	0		No
SLV 15	3.09	292.21	-3320	-0.0002295	0.0005615	0.0035	0.2026		358.01	358.01	1.23		Si
SLV 7	1.09	-174.77	834	0	0.0005615	0.0035	0.2026		0	0	0		No
SLV 7	3.09	315.03	-2796	-0.0054448	0.0005615	0.0035	0.2026		309.23	309.23	0.98		No
SLV 5	1.09	188.51	-5517	-0.000148	0.0005615	0.0035	0.2026		530.41	530.41	2.81		Si
SLV 5	3.09	-124.9	-966	0	0.0005615	0.0035	0.2026		115.97	115.97	0.93		No
SLV 8	1.09	-161.12	532	0	0.0005615	0.0035	0.2026		0	0	0		No
SLV 8	3.09	298.13	-2749	-0.0005586	0.0005615	0.0035	0.2026		304.62	304.62	1.02		Si
SLV 6	1.09	202.16	-5819	-0.0001586	0.0005615	0.0035	0.2026		548.48	548.48	2.71		Si
SLV 6	3.09	-141.8	-919	0	0.0005615	0.0035	0.2026		110.53	110.53	0.78		No
SLV 13	1.09	-290.4	-182	0	0.0005615	0.0035	0.2026		22.67	22.67	0.08		No
SLV 13	3.09	160.24	-2771	-0.0000962	0.0005615	0.0035	0.2026		306.75	306.75	1.91		Si
SLV 14	1.09	-276.74	-484	0	0.0005615	0.0035	0.2026		59.32	59.32	0.21		No
SLV 14	3.09	143.34	-2723	-0.0000873	0.0005615	0.0035	0.2026		302.14	302.14	2.11		Si
SLV 11	1.09	-337.12	2270	0	0.0005615	0.0035	0.2026		0	0	0		No
SLV 11	3.09	375.57	-3334	-0.0070031	0.0005615	0.0035	0.2026		359.27	359.27	0.96		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	1.09	-118.64	-1993	-1771	-197	0.2026	0.2012	0	0	0	42820	2730	517	3246	No	16.47	Si
SLU 41	3.09	187.64	-3087	-2744	-304	0.2026	0.1975	0	0	0	42820	2730	517	3246	No	10.66	Si
SLU 82	1.09	-129	-2433	-2162	-210	0.2026	0.2208	0	0	0	42820	2730	517	3246	No	15.45	Si
SLU 82	3.09	208.79	-3512	-3122	-335	0.2026	0.2015	0	0	0	42820	2730	517	3246	No	9.69	Si
SLU 84	1.09	-129	-2433	-2162	-210	0.2026	0.2208	0	0	0	42820	2730	517	3246	No	15.45	Si
SLU 84	3.09	208.79	-3512	-3122	-335	0.2026	0.2015	0	0	0	42820	2730	517	3246	No	9.69	Si
SLU 81	1.09	-127.84	-2463	-2190	-206	0.2026	0.2242	0	0	0	42820	2730	517	3246	No	15.73	Si
SLU 81	3.09	207.28	-3509	-3119	-332	0.2026	0.2027	0	0	0	42820	2730	517	3246	No	9.79	Si
SLU 39	1.09	-118.64	-1993	-1771	-197	0.2026	0.2012	0	0	0	42820	2730	517	3246	No	16.47	Si
SLU 39	3.09	187.64	-3087	-2744	-304	0.2026	0.1975	0	0	0	42820	2730	517	3246	No	10.66	Si
SLU 73	1.09	-115.74	-2363	-2100	-186	0.2026	0.2329	0	0	0	42820	2730	517	3246	No	17.5	Si
SLU 73	3.09	190.48	-3256	-2894	-303	0.2026	0.2043	0	0	0	42820	2730	517	3246	No	10.71	Si
SLU 40	1.09	-119.8	-1962	-1744	-201	0.2026	0.1967	0	0	0	42820	2730	517	3246	No	16.16	Si
SLU 40	3.09	189.15	-3089	-2746	-308	0.2026	0.1962	0	0	0	42820	2730	517	3246	No	10.54	Si
SLU 42	1.09	-119.8	-1962	-1744	-201	0.2026	0.1967	0	0	0	42820	2730	517	3246	No	16.16	Si
SLU 42	3.09	189.15	-3089	-2746	-308	0.2026	0.1962	0	0	0	42820	2730	517	3246	No	10.54	Si
SLU 76	1.09	-115.74	-2363	-2100	-186	0.2026	0.2329	0	0	0	42820	2730	517	3246	No	17.5	Si
SLU 76	3.09	190.48	-3256	-2894	-303	0.2026	0.2043	0	0	0	42820	2730	517	3246	No	10.71	Si
SLU 83	1.09	-127.84	-2463	-2190	-206	0.2026	0.2242	0	0	0	42820	2730	517	3246	No	15.73	Si
SLU 83	3.09	207.28	-3509	-3119	-332	0.2026	0.2027	0	0	0	42820	2730	517	3246	No	9.79	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	1.09	264.42	-5272	-4686	705	0.2026	0.2294	0	0	0	42820	4095	517	4611		6.54	Si
SLV 2	3.09	-58.44	-932	-829	62	0.2026	0.1918	0	0	0	42820	4095	517	4611		73.85	Si
SLV 7	1.09	-174.77	834	741	-458	0.2026	0	0	0	0	42820	4095	517	4611		10.07	Si
SLV 7	3.09	315.03	-2796	-2486	-599	0.2026	0.0419	0	0	0	42820	4095	517	4611		7.7	Si
SLV 5	1.09	188.51	-5517	-4904	595	0.2026	0.2532	0	0	0	42820	4095	517	4611		7.75	Si
SLV 5	3.09	-124.9	-966	-859	258	0.2026	0	0	0	0	42820	4095	517	4611		17.9	Si
SLV 1	1.09	250.76	-4970	-4418	665	0.2026	0.2285	0	0	0	42820	4095	517	4611		6.93	Si
SLV 1	3.09	-41.55	-980	-871	24	0.2026	0.2526	0	0	0	42820	4095	517	4611		192.5	Si
SLV 15	1.09	-399.38	1723	1531	-905	0.2026	0	0	0	0	42820	4095	517	4611		5.1	Si
SLV 15	3.09	292.21	-3320	-2951	-422	0.2026	0.1158	0	0	0	42820	4095	517	4611		10.93	Si
SLV 11	1.09	-337.12	2270	2018	-834	0.2026	0	0	0	0	42820	4095	517	4611		5.53	Si
SLV 11	3.09	375.57	-3334	-2963	-656	0.2026	0.0419	0	0	0	42820	4095	517	4611		7.03	Si
SLV 12	1.09	-323.47	1968	1749	-794	0.2026	0	0	0	0	42820	4095	517	4611		5.81	Si
SLV 12	3.09	358.67	-3286	-2921	-617	0.2026	0.0524	0	0	0	42820	4095	517	4611		7.47	Si
SLV 13	1.09	-290.4	-182	-162	-589	0.2026	0	0	0	0	42820	4095	517	4611		7.83	Si
SLV 13	3.09	160.24	-2771	-2463	-165	0.2026	0.2064	0	0	0	42820	4095	517	4611		27.96	Si
SLV 16	1.09	-385.72	1421	1263	-864	0.2026	0	0	0	0	42820	4095	517	4611		5.33	Si
SLV 16	3.09	275.32	-3272	-2909	-383	0.2026	0.1275	0	0	0	42820	4095	517	4611		12.03	Si
SLV 6	1.09	202.16	-5819	-5172	635	0.2026	0.2532	0	0	0	42820	4095	517	4611		7.26	Si
SLV 6	3.09	-141.8	-919	-817	296	0.2026	0	0	0	0	42820	4095	517	4611		15.57	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.99 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.47	8061	-919	60.16	195.77	3.25	Si
SLV 2	179667	0.47	8182	-932	60.16	198.54	3.3	Si
SLV 5	179667	0.47	8477	-966	60.16	205.3	3.41	Si
SLV 1	179667	0.47	8598	-980	60.16	208.05	3.46	Si
SLV 10	179667	0.47	12776	-1456	60.16	300.17	4.99	Si
SLV 4	179667	0.47	13000	-1481	60.16	304.95	5.07	Si



Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.47	13192	-1503	60.16	309.03	5.14	Si
SLV 3	179667	0.47	13417	-1529	60.16	313.78	5.22	Si
SLV 14	179667	0.47	23898	-2723	60.16	516.86	8.59	Si
SLV 8	179667	0.47	24122	-2749	60.16	520.81	8.66	Si

Per la verifica della tabella precedente non è stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.99 Wa = 0.08 Ta = 0.0536

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-255	-5272	-15	2.278	94.2	0.893	37.07164	9.87673	Si
SLV 1	-251	-4970	-15	2.293	93.8	0.894	37.28941	9.87673	Si
SLV 6	-227	-5819	-3	2.396	91.9	0.896	38.87438	9.87673	Si
SLV 5	-223	-5517	-4	2.412	91.6	0.896	39.10866	9.87673	Si
SLV 4	-212	-3367	-16	2.434	90.7	0.898	39.41377	9.87673	Si
SLV 3	-208	-3065	-16	2.45	90.4	0.898	39.65432	9.87673	Si
SLV 10	-161	-4383	6	2.673	86.9	0.906	42.86293	9.87673	Si
SLV 9	-157	-4081	6	2.693	86.6	0.907	43.14073	9.87673	Si
SLV 8	-85	532	-6	3.089	82.1	0.931	48.19763	9.87673	Si, Trazione
SLV 7	-81	834	-6	3.115	81.9	0.933	48.50525	9.87673	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.659	SLU 82	Si
V_SLU	9.692	SLU 82	Si
PF_SLV	0	SLV 7	No
V_SLV	5.097	SLV 15	Si
PFFP_SLV	3.254	SLV 6	Si
R_SLV	3.753	SLV 2	Si

Maschio 27

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
33.371	27.161	33.371	18.426	L2	L3	8.735	0.45	3.8	3.8	3.8			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	φ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	1.09	24064.61	-32195	-0.000018	0.0004492	0.0035	8.735	131185.71	140930.8	140930.8	5.86	No	Si
SLU 46	4.89	-267.55	-717	-0.0000003	0.0004492	0.0035	8.735	3125.15	50108.96	50108.96	187.29	No	Si
SLU 64	1.09	26787.49	-36337	-0.0000203	0.0004492	0.0035	8.735	146696.99	157315.06	157315.06	5.87	No	Si
SLU 64	4.89	-259.12	-1448	-0.0000006	0.0004492	0.0035	8.735	6303.57	53211.28	53211.28	205.35	No	Si
SLU 50	1.09	24580.68	-32230	-0.0000182	0.0004492	0.0035	8.735	131317.9	141069.22	141069.22	5.74	No	Si
SLU 50	4.89	-282.29	-718	-0.0000003	0.0004492	0.0035	8.735	3129.06	50112.77	50112.77	177.53	No	Si
SLU 51	1.09	24064.61	-32195	-0.000018	0.0004492	0.0035	8.735	131185.71	140930.8	140930.8	5.86	No	Si
SLU 51	4.89	-267.55	-717	-0.0000003	0.0004492	0.0035	8.735	3125.15	50108.96	50108.96	187.29	No	Si
SLU 49	1.09	24064.61	-32195	-0.000018	0.0004492	0.0035	8.735	131185.71	140930.8	140930.8	5.86	No	Si
SLU 49	4.89	-267.55	-717	-0.0000003	0.0004492	0.0035	8.735	3125.15	50108.96	50108.96	187.29	No	Si
SLU 69	1.09	26787.49	-36337	-0.0000203	0.0004492	0.0035	8.735	146696.99	157315.06	157315.06	5.87	No	Si
SLU 69	4.89	-259.12	-1448	-0.0000006	0.0004492	0.0035	8.735	6303.57	53211.28	53211.28	205.35	No	Si
SLU 45	1.09	24580.68	-32230	-0.0000182	0.0004492	0.0035	8.735	131317.9	141069.22	141069.22	5.74	No	Si



Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	4.89	-282.29	-718	-0.0000003	0.0004492	0.0035	8.735	3129.06	50112.77	50112.77	177.53	No	Si
SLU 48	1.09	24580.68	-32230	-0.0000182	0.0004492	0.0035	8.735	131317.9	141069.22	141069.22	5.74	No	Si
SLU 48	4.89	-282.29	-718	-0.0000003	0.0004492	0.0035	8.735	3129.06	50112.77	50112.77	177.53	No	Si
SLU 43	1.09	24580.68	-32230	-0.0000182	0.0004492	0.0035	8.735	131317.9	141069.22	141069.22	5.74	No	Si
SLU 43	4.89	-282.29	-718	-0.0000003	0.0004492	0.0035	8.735	3129.06	50112.77	50112.77	177.53	No	Si
SLU 66	1.09	26787.49	-36337	-0.0000203	0.0004492	0.0035	8.735	146696.99	157315.06	157315.06	5.87	No	Si
SLU 66	4.89	-259.12	-1448	-0.0000006	0.0004492	0.0035	8.735	6303.57	53211.28	53211.28	205.35	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	1.09	41062.42	-18214	-0.0000184	0.0006738	0.0035	8.735		85065.94	85065.94	2.07		Si
SLV 1	4.89	2075.56	-1745	-0.0000012	0.0006738	0.0035	8.735		15240.91	15240.91	7.34		Si
SLV 4	1.09	22780.03	-17787	-0.0000122	0.0006738	0.0035	8.735		83275.05	83275.05	3.66		Si
SLV 4	4.89	1466.2	-1501	-0.0000009	0.0006738	0.0035	8.735		14197.08	14197.08	9.68		Si
SLV 5	1.09	59524.89	-27039	-0.0000268	0.0006738	0.0035	8.735		121677.25	121677.25	2.04		Si
SLV 5	4.89	1061.16	-1872	-0.0000009	0.0006738	0.0035	8.735		15787.56	15787.56	14.88		Si
SLV 10	1.09	57067.46	-34177	-0.0000272	0.0006738	0.0035	8.735		150808.48	150808.48	2.64		Si
SLV 10	4.89	-417.68	-1738	-0.0000007	0.0006738	0.0035	8.735		54420.8	54420.8	130.29		Si
SLV 6	1.09	63707.26	-27659	-0.0000288	0.0006738	0.0035	8.735		124239.41	124239.41	1.95		Si
SLV 6	4.89	753.49	-1904	-0.0000009	0.0006738	0.0035	8.735		15926.08	15926.08	21.14		Si
SLV 3	1.09	18597.65	-17167	-0.0000109	0.0006738	0.0035	8.735		80674.72	80674.72	4.34		Si
SLV 3	4.89	1773.87	-1469	-0.000001	0.0006738	0.0035	8.735		14058.57	14058.57	7.93		Si
SLV 2	1.09	45244.8	-18834	-0.0000205	0.0006738	0.0035	8.735		87666.27	87666.27	1.94		Si
SLV 2	4.89	1767.89	-1777	-0.0000011	0.0006738	0.0035	8.735		15379.42	15379.42	8.7		Si
SLV 11	1.09	-21997.49	-30067	-0.0000166	0.0006738	0.0035	8.735		171843.77	171843.77	7.81		Si
SLV 11	4.89	-1115.64	-788	-0.0000006	0.0006738	0.0035	8.735		50391.84	50391.84	45.17		Si
SLV 14	1.09	23112.12	-40559	-0.0000208	0.0006738	0.0035	8.735		176510.45	176510.45	7.64		Si
SLV 14	4.89	-2136.02	-1223	-0.000001	0.0006738	0.0035	8.735		52236.14	52236.14	24.45		Si
SLV 9	1.09	52885.08	-33557	-0.0000258	0.0006738	0.0035	8.735		148284.53	148284.53	2.8		Si
SLV 9	4.89	-110.01	-1706	-0.0000006	0.0006738	0.0035	8.735		54284	54284	493.43		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	1.09	30458.18	-45407	-36326	11091	8.735	8.735	-9241	9566	37600	122342	141262	44549	159942	No	14.42	Si
SLU 81	4.89	-142.42	-3412	-2729	11270	8.735	8.735	-694	8426	33120	122342	141262	44549	155463	No	13.79	Si
SLU 74	1.09	29356.97	-42686	-34149	10587	8.735	8.735	-8688	9492	37310	122342	141262	44549	159652	No	15.08	Si
SLU 74	4.89	-177.43	-2822	-2258	10751	8.735	8.735	-574	8410	33057	122342	141262	44549	155400	No	14.45	Si
SLU 84	1.09	29942.1	-45372	-36298	10776	8.735	8.735	-9234	9565	37596	122342	141262	44549	159938	No	14.84	Si
SLU 84	4.89	-127.69	-3411	-2729	11087	8.735	8.735	-694	8426	33120	122342	141262	44549	155463	No	14.02	Si
SLU 82	1.09	29942.1	-45372	-36298	10776	8.735	8.735	-9234	9565	37596	122342	141262	44549	159938	No	14.84	Si
SLU 82	4.89	-127.69	-3411	-2729	11087	8.735	8.735	-694	8426	33120	122342	141262	44549	155463	No	14.02	Si
SLU 83	1.09	30458.18	-45407	-36326	11091	8.735	8.735	-9241	9566	37600	122342	141262	44549	159942	No	14.42	Si
SLU 83	4.89	-142.42	-3412	-2729	11270	8.735	8.735	-694	8426	33120	122342	141262	44549	155463	No	13.79	Si
SLU 80	1.09	28840.89	-42651	-34121	10272	8.735	8.735	-8681	9491	37306	122342	141262	44549	159648	No	15.54	Si
SLU 80	4.89	-162.7	-2822	-2257	10568	8.735	8.735	-574	8410	33057	122342	141262	44549	155400	No	14.7	Si
SLU 75	1.09	28840.89	-42651	-34121	10272	8.735	8.735	-8681	9491	37306	122342	141262	44549	159648	No	15.54	Si
SLU 75	4.89	-162.7	-2822	-2257	10568	8.735	8.735	-574	8410	33057	122342	141262	44549	155400	No	14.7	Si
SLU 77	1.09	29356.97	-42686	-34149	10587	8.735	8.735	-8688	9492	37310	122342	141262	44549	159652	No	15.08	Si
SLU 77	4.89	-177.43	-2822	-2258	10751	8.735	8.735	-574	8410	33057	122342	141262	44549	155400	No	14.45	Si
SLU 78	1.09	28840.89	-42651	-34121	10272	8.735	8.735	-8681	9491	37306	122342	141262	44549	159648	No	15.54	Si
SLU 78	4.89	-162.7	-2822	-2257	10568	8.735	8.735	-574	8410	33057	122342	141262	44549	155400	No	14.7	Si
SLU 79	1.09	29356.97	-42686	-34149	10587	8.735	8.735	-8688	9492	37310	122342	141262	44549	159652	No	15.08	Si
SLU 79	4.89	-177.43	-2822	-2258	10751	8.735	8.735	-574	8410	33057	122342	141262	44549	155400	No	14.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	I'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	1.09	23112.12	-40559	-32447	16754	8.735	8.735	-8255	14151	55624	122342	211893	44549	177966		10.62	Si
SLV 14	4.89	-2136.02	-1223	-978	8894	8.735	8.735	-276	12555	44416	122342	211893	44549	166758		18.75	Si
SLV 6	1.09	63707.26	-27659	-22127	29365	8.735	8.735	-5629	13626	37971	122342	211893	44549	160314		5.46	Si
SLV 6	4.89	753.49	-1904	-1523	23238	8.735	8.735	-388	12578	49439	122342	211893	44549	171782		7.39	Si
SLV 10	1.09	57067.46	-34177	-27341	30359	8.735	8.0932	-6956	13891	50591	122342	211893	44549	172933		5.7	Si
SLV 10	4.89	-417.68	-1738	-1390	20879	8.735	8.735	-354	12571	49413	122342	211893	44549	171755		8.23	Si
SLV 5	1.09	59524.89	-27039	-21631	26581	8.735	6.4983	-5503	13601	39771	122342	211893	44549	162114		6.1	Si
SLV 5	4.89	1061.16	-1872	-1498	20462	8.735	8.735	-381	12576	49434	122342	211893	44549	171776		8.39	Si
SLV 1	1.09	41062.42	-18214	-14571	10656	8.735	6.3394	-3707	13241	37774	122342	211893	44549	160116		15.03	Si
SLV 1	4.89	2075.56	-1745	-1396	13984	8.735	8.735	-355	12571	49414	122342	211893	44549	171756		12.28	Si
SLV 11	1.09	-21997.49	-30067	-24053	-14610	8.735	8.735	-6119	13724	53945	122342	211893	44549	176288		12.07	Si
SLV 11	4.89	-1115.64	-788	-630	-8273	8.735	8.735	-160	12532	49261	122342	211893	44549	171603		20.74	Si
SLV 2	1.09	45244.8	-18834	-15067	13441	8.735	5.8958	-3833	13267	35198	122342	211893	44549	157540		11.72	Si
SLV 2	4.89	1767.89	-1777	-1421	16760	8.735	8.735	-362	12572	49419	122342	211893	44549	171761		10.25	Si
SLV 9	1.09	52885.08	-33557	-26845	27575	8.735	8.3746	-6830	13866	52254	122342	211893	44549	174597		6.33	Si
SLV 9	4.89	-110.01	-1706	-1365	18103	8.735	8.735	-347	12569	49407	122342	211893	44549	171750		9.49	Si
SLV 7	1.09	-15357.68	-23549	-18840	-15604	8.735	8.735	-4793	13459	52902	122342	211893	44549	175245		11.23	Si
SLV 7	4.89	55.53	-954	-763	-5913	8.735	8.735	-194	12539	49287	122342	211893	44549	171630		29.03	Si
SLV 13	1.09	18929.75	-39939	-31951	13970	8.735	8.735	-8128	14126	55525	122342	211893	44549	177867		12.73	Si
SLV 13	4.89	-1828.35	-1190	-952	6118	8.735	8.4947	-249	12550	47973	122342	211893	44549	170316		27.84	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRM D.M. 17-01-18 (N.T.C.)

quota 2.99 Ta 0.05 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-11140	0.47	2075.21	2467.68	4412.57	3440.13	1.66	Si
SLV 8	-11594	0.47	2075.21	2566.75	4522.14	3544.45	1.71	Si
SLV 3	-11868	0.47	2075.21	2626.36	4588.11	3607.23	1.74	Si
SLV 4	-12323	0.47	2075.21	2725.22	4697.6	3711.41	1.79	Si



Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 11	-12562	0.47	2075.21	2777.25	4755.25	3766.25	1.81	Si
SLV 12	-13017	0.47	2075.21	2875.91	4864.34	3870.13	1.86	Si
SLV 1	-13915	0.47	2075.21	3070.47	5079.45	4074.96	1.96	Si
SLV 2	-14370	0.47	2075.21	3168.75	5188.32	4178.53	2.01	Si
SLV 15	-16610	0.47	2075.21	3651.18	5724.61	4687.89	2.26	Si
SLV 16	-17065	0.47	2075.21	3748.69	5833.42	4791.05	2.31	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzera = 2.99 $W_a = 0.08$ $T_a = 0.0536$

Comb.	N top	N base	V orto	$\alpha 0$	M*	e*	a0*	aLim	Verifica
SLV 2	-1777	-18834	1132	3.261	2778.6	0.951	49.83433	9.87673	Si
SLV 1	-1745	-18214	1131	3.268	2777.4	0.952	49.90498	9.87673	Si
SLV 4	-1501	-17787	1222	3.314	2768.7	0.957	50.33675	9.87673	Si
SLV 3	-1469	-17167	1221	3.321	2767.6	0.957	50.40705	9.87673	Si
SLV 6	-1904	-27659	195	3.295	2783.6	0.948	50.49398	9.87673	Si
SLV 10	-1738	-34177	-517	3.31	2777.1	0.952	50.53658	9.87673	Si
SLV 5	-1872	-27039	194	3.302	2782.3	0.949	50.56601	9.87673	Si
SLV 9	-1706	-33557	-518	3.316	2775.9	0.952	50.60622	9.87673	Si
SLV 14	-1223	-40559	-1242	3.374	2759.9	0.963	50.91323	9.87673	Si
SLV 13	-1190	-39939	-1243	3.382	2759	0.964	50.98107	9.87673	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.739	SLU 43	Si
V_SLU	13.795	SLU 81	Si
PF_SLV	1.938	SLV 2	Si
V_SLV	5.459	SLV 6	Si
PFFP_SLV	1.658	SLV 7	Si
R_SLV	5.046	SLV 2	Si

1.5 Verifiche travi di accoppiamento in muratura

Le unità di misura elencate nel capitolo sono in [m, daN] ove non espressamente specificato.

X ini.: coordinata punto iniziale. [m]

Y ini.: coordinata punto iniziale. [m]

Z ini.inf.: coordinata punto iniziale. [m]

Z ini.sup.: coordinata punto iniziale. [m]

H ini.: altezza della sezione iniziale. [m]

X fin.: coordinata punto finale. [m]

Y fin.: coordinata punto finale. [m]

Z fin.inf.: coordinata punto finale. [m]

Z fin.sup.: coordinata punto finale. [m]

H fin.: altezza della sezione finale. [m]

Luce: lunghezza della trave. [m]

Spessore: spessore. [m]

R. Trazione: resistenza a trazione dell'elemento teso disposto orizzontalmente. [daN]

fb: resistenza normalizzata a compressione in direzione orizzontale dei blocchi. [daN/m²]

fhk: resistenza caratteristica a compressione della muratura utilizzata in direzione orizzontale. [daN/m²]

fvk0: resistenza caratteristica a taglio in assenza di carichi verticali. [daN/m²]

fhmmedio: resistenza media a compressione della muratura utilizzata in direzione orizzontale. [daN/m²]

$\tau 0$: resistenza media a taglio in assenza di azioni normali [C8.7.1.16]. [daN/m²]

fv0: resistenza media a taglio in assenza di azioni normali [C8.7.1.17]. [daN/m²]

μ : coefficiente di attrito [C8.7.1.17].

ϕ : coefficiente di ammortamento o ingranamento secondo Circolare 7 21-01-19 §C8.7.1.3.1.1.

fvk,lim: valore caratteristico massimo della resistenza a taglio che può essere impiegata nel calcolo (§11.10.3.3). [daN/m²]

E: modulo di elasticità longitudinale della muratura utilizzato. [daN/m²]

G: modulo di elasticità tangenziale della muratura utilizzato. [daN/m²]

FC: fattore di confidenza della muratura.

Materiale: descrizione del materiale.

Fu Verticale: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]

Fu Orizzontale: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]

tfr: spessore di calcolo equivalente verticale di uno strato di rinforzo.

tfo: spessore di calcolo equivalente orizzontale di uno strato di rinforzo.

E: modulo di elasticità longitudinale. [daN/m²]

eu: dilatazione a rottura.

Tipo fibra: natura della fibra.

materiale: materiale fibra del rinforzo.

lato applicazione: lato di applicazione del rinforzo.

esposizione: condizione di esposizione secondo CNR-DT 215 §3.2.

ancoraggio verticale iniziale: grado di ancoraggio iniziale dei rinforzi verticali.

ancoraggio verticale finale: grado di ancoraggio finale dei rinforzi verticali.

ancoraggio orizzontale iniziale: grado di ancoraggio iniziale dei rinforzi orizzontali.



ancoraggio orizzontale finale: grado di ancoraggio finale dei rinforzi orizzontali.

strati: numero strati del rinforzo.

verifica taglio: tipo di verifica a taglio.

elim,conv / ϵ_{CNR} DT-200: dati relativi ai parametri per il calcolo della deformazione di progetto.

α : coefficiente che tiene conto della ridotta capacità estensionale delle fibre sollecitate a taglio secondo CNR-DT 215 §4.1.1.

α : coefficiente amplificativo tensione di distacco secondo CNR-DT 215 §3.1 ovvero secondo CNR-DT 200 R1/2013 §5.3.3.

elim,conv: deformazione limite convenzionale del rinforzo FRCM.

ϵ_{fd} : deformazione di progetto del rinforzo FRCM ovvero CRM.

$\gamma_{F,d}$: fattore parziali di sicurezza per stato limite di distacco secondo CNR-DT 200 R1/2013 §3.4.1.

connettori: presenza di connettori per la prevenzione del distacco del rinforzo.

tipo di muratura: tipo di muratura per stato limite di distacco di estremità secondo CNR-DT 200 R1/2013 §5.3.2.

CRM / Fibrenet? dati relativi ai parametri per il calcolo secondo metodo Fibrenet? ovvero se il materiale è di tipo CRM.

CRM: stabilisce se il rinforzo è di tipo CRM secondo le Linee Guida del C.S.L.P. Ottobre 2019.

intonaco: materiale intonaco FRCM ovvero CRM.

spessore intonaco: spessore intonaco. [m]

tipo blocco fibrenet: tipo blocco muratura per verifica a taglio tipo Fibrenet.

Comb.: combinazione.

Sez.: sezione di verifica.

M: momento flettente nel piano. [daN*m]

N: sforzo normale. [daN]

ϵ_m : deformazione della muratura.

ϵ_{m_1} : deformazione elastica della muratura.

ϵ_{mu} : deformazione ultima della muratura.

d_f : distanza tra il lembo compresso e la fibra tesa più lontana. [m]

M0d: momento resistente della sezione non rinforzata. [daN*m]

M1d: momento resistente della sezione rinforzata. [daN*m]

MRd: momento resistente della sezione. [daN*m]

incremento > 50%: incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.

c.s.: coefficiente di sicurezza.

Verifica: stato di verifica.

V: taglio nel piano. [daN]

d_f : distanza tra lembo compresso e baricentro dell'armatura tesa. [m]

f_{vd} : resistenza a taglio di calcolo. [daN/m²]

Vt: resistenza a taglio della muratura non rinforzata. [daN]

Vt,f: resistenza a taglio del rinforzo (CNR DT215 4.1a). [daN]

Vt,c: resistenza a taglio per schiacciamento delle bielle (CNR DT215 4.1b). [daN]

Vt,c int.: contributo di resistenza a taglio delle bielle dell'intonaco se considerato. [daN]

Vt,R: resistenza a taglio della sezione rinforzata. [daN]

Stato limite: pF_SLV=Presso flessione per azioni sismiche; V_SLV=Taglio per azioni sismiche.

Coeff.s.: coefficiente di sicurezza.

Trave di accoppiamento 1

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
24.042	20.644	-1.6	-0.21	1.39	23.989	19.646	-1.6	-0.21	1.39	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

f _b	f _{hk}	f _{vk0}	f _{hmedio}	τ_0	f _{v0}	μ	ϕ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	e _u	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / ϵ_{CNR} DT-200						CRM / Fibrenet?				
									α	α	elim,conv	ϵ_{fd}	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ϵ_m	ϵ_{m_1}	ϵ_{mu}	d_f	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-874.3	-449	-0.0001937	0.0001872	0.0035	1.39		5240.94	5240.94	No	5.99	Si
SLU 82	fin.	1318.85	-4566	-0.0003088	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.97	Si
SLU 78	ini.	-855.25	-389	-0.0001891	0.0001872	0.0035	1.39		5240.94	5240.94	No	6.13	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	fin.	1271.64	-4369	-0.000296	0.0001872	0.0035	1.39		5230.97	5230.97	No	4.11	Si
SLU 75	ini.	-855.25	-389	-0.0001891	0.0001872	0.0035	1.39		5240.94	5240.94	No	6.13	Si
SLU 75	fin.	1271.64	-4369	-0.000296	0.0001872	0.0035	1.39		5230.97	5230.97	No	4.11	Si
SLU 73	ini.	-866.64	-365	-0.0001918	0.0001872	0.0035	1.39		5240.94	5240.94	No	6.05	Si
SLU 73	fin.	1279.08	-4397	-0.000298	0.0001872	0.0035	1.39		5230.97	5230.97	No	4.09	Si
SLU 81	ini.	-857.2	-484	-0.0001895	0.0001872	0.0035	1.39		5240.94	5240.94	No	6.11	Si
SLU 81	fin.	1307.7	-4523	-0.0003057	0.0001872	0.0035	1.39		5230.97	5230.97	No	4	Si
SLU 77	ini.	-838.15	-423	-0.0001849	0.0001872	0.0035	1.39		5240.94	5240.94	No	6.25	Si
SLU 77	fin.	1260.49	-4326	-0.000293	0.0001872	0.0035	1.39		5230.97	5230.97	No	4.15	Si
SLU 80	ini.	-855.25	-389	-0.0001891	0.0001872	0.0035	1.39		5240.94	5240.94	No	6.13	Si
SLU 80	fin.	1271.64	-4369	-0.000296	0.0001872	0.0035	1.39		5230.97	5230.97	No	4.11	Si
SLU 76	ini.	-866.64	-365	-0.0001918	0.0001872	0.0035	1.39		5240.94	5240.94	No	6.05	Si
SLU 76	fin.	1279.08	-4397	-0.000298	0.0001872	0.0035	1.39		5230.97	5230.97	No	4.09	Si
SLU 83	ini.	-857.2	-484	-0.0001895	0.0001872	0.0035	1.39		5240.94	5240.94	No	6.11	Si
SLU 83	fin.	1307.7	-4523	-0.0003057	0.0001872	0.0035	1.39		5230.97	5230.97	No	4	Si
SLU 84	ini.	-874.3	-449	-0.0001937	0.0001872	0.0035	1.39		5240.94	5240.94	No	5.99	Si
SLU 84	fin.	1318.85	-4566	-0.0003088	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-855.25	3642	1.39	0	979	7930	9365	3545	8908	No	2.45	Si
SLU 75	fin.	1271.64	6600	1.39	0	1534	7930	9365	3545	9463	No	1.43	Si
SLU 84	ini.	-874.3	3716	1.39	0	990	7930	9365	3545	8919	No	2.4	Si
SLU 84	fin.	1318.85	6886	1.39	0	1556	7930	9365	3545	9486	No	1.38	Si
SLU 80	ini.	-855.25	3642	1.39	0	979	7930	9365	3545	8908	No	2.45	Si
SLU 80	fin.	1271.64	6600	1.39	0	1534	7930	9365	3545	9463	No	1.43	Si
SLU 73	ini.	-866.64	3698	1.39	0	975	7930	9365	3545	8904	No	2.41	Si
SLU 73	fin.	1279.08	6648	1.39	0	1537	7930	9365	3545	9467	No	1.42	Si
SLU 78	ini.	-855.25	3642	1.39	0	979	7930	9365	3545	8908	No	2.45	Si
SLU 78	fin.	1271.64	6600	1.39	0	1534	7930	9365	3545	9463	No	1.43	Si
SLU 77	ini.	-838.15	3559	1.39	0	985	7930	9365	3545	8915	No	2.51	Si
SLU 77	fin.	1260.49	6528	1.39	0	1529	7930	9365	3545	9458	No	1.45	Si
SLU 83	ini.	-857.2	3633	1.39	0	996	7930	9365	3545	8925	No	2.46	Si
SLU 83	fin.	1307.7	6814	1.39	0	1551	7930	9365	3545	9481	No	1.39	Si
SLU 82	ini.	-874.3	3716	1.39	0	990	7930	9365	3545	8919	No	2.4	Si
SLU 82	fin.	1318.85	6886	1.39	0	1556	7930	9365	3545	9486	No	1.38	Si
SLU 76	ini.	-866.64	3698	1.39	0	975	7930	9365	3545	8904	No	2.41	Si
SLU 76	fin.	1279.08	6648	1.39	0	1537	7930	9365	3545	9467	No	1.42	Si
SLU 81	ini.	-857.2	3633	1.39	0	996	7930	9365	3545	8925	No	2.46	Si
SLU 81	fin.	1307.7	6814	1.39	0	1551	7930	9365	3545	9481	No	1.39	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-1795.38	3153	-0.0004203	0.0002807	0.0035	1.39		7578.45	7578.45		4.22	Si
SLV 12	fin.	1601.54	-5085	-0.0003686	0.0002807	0.0035	1.39		7569.61	7569.61		4.73	Si
SLV 2	ini.	-178.66	-3639	-0.0000369	0.0002807	0.0035	1.39		7578.45	7578.45		42.42	Si
SLV 2	fin.	828.86	-4423	-0.0001788	0.0002807	0.0035	1.39		7569.61	7569.61		9.13	Si
SLV 1	ini.	-48.68	-3900	-0.000001	0.0002807	0.0035	1.39		7578.45	7578.45		155.69	Si
SLV 1	fin.	750.81	-4108	-0.0001611	0.0002807	0.0035	1.39		7569.61	7569.61		10.08	Si
SLV 8	ini.	-1686.39	1469	-0.0003907	0.0002807	0.0035	1.39		7578.45	7578.45		4.49	Si
SLV 8	fin.	1661.66	-6277	-0.0003846	0.0002807	0.0035	1.39		7569.61	7569.61		4.56	Si
SLV 7	ini.	-1556.4	1207	-0.0003562	0.0002807	0.0035	1.39		7578.45	7578.45		4.87	Si
SLV 7	fin.	1583.6	-5962	-0.0003638	0.0002807	0.0035	1.39		7569.61	7569.61		4.78	Si
SLV 15	ini.	-1049.17	3165	-0.0002299	0.0002807	0.0035	1.39		7578.45	7578.45		7.22	Si
SLV 15	fin.	967.16	-1632	-0.0002108	0.0002807	0.0035	1.39		7569.61	7569.61		7.83	Si
SLV 16	ini.	-1179.15	3426	-0.000261	0.0002807	0.0035	1.39		7578.45	7578.45		6.43	Si
SLV 16	fin.	1045.21	-1947	-0.0002292	0.0002807	0.0035	1.39		7569.61	7569.61		7.24	Si
SLV 3	ini.	-685.86	-2450	-0.0001463	0.0002807	0.0035	1.39		7578.45	7578.45		11.05	Si
SLV 3	fin.	1167.55	-5605	-0.0002586	0.0002807	0.0035	1.39		7569.61	7569.61		6.48	Si
SLV 4	ini.	-815.85	-2188	-0.0001756	0.0002807	0.0035	1.39		7578.45	7578.45		9.29	Si
SLV 4	fin.	1245.6	-5920	-0.0002776	0.0002807	0.0035	1.39		7569.61	7569.61		6.08	Si
SLV 11	ini.	-1665.39	2892	-0.0003851	0.0002807	0.0035	1.39		7578.45	7578.45		4.55	Si
SLV 11	fin.	1523.49	-4770	-0.0003481	0.0002807	0.0035	1.39		7569.61	7569.61		4.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-1179.15	6264	1.39	0	220	7930	14048	3545	8150		1.3	Si
SLV 16	fin.	1045.21	5094	1.39	0	1695	7930	14048	3545	9624		1.89	Si
SLV 7	ini.	-1556.4	7113	1.39	0	1102	7930	14048	3545	9032		1.27	Si
SLV 7	fin.	1583.6	9103	1.39	0	2232	7930	14048	3545	10162		1.12	Si
SLV 3	ini.	-685.86	2161	1.39	0	1771	7930	14048	3545	9701		4.49	Si
SLV 3	fin.	1167.55	6766	1.39	0	2190	7930	14048	3545	10119		1.5	Si
SLV 8	ini.	-1686.39	7704	1.39	0	1038	7930	14048	3545	8967		1.16	Si
SLV 8	fin.	1661.66	9699	1.39	0	2269	7930	14048	3545	10198		1.05	Si
SLV 12	ini.	-1795.38	8758	1.39	0	438	7930	14048	3545	8368		0.96	No
SLV 12	fin.	1601.54	9019	1.39	0	2126	7930	14048	3545	10056		1.11	Si
SLV 2	ini.	-178.66	-439	1.39	0	1939	7930	14048	3545	9869		22.49	Si
SLV 2	fin.	828.86	4678	1.39	0	2043	7930	14048	3545	9972		2.13	Si
SLV 1	ini.	-48.68	-1031	1.39	0	1975	7930	14048	3545	9904		9.61	Si
SLV 1	fin.	750.81	4083	1.39	0	2002	7930	14048	3545	9932		2.43	Si
SLV 15	ini.	-1049.17	5672	1.39	0	431	7930	14048	3545	8361		1.47	Si
SLV 15	fin.	967.16	4499	1.39	0	1645	7930	14048	3545	9575		2.13	Si
SLV 4	ini.	-815.85	2752	1.39	0	1732	7930	14048	3545	9661		3.51	Si
SLV 4	fin.	1245.6	7362	1.39	0	2227	7930	14048	3545	10157		1.38	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1665.39	8166	1.39	0	574	7930	14048	3545	8504		1.04	Si
SLV 11	fin.	1523.49	8423	1.39	0	2087	7930	14048	3545	10017		1.19	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.221	SLV 12	Si
V_SLV	0.955	SLV 12	No
PF_SLU	3.966	SLU 82	Si
V_SLU	1.378	SLU 82	Si

Trave di accoppiamento 2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
24.042	20.644	0.19	1.09	0.9	23.989	19.646	0.19	1.09	0.9	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	f _{hk}	f _{vk0}	f _{hmedio}	τ ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α _t	α	elim,conv	e _{f,d}	γ _{F,d}	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-1131.66	-4387	-0.0007351	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.05	Si
SLU 83	fin.	519.1	2117	-0.0002879	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.47	Si
SLU 78	ini.	-1097.31	-4236	-0.0007071	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.12	Si
SLU 78	fin.	513.22	2103	-0.0002842	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.52	Si
SLU 81	ini.	-1131.66	-4387	-0.0007351	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.05	Si
SLU 81	fin.	519.1	2117	-0.0002879	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.47	Si
SLU 84	ini.	-1142.22	-4422	-0.0007438	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.03	Si
SLU 84	fin.	527.34	2157	-0.0002932	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.4	Si
SLU 82	ini.	-1142.22	-4422	-0.0007438	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.03	Si
SLU 82	fin.	527.34	2157	-0.0002932	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.4	Si
SLU 77	ini.	-1086.75	-4201	-0.0006986	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.14	Si
SLU 77	fin.	504.98	2064	-0.0002789	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.59	Si
SLU 75	ini.	-1097.31	-4236	-0.0007071	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.12	Si
SLU 75	fin.	513.22	2103	-0.0002842	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.52	Si
SLU 80	ini.	-1097.31	-4236	-0.0007071	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.12	Si
SLU 80	fin.	513.22	2103	-0.0002842	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.52	Si
SLU 73	ini.	-1104.36	-4259	-0.0007128	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.1	Si
SLU 73	fin.	518.71	2129	-0.0002877	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.47	Si
SLU 76	ini.	-1104.36	-4259	-0.0007128	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.1	Si
SLU 76	fin.	518.71	2129	-0.0002877	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-1131.66	6454	0.9	0	1042	7137	6064	2295	8178	No	1.27	Si
SLU 83	fin.	519.1	1957	0.9	0	0	7137	6064	2295	7137	No	3.65	Si
SLU 81	ini.	-1131.66	6454	0.9	0	1042	7137	6064	2295	8178	No	1.27	Si
SLU 81	fin.	519.1	1957	0.9	0	0	7137	6064	2295	7137	No	3.65	Si
SLU 76	ini.	-1104.36	6279	0.9	0	1030	7137	6064	2295	8167	No	1.3	Si
SLU 76	fin.	518.71	2004	0.9	0	0	7137	6064	2295	7137	No	3.56	Si
SLU 84	ini.	-1142.22	6506	0.9	0	1045	7137	6064	2295	8181	No	1.26	Si
SLU 84	fin.	527.34	2009	0.9	0	0	7137	6064	2295	7137	No	3.55	Si
SLU 73	ini.	-1104.36	6279	0.9	0	1030	7137	6064	2295	8167	No	1.3	Si
SLU 73	fin.	518.71	2004	0.9	0	0	7137	6064	2295	7137	No	3.56	Si
SLU 77	ini.	-1086.75	6194	0.9	0	1025	7137	6064	2295	8162	No	1.32	Si
SLU 77	fin.	504.98	1917	0.9	0	0	7137	6064	2295	7137	No	3.72	Si
SLU 82	ini.	-1142.22	6506	0.9	0	1045	7137	6064	2295	8181	No	1.26	Si
SLU 82	fin.	527.34	2009	0.9	0	0	7137	6064	2295	7137	No	3.55	Si
SLU 78	ini.	-1097.31	6245	0.9	0	1028	7137	6064	2295	8165	No	1.31	Si
SLU 78	fin.	513.22	1969	0.9	0	0	7137	6064	2295	7137	No	3.62	Si
SLU 75	ini.	-1097.31	6245	0.9	0	1028	7137	6064	2295	8165	No	1.31	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	fin.	513.22	1969	0.9	0	0	7137	6064	2295	7137	No	3.62	Si
SLU 80	ini.	-1097.31	6245	0.9	0	1028	7137	6064	2295	8165	No	1.31	Si
SLU 80	fin.	513.22	1969	0.9	0	0	7137	6064	2295	7137	No	3.62	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-896.67	-3562	-0.0005187	0.0002807	0.0035	0.9		3189.29	3189.29		3.56	Si
SLV 2	fin.	406.1	2190	-0.0002118	0.0002807	0.0035	0.9		3183.56	3183.56		7.84	Si
SLV 12	ini.	-1372.04	-4843	-0.0008824	0.0002807	0.0035	0.9		3189.29	3189.29		2.32	Si
SLV 12	fin.	880.39	3775	-0.0005085	0.0002807	0.0035	0.9		3183.56	3183.56		3.62	Si
SLV 11	ini.	-1291.01	-4588	-0.0008156	0.0002807	0.0035	0.9		3189.29	3189.29		2.47	Si
SLV 11	fin.	813.86	3447	-0.000463	0.0002807	0.0035	0.9		3183.56	3183.56		3.91	Si
SLV 1	ini.	-815.64	-3306	-0.0004632	0.0002807	0.0035	0.9		3189.29	3189.29		3.91	Si
SLV 1	fin.	339.57	1863	-0.000175	0.0002807	0.0035	0.9		3183.56	3183.56		9.38	Si
SLV 15	ini.	-639.12	-2342	-0.0003487	0.0002807	0.0035	0.9		3189.29	3189.29		4.99	Si
SLV 15	fin.	326.68	814	-0.000168	0.0002807	0.0035	0.9		3183.56	3183.56		9.75	Si
SLV 7	ini.	-1460.7	-5254	-0.0009579	0.0002807	0.0035	0.9		3189.29	3189.29		2.18	Si
SLV 7	fin.	913.2	4210	-0.0005314	0.0002807	0.0035	0.9		3183.56	3183.56		3.49	Si
SLV 8	ini.	-1541.73	-5510	-0.0010293	0.0002807	0.0035	0.9		3189.29	3189.29		2.07	Si
SLV 8	fin.	979.73	4538	-0.0005788	0.0002807	0.0035	0.9		3183.56	3183.56		3.25	Si
SLV 3	ini.	-1204.73	-4564	-0.0007468	0.0002807	0.0035	0.9		3189.29	3189.29		2.65	Si
SLV 3	fin.	657.82	3357	-0.0003611	0.0002807	0.0035	0.9		3183.56	3183.56		4.84	Si
SLV 16	ini.	-720.15	-2598	-0.0004001	0.0002807	0.0035	0.9		3189.29	3189.29		4.43	Si
SLV 16	fin.	393.21	1142	-0.0002046	0.0002807	0.0035	0.9		3183.56	3183.56		8.1	Si
SLV 4	ini.	-1285.76	-4820	-0.0008114	0.0002807	0.0035	0.9		3189.29	3189.29		2.48	Si
SLV 4	fin.	724.34	3684	-0.0004037	0.0002807	0.0035	0.9		3183.56	3183.56		4.4	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-1372.04	7289	0.9	0	1401	7137	9096	2295	8538		1.17	Si
SLV 12	fin.	880.39	5287	0.9	0	0	7137	9096	2295	7137		1.35	Si
SLV 1	ini.	-815.64	4426	0.9	0	1241	7137	9096	2295	8377		1.89	Si
SLV 1	fin.	339.57	-1040	0.9	0	338	7137	9096	2295	7475		7.19	Si
SLV 15	ini.	-639.12	3929	0.9	0	1128	7137	9096	2295	8265		2.1	Si
SLV 15	fin.	326.68	3460	0.9	0	635	7137	9096	2295	7772		2.25	Si
SLV 11	ini.	-1291.01	6901	0.9	0	1376	7137	9096	2295	8512		1.23	Si
SLV 11	fin.	813.86	4891	0.9	0	0	7137	9096	2295	7137		1.46	Si
SLV 7	ini.	-1460.7	7603	0.9	0	1441	7137	9096	2295	8578		1.13	Si
SLV 7	fin.	913.2	4135	0.9	0	0	7137	9096	2295	7137		1.73	Si
SLV 4	ini.	-1285.76	6659	0.9	0	1399	7137	9096	2295	8535		1.28	Si
SLV 4	fin.	724.34	1337	0.9	0	0	7137	9096	2295	7137		5.34	Si
SLV 3	ini.	-1204.73	6270	0.9	0	1373	7137	9096	2295	8510		1.36	Si
SLV 3	fin.	657.82	941	0.9	0	0	7137	9096	2295	7137		7.58	Si
SLV 2	ini.	-896.67	4814	0.9	0	1269	7137	9096	2295	8405		1.75	Si
SLV 2	fin.	406.1	-645	0.9	0	155	7137	9096	2295	7292		11.31	Si
SLV 16	ini.	-720.15	4318	0.9	0	1159	7137	9096	2295	8296		1.92	Si
SLV 16	fin.	393.21	3856	0.9	0	560	7137	9096	2295	7696		2	Si
SLV 8	ini.	-1541.73	7992	0.9	0	1465	7137	9096	2295	8602		1.08	Si
SLV 8	fin.	979.73	4531	0.9	0	0	7137	9096	2295	7137		1.58	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.069	SLV 8	Si
V_SLV	1.076	SLV 8	Si
PF_SLU	2.035	SLU 82	Si
V_SLU	1.258	SLU 82	Si

Trave di accoppiamento 3

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
24.284	25.288	-1.6	-0.21	1.39	24.232	24.289	-1.6	-0.21	1.39	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fnk	fvk0	fnmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	832.8	-2982	-0.0001839	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.28	Si
SLU 78	fin.	-35.73	-2515	-0.0000073	0.0001872	0.0035	1.39		5240.94	5240.94	No	146.68	Si
SLU 79	ini.	843.04	-3029	-0.0001864	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.2	Si
SLU 79	fin.	-50.43	-2477	-0.0000103	0.0001872	0.0035	1.39		5240.94	5240.94	No	103.92	Si
SLU 84	ini.	857.83	-3119	-0.0001899	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.1	Si
SLU 84	fin.	-15.69	-2686	-0.0000032	0.0001872	0.0035	1.39		5240.94	5240.94	No	333.96	Si
SLU 82	ini.	857.83	-3119	-0.0001899	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.1	Si
SLU 82	fin.	-15.69	-2686	-0.0000032	0.0001872	0.0035	1.39		5240.94	5240.94	No	333.96	Si
SLU 80	ini.	832.8	-2982	-0.0001839	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.28	Si
SLU 80	fin.	-35.73	-2515	-0.0000073	0.0001872	0.0035	1.39		5240.94	5240.94	No	146.68	Si
SLU 74	ini.	843.04	-3029	-0.0001864	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.2	Si
SLU 74	fin.	-50.43	-2477	-0.0000103	0.0001872	0.0035	1.39		5240.94	5240.94	No	103.92	Si
SLU 83	ini.	868.07	-3166	-0.0001924	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.03	Si
SLU 83	fin.	-30.4	-2648	-0.0000062	0.0001872	0.0035	1.39		5240.94	5240.94	No	172.41	Si
SLU 77	ini.	843.04	-3029	-0.0001864	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.2	Si
SLU 77	fin.	-50.43	-2477	-0.0000103	0.0001872	0.0035	1.39		5240.94	5240.94	No	103.92	Si
SLU 75	ini.	832.8	-2982	-0.0001839	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.28	Si
SLU 75	fin.	-35.73	-2515	-0.0000073	0.0001872	0.0035	1.39		5240.94	5240.94	No	146.68	Si
SLU 81	ini.	868.07	-3166	-0.0001924	0.0001872	0.0035	1.39		5230.97	5230.97	No	6.03	Si
SLU 81	fin.	-30.4	-2648	-0.0000062	0.0001872	0.0035	1.39		5240.94	5240.94	No	172.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	857.83	-5277	1.39	0	1384	7930	9365	3545	9313	No	1.76	Si
SLU 84	fin.	-15.69	535	1.39	0	1328	7930	9365	3545	9257	No	17.29	Si
SLU 83	ini.	868.07	-5354	1.39	0	1390	7930	9365	3545	9319	No	1.74	Si
SLU 83	fin.	-30.4	454	1.39	0	1323	7930	9365	3545	9252	No	20.39	Si
SLU 80	ini.	832.8	-5065	1.39	0	1366	7930	9365	3545	9296	No	1.84	Si
SLU 80	fin.	-35.73	412	1.39	0	1305	7930	9365	3545	9235	No	22.44	Si
SLU 81	ini.	868.07	-5354	1.39	0	1390	7930	9365	3545	9319	No	1.74	Si
SLU 81	fin.	-30.4	454	1.39	0	1323	7930	9365	3545	9252	No	20.39	Si
SLU 79	ini.	843.04	-5142	1.39	0	1372	7930	9365	3545	9302	No	1.81	Si
SLU 79	fin.	-50.43	330	1.39	0	1300	7930	9365	3545	9230	No	27.97	Si
SLU 74	ini.	843.04	-5142	1.39	0	1372	7930	9365	3545	9302	No	1.81	Si
SLU 74	fin.	-50.43	330	1.39	0	1300	7930	9365	3545	9230	No	27.97	Si
SLU 75	ini.	832.8	-5065	1.39	0	1366	7930	9365	3545	9296	No	1.84	Si
SLU 75	fin.	-35.73	412	1.39	0	1305	7930	9365	3545	9235	No	22.44	Si
SLU 78	ini.	832.8	-5065	1.39	0	1366	7930	9365	3545	9296	No	1.84	Si
SLU 78	fin.	-35.73	412	1.39	0	1305	7930	9365	3545	9235	No	22.44	Si
SLU 77	ini.	843.04	-5142	1.39	0	1372	7930	9365	3545	9302	No	1.81	Si
SLU 77	fin.	-50.43	330	1.39	0	1300	7930	9365	3545	9230	No	27.97	Si
SLU 82	ini.	857.83	-5277	1.39	0	1384	7930	9365	3545	9313	No	1.76	Si
SLU 82	fin.	-15.69	535	1.39	0	1328	7930	9365	3545	9257	No	17.29	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	1604.8	-5788	-0.0003694	0.0002807	0.0035	1.39		7569.61	7569.61		4.72	Si
SLV 5	fin.	-1346.44	522	-0.0003023	0.0002807	0.0035	1.39		7578.45	7578.45		5.63	Si
SLV 9	ini.	1356.03	-4498	-0.0003051	0.0002807	0.0035	1.39		7569.61	7569.61		5.58	Si
SLV 9	fin.	-700.46	608	-0.0001496	0.0002807	0.0035	1.39		7578.45	7578.45		10.82	Si
SLV 12	ini.	-383.56	1541	-0.0000802	0.0002807	0.0035	1.39		7578.45	7578.45		19.76	Si
SLV 12	fin.	1212.08	-3827	-0.0002694	0.0002807	0.0035	1.39		7569.61	7569.61		6.25	Si
SLV 2	ini.	1248.88	-4968	-0.0002784	0.0002807	0.0035	1.39		7569.61	7569.61		6.06	Si
SLV 2	fin.	-1361.74	-1147	-0.0003062	0.0002807	0.0035	1.39		7578.45	7578.45		5.57	Si
SLV 15	ini.	-27.64	722	-0.0000057	0.0002807	0.0035	1.39		7578.45	7578.45		274.2	Si
SLV 15	fin.	1227.38	-2158	-0.0002732	0.0002807	0.0035	1.39		7569.61	7569.61		6.17	Si
SLV 10	ini.	1298.65	-4175	-0.0002908	0.0002807	0.0035	1.39		7569.61	7569.61		5.83	Si
SLV 10	fin.	-594.37	583	-0.000126	0.0002807	0.0035	1.39		7578.45	7578.45		12.75	Si
SLV 6	ini.	1547.42	-5465	-0.0003543	0.0002807	0.0035	1.39		7569.61	7569.61		4.89	Si
SLV 6	fin.	-1240.35	497	-0.000276	0.0002807	0.0035	1.39		7578.45	7578.45		6.11	Si
SLV 11	ini.	-326.18	1218	-0.000068	0.0002807	0.0035	1.39		7578.45	7578.45		23.23	Si
SLV 11	fin.	1105.99	-3802	-0.0002437	0.0002807	0.0035	1.39		7569.61	7569.61		6.84	Si
SLV 16	ini.	-85.02	1045	-0.0000175	0.0002807	0.0035	1.39		7578.45	7578.45		89.14	Si
SLV 16	fin.	1333.46	-2183	-0.0002995	0.0002807	0.0035	1.39		7569.61	7569.61		5.68	Si
SLV 1	ini.	1306.25	-5292	-0.0002927	0.0002807	0.0035	1.39		7569.61	7569.61		5.79	Si
SLV 1	fin.	-1467.82	-1122	-0.0003332	0.0002807	0.0035	1.39		7578.45	7578.45		5.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-383.56	1981	1.39	0	1019	7930	14048	3545	8949		4.52	Si
SLV 12	fin.	1212.08	6191	1.39	0	1965	7930	14048	3545	9894		1.6	Si
SLV 1	ini.	1306.25	-7276	1.39	0	2152	7930	14048	3545	10081		1.39	Si
SLV 1	fin.	-1467.82	-4582	1.39	0	1562	7930	14048	3545	9491		2.07	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-85.02	0	1.39	0	1140	7930	14048	3545	9070		29511.16	Si
SLV 16	fin.	1333.46	4733	1.39	0	1731	7930	14048	3545	9661		2.04	Si
SLV 5	ini.	1604.8	-9257	1.39	0	2211	7930	14048	3545	10141		1.1	Si
SLV 5	fin.	-1346.44	-6040	1.39	0	1255	7930	14048	3545	9184		1.52	Si
SLV 11	ini.	-326.18	1583	1.39	0	1100	7930	14048	3545	9029		5.7	Si
SLV 11	fin.	1105.99	5794	1.39	0	1961	7930	14048	3545	9891		1.71	Si
SLV 2	ini.	1248.88	-6878	1.39	0	2112	7930	14048	3545	10041		1.46	Si
SLV 2	fin.	-1361.74	-4185	1.39	0	1566	7930	14048	3545	9495		2.27	Si
SLV 10	ini.	1298.65	-7663	1.39	0	2011	7930	14048	3545	9940		1.3	Si
SLV 10	fin.	-594.37	-3874	1.39	0	1242	7930	14048	3545	9172		2.37	Si
SLV 6	ini.	1547.42	-8859	1.39	0	2173	7930	14048	3545	10102		1.14	Si
SLV 6	fin.	-1240.35	-5643	1.39	0	1260	7930	14048	3545	9190		1.63	Si
SLV 15	ini.	-27.64	-398	1.39	0	1212	7930	14048	3545	9142		22.97	Si
SLV 15	fin.	1227.38	4336	1.39	0	1727	7930	14048	3545	9657		2.23	Si
SLV 9	ini.	1356.03	-8062	1.39	0	2053	7930	14048	3545	9982		1.24	Si
SLV 9	fin.	-700.46	-4271	1.39	0	1237	7930	14048	3545	9166		2.15	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF SLV	4.717	SLV 5	Si
V SLV	1.095	SLV 5	Si
PF SLU	6.026	SLU 81	Si
V SLU	1.74	SLU 81	Si

Trave di accoppiamento 4

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
24.284	25.288	0.19	1.09	0.9	24.232	24.289	0.19	1.09	0.9	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	f _{hk}	f _{vk0}	f _{hmedio}	t ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	ϵ_{fd}	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	42.84	-484	-0.0000211	0.0001872	0.00035	0.9		2317.79	2317.79	No	54.1	Si
SLU 79	fin.	-572.36	-2923	-0.0003218	0.0001872	0.00035	0.9		2324.38	2324.38	No	4.06	Si
SLU 78	ini.	33.66	-523	-0.0000166	0.0001872	0.00035	0.9		2317.79	2317.79	No	68.86	Si
SLU 78	fin.	-562.51	-2885	-0.0003153	0.0001872	0.00035	0.9		2324.38	2324.38	No	4.13	Si
SLU 83	ini.	32.55	-560	-0.000016	0.0001872	0.00035	0.9		2317.79	2317.79	No	71.21	Si
SLU 83	fin.	-592.26	-3042	-0.0003349	0.0001872	0.00035	0.9		2324.38	2324.38	No	3.92	Si
SLU 82	ini.	23.37	-599	-0.0000115	0.0001872	0.00035	0.9		2317.79	2317.79	No	99.19	Si
SLU 82	fin.	-582.4	-3005	-0.0003284	0.0001872	0.00035	0.9		2324.38	2324.38	No	3.99	Si
SLU 77	ini.	42.84	-484	-0.0000211	0.0001872	0.00035	0.9		2317.79	2317.79	No	54.1	Si
SLU 77	fin.	-572.36	-2923	-0.0003218	0.0001872	0.00035	0.9		2324.38	2324.38	No	4.06	Si
SLU 74	ini.	42.84	-484	-0.0000211	0.0001872	0.00035	0.9		2317.79	2317.79	No	54.1	Si
SLU 74	fin.	-572.36	-2923	-0.0003218	0.0001872	0.00035	0.9		2324.38	2324.38	No	4.06	Si
SLU 84	ini.	23.37	-599	-0.0000115	0.0001872	0.00035	0.9		2317.79	2317.79	No	99.19	Si
SLU 84	fin.	-582.4	-3005	-0.0003284	0.0001872	0.00035	0.9		2324.38	2324.38	No	3.99	Si
SLU 75	ini.	33.66	-523	-0.0000166	0.0001872	0.00035	0.9		2317.79	2317.79	No	68.86	Si
SLU 75	fin.	-562.51	-2885	-0.0003153	0.0001872	0.00035	0.9		2324.38	2324.38	No	4.13	Si
SLU 80	ini.	33.66	-523	-0.0000166	0.0001872	0.00035	0.9		2317.79	2317.79	No	68.86	Si
SLU 80	fin.	-562.51	-2885	-0.0003153	0.0001872	0.00035	0.9		2324.38	2324.38	No	4.13	Si
SLU 81	ini.	32.55	-560	-0.000016	0.0001872	0.00035	0.9		2317.79	2317.79	No	71.21	Si
SLU 81	fin.	-592.26	-3042	-0.0003349	0.0001872	0.00035	0.9		2324.38	2324.38	No	3.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	33.66	1386	0.9	0	612	7137	6064	2295	7749	No	5.59	Si
SLU 80	fin.	-562.51	-4504	0.9	0	900	7137	6064	2295	8036	No	1.78	Si
SLU 78	ini.	33.66	1386	0.9	0	612	7137	6064	2295	7749	No	5.59	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	fin.	-562.51	-4504	0.9	0	900	7137	6064	2295	8036	No	1.78	Si
SLU 79	ini.	42.84	1339	0.9	0	607	7137	6064	2295	7743	No	5.78	Si
SLU 79	fin.	-572.36	-4563	0.9	0	903	7137	6064	2295	8040	No	1.76	Si
SLU 84	ini.	23.37	1512	0.9	0	624	7137	6064	2295	7760	No	5.13	Si
SLU 84	fin.	-582.4	-4682	0.9	0	912	7137	6064	2295	8048	No	1.72	Si
SLU 74	ini.	42.84	1339	0.9	0	607	7137	6064	2295	7743	No	5.78	Si
SLU 74	fin.	-572.36	-4563	0.9	0	903	7137	6064	2295	8040	No	1.76	Si
SLU 75	ini.	33.66	1386	0.9	0	612	7137	6064	2295	7749	No	5.59	Si
SLU 75	fin.	-562.51	-4504	0.9	0	900	7137	6064	2295	8036	No	1.78	Si
SLU 77	ini.	42.84	1339	0.9	0	607	7137	6064	2295	7743	No	5.78	Si
SLU 77	fin.	-572.36	-4563	0.9	0	903	7137	6064	2295	8040	No	1.76	Si
SLU 82	ini.	23.37	1512	0.9	0	624	7137	6064	2295	7760	No	5.13	Si
SLU 82	fin.	-582.4	-4682	0.9	0	912	7137	6064	2295	8048	No	1.72	Si
SLU 81	ini.	32.55	1465	0.9	0	618	7137	6064	2295	7755	No	5.29	Si
SLU 81	fin.	-592.26	-4741	0.9	0	915	7137	6064	2295	8052	No	1.7	Si
SLU 83	ini.	32.55	1465	0.9	0	618	7137	6064	2295	7755	No	5.29	Si
SLU 83	fin.	-592.26	-4741	0.9	0	915	7137	6064	2295	8052	No	1.7	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	668.4	2259	-0.0003678	0.0002807	0.0035	0.9		3183.56	3183.56		4.76	Si
SLV 6	fin.	-1136.39	-4877	-0.0006939	0.0002807	0.0035	0.9		3189.29	3189.29		2.81	Si
SLV 10	ini.	486.26	1519	-0.0002574	0.0002807	0.0035	0.9		3183.56	3183.56		6.55	Si
SLV 10	fin.	-896.01	-3927	-0.0005182	0.0002807	0.0035	0.9		3189.29	3189.29		3.56	Si
SLV 1	ini.	542.96	1754	-0.0002908	0.0002807	0.0035	0.9		3183.56	3183.56		5.86	Si
SLV 1	fin.	-1031.21	-4494	-0.000615	0.0002807	0.0035	0.9		3189.29	3189.29		3.09	Si
SLV 9	ini.	536.76	1732	-0.0002871	0.0002807	0.0035	0.9		3183.56	3183.56		5.93	Si
SLV 9	fin.	-955.32	-4145	-0.0005601	0.0002807	0.0035	0.9		3189.29	3189.29		3.34	Si
SLV 3	ini.	210.03	400	-0.000106	0.0002807	0.0035	0.9		3183.56	3183.56		15.16	Si
SLV 3	fin.	-649.82	-3029	-0.0003553	0.0002807	0.0035	0.9		3189.29	3189.29		4.91	Si
SLV 4	ini.	159.53	187	-0.0000799	0.0002807	0.0035	0.9		3183.56	3183.56		19.96	Si
SLV 4	fin.	-590.5	-2812	-0.0003187	0.0002807	0.0035	0.9		3189.29	3189.29		5.4	Si
SLV 5	ini.	718.9	2472	-0.0004001	0.0002807	0.0035	0.9		3183.56	3183.56		4.43	Si
SLV 5	fin.	-1195.71	-5095	-0.0007397	0.0002807	0.0035	0.9		3189.29	3189.29		2.67	Si
SLV 2	ini.	492.47	1542	-0.000261	0.0002807	0.0035	0.9		3183.56	3183.56		6.46	Si
SLV 2	fin.	-971.89	-4276	-0.0005719	0.0002807	0.0035	0.9		3189.29	3189.29		3.28	Si
SLV 11	ini.	-573.01	-2782	-0.0003081	0.0002807	0.0035	0.9		3189.29	3189.29		5.57	Si
SLV 11	fin.	315.98	737	-0.0001622	0.0002807	0.0035	0.9		3183.56	3183.56		10.08	Si
SLV 12	ini.	-623.51	-2995	-0.000339	0.0002807	0.0035	0.9		3189.29	3189.29		5.12	Si
SLV 12	fin.	375.29	955	-0.0001946	0.0002807	0.0035	0.9		3183.56	3183.56		8.48	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	536.76	-1872	0.9	0	388	7137	9096	2295	7525		4.02	Si
SLV 9	fin.	-955.32	-6089	0.9	0	1331	7137	9096	2295	8467		1.39	Si
SLV 2	ini.	492.47	-1718	0.9	0	451	7137	9096	2295	7587		4.42	Si
SLV 2	fin.	-971.89	-6256	0.9	0	1344	7137	9096	2295	8481		1.36	Si
SLV 3	ini.	210.03	-137	0.9	0	719	7137	9096	2295	7856		57.48	Si
SLV 3	fin.	-649.82	-4531	0.9	0	1209	7137	9096	2295	8346		1.84	Si
SLV 12	ini.	-623.51	4632	0.9	0	1206	7137	9096	2295	8342		1.8	Si
SLV 12	fin.	375.29	893	0.9	0	604	7137	9096	2295	7741		8.67	Si
SLV 6	ini.	668.4	-2653	0.9	0	73	7137	9096	2295	7210		2.72	Si
SLV 6	fin.	-1136.39	-7096	0.9	0	1404	7137	9096	2295	8541		1.2	Si
SLV 10	ini.	486.26	-1588	0.9	0	457	7137	9096	2295	7594		4.78	Si
SLV 10	fin.	-896.01	-5805	0.9	0	1308	7137	9096	2295	8444		1.45	Si
SLV 5	ini.	718.9	-2937	0.9	0	0	7137	9096	2295	7137		2.43	Si
SLV 5	fin.	-1195.71	-7380	0.9	0	1425	7137	9096	2295	8562		1.16	Si
SLV 11	ini.	-573.01	4348	0.9	0	1181	7137	9096	2295	8318		1.91	Si
SLV 11	fin.	315.98	609	0.9	0	652	7137	9096	2295	7788		12.79	Si
SLV 1	ini.	542.96	-2003	0.9	0	380	7137	9096	2295	7517		3.75	Si
SLV 1	fin.	-1031.21	-6540	0.9	0	1366	7137	9096	2295	8503		1.3	Si
SLV 4	ini.	159.53	148	0.9	0	759	7137	9096	2295	7896		53.43	Si
SLV 4	fin.	-590.5	-4247	0.9	0	1184	7137	9096	2295	8321		1.96	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.667	SLV 5	Si
V_SLV	1.16	SLV 5	Si
PF_SLU	3.925	SLU 81	Si
V_SLU	1.698	SLU 81	Si

Trave di accoppiamento 5

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
27.312	17.939	0.6	1.09	0.49	28.311	17.887	0.6	1.09	0.49	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti



fb	fhk	fvk0	fhmedio	τ_0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	ϵ_{fd}	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-86.96	-392	-0.0001509	0.0002246	0.0035	0.49		675.84	675.84	No	7.77	Si
SLU 74	fin.	108.37	-774	-0.0001917	0.0002246	0.0035	0.49		672.28	672.28	No	6.2	Si
SLU 82	ini.	-95.6	-431	-0.0001669	0.0002246	0.0035	0.49		675.84	675.84	No	7.07	Si
SLU 82	fin.	115.68	-812	-0.0002057	0.0002246	0.0035	0.49		672.28	672.28	No	5.81	Si
SLU 77	ini.	-86.96	-392	-0.0001509	0.0002246	0.0035	0.49		675.84	675.84	No	7.77	Si
SLU 77	fin.	108.37	-774	-0.0001917	0.0002246	0.0035	0.49		672.28	672.28	No	6.2	Si
SLU 84	ini.	-95.6	-431	-0.0001669	0.0002246	0.0035	0.49		675.84	675.84	No	7.07	Si
SLU 84	fin.	115.68	-812	-0.0002057	0.0002246	0.0035	0.49		672.28	672.28	No	5.81	Si
SLU 79	ini.	-86.96	-392	-0.0001509	0.0002246	0.0035	0.49		675.84	675.84	No	7.77	Si
SLU 79	fin.	108.37	-774	-0.0001917	0.0002246	0.0035	0.49		672.28	672.28	No	6.2	Si
SLU 83	ini.	-95.5	-430	-0.0001667	0.0002246	0.0035	0.49		675.84	675.84	No	7.08	Si
SLU 83	fin.	115.81	-822	-0.000206	0.0002246	0.0035	0.49		672.28	672.28	No	5.81	Si
SLU 81	ini.	-95.5	-430	-0.0001667	0.0002246	0.0035	0.49		675.84	675.84	No	7.08	Si
SLU 81	fin.	115.81	-822	-0.000206	0.0002246	0.0035	0.49		672.28	672.28	No	5.81	Si
SLU 80	ini.	-87.06	-392	-0.0001511	0.0002246	0.0035	0.49		675.84	675.84	No	7.76	Si
SLU 80	fin.	108.24	-764	-0.0001914	0.0002246	0.0035	0.49		672.28	672.28	No	6.21	Si
SLU 78	ini.	-87.06	-392	-0.0001511	0.0002246	0.0035	0.49		675.84	675.84	No	7.76	Si
SLU 78	fin.	108.24	-764	-0.0001914	0.0002246	0.0035	0.49		672.28	672.28	No	6.21	Si
SLU 75	ini.	-87.06	-392	-0.0001511	0.0002246	0.0035	0.49		675.84	675.84	No	7.76	Si
SLU 75	fin.	108.24	-764	-0.0001914	0.0002246	0.0035	0.49		672.28	672.28	No	6.21	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-95.5	1143	0.49	0	263	3886	3962	1250	4148	No	3.63	Si
SLU 83	fin.	115.81	-1817	0.49	0	301	3886	3962	1250	4186	No	2.3	Si
SLU 79	ini.	-86.96	1049	0.49	0	259	3886	3962	1250	4144	No	3.95	Si
SLU 79	fin.	108.37	-1695	0.49	0	296	3886	3962	1250	4182	No	2.47	Si
SLU 75	ini.	-87.06	1052	0.49	0	259	3886	3962	1250	4144	No	3.94	Si
SLU 75	fin.	108.24	-1683	0.49	0	296	3886	3962	1250	4181	No	2.48	Si
SLU 78	ini.	-87.06	1052	0.49	0	259	3886	3962	1250	4144	No	3.94	Si
SLU 78	fin.	108.24	-1683	0.49	0	296	3886	3962	1250	4181	No	2.48	Si
SLU 82	ini.	-95.6	1145	0.49	0	263	3886	3962	1250	4148	No	3.62	Si
SLU 82	fin.	115.68	-1805	0.49	0	300	3886	3962	1250	4185	No	2.32	Si
SLU 77	ini.	-86.96	1049	0.49	0	259	3886	3962	1250	4144	No	3.95	Si
SLU 77	fin.	108.37	-1695	0.49	0	296	3886	3962	1250	4182	No	2.47	Si
SLU 80	ini.	-87.06	1052	0.49	0	259	3886	3962	1250	4144	No	3.94	Si
SLU 80	fin.	108.24	-1683	0.49	0	296	3886	3962	1250	4181	No	2.48	Si
SLU 84	ini.	-95.6	1145	0.49	0	263	3886	3962	1250	4148	No	3.62	Si
SLU 84	fin.	115.68	-1805	0.49	0	300	3886	3962	1250	4185	No	2.32	Si
SLU 74	ini.	-86.96	1049	0.49	0	259	3886	3962	1250	4144	No	3.95	Si
SLU 74	fin.	108.37	-1695	0.49	0	296	3886	3962	1250	4182	No	2.47	Si
SLU 81	ini.	-95.5	1143	0.49	0	263	3886	3962	1250	4148	No	3.63	Si
SLU 81	fin.	115.81	-1817	0.49	0	301	3886	3962	1250	4186	No	2.3	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	144.83	839	-0.0002562	0.0003369	0.0035	0.49		812.87	812.87		5.61	Si
SLV 13	fin.	91.46	-2335	-0.0001574	0.0003369	0.0035	0.49		812.87	812.87		8.89	Si
SLV 3	ini.	-229.14	-1186	-0.0004253	0.0003369	0.0035	0.49		816.12	816.12		3.56	Si
SLV 3	fin.	56.09	993	-0.0000949	0.0003369	0.0035	0.49		812.87	812.87		14.49	Si
SLV 8	ini.	-239.98	-984	-0.0004487	0.0003369	0.0035	0.49		816.12	816.12		3.4	Si
SLV 8	fin.	60.76	825	-0.000103	0.0003369	0.0035	0.49		812.87	812.87		13.38	Si
SLV 11	ini.	-126.57	-303	-0.0002209	0.0003369	0.0035	0.49		816.12	816.12		6.45	Si
SLV 11	fin.	73.41	-330	-0.0001252	0.0003369	0.0035	0.49		812.87	812.87		11.07	Si
SLV 9	ini.	131.24	493	-0.0002304	0.0003369	0.0035	0.49		812.87	812.87		6.19	Si
SLV 9	fin.	83.82	-1871	-0.0001437	0.0003369	0.0035	0.49		812.87	812.87		9.7	Si
SLV 7	ini.	-215.56	-839	-0.0003964	0.0003369	0.0035	0.49		816.12	816.12		3.79	Si
SLV 7	fin.	63.73	530	-0.0001082	0.0003369	0.0035	0.49		812.87	812.87		12.75	Si
SLV 2	ini.	-176.22	-1091	-0.0003162	0.0003369	0.0035	0.49		816.12	816.12		4.63	Si
SLV 2	fin.	56.25	826	-0.0000952	0.0003369	0.0035	0.49		812.87	812.87		14.45	Si
SLV 12	ini.	-150.99	-448	-0.000267	0.0003369	0.0035	0.49		816.12	816.12		5.41	Si



Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	fin.	70.44	-35	-0.00012	0.0003369	0.0035	0.49		812.87	812.87		11.54	Si
SLV 1	ini.	-151.8	-947	-0.0002686	0.0003369	0.0035	0.49		816.12	816.12		5.38	Si
SLV 1	fin.	59.22	531	-0.0001003	0.0003369	0.0035	0.49		812.87	812.87		13.73	Si
SLV 4	ini.	-253.56	-1330	-0.0004785	0.0003369	0.0035	0.49		816.12	816.12		3.22	Si
SLV 4	fin.	53.12	1289	-0.0000898	0.0003369	0.0035	0.49		812.87	812.87		15.3	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	131.24	-890	0.49	0	248	3886	5943	1250	4134		4.64	Si
SLV 9	fin.	83.82	-2815	0.49	0	506	3886	5943	1250	4392		1.56	Si
SLV 10	ini.	106.82	-663	0.49	0	271	3886	5943	1250	4156		6.27	Si
SLV 10	fin.	80.85	-2435	0.49	0	482	3886	5943	1250	4367		1.79	Si
SLV 15	ini.	67.48	-446	0.49	0	230	3886	5943	1250	4115		9.22	Si
SLV 15	fin.	88.34	-2819	0.49	0	506	3886	5943	1250	4392		1.56	Si
SLV 13	ini.	144.83	-1077	0.49	0	182	3886	5943	1250	4067		3.78	Si
SLV 13	fin.	91.46	-3398	0.49	0	543	3886	5943	1250	4428		1.3	Si
SLV 3	ini.	-229.14	2189	0.49	0	447	3886	5943	1250	4332		1.98	Si
SLV 3	fin.	56.09	774	0.49	0	143	3886	5943	1250	4028		5.21	Si
SLV 14	ini.	120.41	-849	0.49	0	212	3886	5943	1250	4097		4.82	Si
SLV 14	fin.	88.49	-3017	0.49	0	520	3886	5943	1250	4405		1.46	Si
SLV 16	ini.	43.06	-219	0.49	0	254	3886	5943	1250	4140		18.93	Si
SLV 16	fin.	85.37	-2439	0.49	0	482	3886	5943	1250	4367		1.79	Si
SLV 4	ini.	-253.56	2416	0.49	0	460	3886	5943	1250	4346		1.8	Si
SLV 4	fin.	53.12	1154	0.49	0	0	3886	5943	1250	3886		3.37	Si
SLV 7	ini.	-215.56	2002	0.49	0	414	3886	5943	1250	4299		2.15	Si
SLV 7	fin.	63.73	191	0.49	0	242	3886	5943	1250	4127		21.6	Si
SLV 8	ini.	-239.98	2230	0.49	0	428	3886	5943	1250	4313		1.93	Si
SLV 8	fin.	60.76	572	0.49	0	185	3886	5943	1250	4070		7.12	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.219	SLV 4	Si
V_SLV	1.303	SLV 13	Si
PF_SLU	5.805	SLU 81	Si
V_SLU	2.304	SLU 81	Si

Trave di accoppiamento 6

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
25.828	27.161	-1.6	-0.21	1.39	26.828	27.161	-1.6	-0.21	1.39	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

f _b	f _{hk}	f _{vk0}	f _{hmedio}	τ ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	$\epsilon_{f,d}$	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-195.3	48	-0.0000405	0.0001872	0.0035	1.39		5240.94	5240.94	No	26.84	Si
SLU 74	fin.	1369.36	-1645	-0.0003226	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.82	Si
SLU 78	ini.	-186.87	16	-0.0000388	0.0001872	0.0035	1.39		5240.94	5240.94	No	28.05	Si
SLU 78	fin.	1361.05	-1692	-0.0003203	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.84	Si
SLU 77	ini.	-195.3	48	-0.0000405	0.0001872	0.0035	1.39		5240.94	5240.94	No	26.84	Si
SLU 77	fin.	1369.36	-1645	-0.0003226	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.82	Si
SLU 81	ini.	-220.48	77	-0.0000459	0.0001872	0.0035	1.39		5240.94	5240.94	No	23.77	Si
SLU 81	fin.	1467.14	-1737	-0.0003497	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.57	Si
SLU 83	ini.	-220.48	77	-0.0000459	0.0001872	0.0035	1.39		5240.94	5240.94	No	23.77	Si
SLU 83	fin.	1467.14	-1737	-0.0003497	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.57	Si
SLU 75	ini.	-186.87	16	-0.0000388	0.0001872	0.0035	1.39		5240.94	5240.94	No	28.05	Si
SLU 75	fin.	1361.05	-1692	-0.0003203	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.84	Si
SLU 80	ini.	-186.87	16	-0.0000388	0.0001872	0.0035	1.39		5240.94	5240.94	No	28.05	Si
SLU 80	fin.	1361.05	-1692	-0.0003203	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.84	Si



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-195.3	48	-0.0000405	0.0001872	0.0035	1.39		5240.94	5240.94	No	26.84	Si
SLU 79	fin.	1369.36	-1645	-0.0003226	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.82	Si
SLU 84	ini.	-212.05	44	-0.0000441	0.0001872	0.0035	1.39		5240.94	5240.94	No	24.72	Si
SLU 84	fin.	1458.82	-1784	-0.0003474	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.59	Si
SLU 82	ini.	-212.05	44	-0.0000441	0.0001872	0.0035	1.39		5240.94	5240.94	No	24.72	Si
SLU 82	fin.	1458.82	-1784	-0.0003474	0.0001872	0.0035	1.39		5230.97	5230.97	No	3.59	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-195.3	686	1.39	0	897	7930	9365	3545	8827	No	12.86	Si
SLU 79	fin.	1369.36	5740	1.39	0	1182	7930	9365	3545	9112	No	1.59	Si
SLU 82	ini.	-212.05	736	1.39	0	898	7930	9365	3545	8828	No	11.99	Si
SLU 82	fin.	1458.82	6138	1.39	0	1203	7930	9365	3545	9132	No	1.49	Si
SLU 80	ini.	-186.87	663	1.39	0	904	7930	9365	3545	8833	No	13.33	Si
SLU 80	fin.	1361.05	5738	1.39	0	1189	7930	9365	3545	9119	No	1.59	Si
SLU 81	ini.	-220.48	759	1.39	0	892	7930	9365	3545	8821	No	11.62	Si
SLU 81	fin.	1467.14	6139	1.39	0	1196	7930	9365	3545	9126	No	1.49	Si
SLU 83	ini.	-220.48	759	1.39	0	892	7930	9365	3545	8821	No	11.62	Si
SLU 83	fin.	1467.14	6139	1.39	0	1196	7930	9365	3545	9126	No	1.49	Si
SLU 75	ini.	-186.87	663	1.39	0	904	7930	9365	3545	8833	No	13.33	Si
SLU 75	fin.	1361.05	5738	1.39	0	1189	7930	9365	3545	9119	No	1.59	Si
SLU 84	ini.	-212.05	736	1.39	0	898	7930	9365	3545	8828	No	11.99	Si
SLU 84	fin.	1458.82	6138	1.39	0	1203	7930	9365	3545	9132	No	1.49	Si
SLU 74	ini.	-195.3	686	1.39	0	897	7930	9365	3545	8827	No	12.86	Si
SLU 74	fin.	1369.36	5740	1.39	0	1182	7930	9365	3545	9112	No	1.59	Si
SLU 78	ini.	-186.87	663	1.39	0	904	7930	9365	3545	8833	No	13.33	Si
SLU 78	fin.	1361.05	5738	1.39	0	1189	7930	9365	3545	9119	No	1.59	Si
SLU 77	ini.	-195.3	686	1.39	0	897	7930	9365	3545	8827	No	12.86	Si
SLU 77	fin.	1369.36	5740	1.39	0	1182	7930	9365	3545	9112	No	1.59	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-320.4	1706	-0.0000667	0.0002807	0.0035	1.39		7578.45	7578.45		23.65	Si
SLV 9	fin.	1384.64	1322	-0.0003124	0.0002807	0.0035	1.39		7569.61	7569.61		5.47	Si
SLV 6	ini.	-661.38	2495	-0.0001408	0.0002807	0.0035	1.39		7578.45	7578.45		11.46	Si
SLV 6	fin.	1931.44	1124	-0.0004587	0.0002807	0.0035	1.39		7569.61	7569.61		3.92	Si
SLV 10	ini.	-202.57	1394	-0.0000419	0.0002807	0.0035	1.39		7578.45	7578.45		37.41	Si
SLV 10	fin.	1178.22	1326	-0.0002612	0.0002807	0.0035	1.39		7569.61	7569.61		6.42	Si
SLV 15	ini.	706.24	-2318	-0.0001511	0.0002807	0.0035	1.39		7569.61	7569.61		10.72	Si
SLV 15	fin.	-467.96	-1500	-0.0000984	0.0002807	0.0035	1.39		7578.45	7578.45		16.19	Si
SLV 2	ini.	-932.09	2304	-0.0002024	0.0002807	0.0035	1.39		7578.45	7578.45		8.13	Si
SLV 2	fin.	2285.82	-760	-0.0005616	0.0002807	0.0035	1.39		7569.61	7569.61		3.31	Si
SLV 3	ini.	-823.15	1351	-0.0001773	0.0002807	0.0035	1.39		7578.45	7578.45		9.21	Si
SLV 3	fin.	2042.76	-2176	-0.0004904	0.0002807	0.0035	1.39		7569.61	7569.61		3.71	Si
SLV 4	ini.	-705.31	1039	-0.0001507	0.0002807	0.0035	1.39		7578.45	7578.45		10.74	Si
SLV 4	fin.	1836.35	-2172	-0.0004322	0.0002807	0.0035	1.39		7569.61	7569.61		4.12	Si
SLV 1	ini.	-1049.93	2615	-0.000232	0.0002807	0.0035	1.39		7578.45	7578.45		7.22	Si
SLV 1	fin.	2492.23	-764	-0.0006244	0.0002807	0.0035	1.39		7569.61	7569.61		3.04	Si
SLV 16	ini.	824.07	-2630	-0.0001777	0.0002807	0.0035	1.39		7569.61	7569.61		9.19	Si
SLV 16	fin.	-674.38	-1496	-0.0001437	0.0002807	0.0035	1.39		7578.45	7578.45		11.24	Si
SLV 5	ini.	-779.22	2806	-0.0001673	0.0002807	0.0035	1.39		7578.45	7578.45		9.73	Si
SLV 5	fin.	2137.85	1120	-0.0005179	0.0002807	0.0035	1.39		7569.61	7569.61		3.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	824.07	-3603	1.39	0	1797	7930	14048	3545	9727		2.7	Si
SLV 16	fin.	-674.38	161	1.39	0	1623	7930	14048	3545	9553		59.46	Si
SLV 4	ini.	-705.31	3058	1.39	0	1141	7930	14048	3545	9071		2.97	Si
SLV 4	fin.	1836.35	7294	1.39	0	1729	7930	14048	3545	9659		1.32	Si
SLV 5	ini.	-779.22	3100	1.39	0	612	7930	14048	3545	8541		2.76	Si
SLV 5	fin.	2137.85	4588	1.39	0	1123	7930	14048	3545	9052		1.97	Si
SLV 2	ini.	-932.09	3907	1.39	0	799	7930	14048	3545	8729		2.23	Si
SLV 2	fin.	2285.82	6950	1.39	0	1499	7930	14048	3545	9429		1.36	Si
SLV 11	ini.	435.53	-1728	1.39	0	1780	7930	14048	3545	9709		5.62	Si
SLV 11	fin.	-113.59	3594	1.39	0	1905	7930	14048	3545	9834		2.74	Si
SLV 1	ini.	-1049.93	4440	1.39	0	689	7930	14048	3545	8619		1.94	Si
SLV 1	fin.	2492.23	7486	1.39	0	1500	7930	14048	3545	9430		1.26	Si
SLV 7	ini.	-23.28	270	1.39	0	1609	7930	14048	3545	9539		35.35	Si
SLV 7	fin.	639.63	5734	1.39	0	1932	7930	14048	3545	9862		1.72	Si
SLV 8	ini.	94.55	-264	1.39	0	1659	7930	14048	3545	9589		36.34	Si
SLV 8	fin.	433.21	5198	1.39	0	1932	7930	14048	3545	9861		1.9	Si
SLV 6	ini.	-661.38	2566	1.39	0	734	7930	14048	3545	8663		3.38	Si
SLV 6	fin.	1931.44	4052	1.39	0	1122	7930	14048	3545	9051		2.23	Si
SLV 3	ini.	-823.15	3591	1.39	0	1067	7930	14048	3545	8997		2.51	Si
SLV 3	fin.	2042.76	7830	1.39	0	1730	7930	14048	3545	9659		1.23	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.037	SLV 1	Si
V_SLV	1.234	SLV 3	Si
PF_SLU	3.565	SLU 81	Si
V_SLU	1.486	SLU 81	Si



Trave di accoppiamento 7

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
25.828	27.161	0.19	1.09	0.9	26.828	27.161	0.19	1.09	0.9	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	f _{hk}	f _{vk0}	f _{hmedio}	τ ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α _t	α	elim,conv / ε,CNR DT-200					CRM / Fibrenet?			
											elim,conv	ε _{fd}	γ _{F,d}	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-705.47	-2436	-0.0004119	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.29	Si
SLU 83	fin.	475.99	-323	-0.0002607	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.87	Si
SLU 77	ini.	-658.58	-2275	-0.0003795	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.53	Si
SLU 77	fin.	439.32	-304	-0.000238	0.0001872	0.0035	0.9		2317.79	2317.79	No	5.28	Si
SLU 74	ini.	-658.58	-2275	-0.0003795	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.53	Si
SLU 74	fin.	439.32	-304	-0.000238	0.0001872	0.0035	0.9		2317.79	2317.79	No	5.28	Si
SLU 82	ini.	-703.11	-2431	-0.0004102	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.31	Si
SLU 82	fin.	467.73	-340	-0.0002555	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.96	Si
SLU 84	ini.	-703.11	-2431	-0.0004102	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.31	Si
SLU 84	fin.	467.73	-340	-0.0002555	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.96	Si
SLU 79	ini.	-658.58	-2275	-0.0003795	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.53	Si
SLU 79	fin.	439.32	-304	-0.000238	0.0001872	0.0035	0.9		2317.79	2317.79	No	5.28	Si
SLU 80	ini.	-656.22	-2270	-0.0003779	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.54	Si
SLU 80	fin.	431.05	-321	-0.000233	0.0001872	0.0035	0.9		2317.79	2317.79	No	5.38	Si
SLU 75	ini.	-656.22	-2270	-0.0003779	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.54	Si
SLU 75	fin.	431.05	-321	-0.000233	0.0001872	0.0035	0.9		2317.79	2317.79	No	5.38	Si
SLU 78	ini.	-656.22	-2270	-0.0003779	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.54	Si
SLU 78	fin.	431.05	-321	-0.000233	0.0001872	0.0035	0.9		2317.79	2317.79	No	5.38	Si
SLU 81	ini.	-705.47	-2436	-0.0004119	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.29	Si
SLU 81	fin.	475.99	-323	-0.0002607	0.0001872	0.0035	0.9		2317.79	2317.79	No	4.87	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	f _{vd}	V _t	V _{t,f}	V _{t,c}	V _{t,c int.}	V _{t,R}	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-703.11	5399	0.9	0	852	7137	6064	2295	7989	No	1.48	Si
SLU 82	fin.	467.73	-219	0.9	0	584	7137	6064	2295	7721	No	35.31	Si
SLU 74	ini.	-658.58	5076	0.9	0	835	7137	6064	2295	7972	No	1.57	Si
SLU 74	fin.	439.32	-218	0.9	0	579	7137	6064	2295	7715	No	35.34	Si
SLU 75	ini.	-656.22	5058	0.9	0	834	7137	6064	2295	7971	No	1.58	Si
SLU 75	fin.	431.05	-241	0.9	0	581	7137	6064	2295	7718	No	32.07	Si
SLU 84	ini.	-703.11	5399	0.9	0	852	7137	6064	2295	7989	No	1.48	Si
SLU 84	fin.	467.73	-219	0.9	0	584	7137	6064	2295	7721	No	35.31	Si
SLU 83	ini.	-705.47	5417	0.9	0	852	7137	6064	2295	7989	No	1.47	Si
SLU 83	fin.	475.99	-196	0.9	0	582	7137	6064	2295	7718	No	39.32	Si
SLU 81	ini.	-705.47	5417	0.9	0	852	7137	6064	2295	7989	No	1.47	Si
SLU 81	fin.	475.99	-196	0.9	0	582	7137	6064	2295	7718	No	39.32	Si
SLU 79	ini.	-658.58	5076	0.9	0	835	7137	6064	2295	7972	No	1.57	Si
SLU 79	fin.	439.32	-218	0.9	0	579	7137	6064	2295	7715	No	35.34	Si
SLU 80	ini.	-656.22	5058	0.9	0	834	7137	6064	2295	7971	No	1.58	Si
SLU 80	fin.	431.05	-241	0.9	0	581	7137	6064	2295	7718	No	32.07	Si
SLU 77	ini.	-658.58	5076	0.9	0	835	7137	6064	2295	7972	No	1.57	Si
SLU 77	fin.	439.32	-218	0.9	0	579	7137	6064	2295	7715	No	35.34	Si
SLU 78	ini.	-656.22	5058	0.9	0	834	7137	6064	2295	7971	No	1.58	Si
SLU 78	fin.	431.05	-241	0.9	0	581	7137	6064	2295	7718	No	32.07	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	122.49	158	-0.000061	0.0002807	0.0035	0.9		3183.56	3183.56		25.99	Si



Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	fin.	-657.22	-1340	-0.00036	0.0002807	0.0035	0.9		3189.29	3189.29		4.85	Si
SLV 3	ini.	-881.67	-2846	-0.0005083	0.0002807	0.0035	0.9		3189.29	3189.29		3.62	Si
SLV 3	fin.	972.46	535	-0.0005736	0.0002807	0.0035	0.9		3183.56	3183.56		3.27	Si
SLV 5	ini.	-949.76	-3022	-0.0005561	0.0002807	0.0035	0.9		3189.29	3189.29		3.36	Si
SLV 5	fin.	1239.28	1067	-0.0007759	0.0002807	0.0035	0.9		3183.56	3183.56		2.57	Si
SLV 2	ini.	-997.21	-3185	-0.0005902	0.0002807	0.0035	0.9		3189.29	3189.29		3.2	Si
SLV 2	fin.	1225.69	926	-0.0007651	0.0002807	0.0035	0.9		3183.56	3183.56		2.6	Si
SLV 1	ini.	-1075.31	-3412	-0.0006477	0.0002807	0.0035	0.9		3189.29	3189.29		2.97	Si
SLV 1	fin.	1358.86	1084	-0.0008734	0.0002807	0.0035	0.9		3183.56	3183.56		2.34	Si
SLV 4	ini.	-803.57	-2618	-0.000455	0.0002807	0.0035	0.9		3189.29	3189.29		3.97	Si
SLV 4	fin.	839.28	378	-0.0004802	0.0002807	0.0035	0.9		3183.56	3183.56		3.79	Si
SLV 9	ini.	-648.51	-2121	-0.0003545	0.0002807	0.0035	0.9		3189.29	3189.29		4.92	Si
SLV 9	fin.	750.37	504	-0.0004207	0.0002807	0.0035	0.9		3183.56	3183.56		4.24	Si
SLV 16	ini.	200.59	385	-0.0001011	0.0002807	0.0035	0.9		3183.56	3183.56		15.87	Si
SLV 16	fin.	-790.4	-1498	-0.0004462	0.0002807	0.0035	0.9		3189.29	3189.29		4.04	Si
SLV 12	ini.	75.04	-5	-0.0000371	0.0002807	0.0035	0.9		3183.56	3183.56		42.42	Si
SLV 12	fin.	-670.81	-1481	-0.0003685	0.0002807	0.0035	0.9		3189.29	3189.29		4.75	Si
SLV 6	ini.	-871.66	-2795	-0.0005014	0.0002807	0.0035	0.9		3189.29	3189.29		3.66	Si
SLV 6	fin.	1106.1	909	-0.0006724	0.0002807	0.0035	0.9		3183.56	3183.56		2.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-1075.31	6431	0.9	0	1252	7137	9096	2295	8389		1.3	Si
SLV 1	fin.	1358.86	2920	0.9	0	574	7137	9096	2295	7710		2.64	Si
SLV 4	ini.	-803.57	5065	0.9	0	1162	7137	9096	2295	8298		1.64	Si
SLV 4	fin.	839.28	1412	0.9	0	724	7137	9096	2295	7860		5.57	Si
SLV 2	ini.	-997.21	6072	0.9	0	1227	7137	9096	2295	8364		1.38	Si
SLV 2	fin.	1225.69	2528	0.9	0	610	7137	9096	2295	7747		3.07	Si
SLV 12	ini.	75.04	833	0.9	0	793	7137	9096	2295	7930		9.52	Si
SLV 12	fin.	-670.81	-2962	0.9	0	1018	7137	9096	2295	8155		2.75	Si
SLV 5	ini.	-949.76	5959	0.9	0	1209	7137	9096	2295	8345		1.4	Si
SLV 5	fin.	1239.28	2568	0.9	0	578	7137	9096	2295	7714		3	Si
SLV 9	ini.	-648.51	4548	0.9	0	1101	7137	9096	2295	8238		1.81	Si
SLV 9	fin.	750.37	1151	0.9	0	699	7137	9096	2295	7836		6.81	Si
SLV 6	ini.	-871.66	5599	0.9	0	1182	7137	9096	2295	8319		1.49	Si
SLV 6	fin.	1106.1	2176	0.9	0	614	7137	9096	2295	7751		3.56	Si
SLV 16	ini.	200.59	361	0.9	0	722	7137	9096	2295	7859		21.78	Si
SLV 16	fin.	-790.4	-3313	0.9	0	1020	7137	9096	2295	8157		2.46	Si
SLV 10	ini.	-570.41	4188	0.9	0	1072	7137	9096	2295	8209		1.96	Si
SLV 10	fin.	617.2	758	0.9	0	730	7137	9096	2295	7866		10.37	Si
SLV 3	ini.	-881.67	5425	0.9	0	1188	7137	9096	2295	8325		1.53	Si
SLV 3	fin.	972.46	1804	0.9	0	693	7137	9096	2295	7830		4.34	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.343	SLV 1	Si
V_SLV	1.304	SLV 1	Si
PF_SLU	3.295	SLU 81	Si
V_SLU	1.475	SLU 81	Si

Trave di accoppiamento 8

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
30.248	27.161	-1.6	-0.21	1.39	31.248	27.161	-1.6	-0.21	1.39	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fhk	fvk0	fmedio	τ_0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									at	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	386.25	-1712	-0.0000816	0.0001872	0.0035	1.39		5230.97	5230.97	No	13.54	Si
SLU 83	fin.	-7.78	-1280	-0.0000016	0.0001872	0.0035	1.39		5240.94	5240.94	No	673.69	Si
SLU 84	ini.	375.67	-1787	-0.0000793	0.0001872	0.0035	1.39		5230.97	5230.97	No	13.92	Si
SLU 84	fin.	-7.43	-1348	-0.0000015	0.0001872	0.0035	1.39		5240.94	5240.94	No	705.47	Si
SLU 79	ini.	347.46	-1621	-0.0000731	0.0001872	0.0035	1.39		5230.97	5230.97	No	15.05	Si
SLU 79	fin.	4.92	-1239	-0.000001	0.0001872	0.0035	1.39		5230.97	5230.97	No	1063.89	Si
SLU 77	ini.	347.46	-1621	-0.0000731	0.0001872	0.0035	1.39		5230.97	5230.97	No	15.05	Si
SLU 77	fin.	4.92	-1239	-0.000001	0.0001872	0.0035	1.39		5230.97	5230.97	No	1063.89	Si
SLU 39	ini.	354.3	-1457	-0.0000746	0.0001872	0.0035	1.39		5230.97	5230.97	No	14.76	Si
SLU 39	fin.	-24.23	-1051	-0.0000005	0.0001872	0.0035	1.39		5240.94	5240.94	No	216.33	Si
SLU 81	ini.	386.25	-1712	-0.0000816	0.0001872	0.0035	1.39		5230.97	5230.97	No	13.54	Si
SLU 81	fin.	-7.78	-1280	-0.0000016	0.0001872	0.0035	1.39		5240.94	5240.94	No	673.69	Si
SLU 40	ini.	343.72	-1533	-0.0000723	0.0001872	0.0035	1.39		5230.97	5230.97	No	15.22	Si
SLU 40	fin.	-23.88	-1118	-0.0000049	0.0001872	0.0035	1.39		5240.94	5240.94	No	219.51	Si
SLU 74	ini.	347.46	-1621	-0.0000731	0.0001872	0.0035	1.39		5230.97	5230.97	No	15.05	Si
SLU 74	fin.	4.92	-1239	-0.000001	0.0001872	0.0035	1.39		5230.97	5230.97	No	1063.89	Si
SLU 82	ini.	375.67	-1787	-0.0000793	0.0001872	0.0035	1.39		5230.97	5230.97	No	13.92	Si
SLU 82	fin.	-7.43	-1348	-0.0000015	0.0001872	0.0035	1.39		5240.94	5240.94	No	705.47	Si
SLU 41	ini.	354.3	-1457	-0.0000746	0.0001872	0.0035	1.39		5230.97	5230.97	No	14.76	Si
SLU 41	fin.	-24.23	-1051	-0.0000005	0.0001872	0.0035	1.39		5240.94	5240.94	No	216.33	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	375.67	-4254	1.39	0	1203	7930	9365	3545	9133	No	2.15	Si
SLU 82	fin.	-7.43	825	1.39	0	1138	7930	9365	3545	9067	No	10.98	Si
SLU 84	ini.	375.67	-4254	1.39	0	1203	7930	9365	3545	9133	No	2.15	Si
SLU 84	fin.	-7.43	825	1.39	0	1138	7930	9365	3545	9067	No	10.98	Si
SLU 79	ini.	347.46	-3944	1.39	0	1179	7930	9365	3545	9108	No	2.31	Si
SLU 79	fin.	4.92	775	1.39	0	1121	7930	9365	3545	9050	No	11.67	Si
SLU 76	ini.	329.83	-3955	1.39	0	1197	7930	9365	3545	9127	No	2.31	Si
SLU 76	fin.	5.5	813	1.39	0	1138	7930	9365	3545	9068	No	11.16	Si
SLU 78	ini.	336.88	-3950	1.39	0	1190	7930	9365	3545	9120	No	2.31	Si
SLU 78	fin.	5.27	798	1.39	0	1131	7930	9365	3545	9061	No	11.36	Si
SLU 81	ini.	386.25	-4247	1.39	0	1192	7930	9365	3545	9122	No	2.15	Si
SLU 81	fin.	-7.78	803	1.39	0	1127	7930	9365	3545	9057	No	11.28	Si
SLU 75	ini.	336.88	-3950	1.39	0	1190	7930	9365	3545	9120	No	2.31	Si
SLU 75	fin.	5.27	798	1.39	0	1131	7930	9365	3545	9061	No	11.36	Si
SLU 83	ini.	386.25	-4247	1.39	0	1192	7930	9365	3545	9122	No	2.15	Si
SLU 83	fin.	-7.78	803	1.39	0	1127	7930	9365	3545	9057	No	11.28	Si
SLU 73	ini.	329.83	-3955	1.39	0	1197	7930	9365	3545	9127	No	2.31	Si
SLU 73	fin.	5.5	813	1.39	0	1138	7930	9365	3545	9068	No	11.16	Si
SLU 80	ini.	336.88	-3950	1.39	0	1190	7930	9365	3545	9120	No	2.31	Si
SLU 80	fin.	5.27	798	1.39	0	1131	7930	9365	3545	9061	No	11.36	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1377.1	-653	-0.0003105	0.0002807	0.0035	1.39		7569.61	7569.61		5.5	Si
SLV 14	fin.	-1027.62	1808	-0.0002248	0.0002807	0.0035	1.39		7578.45	7578.45		7.37	Si
SLV 4	ini.	-791.24	-1653	-0.00017	0.0002807	0.0035	1.39		7578.45	7578.45		9.58	Si
SLV 4	fin.	918.32	-3314	-0.0001994	0.0002807	0.0035	1.39		7569.61	7569.61		8.24	Si
SLV 10	ini.	802.51	2496	-0.0001728	0.0002807	0.0035	1.39		7569.61	7569.61		9.43	Si
SLV 10	fin.	-377.5	3008	-0.0000789	0.0002807	0.0035	1.39		7578.45	7578.45		20.08	Si
SLV 1	ini.	-832.85	735	-0.0001795	0.0002807	0.0035	1.39		7578.45	7578.45		9.1	Si
SLV 1	fin.	1050.96	-1618	-0.0002306	0.0002807	0.0035	1.39		7569.61	7569.61		7.2	Si
SLV 2	ini.	-669.7	654	-0.0001427	0.0002807	0.0035	1.39		7578.45	7578.45		11.32	Si
SLV 2	fin.	897.91	-1341	-0.0001947	0.0002807	0.0035	1.39		7569.61	7569.61		8.43	Si
SLV 13	ini.	1213.96	-572	-0.0002699	0.0002807	0.0035	1.39		7569.61	7569.61		6.24	Si
SLV 13	fin.	-874.57	1531	-0.0001891	0.0002807	0.0035	1.39		7578.45	7578.45		8.67	Si
SLV 3	ini.	-954.38	-1572	-0.0002076	0.0002807	0.0035	1.39		7578.45	7578.45		7.94	Si
SLV 3	fin.	1071.37	-3591	-0.0002354	0.0002807	0.0035	1.39		7569.61	7569.61		7.07	Si
SLV 9	ini.	639.37	2577	-0.0001361	0.0002807	0.0035	1.39		7569.61	7569.61		11.84	Si
SLV 9	fin.	-224.45	2731	-0.0000465	0.0002807	0.0035	1.39		7578.45	7578.45		33.76	Si
SLV 15	ini.	1092.42	-2878	-0.0002405	0.0002807	0.0035	1.39		7569.61	7569.61		6.93	Si
SLV 15	fin.	-854.16	-443	-0.0001844	0.0002807	0.0035	1.39		7578.45	7578.45		8.87	Si
SLV 16	ini.	1255.57	-2960	-0.0002801	0.0002807	0.0035	1.39		7569.61	7569.61		6.03	Si
SLV 16	fin.	-1007.21	-165	-0.0002199	0.0002807	0.0035	1.39		7578.45	7578.45		7.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-832.85	1263	1.39	0	1209	7930	14048	3545	9139		7.24	Si
SLV 1	fin.	1050.96	4022	1.39	0	1643	7930	14048	3545	9573		2.38	Si
SLV 15	ini.	1092.42	-5878	1.39	0	1833	7930	14048	3545	9763		1.66	Si
SLV 15	fin.	-854.16	-2366	1.39	0	1443	7930	14048	3545	9372		3.96	Si
SLV 12	ini.	397.4	-5319	1.39	0	2140	7930	14048	3545	10069		1.89	Si
SLV 12	fin.	-309.46	-270	1.39	0	1930	7930	14048	3545	9860		36.58	Si
SLV 16	ini.	1255.57	-6436	1.39	0	1845	7930	14048	3545	9775		1.52	Si
SLV 16	fin.	-1007.21	-2918	1.39	0	1391	7930	14048	3545	9321		3.19	Si
SLV 14	ini.	1377.1	-5525	1.39	0	1481	7930	14048	3545	9410		1.7	Si
SLV 14	fin.	-1027.62	-3191	1.39	0	948	7930	14048	3545	8878		2.78	Si
SLV 13	ini.	1213.96	-4967	1.39	0	1466	7930	14048	3545	9396		1.89	Si
SLV 13	fin.	-874.57	-2638	1.39	0	1022	7930	14048	3545	8952		3.39	Si
SLV 4	ini.	-791.24	-206	1.39	0	1649	7930	14048	3545	9578		46.43	Si
SLV 4	fin.	918.32	3742	1.39	0	1895	7930	14048	3545	9825		2.63	Si
SLV 11	ini.	234.25	-4761	1.39	0	2130	7930	14048	3545	10059		2.11	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	fin.	-156.41	283	1.39	0	1967	7930	14048	3545	9897		34.97	Si
SLV 2	ini.	-669.7	705	1.39	0	1227	7930	14048	3545	9157		12.99	Si
SLV 2	fin.	897.91	3469	1.39	0	1598	7930	14048	3545	9528		2.75	Si
SLV 3	ini.	-954.38	352	1.39	0	1636	7930	14048	3545	9565		27.18	Si
SLV 3	fin.	1071.37	4294	1.39	0	1933	7930	14048	3545	9863		2.3	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	5.497	SLV 14	Si
V_SLV	1.519	SLV 16	Si
PF_SLU	13.543	SLU 81	Si
V_SLU	2.147	SLU 82	Si

Trave di accoppiamento 9

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
30.248	27.161	0.19	1.09	0.9	31.248	27.161	0.19	1.09	0.9	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	ϵ_{fd}	$y_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-284.24	-986	-0.0001474	0.0001872	0.0035	0.9		2324.38	2324.38	No	8.18	Si
SLU 83	fin.	-219.85	-1000	-0.0001123	0.0001872	0.0035	0.9		2324.38	2324.38	No	10.57	Si
SLU 80	ini.	-281.11	-959	-0.0001456	0.0001872	0.0035	0.9		2324.38	2324.38	No	8.27	Si
SLU 80	fin.	-192.85	-920	-0.0000979	0.0001872	0.0035	0.9		2324.38	2324.38	No	12.05	Si
SLU 81	ini.	-284.24	-986	-0.0001474	0.0001872	0.0035	0.9		2324.38	2324.38	No	8.18	Si
SLU 81	fin.	-219.85	-1000	-0.0001123	0.0001872	0.0035	0.9		2324.38	2324.38	No	10.57	Si
SLU 79	ini.	-274.93	-938	-0.0001422	0.0001872	0.0035	0.9		2324.38	2324.38	No	8.45	Si
SLU 79	fin.	-194.77	-914	-0.0000989	0.0001872	0.0035	0.9		2324.38	2324.38	No	11.93	Si
SLU 82	ini.	-290.42	-1008	-0.0001508	0.0001872	0.0035	0.9		2324.38	2324.38	No	8	Si
SLU 82	fin.	-217.93	-1005	-0.0001113	0.0001872	0.0035	0.9		2324.38	2324.38	No	10.67	Si
SLU 84	ini.	-290.42	-1008	-0.0001508	0.0001872	0.0035	0.9		2324.38	2324.38	No	8	Si
SLU 84	fin.	-217.93	-1005	-0.0001113	0.0001872	0.0035	0.9		2324.38	2324.38	No	10.67	Si
SLU 76	ini.	-285.23	-974	-0.0001479	0.0001872	0.0035	0.9		2324.38	2324.38	No	8.15	Si
SLU 76	fin.	-191.57	-923	-0.0000972	0.0001872	0.0035	0.9		2324.38	2324.38	No	12.13	Si
SLU 78	ini.	-281.11	-959	-0.0001456	0.0001872	0.0035	0.9		2324.38	2324.38	No	8.27	Si
SLU 78	fin.	-192.85	-920	-0.0000979	0.0001872	0.0035	0.9		2324.38	2324.38	No	12.05	Si
SLU 75	ini.	-281.11	-959	-0.0001456	0.0001872	0.0035	0.9		2324.38	2324.38	No	8.27	Si
SLU 75	fin.	-192.85	-920	-0.0000979	0.0001872	0.0035	0.9		2324.38	2324.38	No	12.05	Si
SLU 73	ini.	-285.23	-974	-0.0001479	0.0001872	0.0035	0.9		2324.38	2324.38	No	8.15	Si
SLU 73	fin.	-191.57	-923	-0.0000972	0.0001872	0.0035	0.9		2324.38	2324.38	No	12.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-281.11	2688	0.9	0	675	7137	6064	2295	7811	No	2.91	Si
SLU 80	fin.	-192.85	-2209	0.9	0	669	7137	6064	2295	7806	No	3.53	Si
SLU 79	ini.	-274.93	2665	0.9	0	672	7137	6064	2295	7809	No	2.93	Si
SLU 79	fin.	-194.77	-2217	0.9	0	669	7137	6064	2295	7805	No	3.52	Si
SLU 84	ini.	-290.42	2819	0.9	0	681	7137	6064	2295	7818	No	2.77	Si
SLU 84	fin.	-217.93	-2385	0.9	0	681	7137	6064	2295	7818	No	3.28	Si
SLU 75	ini.	-281.11	2688	0.9	0	675	7137	6064	2295	7811	No	2.91	Si
SLU 75	fin.	-192.85	-2209	0.9	0	669	7137	6064	2295	7806	No	3.53	Si
SLU 81	ini.	-284.24	2796	0.9	0	678	7137	6064	2295	7815	No	2.79	Si
SLU 81	fin.	-219.85	-2393	0.9	0	680	7137	6064	2295	7817	No	3.27	Si
SLU 76	ini.	-285.23	2703	0.9	0	677	7137	6064	2295	7813	No	2.89	Si
SLU 76	fin.	-191.57	-2203	0.9	0	670	7137	6064	2295	7807	No	3.54	Si
SLU 78	ini.	-281.11	2688	0.9	0	675	7137	6064	2295	7811	No	2.91	Si
SLU 78	fin.	-192.85	-2209	0.9	0	669	7137	6064	2295	7806	No	3.53	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-290.42	2819	0.9	0	681	7137	6064	2295	7818	No	2.77	Si
SLU 82	fin.	-217.93	-2385	0.9	0	681	7137	6064	2295	7818	No	3.28	Si
SLU 83	ini.	-284.24	2796	0.9	0	678	7137	6064	2295	7815	No	2.79	Si
SLU 83	fin.	-219.85	-2393	0.9	0	680	7137	6064	2295	7817	No	3.27	Si
SLU 73	ini.	-285.23	2703	0.9	0	677	7137	6064	2295	7813	No	2.89	Si
SLU 73	fin.	-191.57	-2203	0.9	0	670	7137	6064	2295	7807	No	3.54	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-833.45	-2211	-0.0004752	0.0002807	0.0035	0.9		3189.29	3189.29		3.83	Si
SLV 4	fin.	615.79	479	-0.0003349	0.0002807	0.0035	0.9		3183.56	3183.56		5.17	Si
SLV 10	ini.	425.77	850	-0.0002228	0.0002807	0.0035	0.9		3183.56	3183.56		7.48	Si
SLV 10	fin.	-760.07	-1437	-0.0004261	0.0002807	0.0035	0.9		3189.29	3189.29		4.2	Si
SLV 9	ini.	330.42	624	-0.00017	0.0002807	0.0035	0.9		3183.56	3183.56		9.64	Si
SLV 9	fin.	-649.45	-1282	-0.0003551	0.0002807	0.0035	0.9		3189.29	3189.29		4.91	Si
SLV 1	ini.	-685.19	-1855	-0.0003777	0.0002807	0.0035	0.9		3189.29	3189.29		4.65	Si
SLV 1	fin.	491.92	344	-0.0002607	0.0002807	0.0035	0.9		3183.56	3183.56		6.47	Si
SLV 13	ini.	440.02	913	-0.0002309	0.0002807	0.0035	0.9		3183.56	3183.56		7.24	Si
SLV 13	fin.	-843.15	-1636	-0.0004818	0.0002807	0.0035	0.9		3189.29	3189.29		3.78	Si
SLV 8	ini.	-723.85	-1923	-0.0004025	0.0002807	0.0035	0.9		3189.29	3189.29		4.41	Si
SLV 8	fin.	422.09	125	-0.0002208	0.0002807	0.0035	0.9		3183.56	3183.56		7.54	Si
SLV 3	ini.	-928.81	-2438	-0.0005412	0.0002807	0.0035	0.9		3189.29	3189.29		3.43	Si
SLV 3	fin.	726.41	634	-0.000405	0.0002807	0.0035	0.9		3183.56	3183.56		4.38	Si
SLV 14	ini.	535.37	1139	-0.0002862	0.0002807	0.0035	0.9		3183.56	3183.56		5.95	Si
SLV 14	fin.	-953.77	-1791	-0.000559	0.0002807	0.0035	0.9		3189.29	3189.29		3.34	Si
SLV 7	ini.	-819.2	-2149	-0.0004656	0.0002807	0.0035	0.9		3189.29	3189.29		3.89	Si
SLV 7	fin.	532.71	280	-0.0002847	0.0002807	0.0035	0.9		3183.56	3183.56		5.98	Si
SLV 16	ini.	291.76	556	-0.0001492	0.0002807	0.0035	0.9		3183.56	3183.56		10.91	Si
SLV 16	fin.	-719.28	-1500	-0.0003995	0.0002807	0.0035	0.9		3189.29	3189.29		4.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	440.02	-461	0.9	0	613	7137	9096	2295	7750		16.8	Si
SLV 13	fin.	-843.15	-3473	0.9	0	1039	7137	9096	2295	8175		2.35	Si
SLV 2	ini.	-589.83	3559	0.9	0	1038	7137	9096	2295	8174		2.3	Si
SLV 2	fin.	381.3	844	0.9	0	759	7137	9096	2295	7895		9.36	Si
SLV 15	ini.	196.4	142	0.9	0	733	7137	9096	2295	7869		55.61	Si
SLV 15	fin.	-608.66	-3735	0.9	0	999	7137	9096	2295	8136		2.18	Si
SLV 1	ini.	-685.19	3931	0.9	0	1067	7137	9096	2295	8204		2.09	Si
SLV 1	fin.	491.92	1219	0.9	0	730	7137	9096	2295	7867		6.45	Si
SLV 16	ini.	291.76	-230	0.9	0	689	7137	9096	2295	7826		34.01	Si
SLV 16	fin.	-719.28	-4110	0.9	0	1021	7137	9096	2295	8157		1.98	Si
SLV 8	ini.	-723.85	3328	0.9	0	1076	7137	9096	2295	8213		2.47	Si
SLV 8	fin.	422.09	-1366	0.9	0	770	7137	9096	2295	7907		5.79	Si
SLV 3	ini.	-928.81	4534	0.9	0	1140	7137	9096	2295	8277		1.83	Si
SLV 3	fin.	726.41	957	0.9	0	673	7137	9096	2295	7810		8.16	Si
SLV 4	ini.	-833.45	4162	0.9	0	1112	7137	9096	2295	8249		1.98	Si
SLV 4	fin.	615.79	582	0.9	0	704	7137	9096	2295	7841		13.47	Si
SLV 7	ini.	-819.2	3700	0.9	0	1105	7137	9096	2295	8241		2.23	Si
SLV 7	fin.	532.71	-991	0.9	0	742	7137	9096	2295	7879		7.95	Si
SLV 14	ini.	535.37	-833	0.9	0	560	7137	9096	2295	7697		9.24	Si
SLV 14	fin.	-953.77	-3848	0.9	0	1059	7137	9096	2295	8196		2.13	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.344	SLV 14	Si
V_SLV	1.826	SLV 3	Si
PF_SLU	8.003	SLU 82	Si
V_SLU	2.773	SLU 82	Si

Trave di accoppiamento 10

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
29.472	22.451	0.57	1.09	0.52	28.472	22.451	0.57	1.09	0.52	1	0.3	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb ₀	f _{hk}	f _{vk0}	f _{medio}	τ ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

Sismicad 12.19 - Licenza assegnata a Sidel ingegneria Srl - Via Isonzo, 13 - Villanova di Castenaso (BO)



materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / e,CNR DT-200							CRM / Fibrenet?			
									αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-19.8	-491	-0.000291	0.0002246	0.0035	0.52		1014.2	1014.2	No	51.22	Si
SLU 77	fin.	-164.11	-2227	-0.0002634	0.0002246	0.0035	0.52		1014.2	1014.2	No	6.18	Si
SLU 74	ini.	-19.8	-491	-0.000291	0.0002246	0.0035	0.52		1014.2	1014.2	No	51.22	Si
SLU 74	fin.	-164.11	-2227	-0.0002634	0.0002246	0.0035	0.52		1014.2	1014.2	No	6.18	Si
SLU 78	ini.	-20.12	-494	-0.000296	0.0002246	0.0035	0.52		1014.2	1014.2	No	50.41	Si
SLU 78	fin.	-163.93	-2225	-0.0002631	0.0002246	0.0035	0.52		1014.2	1014.2	No	6.19	Si
SLU 81	ini.	-24.04	-562	-0.000354	0.0002246	0.0035	0.52		1014.2	1014.2	No	42.19	Si
SLU 81	fin.	-172.63	-2360	-0.0002789	0.0002246	0.0035	0.52		1014.2	1014.2	No	5.87	Si
SLU 80	ini.	-20.12	-494	-0.000296	0.0002246	0.0035	0.52		1014.2	1014.2	No	50.41	Si
SLU 80	fin.	-163.93	-2225	-0.0002631	0.0002246	0.0035	0.52		1014.2	1014.2	No	6.19	Si
SLU 82	ini.	-24.36	-565	-0.000359	0.0002246	0.0035	0.52		1014.2	1014.2	No	41.64	Si
SLU 82	fin.	-172.46	-2358	-0.0002785	0.0002246	0.0035	0.52		1014.2	1014.2	No	5.88	Si
SLU 83	ini.	-24.04	-562	-0.000354	0.0002246	0.0035	0.52		1014.2	1014.2	No	42.19	Si
SLU 83	fin.	-172.63	-2360	-0.0002789	0.0002246	0.0035	0.52		1014.2	1014.2	No	5.87	Si
SLU 79	ini.	-19.8	-491	-0.000291	0.0002246	0.0035	0.52		1014.2	1014.2	No	51.22	Si
SLU 79	fin.	-164.11	-2227	-0.0002634	0.0002246	0.0035	0.52		1014.2	1014.2	No	6.18	Si
SLU 84	ini.	-24.36	-565	-0.000359	0.0002246	0.0035	0.52		1014.2	1014.2	No	41.64	Si
SLU 84	fin.	-172.46	-2358	-0.0002785	0.0002246	0.0035	0.52		1014.2	1014.2	No	5.88	Si
SLU 75	ini.	-20.12	-494	-0.000296	0.0002246	0.0035	0.52		1014.2	1014.2	No	50.41	Si
SLU 75	fin.	-163.93	-2225	-0.0002631	0.0002246	0.0035	0.52		1014.2	1014.2	No	6.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-19.8	1863	0.52	0	202	4123	2803	1326	4129	No	2.22	Si
SLU 79	fin.	-164.11	-3192	0.52	0	324	4123	2803	1326	4129	No	1.29	Si
SLU 81	ini.	-24.04	2045	0.52	0	208	4123	2803	1326	4129	No	2.02	Si
SLU 81	fin.	-172.63	-3431	0.52	0	331	4123	2803	1326	4129	No	1.2	Si
SLU 83	ini.	-24.04	2045	0.52	0	208	4123	2803	1326	4129	No	2.02	Si
SLU 83	fin.	-172.63	-3431	0.52	0	331	4123	2803	1326	4129	No	1.2	Si
SLU 80	ini.	-20.12	1865	0.52	0	202	4123	2803	1326	4129	No	2.21	Si
SLU 80	fin.	-163.93	-3191	0.52	0	323	4123	2803	1326	4129	No	1.29	Si
SLU 84	ini.	-24.36	2047	0.52	0	209	4123	2803	1326	4129	No	2.02	Si
SLU 84	fin.	-172.46	-3430	0.52	0	331	4123	2803	1326	4129	No	1.2	Si
SLU 75	ini.	-20.12	1865	0.52	0	202	4123	2803	1326	4129	No	2.21	Si
SLU 75	fin.	-163.93	-3191	0.52	0	323	4123	2803	1326	4129	No	1.29	Si
SLU 82	ini.	-24.36	2047	0.52	0	209	4123	2803	1326	4129	No	2.02	Si
SLU 82	fin.	-172.46	-3430	0.52	0	331	4123	2803	1326	4129	No	1.2	Si
SLU 78	ini.	-20.12	1865	0.52	0	202	4123	2803	1326	4129	No	2.21	Si
SLU 78	fin.	-163.93	-3191	0.52	0	323	4123	2803	1326	4129	No	1.29	Si
SLU 77	ini.	-19.8	1863	0.52	0	202	4123	2803	1326	4129	No	2.22	Si
SLU 77	fin.	-164.11	-3192	0.52	0	324	4123	2803	1326	4129	No	1.29	Si
SLU 74	ini.	-19.8	1863	0.52	0	202	4123	2803	1326	4129	No	2.22	Si
SLU 74	fin.	-164.11	-3192	0.52	0	324	4123	2803	1326	4129	No	1.29	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-133.12	-1411	-0.0002046	0.0003369	0.0035	0.52		1001.89	1001.89		7.53	Si
SLV 13	fin.	8.7	-298	-0.000128	0.0003369	0.0035	0.52		998.47	998.47		114.74	Si
SLV 2	ini.	156.44	1509	-0.0002439	0.0003369	0.0035	0.52		998.47	998.47		6.38	Si
SLV 2	fin.	-260.61	-3245	-0.0004282	0.0003369	0.0035	0.52		1001.89	1001.89		3.84	Si
SLV 15	ini.	-175.04	-2053	-0.0002744	0.0003369	0.0035	0.52		1001.89	1001.89		5.72	Si
SLV 15	fin.	33.2	219	-0.0000491	0.0003369	0.0035	0.52		998.47	998.47		30.07	Si
SLV 16	ini.	-182.1	-2134	-0.0002865	0.0003369	0.0035	0.52		1001.89	1001.89		5.5	Si
SLV 16	fin.	39.41	298	-0.0000584	0.0003369	0.0035	0.52		998.47	998.47		25.34	Si
SLV 5	ini.	108.59	1288	-0.0001656	0.0003369	0.0035	0.52		998.47	998.47		9.19	Si
SLV 5	fin.	-198.97	-2869	-0.0003157	0.0003369	0.0035	0.52		1001.89	1001.89		5.04	Si
SLV 6	ini.	101.54	1207	-0.0001544	0.0003369	0.0035	0.52		998.47	998.47		9.83	Si
SLV 6	fin.	-192.76	-2790	-0.0003049	0.0003369	0.0035	0.52		1001.89	1001.89		5.2	Si
SLV 1	ini.	163.5	1591	-0.0002557	0.0003369	0.0035	0.52		998.47	998.47		6.11	Si
SLV 1	fin.	-266.81	-3324	-0.0004401	0.0003369	0.0035	0.52		1001.89	1001.89		3.75	Si
SLV 4	ini.	114.52	868	-0.0001751	0.0003369	0.0035	0.52		998.47	998.47		8.72	Si
SLV 4	fin.	-236.11	-2728	-0.0003824	0.0003369	0.0035	0.52		1001.89	1001.89		4.24	Si
SLV 3	ini.	121.58	949	-0.0001865	0.0003369	0.0035	0.52		998.47	998.47		8.21	Si
SLV 3	fin.	-242.31	-2807	-0.0003939	0.0003369	0.0035	0.52		1001.89	1001.89		4.13	Si
SLV 14	ini.	-140.18	-1493	-0.0002161	0.0003369	0.0035	0.52		1001.89	1001.89		7.15	Si
SLV 14	fin.	14.91	-220	-0.0000219	0.0003369	0.0035	0.52		998.47	998.47		66.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-182.1	2354	0.52	0	411	4123	4205	1326	4534		1.93	Si
SLV 16	fin.	39.41	-846	0.52	0	186	4123	4205	1326	4310		5.1	Si
SLV 4	ini.	114.52	319	0.52	0	57	4123	4205	1326	4180		13.12	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	fin.	-236.11	-3017	0.52	0	449	4123	4205	1326	4572		1.52	Si
SLV 1	ini.	163.5	-40	0.52	0	0	4123	4205	1326	4123		104.34	Si
SLV 1	fin.	-266.81	-3340	0.52	0	484	4123	4205	1326	4608		1.38	Si
SLV 6	ini.	101.54	413	0.52	0	0	4123	4205	1326	4123		9.98	Si
SLV 6	fin.	-192.76	-2798	0.52	0	453	4123	4205	1326	4576		1.64	Si
SLV 2	ini.	156.44	34	0.52	0	0	4123	4205	1326	4123		122.87	Si
SLV 2	fin.	-260.61	-3266	0.52	0	480	4123	4205	1326	4603		1.41	Si
SLV 10	ini.	12.55	1024	0.52	0	185	4123	4205	1326	4308		4.21	Si
SLV 10	fin.	-110.1	-2147	0.52	0	394	4123	4205	1326	4517		2.1	Si
SLV 3	ini.	121.58	246	0.52	0	0	4123	4205	1326	4123		16.79	Si
SLV 3	fin.	-242.31	-3090	0.52	0	454	4123	4205	1326	4577		1.48	Si
SLV 15	ini.	-175.04	2281	0.52	0	405	4123	4205	1326	4529		1.99	Si
SLV 15	fin.	33.2	-919	0.52	0	198	4123	4205	1326	4321		4.7	Si
SLV 9	ini.	19.61	951	0.52	0	172	4123	4205	1326	4296		4.52	Si
SLV 9	fin.	-116.31	-2220	0.52	0	399	4123	4205	1326	4523		2.04	Si
SLV 5	ini.	108.59	340	0.52	0	0	4123	4205	1326	4123		12.12	Si
SLV 5	fin.	-198.97	-2871	0.52	0	458	4123	4205	1326	4581		1.6	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.755	SLV 1	Si
V_SLV	1.38	SLV 1	Si
PF_SLU	5.875	SLU 81	Si
V_SLU	1.203	SLU 81	Si

Trave di accoppiamento 13

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
33.371	23.706	0.5	1.09	0.59	33.371	22.756	0.5	1.09	0.59	0.95	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	f _{hk}	f _{vk0}	f _{hmedio}	τ ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α _t	α	elim,conv	e _{f,d}	γ _{F,d}	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 60	ini.	173.54	320	-0.0002125	0.0002246	0.0035	0.59		878.36	878.36	No	5.06	Si
SLU 60	fin.	-446.85	-837	-0.0006389	0.0002246	0.0035	0.59		882.81	882.81	No	1.98	Si
SLU 83	ini.	152.16	284	-0.0001843	0.0002246	0.0035	0.59		878.36	878.36	No	5.77	Si
SLU 83	fin.	-454.91	-867	-0.0006533	0.0002246	0.0035	0.59		882.81	882.81	No	1.94	Si
SLU 79	ini.	167.73	311	-0.0002047	0.0002246	0.0035	0.59		878.36	878.36	No	5.24	Si
SLU 79	fin.	-451.6	-849	-0.0006474	0.0002246	0.0035	0.59		882.81	882.81	No	1.95	Si
SLU 62	ini.	173.54	320	-0.0002125	0.0002246	0.0035	0.59		878.36	878.36	No	5.06	Si
SLU 62	fin.	-446.85	-837	-0.0006389	0.0002246	0.0035	0.59		882.81	882.81	No	1.98	Si
SLU 82	ini.	140.85	267	-0.0001696	0.0002246	0.0035	0.59		878.36	878.36	No	6.24	Si
SLU 82	fin.	-444.11	-852	-0.0006341	0.0002246	0.0035	0.59		882.81	882.81	No	1.99	Si
SLU 77	ini.	167.73	311	-0.0002047	0.0002246	0.0035	0.59		878.36	878.36	No	5.24	Si
SLU 77	fin.	-451.6	-849	-0.0006474	0.0002246	0.0035	0.59		882.81	882.81	No	1.95	Si
SLU 66	ini.	204.07	374	-0.0002541	0.0002246	0.0035	0.59		878.36	878.36	No	4.3	Si
SLU 66	fin.	-443.88	-807	-0.0006337	0.0002246	0.0035	0.59		882.81	882.81	No	1.99	Si
SLU 84	ini.	140.85	267	-0.0001696	0.0002246	0.0035	0.59		878.36	878.36	No	6.24	Si
SLU 84	fin.	-444.11	-852	-0.0006341	0.0002246	0.0035	0.59		882.81	882.81	No	1.99	Si
SLU 81	ini.	152.16	284	-0.0001843	0.0002246	0.0035	0.59		878.36	878.36	No	5.77	Si
SLU 81	fin.	-454.91	-867	-0.0006533	0.0002246	0.0035	0.59		882.81	882.81	No	1.94	Si
SLU 74	ini.	167.73	311	-0.0002047	0.0002246	0.0035	0.59		878.36	878.36	No	5.24	Si
SLU 74	fin.	-451.6	-849	-0.0006474	0.0002246	0.0035	0.59		882.81	882.81	No	1.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	167.73	-7	0.59	0	213	4678	4771	1505	4891	No	716.39	Si
SLU 79	fin.	-451.6	-2019	0.59	0	349	4678	4771	1505	5028	No	2.49	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	156.42	28	0.59	0	215	4678	4771	1505	4894	No	174.48	Si
SLU 80	fin.	-440.79	-1987	0.59	0	348	4678	4771	1505	5026	No	2.53	Si
SLU 74	ini.	167.73	-7	0.59	0	213	4678	4771	1505	4891	No	716.39	Si
SLU 74	fin.	-451.6	-2019	0.59	0	349	4678	4771	1505	5028	No	2.49	Si
SLU 60	ini.	173.54	-37	0.59	0	211	4678	4771	1505	4890	No	131.82	Si
SLU 60	fin.	-446.85	-1988	0.59	0	348	4678	4771	1505	5026	No	2.53	Si
SLU 82	ini.	140.85	98	0.59	0	219	4678	4771	1505	4898	No	49.93	Si
SLU 82	fin.	-444.11	-2025	0.59	0	349	4678	4771	1505	5028	No	2.48	Si
SLU 84	ini.	140.85	98	0.59	0	219	4678	4771	1505	4898	No	49.93	Si
SLU 84	fin.	-444.11	-2025	0.59	0	349	4678	4771	1505	5028	No	2.48	Si
SLU 77	ini.	167.73	-7	0.59	0	213	4678	4771	1505	4891	No	716.39	Si
SLU 77	fin.	-451.6	-2019	0.59	0	349	4678	4771	1505	5028	No	2.49	Si
SLU 81	ini.	152.16	63	0.59	0	217	4678	4771	1505	4895	No	77.43	Si
SLU 81	fin.	-454.91	-2057	0.59	0	351	4678	4771	1505	5029	No	2.45	Si
SLU 83	ini.	152.16	63	0.59	0	217	4678	4771	1505	4895	No	77.43	Si
SLU 83	fin.	-454.91	-2057	0.59	0	351	4678	4771	1505	5029	No	2.45	Si
SLU 62	ini.	173.54	-37	0.59	0	211	4678	4771	1505	4890	No	131.82	Si
SLU 62	fin.	-446.85	-1988	0.59	0	348	4678	4771	1505	5026	No	2.53	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	644.62	994	-0.0009601	0.0003369	0.0035	0.59		932.52	932.52		1.45	Si
SLV 13	fin.	-851.33	-1387	-0.001408	0.0003369	0.0035	0.59		937.11	937.11		1.1	Si
SLV 9	ini.	825.31	1293	-0.0013506	0.0003369	0.0035	0.59		932.52	932.52		1.13	Si
SLV 9	fin.	-982.41	-1524	-0.001764	0.0003369	0.0035	0.59		937.11	937.11		0.95	No
SLV 15	ini.	287.45	456	-0.0003601	0.0003369	0.0035	0.59		932.52	932.52		3.24	Si
SLV 15	fin.	-517.58	-923	-0.0007214	0.0003369	0.0035	0.59		937.11	937.11		1.81	Si
SLV 7	ini.	-567.59	-779	-0.0008108	0.0003369	0.0035	0.59		937.11	937.11		1.65	Si
SLV 7	fin.	351.48	365	-0.0004534	0.0003369	0.0035	0.59		932.52	932.52		2.65	Si
SLV 8	ini.	-522.72	-738	-0.0007304	0.0003369	0.0035	0.59		937.11	937.11		1.79	Si
SLV 8	fin.	298.65	271	-0.000376	0.0003369	0.0035	0.59		932.52	932.52		3.12	Si
SLV 5	ini.	623	1012	-0.0009179	0.0003369	0.0035	0.59		932.52	932.52		1.5	Si
SLV 5	fin.	-761.01	-1179	-0.0011982	0.0003369	0.0035	0.59		937.11	937.11		1.23	Si
SLV 10	ini.	870.17	1335	-0.001461	0.0003369	0.0035	0.59		932.52	932.52		1.07	Si
SLV 10	fin.	-1035.24	-1618	-0.001933	0.0003369	0.0035	0.59		937.11	937.11		0.91	No
SLV 14	ini.	689.49	1035	-0.0010503	0.0003369	0.0035	0.59		932.52	932.52		1.35	Si
SLV 14	fin.	-904.16	-1480	-0.0015426	0.0003369	0.0035	0.59		937.11	937.11		1.04	Si
SLV 16	ini.	332.31	498	-0.0004248	0.0003369	0.0035	0.59		932.52	932.52		2.81	Si
SLV 16	fin.	-570.41	-1017	-0.000816	0.0003369	0.0035	0.59		937.11	937.11		1.64	Si
SLV 6	ini.	667.87	1054	-0.0010063	0.0003369	0.0035	0.59		932.52	932.52		1.4	Si
SLV 6	fin.	-813.85	-1272	-0.0013182	0.0003369	0.0035	0.59		937.11	937.11		1.15	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	623	-1512	0.59	0	218	4678	7156	1505	4897		3.24	Si
SLV 5	fin.	-761.01	-2746	0.59	0	515	4678	7156	1505	5193		1.89	Si
SLV 15	ini.	287.45	-675	0.59	0	321	4678	7156	1505	4999		7.41	Si
SLV 15	fin.	-517.58	-1907	0.59	0	489	4678	7156	1505	5168		2.71	Si
SLV 13	ini.	644.62	-1776	0.59	0	223	4678	7156	1505	4901		2.76	Si
SLV 13	fin.	-851.33	-2877	0.59	0	534	4678	7156	1505	5213		1.81	Si
SLV 10	ini.	870.17	-2370	0.59	0	125	4678	7156	1505	4804		2.03	Si
SLV 10	fin.	-1035.24	-3476	0.59	0	555	4678	7156	1505	5234		1.51	Si
SLV 16	ini.	332.31	-819	0.59	0	314	4678	7156	1505	4993		6.1	Si
SLV 16	fin.	-570.41	-2055	0.59	0	499	4678	7156	1505	5177		2.52	Si
SLV 6	ini.	667.87	-1656	0.59	0	209	4678	7156	1505	4887		2.95	Si
SLV 6	fin.	-813.85	-2894	0.59	0	524	4678	7156	1505	5202		1.8	Si
SLV 14	ini.	689.49	-1920	0.59	0	213	4678	7156	1505	4892		2.55	Si
SLV 14	fin.	-904.16	-3025	0.59	0	543	4678	7156	1505	5221		1.73	Si
SLV 8	ini.	-522.72	2013	0.59	0	470	4678	7156	1505	5149		2.56	Si
SLV 8	fin.	298.65	339	0.59	0	348	4678	7156	1505	5027		14.81	Si
SLV 9	ini.	825.31	-2226	0.59	0	141	4678	7156	1505	4819		2.16	Si
SLV 9	fin.	-982.41	-3329	0.59	0	547	4678	7156	1505	5225		1.57	Si
SLV 7	ini.	-567.59	2157	0.59	0	475	4678	7156	1505	5153		2.39	Si
SLV 7	fin.	351.48	487	0.59	0	334	4678	7156	1505	5013		10.29	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.905	SLV 10	No
V_SLV	1.505	SLV 10	Si
PF_SLU	1.941	SLU 81	Si
V_SLU	2.445	SLU 81	Si

Trave di accoppiamento 14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
24.042	20.644	1.09	2.09	1	23.989	19.646	1.09	2.09	1	1	0.45	30000



Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	e,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-1013.96	2236	-0.0004931	0.0001872	0.0035	1		2735.8	2735.8	No	2.7	Si
SLU 78	fin.	972.19	-3971	-0.0004696	0.0001872	0.0035	1		2728.53	2728.53	No	2.81	Si
SLU 84	ini.	-1043.62	2274	-0.0005107	0.0001872	0.0035	1		2735.8	2735.8	No	2.62	Si
SLU 84	fin.	1010.87	-4151	-0.0004923	0.0001872	0.0035	1		2728.53	2728.53	No	2.7	Si
SLU 83	ini.	-1038.87	2261	-0.0005079	0.0001872	0.0035	1		2735.8	2735.8	No	2.63	Si
SLU 83	fin.	1006.47	-4133	-0.0004897	0.0001872	0.0035	1		2728.53	2728.53	No	2.71	Si
SLU 81	ini.	-1038.87	2261	-0.0005079	0.0001872	0.0035	1		2735.8	2735.8	No	2.63	Si
SLU 81	fin.	1006.47	-4133	-0.0004897	0.0001872	0.0035	1		2728.53	2728.53	No	2.71	Si
SLU 79	ini.	-1009.22	2223	-0.0004903	0.0001872	0.0035	1		2735.8	2735.8	No	2.71	Si
SLU 79	fin.	967.79	-3954	-0.000467	0.0001872	0.0035	1		2728.53	2728.53	No	2.82	Si
SLU 80	ini.	-1013.96	2236	-0.0004931	0.0001872	0.0035	1		2735.8	2735.8	No	2.7	Si
SLU 80	fin.	972.19	-3971	-0.0004696	0.0001872	0.0035	1		2728.53	2728.53	No	2.81	Si
SLU 82	ini.	-1043.62	2274	-0.0005107	0.0001872	0.0035	1		2735.8	2735.8	No	2.62	Si
SLU 82	fin.	1010.87	-4151	-0.0004923	0.0001872	0.0035	1		2728.53	2728.53	No	2.7	Si
SLU 76	ini.	-1017.12	2244	-0.000495	0.0001872	0.0035	1		2735.8	2735.8	No	2.69	Si
SLU 76	fin.	975.12	-3983	-0.0004713	0.0001872	0.0035	1		2728.53	2728.53	No	2.8	Si
SLU 73	ini.	-1017.12	2244	-0.000495	0.0001872	0.0035	1		2735.8	2735.8	No	2.69	Si
SLU 73	fin.	975.12	-3983	-0.0004713	0.0001872	0.0035	1		2728.53	2728.53	No	2.8	Si
SLU 75	ini.	-1013.96	2236	-0.0004931	0.0001872	0.0035	1		2735.8	2735.8	No	2.7	Si
SLU 75	fin.	972.19	-3971	-0.0004696	0.0001872	0.0035	1		2728.53	2728.53	No	2.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-1009.22	4140	1	0	0	7930	6738	2550	7930	No	1.92	Si
SLU 77	fin.	967.79	6590	1	0	1192	7930	6738	2550	9122	No	1.38	Si
SLU 84	ini.	-1043.62	4249	1	0	0	7930	6738	2550	7930	No	1.87	Si
SLU 84	fin.	1010.87	6916	1	0	1213	7930	6738	2550	9143	No	1.32	Si
SLU 76	ini.	-1017.12	4182	1	0	0	7930	6738	2550	7930	No	1.9	Si
SLU 76	fin.	975.12	6630	1	0	1196	7930	6738	2550	9125	No	1.38	Si
SLU 73	ini.	-1017.12	4182	1	0	0	7930	6738	2550	7930	No	1.9	Si
SLU 73	fin.	975.12	6630	1	0	1196	7930	6738	2550	9125	No	1.38	Si
SLU 81	ini.	-1038.87	4224	1	0	0	7930	6738	2550	7930	No	1.88	Si
SLU 81	fin.	1006.47	6893	1	0	1211	7930	6738	2550	9141	No	1.33	Si
SLU 75	ini.	-1013.96	4165	1	0	0	7930	6738	2550	7930	No	1.9	Si
SLU 75	fin.	972.19	6614	1	0	1194	7930	6738	2550	9124	No	1.38	Si
SLU 80	ini.	-1013.96	4165	1	0	0	7930	6738	2550	7930	No	1.9	Si
SLU 80	fin.	972.19	6614	1	0	1194	7930	6738	2550	9124	No	1.38	Si
SLU 83	ini.	-1038.87	4224	1	0	0	7930	6738	2550	7930	No	1.88	Si
SLU 83	fin.	1006.47	6893	1	0	1211	7930	6738	2550	9141	No	1.33	Si
SLU 78	ini.	-1013.96	4165	1	0	0	7930	6738	2550	7930	No	1.9	Si
SLU 78	fin.	972.19	6614	1	0	1194	7930	6738	2550	9124	No	1.38	Si
SLU 82	ini.	-1043.62	4249	1	0	0	7930	6738	2550	7930	No	1.87	Si
SLU 82	fin.	1010.87	6916	1	0	1213	7930	6738	2550	9143	No	1.32	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-1207.6	2912	-0.0005747	0.0002807	0.0035	1		3929.63	3929.63		3.25	Si
SLV 4	fin.	1076.72	-4344	-0.0005012	0.0002807	0.0035	1		3923.34	3923.34		3.64	Si
SLV 11	ini.	-1003.33	2404	-0.0004599	0.0002807	0.0035	1		3929.63	3929.63		3.92	Si
SLV 11	fin.	958.76	-3896	-0.0004367	0.0002807	0.0035	1		3923.34	3923.34		4.09	Si
SLV 8	ini.	-1299.51	3193	-0.0006289	0.0002807	0.0035	1		3929.63	3929.63		3.02	Si
SLV 8	fin.	1188.52	-4795	-0.0005648	0.0002807	0.0035	1		3923.34	3923.34		3.3	Si
SLV 16	ini.	-625.94	1405	-0.0002683	0.0002807	0.0035	1		3929.63	3929.63		6.28	Si
SLV 16	fin.	621.22	-2488	-0.0002665	0.0002807	0.0035	1		3923.34	3923.34		6.32	Si
SLV 2	ini.	-954.32	2220	-0.0004334	0.0002807	0.0035	1		3929.63	3929.63		4.12	Si
SLV 2	fin.	844.24	-3402	-0.0003765	0.0002807	0.0035	1		3923.34	3923.34		4.65	Si
SLV 12	ini.	-1125.01	2740	-0.0005274	0.0002807	0.0035	1		3929.63	3929.63		3.49	Si
SLV 12	fin.	1051.87	-4238	-0.0004874	0.0002807	0.0035	1		3923.34	3923.34		3.73	Si



Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-832.64	1883	-0.0003698	0.0002807	0.0035	1		3929.63	3929.63		4.72	Si
SLV 1	fin.	751.13	-3060	-0.0003294	0.0002807	0.0035	1		3923.34	3923.34		5.22	Si
SLV 3	ini.	-1085.92	2576	-0.0005054	0.0002807	0.0035	1		3929.63	3929.63		3.62	Si
SLV 3	fin.	983.61	-4003	-0.00045	0.0002807	0.0035	1		3923.34	3923.34		3.99	Si
SLV 15	ini.	-504.26	1068	-0.0002121	0.0002807	0.0035	1		3929.63	3929.63		7.79	Si
SLV 15	fin.	528.11	-2147	-0.0002233	0.0002807	0.0035	1		3923.34	3923.34		7.43	Si
SLV 7	ini.	-1177.83	2856	-0.0005575	0.0002807	0.0035	1		3929.63	3929.63		3.34	Si
SLV 7	fin.	1095.41	-4453	-0.0005117	0.0002807	0.0035	1		3923.34	3923.34		3.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-1085.92	4894	1	0	0	7930	10106	2550	7930		1.62	Si
SLV 3	fin.	983.61	6233	1	0	1572	7930	10106	2550	9501		1.52	Si
SLV 16	ini.	-625.94	2620	1	0	653	7930	10106	2550	8582		3.28	Si
SLV 16	fin.	621.22	4288	1	0	1378	7930	10106	2550	9307		2.17	Si
SLV 12	ini.	-1125.01	5274	1	0	0	7930	10106	2550	7930		1.5	Si
SLV 12	fin.	1051.87	6676	1	0	1600	7930	10106	2550	9529		1.43	Si
SLV 11	ini.	-1003.33	4698	1	0	220	7930	10106	2550	8149		1.73	Si
SLV 11	fin.	958.76	6107	1	0	1559	7930	10106	2550	9488		1.55	Si
SLV 15	ini.	-504.26	2044	1	0	744	7930	10106	2550	8673		4.24	Si
SLV 15	fin.	528.11	3719	1	0	1330	7930	10106	2550	9259		2.49	Si
SLV 4	ini.	-1207.6	5470	1	0	0	7930	10106	2550	7930		1.45	Si
SLV 4	fin.	1076.72	6801	1	0	1612	7930	10106	2550	9542		1.4	Si
SLV 8	ini.	-1299.51	6129	1	0	0	7930	10106	2550	7930		1.29	Si
SLV 8	fin.	1188.52	7430	1	0	1664	7930	10106	2550	9594		1.29	Si
SLV 1	ini.	-832.64	3474	1	0	495	7930	10106	2550	8425		2.43	Si
SLV 1	fin.	751.13	4940	1	0	1454	7930	10106	2550	9384		1.9	Si
SLV 7	ini.	-1177.83	5553	1	0	0	7930	10106	2550	7930		1.43	Si
SLV 7	fin.	1095.41	6862	1	0	1625	7930	10106	2550	9555		1.39	Si
SLV 2	ini.	-954.32	4050	1	0	343	7930	10106	2550	8273		2.04	Si
SLV 2	fin.	844.24	5508	1	0	1498	7930	10106	2550	9427		1.71	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.024	SLV 8	Si
V_SLV	1.291	SLV 8	Si
PF_SLU	2.621	SLU 82	Si
V_SLU	1.322	SLU 82	Si

Trave di accoppiamento 15

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
24.042	20.644	3.99	4.89	0.9	23.989	19.646	3.99	4.89	0.9	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	f _{hk}	f _{vk0}	f _{hmedio}	τ ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	elim,conv / ε.CNR DT-200				connettori	tipo di muratura	CRM / Fibrenet?			
									α _t	α	elim,conv	ε _{fd}	γ _{F,d}		CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009			Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-1228.22	-3928	-0.0008158	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.89	Si
SLU 82	fin.	891.85	3761	-0.000548	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.6	Si
SLU 73	ini.	-1184.78	-3787	-0.0007791	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.96	Si
SLU 73	fin.	868.26	3654	-0.0005304	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.67	Si
SLU 75	ini.	-1181.61	-3776	-0.0007765	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.97	Si
SLU 75	fin.	866.09	3645	-0.0005288	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.68	Si
SLU 80	ini.	-1181.61	-3776	-0.0007765	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.97	Si
SLU 80	fin.	866.09	3645	-0.0005288	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.68	Si
SLU 76	ini.	-1184.78	-3787	-0.0007791	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.96	Si
SLU 76	fin.	868.26	3654	-0.0005304	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.67	Si
SLU 84	ini.	-1228.22	-3928	-0.0008158	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.89	Si



Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	fin.	891.85	3761	-0.000548	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.6	Si
SLU 77	ini.	-1176.87	-3761	-0.0007725	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.98	Si
SLU 77	fin.	862.84	3631	-0.0005263	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.69	Si
SLU 78	ini.	-1181.61	-3776	-0.0007765	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.97	Si
SLU 78	fin.	866.09	3645	-0.0005288	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.68	Si
SLU 83	ini.	-1223.47	-3912	-0.0008117	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.9	Si
SLU 83	fin.	888.59	3747	-0.0005456	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.61	Si
SLU 81	ini.	-1223.47	-3912	-0.0008117	0.0001872	0.0035	0.9		2324.38	2324.38	No	1.9	Si
SLU 81	fin.	888.59	3747	-0.0005456	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-1181.61	5798	0.9	0	986	7137	6064	2295	8123	No	1.4	Si
SLU 78	fin.	866.09	4922	0.9	0	0	7137	6064	2295	7137	No	1.45	Si
SLU 73	ini.	-1184.78	5812	0.9	0	987	7137	6064	2295	8124	No	1.4	Si
SLU 73	fin.	868.26	4936	0.9	0	0	7137	6064	2295	7137	No	1.45	Si
SLU 80	ini.	-1181.61	5798	0.9	0	986	7137	6064	2295	8123	No	1.4	Si
SLU 80	fin.	866.09	4922	0.9	0	0	7137	6064	2295	7137	No	1.45	Si
SLU 82	ini.	-1228.22	5992	0.9	0	1000	7137	6064	2295	8137	No	1.36	Si
SLU 82	fin.	891.85	5112	0.9	0	0	7137	6064	2295	7137	No	1.4	Si
SLU 76	ini.	-1184.78	5812	0.9	0	987	7137	6064	2295	8124	No	1.4	Si
SLU 76	fin.	868.26	4936	0.9	0	0	7137	6064	2295	7137	No	1.45	Si
SLU 75	ini.	-1181.61	5798	0.9	0	986	7137	6064	2295	8123	No	1.4	Si
SLU 75	fin.	866.09	4922	0.9	0	0	7137	6064	2295	7137	No	1.45	Si
SLU 84	ini.	-1228.22	5992	0.9	0	1000	7137	6064	2295	8137	No	1.36	Si
SLU 84	fin.	891.85	5112	0.9	0	0	7137	6064	2295	7137	No	1.4	Si
SLU 81	ini.	-1223.47	5971	0.9	0	999	7137	6064	2295	8136	No	1.36	Si
SLU 81	fin.	888.59	5091	0.9	0	0	7137	6064	2295	7137	No	1.4	Si
SLU 79	ini.	-1176.87	5776	0.9	0	985	7137	6064	2295	8122	No	1.41	Si
SLU 79	fin.	862.84	4900	0.9	0	0	7137	6064	2295	7137	No	1.46	Si
SLU 83	ini.	-1223.47	5971	0.9	0	999	7137	6064	2295	8136	No	1.36	Si
SLU 83	fin.	888.59	5091	0.9	0	0	7137	6064	2295	7137	No	1.4	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1043.07	-3357	-0.0006237	0.0002807	0.0035	0.9		3189.29	3189.29		3.06	Si
SLV 11	fin.	748.1	3003	-0.0004192	0.0002807	0.0035	0.9		3183.56	3183.56		4.26	Si
SLV 4	ini.	-1222.76	-3920	-0.000761	0.0002807	0.0035	0.9		3189.29	3189.29		2.61	Si
SLV 4	fin.	908.42	3779	-0.0005281	0.0002807	0.0035	0.9		3183.56	3183.56		3.5	Si
SLV 8	ini.	-1297.49	-4173	-0.0008209	0.0002807	0.0035	0.9		3189.29	3189.29		2.46	Si
SLV 8	fin.	943.21	3829	-0.0005527	0.0002807	0.0035	0.9		3183.56	3183.56		3.38	Si
SLV 1	ini.	-904.28	-2888	-0.000524	0.0002807	0.0035	0.9		3189.29	3189.29		3.53	Si
SLV 1	fin.	683.49	2911	-0.0003774	0.0002807	0.0035	0.9		3183.56	3183.56		4.66	Si
SLV 16	ini.	-764.68	-2439	-0.0004292	0.0002807	0.0035	0.9		3189.29	3189.29		4.17	Si
SLV 16	fin.	562.6	2312	-0.0003025	0.0002807	0.0035	0.9		3183.56	3183.56		5.66	Si
SLV 15	ini.	-647.68	-2068	-0.000354	0.0002807	0.0035	0.9		3189.29	3189.29		4.92	Si
SLV 15	fin.	471.24	1926	-0.0002488	0.0002807	0.0035	0.9		3183.56	3183.56		6.76	Si
SLV 7	ini.	-1180.5	-3801	-0.0007279	0.0002807	0.0035	0.9		3189.29	3189.29		2.7	Si
SLV 7	fin.	851.85	3443	-0.0004888	0.0002807	0.0035	0.9		3183.56	3183.56		3.74	Si
SLV 12	ini.	-1160.07	-3728	-0.000712	0.0002807	0.0035	0.9		3189.29	3189.29		2.75	Si
SLV 12	fin.	839.47	3388	-0.0004803	0.0002807	0.0035	0.9		3183.56	3183.56		3.79	Si
SLV 3	ini.	-1105.77	-3549	-0.0006706	0.0002807	0.0035	0.9		3189.29	3189.29		2.88	Si
SLV 3	fin.	817.05	3393	-0.0004651	0.0002807	0.0035	0.9		3183.56	3183.56		3.9	Si
SLV 2	ini.	-1021.28	-3259	-0.0006077	0.0002807	0.0035	0.9		3189.29	3189.29		3.12	Si
SLV 2	fin.	774.85	3297	-0.0004368	0.0002807	0.0035	0.9		3183.56	3183.56		4.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-904.28	4504	0.9	0	1193	7137	9096	2295	8330		1.85	Si
SLV 1	fin.	683.49	3845	0.9	0	0	7137	9096	2295	7137		1.86	Si
SLV 12	ini.	-1160.07	5417	0.9	0	1287	7137	9096	2295	8423		1.55	Si
SLV 12	fin.	839.47	4755	0.9	0	0	7137	9096	2295	7137		1.5	Si
SLV 8	ini.	-1297.49	6034	0.9	0	1333	7137	9096	2295	8470		1.4	Si
SLV 8	fin.	943.21	5377	0.9	0	0	7137	9096	2295	7137		1.33	Si
SLV 7	ini.	-1180.5	5485	0.9	0	1294	7137	9096	2295	8431		1.54	Si
SLV 7	fin.	851.85	4828	0.9	0	0	7137	9096	2295	7137		1.48	Si
SLV 2	ini.	-1021.28	5053	0.9	0	1235	7137	9096	2295	8372		1.66	Si
SLV 2	fin.	774.85	4394	0.9	0	0	7137	9096	2295	7137		1.62	Si
SLV 16	ini.	-764.68	3782	0.9	0	1140	7137	9096	2295	8277		2.19	Si
SLV 16	fin.	562.6	3110	0.9	0	0	7137	9096	2295	7137		2.29	Si
SLV 11	ini.	-1043.07	4868	0.9	0	1246	7137	9096	2295	8383		1.72	Si
SLV 11	fin.	748.1	4206	0.9	0	0	7137	9096	2295	7137		1.7	Si
SLV 4	ini.	-1222.76	5838	0.9	0	1307	7137	9096	2295	8444		1.45	Si
SLV 4	fin.	908.42	5183	0.9	0	0	7137	9096	2295	7137		1.38	Si
SLV 3	ini.	-1105.77	5289	0.9	0	1267	7137	9096	2295	8404		1.59	Si
SLV 3	fin.	817.05	4634	0.9	0	0	7137	9096	2295	7137		1.54	Si
SLV 6	ini.	-625.89	3418	0.9	0	1082	7137	9096	2295	8219		2.4	Si
SLV 6	fin.	497.99	2749	0.9	0	127	7137	9096	2295	7263		2.64	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.458	SLV 8	Si
V_SLV	1.327	SLV 8	Si



Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.892	SLU 82	Si
V_SLU	1.358	SLU 82	Si

Trave di accoppiamento 16

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
24.284	25.288	1.09	2.09	1	24.232	24.289	1.09	2.09	1	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fhk	fvk0	fhmedio	t0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	s,fd	yF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	221.11	-1654	-0.0000906	0.0001872	0.0035	1		2728.53	2728.53	No	12.34	Si
SLU 79	fin.	130.3	-1173	-0.0000526	0.0001872	0.0035	1		2728.53	2728.53	No	20.94	Si
SLU 81	ini.	223.38	-1725	-0.0000915	0.0001872	0.0035	1		2728.53	2728.53	No	12.21	Si
SLU 81	fin.	154.9	-1307	-0.0000627	0.0001872	0.0035	1		2728.53	2728.53	No	17.61	Si
SLU 58	ini.	219.11	-1553	-0.0000897	0.0001872	0.0035	1		2728.53	2728.53	No	12.45	Si
SLU 58	fin.	96.45	-984	-0.0000387	0.0001872	0.0035	1		2728.53	2728.53	No	28.29	Si
SLU 56	ini.	219.11	-1553	-0.0000897	0.0001872	0.0035	1		2728.53	2728.53	No	12.45	Si
SLU 56	fin.	96.45	-984	-0.0000387	0.0001872	0.0035	1		2728.53	2728.53	No	28.29	Si
SLU 83	ini.	223.38	-1725	-0.0000915	0.0001872	0.0035	1		2728.53	2728.53	No	12.21	Si
SLU 83	fin.	154.9	-1307	-0.0000627	0.0001872	0.0035	1		2728.53	2728.53	No	17.61	Si
SLU 60	ini.	221.37	-1624	-0.0000907	0.0001872	0.0035	1		2728.53	2728.53	No	12.33	Si
SLU 60	fin.	121.06	-1117	-0.0000488	0.0001872	0.0035	1		2728.53	2728.53	No	22.54	Si
SLU 77	ini.	221.11	-1654	-0.0000906	0.0001872	0.0035	1		2728.53	2728.53	No	12.34	Si
SLU 77	fin.	130.3	-1173	-0.0000526	0.0001872	0.0035	1		2728.53	2728.53	No	20.94	Si
SLU 53	ini.	219.11	-1553	-0.0000897	0.0001872	0.0035	1		2728.53	2728.53	No	12.45	Si
SLU 53	fin.	96.45	-984	-0.0000387	0.0001872	0.0035	1		2728.53	2728.53	No	28.29	Si
SLU 62	ini.	221.37	-1624	-0.0000907	0.0001872	0.0035	1		2728.53	2728.53	No	12.33	Si
SLU 62	fin.	121.06	-1117	-0.0000488	0.0001872	0.0035	1		2728.53	2728.53	No	22.54	Si
SLU 74	ini.	221.11	-1654	-0.0000906	0.0001872	0.0035	1		2728.53	2728.53	No	12.34	Si
SLU 74	fin.	130.3	-1173	-0.0000526	0.0001872	0.0035	1		2728.53	2728.53	No	20.94	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	212.63	-2517	1	0	921	7930	6738	2550	8851	No	3.52	Si
SLU 84	fin.	157.25	1865	1	0	869	7930	6738	2550	8799	No	4.72	Si
SLU 81	ini.	223.38	-2562	1	0	927	7930	6738	2550	8857	No	3.46	Si
SLU 81	fin.	154.9	1832	1	0	869	7930	6738	2550	8798	No	4.8	Si
SLU 82	ini.	212.63	-2517	1	0	921	7930	6738	2550	8851	No	3.52	Si
SLU 82	fin.	157.25	1865	1	0	869	7930	6738	2550	8799	No	4.72	Si
SLU 77	ini.	221.11	-2461	1	0	918	7930	6738	2550	8847	No	3.59	Si
SLU 77	fin.	130.3	1629	1	0	849	7930	6738	2550	8779	No	5.39	Si
SLU 83	ini.	223.38	-2562	1	0	927	7930	6738	2550	8857	No	3.46	Si
SLU 83	fin.	154.9	1832	1	0	869	7930	6738	2550	8798	No	4.8	Si
SLU 78	ini.	210.37	-2417	1	0	911	7930	6738	2550	8841	No	3.66	Si
SLU 78	fin.	132.64	1662	1	0	849	7930	6738	2550	8779	No	5.28	Si
SLU 75	ini.	210.37	-2417	1	0	911	7930	6738	2550	8841	No	3.66	Si
SLU 75	fin.	132.64	1662	1	0	849	7930	6738	2550	8779	No	5.28	Si
SLU 80	ini.	210.37	-2417	1	0	911	7930	6738	2550	8841	No	3.66	Si
SLU 80	fin.	132.64	1662	1	0	849	7930	6738	2550	8779	No	5.28	Si
SLU 79	ini.	221.11	-2461	1	0	918	7930	6738	2550	8847	No	3.59	Si
SLU 79	fin.	130.3	1629	1	0	849	7930	6738	2550	8779	No	5.39	Si
SLU 74	ini.	221.11	-2461	1	0	918	7930	6738	2550	8847	No	3.59	Si
SLU 74	fin.	130.3	1629	1	0	849	7930	6738	2550	8779	No	5.39	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	483.49	-2416	-0.0002031	0.0002807	0.0035	1		3923.34	3923.34		8.11	Si
SLV 10	fin.	-166.12	-28	-0.0000668	0.0002807	0.0035	1		3929.63	3929.63		23.66	Si
SLV 12	ini.	-406.01	1027	-0.0001684	0.0002807	0.0035	1		3929.63	3929.63		9.68	Si
SLV 12	fin.	578.77	-2261	-0.0002467	0.0002807	0.0035	1		3923.34	3923.34		6.78	Si
SLV 2	ini.	535.38	-2611	-0.0002267	0.0002807	0.0035	1		3923.34	3923.34		7.33	Si
SLV 2	fin.	-300.14	392	-0.0001228	0.0002807	0.0035	1		3929.63	3929.63		13.09	Si
SLV 6	ini.	651.12	-3062	-0.0002807	0.0002807	0.0035	1		3923.34	3923.34		6.03	Si
SLV 6	fin.	-348.3	527	-0.0001434	0.0002807	0.0035	1		3929.63	3929.63		11.28	Si
SLV 16	ini.	-290.26	575	-0.0001186	0.0002807	0.0035	1		3929.63	3929.63		13.54	Si
SLV 16	fin.	530.61	-2127	-0.0002245	0.0002807	0.0035	1		3923.34	3923.34		7.39	Si
SLV 15	ini.	-201.19	270	-0.0000813	0.0002807	0.0035	1		3929.63	3929.63		19.53	Si
SLV 15	fin.	430.21	-1812	-0.0001794	0.0002807	0.0035	1		3923.34	3923.34		9.12	Si
SLV 11	ini.	-316.94	722	-0.0001299	0.0002807	0.0035	1		3929.63	3929.63		12.4	Si
SLV 11	fin.	478.37	-1946	-0.0002008	0.0002807	0.0035	1		3923.34	3923.34		8.2	Si
SLV 5	ini.	740.19	-3367	-0.000324	0.0002807	0.0035	1		3923.34	3923.34		5.3	Si
SLV 5	fin.	-448.71	842	-0.0001873	0.0002807	0.0035	1		3929.63	3929.63		8.76	Si
SLV 1	ini.	624.44	-2916	-0.0002681	0.0002807	0.0035	1		3923.34	3923.34		6.28	Si
SLV 1	fin.	-400.55	708	-0.000166	0.0002807	0.0035	1		3929.63	3929.63		9.81	Si
SLV 9	ini.	572.55	-2721	-0.0002438	0.0002807	0.0035	1		3923.34	3923.34		6.85	Si
SLV 9	fin.	-266.52	287	-0.0001085	0.0002807	0.0035	1		3929.63	3929.63		14.74	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	651.12	-4526	1	0	1454	7930	10106	2550	9384		2.07	Si
SLV 6	fin.	-348.3	-1422	1	0	871	7930	10106	2550	8800		6.19	Si
SLV 10	ini.	483.49	-3396	1	0	1368	7930	10106	2550	9297		2.74	Si
SLV 10	fin.	-166.12	-537	1	0	984	7930	10106	2550	8913		16.59	Si
SLV 9	ini.	572.55	-3915	1	0	1409	7930	10106	2550	9339		2.39	Si
SLV 9	fin.	-266.52	-1056	1	0	921	7930	10106	2550	8851		8.38	Si
SLV 3	ini.	357.59	-3145	1	0	1292	7930	10106	2550	9221		2.93	Si
SLV 3	fin.	-177.08	-116	1	0	971	7930	10106	2550	8901		76.42	Si
SLV 16	ini.	-290.26	1139	1	0	860	7930	10106	2550	8790		7.72	Si
SLV 16	fin.	530.61	3353	1	0	1327	7930	10106	2550	9257		2.76	Si
SLV 12	ini.	-406.01	1553	1	0	754	7930	10106	2550	8684		5.59	Si
SLV 12	fin.	578.77	3859	1	0	1346	7930	10106	2550	9276		2.4	Si
SLV 5	ini.	740.19	-5045	1	0	1493	7930	10106	2550	9423		1.87	Si
SLV 5	fin.	-448.71	-1941	1	0	799	7930	10106	2550	8729		4.5	Si
SLV 1	ini.	624.44	-4630	1	0	1435	7930	10106	2550	9365		2.02	Si
SLV 1	fin.	-400.55	-1435	1	0	830	7930	10106	2550	8760		6.1	Si
SLV 2	ini.	535.38	-4112	1	0	1394	7930	10106	2550	9324		2.27	Si
SLV 2	fin.	-300.14	-916	1	0	899	7930	10106	2550	8829		9.64	Si
SLV 11	ini.	-316.94	1035	1	0	827	7930	10106	2550	8757		8.46	Si
SLV 11	fin.	478.37	3340	1	0	1301	7930	10106	2550	9231		2.76	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	5.3	SLV 5	Si
V_SLV	1.868	SLV 5	Si
PF_SLU	12.215	SLU 81	Si
V_SLU	3.457	SLU 81	Si

Trave di accoppiamento 17

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
24.284	25.288	3.99	4.89	0.9	24.232	24.289	3.99	4.89	0.9	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

f _b	f _{tk}	f _{vk0}	f _{hmedio}	τ_0	f _{v0}	μ	ϕ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	e _u	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / $\epsilon_{CNR DT-200}$							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	ϵ_{fd}	y _{F,d}	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215



Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 48	ini.	68.46	349	-0.0000339	0.0001872	0.0035	0.9		2317.79	2317.79	No	33.86	Si
SLU 48	fin.	-131.31	-468	-0.0000658	0.0001872	0.0035	0.9		2324.38	2324.38	No	17.7	Si
SLU 64	ini.	47.57	288	-0.0000235	0.0001872	0.0035	0.9		2317.79	2317.79	No	48.73	Si
SLU 64	fin.	-124.9	-439	-0.0000625	0.0001872	0.0035	0.9		2324.38	2324.38	No	18.61	Si
SLU 71	ini.	47.57	288	-0.0000235	0.0001872	0.0035	0.9		2317.79	2317.79	No	48.73	Si
SLU 71	fin.	-124.9	-439	-0.0000625	0.0001872	0.0035	0.9		2324.38	2324.38	No	18.61	Si
SLU 69	ini.	47.57	288	-0.0000235	0.0001872	0.0035	0.9		2317.79	2317.79	No	48.73	Si
SLU 69	fin.	-124.9	-439	-0.0000625	0.0001872	0.0035	0.9		2324.38	2324.38	No	18.61	Si
SLU 50	ini.	68.46	349	-0.0000339	0.0001872	0.0035	0.9		2317.79	2317.79	No	33.86	Si
SLU 50	fin.	-131.31	-468	-0.0000658	0.0001872	0.0035	0.9		2324.38	2324.38	No	17.7	Si
SLU 49	ini.	70.15	362	-0.0000348	0.0001872	0.0035	0.9		2317.79	2317.79	No	33.04	Si
SLU 49	fin.	-125.82	-446	-0.000063	0.0001872	0.0035	0.9		2324.38	2324.38	No	18.47	Si
SLU 51	ini.	70.15	362	-0.0000348	0.0001872	0.0035	0.9		2317.79	2317.79	No	33.04	Si
SLU 51	fin.	-125.82	-446	-0.000063	0.0001872	0.0035	0.9		2324.38	2324.38	No	18.47	Si
SLU 45	ini.	68.46	349	-0.0000339	0.0001872	0.0035	0.9		2317.79	2317.79	No	33.86	Si
SLU 45	fin.	-131.31	-468	-0.0000658	0.0001872	0.0035	0.9		2324.38	2324.38	No	17.7	Si
SLU 43	ini.	68.46	349	-0.0000339	0.0001872	0.0035	0.9		2317.79	2317.79	No	33.86	Si
SLU 43	fin.	-131.31	-468	-0.0000658	0.0001872	0.0035	0.9		2324.38	2324.38	No	17.7	Si
SLU 46	ini.	70.15	362	-0.0000348	0.0001872	0.0035	0.9		2317.79	2317.79	No	33.04	Si
SLU 46	fin.	-125.82	-446	-0.000063	0.0001872	0.0035	0.9		2324.38	2324.38	No	18.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 51	ini.	70.15	-130	0.9	0	461	7137	6064	2295	7598	No	58.45	Si
SLU 51	fin.	-125.82	-974	0.9	0	601	7137	6064	2295	7737	No	7.94	Si
SLU 43	ini.	68.46	-138	0.9	0	464	7137	6064	2295	7600	No	55.22	Si
SLU 43	fin.	-131.31	-982	0.9	0	604	7137	6064	2295	7741	No	7.89	Si
SLU 45	ini.	68.46	-138	0.9	0	464	7137	6064	2295	7600	No	55.22	Si
SLU 45	fin.	-131.31	-982	0.9	0	604	7137	6064	2295	7741	No	7.89	Si
SLU 47	ini.	71.28	-125	0.9	0	459	7137	6064	2295	7596	No	60.82	Si
SLU 47	fin.	-122.17	-969	0.9	0	599	7137	6064	2295	7735	No	7.98	Si
SLU 44	ini.	71.28	-125	0.9	0	459	7137	6064	2295	7596	No	60.82	Si
SLU 44	fin.	-122.17	-969	0.9	0	599	7137	6064	2295	7735	No	7.98	Si
SLU 49	ini.	70.15	-130	0.9	0	461	7137	6064	2295	7598	No	58.45	Si
SLU 49	fin.	-125.82	-974	0.9	0	601	7137	6064	2295	7737	No	7.94	Si
SLU 50	ini.	68.46	-138	0.9	0	464	7137	6064	2295	7600	No	55.22	Si
SLU 50	fin.	-131.31	-982	0.9	0	604	7137	6064	2295	7741	No	7.89	Si
SLU 64	ini.	47.57	-62	0.9	0	476	7137	6064	2295	7612	No	122.32	Si
SLU 64	fin.	-124.9	-921	0.9	0	600	7137	6064	2295	7736	No	8.4	Si
SLU 48	ini.	68.46	-138	0.9	0	464	7137	6064	2295	7600	No	55.22	Si
SLU 48	fin.	-131.31	-982	0.9	0	604	7137	6064	2295	7741	No	7.89	Si
SLU 46	ini.	70.15	-130	0.9	0	461	7137	6064	2295	7598	No	58.45	Si
SLU 46	fin.	-125.82	-974	0.9	0	601	7137	6064	2295	7737	No	7.94	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-361.25	-1346	-0.0001865	0.0002807	0.0035	0.9		3189.29	3189.29		8.83	Si
SLV 16	fin.	313.39	1031	-0.0001608	0.0002807	0.0035	0.9		3183.56	3183.56		10.16	Si
SLV 11	ini.	-257.06	-877	-0.0001304	0.0002807	0.0035	0.9		3189.29	3189.29		12.41	Si
SLV 11	fin.	267.21	885	-0.0001361	0.0002807	0.0035	0.9		3183.56	3183.56		11.91	Si
SLV 9	ini.	250.49	1002	-0.0001272	0.0002807	0.0035	0.9		3183.56	3183.56		12.71	Si
SLV 9	fin.	-397.52	-1381	-0.0002066	0.0002807	0.0035	0.9		3189.29	3189.29		8.02	Si
SLV 3	ini.	269.79	1184	-0.0001374	0.0002807	0.0035	0.9		3183.56	3183.56		11.8	Si
SLV 3	fin.	-303.63	-1016	-0.0001552	0.0002807	0.0035	0.9		3189.29	3189.29		10.5	Si
SLV 5	ini.	411.66	1650	-0.0002149	0.0002807	0.0035	0.9		3183.56	3183.56		7.73	Si
SLV 5	fin.	-553.61	-1892	-0.0002965	0.0002807	0.0035	0.9		3189.29	3189.29		5.76	Si
SLV 10	ini.	156.69	631	-0.0000784	0.0002807	0.0035	0.9		3183.56	3183.56		20.32	Si
SLV 10	fin.	-300.78	-1038	-0.0001537	0.0002807	0.0035	0.9		3189.29	3189.29		10.6	Si
SLV 6	ini.	317.86	1278	-0.0001632	0.0002807	0.0035	0.9		3183.56	3183.56		10.02	Si
SLV 6	fin.	-456.86	-1549	-0.00024	0.0002807	0.0035	0.9		3189.29	3189.29		6.98	Si
SLV 2	ini.	328.25	1376	-0.0001689	0.0002807	0.0035	0.9		3183.56	3183.56		9.7	Si
SLV 2	fin.	-406.31	-1353	-0.0002115	0.0002807	0.0035	0.9		3189.29	3189.29		7.85	Si
SLV 1	ini.	422.05	1748	-0.0002207	0.0002807	0.0035	0.9		3183.56	3183.56		7.54	Si
SLV 1	fin.	-503.05	-1695	-0.0002667	0.0002807	0.0035	0.9		3189.29	3189.29		6.34	Si
SLV 12	ini.	-350.86	-1248	-0.0001808	0.0002807	0.0035	0.9		3189.29	3189.29		9.09	Si
SLV 12	fin.	363.95	1227	-0.0001884	0.0002807	0.0035	0.9		3183.56	3183.56		8.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-267.45	1476	0.9	0	947	7137	9096	2295	8084		5.48	Si
SLV 15	fin.	216.65	815	0.9	0	662	7137	9096	2295	7799		9.56	Si
SLV 2	ini.	328.25	-1535	0.9	0	499	7137	9096	2295	7635		4.97	Si
SLV 2	fin.	-406.31	-2192	0.9	0	1000	7137	9096	2295	8137		3.71	Si
SLV 3	ini.	269.79	-1199	0.9	0	549	7137	9096	2295	7686		6.41	Si
SLV 3	fin.	-303.63	-1854	0.9	0	953	7137	9096	2295	8089		4.36	Si
SLV 16	ini.	-361.25	1987	0.9	0	999	7137	9096	2295	8136		4.09	Si
SLV 16	fin.	313.39	1327	0.9	0	586	7137	9096	2295	7723		5.82	Si
SLV 6	ini.	317.86	-1589	0.9	0	525	7137	9096	2295	7662		4.82	Si
SLV 6	fin.	-456.86	-2249	0.9	0	1027	7137	9096	2295	8164		3.63	Si
SLV 5	ini.	411.66	-2101	0.9	0	416	7137	9096	2295	7553		3.6	Si
SLV 5	fin.	-553.61	-2760	0.9	0	1072	7137	9096	2295	8209		2.97	Si
SLV 12	ini.	-350.86	2041	0.9	0	986	7137	9096	2295	8123		3.98	Si
SLV 12	fin.	363.95	1384	0.9	0	538	7137	9096	2295	7675		5.55	Si
SLV 9	ini.	250.49	-1299	0.9	0	593	7137	9096	2295	7730		5.95	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	fin.	-397.52	-1959	0.9	0	1004	7137	9096	2295	8141		4.15	Si
SLV 1	ini.	422.05	-2047	0.9	0	382	7137	9096	2295	7519		3.67	Si
SLV 1	fin.	-503.05	-2703	0.9	0	1046	7137	9096	2295	8183		3.03	Si
SLV 11	ini.	-257.06	1529	0.9	0	933	7137	9096	2295	8069		5.28	Si
SLV 11	fin.	267.21	872	0.9	0	620	7137	9096	2295	7756		8.89	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	5.761	SLV 5	Si
V_SLV	2.974	SLV 5	Si
PF_SLU	17.701	SLU 43	Si
V_SLU	7.886	SLU 43	Si

Trave di accoppiamento 18

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
25.828	27.161	1.09	2.09	1	26.828	27.161	1.09	2.09	1	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	f _{hk}	f _{vk0}	f _{hmedio}	τ ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRM

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	ε _u	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α _t	α	elim,conv	e _{f,d}	γ _{F,d}	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-660.85	978	-0.0002969	0.0001872	0.0035	1		2735.8	2735.8	No	4.14	Si
SLU 80	fin.	1411.11	-2460	-0.0007438	0.0001872	0.0035	1		2728.53	2728.53	No	1.93	Si
SLU 78	ini.	-660.85	978	-0.0002969	0.0001872	0.0035	1		2735.8	2735.8	No	4.14	Si
SLU 78	fin.	1411.11	-2460	-0.0007438	0.0001872	0.0035	1		2728.53	2728.53	No	1.93	Si
SLU 82	ini.	-717.55	1089	-0.0003267	0.0001872	0.0035	1		2735.8	2735.8	No	3.81	Si
SLU 82	fin.	1518.29	-2621	-0.0008164	0.0001872	0.0035	1		2728.53	2728.53	No	1.8	Si
SLU 74	ini.	-665.54	982	-0.0002993	0.0001872	0.0035	1		2735.8	2735.8	No	4.11	Si
SLU 74	fin.	1424.57	-2482	-0.0007528	0.0001872	0.0035	1		2728.53	2728.53	No	1.92	Si
SLU 84	ini.	-717.55	1089	-0.0003267	0.0001872	0.0035	1		2735.8	2735.8	No	3.81	Si
SLU 84	fin.	1518.29	-2621	-0.0008164	0.0001872	0.0035	1		2728.53	2728.53	No	1.8	Si
SLU 83	ini.	-722.24	1094	-0.0003292	0.0001872	0.0035	1		2735.8	2735.8	No	3.79	Si
SLU 83	fin.	1531.75	-2643	-0.0008257	0.0001872	0.0035	1		2728.53	2728.53	No	1.78	Si
SLU 81	ini.	-722.24	1094	-0.0003292	0.0001872	0.0035	1		2735.8	2735.8	No	3.79	Si
SLU 81	fin.	1531.75	-2643	-0.0008257	0.0001872	0.0035	1		2728.53	2728.53	No	1.78	Si
SLU 79	ini.	-665.54	982	-0.0002993	0.0001872	0.0035	1		2735.8	2735.8	No	4.11	Si
SLU 79	fin.	1424.57	-2482	-0.0007528	0.0001872	0.0035	1		2728.53	2728.53	No	1.92	Si
SLU 77	ini.	-665.54	982	-0.0002993	0.0001872	0.0035	1		2735.8	2735.8	No	4.11	Si
SLU 77	fin.	1424.57	-2482	-0.0007528	0.0001872	0.0035	1		2728.53	2728.53	No	1.92	Si
SLU 75	ini.	-660.85	978	-0.0002969	0.0001872	0.0035	1		2735.8	2735.8	No	4.14	Si
SLU 75	fin.	1411.11	-2460	-0.0007438	0.0001872	0.0035	1		2728.53	2728.53	No	1.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-660.85	2739	1	0	423	7930	6738	2550	8352	No	3.05	Si
SLU 75	fin.	1411.11	4212	1	0	1022	7930	6738	2550	8952	No	2.13	Si
SLU 80	ini.	-660.85	2739	1	0	423	7930	6738	2550	8352	No	3.05	Si
SLU 80	fin.	1411.11	4212	1	0	1022	7930	6738	2550	8952	No	2.13	Si
SLU 82	ini.	-717.55	2961	1	0	388	7930	6738	2550	8318	No	2.81	Si
SLU 82	fin.	1518.29	4563	1	0	1042	7930	6738	2550	8972	No	1.97	Si
SLU 81	ini.	-722.24	2996	1	0	387	7930	6738	2550	8317	No	2.78	Si
SLU 81	fin.	1531.75	4592	1	0	1045	7930	6738	2550	8974	No	1.95	Si
SLU 79	ini.	-665.54	2774	1	0	422	7930	6738	2550	8351	No	3.01	Si
SLU 79	fin.	1424.57	4241	1	0	1025	7930	6738	2550	8955	No	2.11	Si
SLU 77	ini.	-665.54	2774	1	0	422	7930	6738	2550	8351	No	3.01	Si
SLU 77	fin.	1424.57	4241	1	0	1025	7930	6738	2550	8955	No	2.11	Si
SLU 74	ini.	-665.54	2774	1	0	422	7930	6738	2550	8351	No	3.01	Si
SLU 74	fin.	1424.57	4241	1	0	1025	7930	6738	2550	8955	No	2.11	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-660.85	2739	1	0	423	7930	6738	2550	8352	No	3.05	Si
SLU 78	fin.	1411.11	4212	1	0	1022	7930	6738	2550	8952	No	2.13	Si
SLU 84	ini.	-717.55	2961	1	0	388	7930	6738	2550	8318	No	2.81	Si
SLU 84	fin.	1518.29	4563	1	0	1042	7930	6738	2550	8972	No	1.97	Si
SLU 83	ini.	-722.24	2996	1	0	387	7930	6738	2550	8317	No	2.78	Si
SLU 83	fin.	1531.75	4592	1	0	1045	7930	6738	2550	8974	No	1.95	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-811.53	1396	-0.0003591	0.0002807	0.0035	1		3929.63	3929.63		4.84	Si
SLV 9	fin.	1640.11	-2512	-0.0008454	0.0002807	0.0035	1		3923.34	3923.34		2.39	Si
SLV 5	ini.	-1161.18	2271	-0.000548	0.0002807	0.0035	1		3929.63	3929.63		3.38	Si
SLV 5	fin.	2155.1	-2973	-0.0012192	0.0002807	0.0035	1		3923.34	3923.34		1.82	Si
SLV 10	ini.	-720.07	1163	-0.0003135	0.0002807	0.0035	1		3929.63	3929.63		5.46	Si
SLV 10	fin.	1500.15	-2376	-0.0007542	0.0002807	0.0035	1		3923.34	3923.34		2.62	Si
SLV 1	ini.	-1211.3	2507	-0.0005769	0.0002807	0.0035	1		3929.63	3929.63		3.24	Si
SLV 1	fin.	2134.27	-2810	-0.0012027	0.0002807	0.0035	1		3923.34	3923.34		1.84	Si
SLV 4	ini.	-813.14	1601	-0.0003599	0.0002807	0.0035	1		3929.63	3929.63		4.83	Si
SLV 4	fin.	1461.48	-2074	-0.0007297	0.0002807	0.0035	1		3923.34	3923.34		2.68	Si
SLV 6	ini.	-1069.73	2038	-0.0004964	0.0002807	0.0035	1		3929.63	3929.63		3.67	Si
SLV 6	fin.	2015.14	-2838	-0.0011109	0.0002807	0.0035	1		3923.34	3923.34		1.95	Si
SLV 7	ini.	-138.85	28	-0.0000557	0.0002807	0.0035	1		3929.63	3929.63		28.3	Si
SLV 7	fin.	378.96	-969	-0.0001569	0.0002807	0.0035	1		3923.34	3923.34		10.35	Si
SLV 3	ini.	-904.6	1834	-0.0004071	0.0002807	0.0035	1		3929.63	3929.63		4.34	Si
SLV 3	fin.	1601.43	-2209	-0.0008198	0.0002807	0.0035	1		3923.34	3923.34		2.45	Si
SLV 13	ini.	-45.77	-410	-0.0000182	0.0002807	0.0035	1		3929.63	3929.63		85.85	Si
SLV 13	fin.	417.64	-1272	-0.0001738	0.0002807	0.0035	1		3923.34	3923.34		9.39	Si
SLV 2	ini.	-1119.84	2274	-0.0005244	0.0002807	0.0035	1		3929.63	3929.63		3.51	Si
SLV 2	fin.	1994.32	-2675	-0.0010953	0.0002807	0.0035	1		3923.34	3923.34		1.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-904.6	3878	1	0	513	7930	10106	2550	8443		2.18	Si
SLV 3	fin.	1601.43	4850	1	0	1339	7930	10106	2550	9268		1.91	Si
SLV 4	ini.	-813.14	3438	1	0	593	7930	10106	2550	8523		2.48	Si
SLV 4	fin.	1461.48	4443	1	0	1320	7930	10106	2550	9249		2.08	Si
SLV 6	ini.	-1069.73	5038	1	0	432	7930	10106	2550	8361		1.66	Si
SLV 6	fin.	2015.14	5731	1	0	1425	7930	10106	2550	9354		1.63	Si
SLV 12	ini.	302.27	-1878	1	0	1168	7930	10106	2550	9098		4.84	Si
SLV 12	fin.	-275.98	-622	1	0	1048	7930	10106	2550	8977		14.42	Si
SLV 2	ini.	-1119.84	5034	1	0	312	7930	10106	2550	8242		1.64	Si
SLV 2	fin.	1994.32	5880	1	0	1403	7930	10106	2550	9333		1.59	Si
SLV 10	ini.	-720.07	3444	1	0	719	7930	10106	2550	8649		2.51	Si
SLV 10	fin.	1500.15	4167	1	0	1362	7930	10106	2550	9292		2.23	Si
SLV 1	ini.	-1211.3	5475	1	0	96	7930	10106	2550	8026		1.47	Si
SLV 1	fin.	2134.27	6287	1	0	1421	7930	10106	2550	9351		1.49	Si
SLV 16	ini.	352.38	-1874	1	0	1206	7930	10106	2550	9136		4.87	Si
SLV 16	fin.	-255.16	-771	1	0	1077	7930	10106	2550	9006		11.69	Si
SLV 9	ini.	-811.53	3885	1	0	655	7930	10106	2550	8585		2.21	Si
SLV 9	fin.	1640.11	4575	1	0	1381	7930	10106	2550	9310		2.04	Si
SLV 5	ini.	-1161.18	5479	1	0	314	7930	10106	2550	8243		1.5	Si
SLV 5	fin.	2155.1	6139	1	0	1443	7930	10106	2550	9372		1.53	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.82	SLV 5	Si
V_SLV	1.466	SLV 1	Si
PF_SLU	1.781	SLU 81	Si
V_SLU	1.954	SLU 81	Si

Trave di accoppiamento 19

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
25.828	27.161	3.99	4.89	0.9	26.828	27.161	3.99	4.89	0.9	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb ₀	f _{hk}	f _{vk0}	f _{medio}	τ ₀	f _{v0}	μ	φ	f _{vk,lim}	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica



									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-756.51	-2052	-0.0004478	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.07	Si
SLU 80	fin.	995.56	1169	-0.0006276	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.33	Si
SLU 84	ini.	-813.04	-2208	-0.0004885	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.86	Si
SLU 84	fin.	1059.54	1233	-0.0006783	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.19	Si
SLU 78	ini.	-756.51	-2052	-0.0004478	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.07	Si
SLU 78	fin.	995.56	1169	-0.0006276	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.33	Si
SLU 83	ini.	-824.46	-2245	-0.0004969	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.82	Si
SLU 83	fin.	1072.76	1241	-0.0006889	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.16	Si
SLU 77	ini.	-767.93	-2090	-0.000456	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.03	Si
SLU 77	fin.	1008.77	1176	-0.000638	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.3	Si
SLU 79	ini.	-767.93	-2090	-0.000456	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.03	Si
SLU 79	fin.	1008.77	1176	-0.000638	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.3	Si
SLU 81	ini.	-824.46	-2245	-0.0004969	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.82	Si
SLU 81	fin.	1072.76	1241	-0.0006889	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.16	Si
SLU 75	ini.	-756.51	-2052	-0.0004478	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.07	Si
SLU 75	fin.	995.56	1169	-0.0006276	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.33	Si
SLU 74	ini.	-767.93	-2090	-0.000456	0.0001872	0.0035	0.9		2324.38	2324.38	No	3.03	Si
SLU 74	fin.	1008.77	1176	-0.000638	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.3	Si
SLU 82	ini.	-813.04	-2208	-0.0004885	0.0001872	0.0035	0.9		2324.38	2324.38	No	2.86	Si
SLU 82	fin.	1059.54	1233	-0.0006783	0.0001872	0.0035	0.9		2317.79	2317.79	No	2.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-813.04	5250	0.9	0	827	7137	6064	2295	7964	No	1.52	Si
SLU 82	fin.	1059.54	2016	0.9	0	229	7137	6064	2295	7366	No	3.65	Si
SLU 75	ini.	-756.51	4800	0.9	0	810	7137	6064	2295	7947	No	1.66	Si
SLU 75	fin.	995.56	1946	0.9	0	254	7137	6064	2295	7390	No	3.8	Si
SLU 77	ini.	-767.93	4846	0.9	0	814	7137	6064	2295	7951	No	1.64	Si
SLU 77	fin.	1008.77	1991	0.9	0	251	7137	6064	2295	7387	No	3.71	Si
SLU 80	ini.	-756.51	4800	0.9	0	810	7137	6064	2295	7947	No	1.66	Si
SLU 80	fin.	995.56	1946	0.9	0	254	7137	6064	2295	7390	No	3.8	Si
SLU 83	ini.	-824.46	5295	0.9	0	832	7137	6064	2295	7968	No	1.5	Si
SLU 83	fin.	1072.76	2061	0.9	0	226	7137	6064	2295	7363	No	3.57	Si
SLU 74	ini.	-767.93	4846	0.9	0	814	7137	6064	2295	7951	No	1.64	Si
SLU 74	fin.	1008.77	1991	0.9	0	251	7137	6064	2295	7387	No	3.71	Si
SLU 79	ini.	-767.93	4846	0.9	0	814	7137	6064	2295	7951	No	1.64	Si
SLU 79	fin.	1008.77	1991	0.9	0	251	7137	6064	2295	7387	No	3.71	Si
SLU 81	ini.	-824.46	5295	0.9	0	832	7137	6064	2295	7968	No	1.5	Si
SLU 81	fin.	1072.76	2061	0.9	0	226	7137	6064	2295	7363	No	3.57	Si
SLU 78	ini.	-756.51	4800	0.9	0	810	7137	6064	2295	7947	No	1.66	Si
SLU 78	fin.	995.56	1946	0.9	0	254	7137	6064	2295	7390	No	3.8	Si
SLU 84	ini.	-813.04	5250	0.9	0	827	7137	6064	2295	7964	No	1.52	Si
SLU 84	fin.	1059.54	2016	0.9	0	229	7137	6064	2295	7366	No	3.65	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-1025.2	-2786	-0.0006106	0.0002807	0.0035	0.9		3189.29	3189.29		3.11	Si
SLV 2	fin.	1528.2	1873	-0.0010197	0.0002807	0.0035	0.9		3183.56	3183.56		2.08	Si
SLV 9	ini.	-986.43	-2836	-0.0005824	0.0002807	0.0035	0.9		3189.29	3189.29		3.23	Si
SLV 9	fin.	1353.1	1464	-0.0008686	0.0002807	0.0035	0.9		3183.56	3183.56		2.35	Si
SLV 12	ini.	208.96	703	-0.001054	0.0002807	0.0035	0.9		3183.56	3183.56		15.24	Si
SLV 12	fin.	-398.56	-384	-0.0002072	0.0002807	0.0035	0.9		3189.29	3189.29		8	Si
SLV 13	ini.	-321.89	-958	-0.0001651	0.0002807	0.0035	0.9		3189.29	3189.29		9.91	Si
SLV 13	fin.	315.62	249	-0.000162	0.0002807	0.0035	0.9		3183.56	3183.56		10.09	Si
SLV 1	ini.	-1111.33	-3033	-0.0006748	0.0002807	0.0035	0.9		3189.29	3189.29		2.87	Si
SLV 1	fin.	1665.19	2032	-0.0011459	0.0002807	0.0035	0.9		3183.56	3183.56		1.91	Si
SLV 10	ini.	-900.31	-2589	-0.0005212	0.0002807	0.0035	0.9		3189.29	3189.29		3.54	Si
SLV 10	fin.	1216.11	1305	-0.0007575	0.0002807	0.0035	0.9		3183.56	3183.56		2.62	Si
SLV 6	ini.	-1137.14	-3212	-0.0006944	0.0002807	0.0035	0.9		3189.29	3189.29		2.8	Si
SLV 6	fin.	1620.98	1840	-0.0011043	0.0002807	0.0035	0.9		3183.56	3183.56		1.96	Si
SLV 4	ini.	-692.42	-1798	-0.0003823	0.0002807	0.0035	0.9		3189.29	3189.29		4.61	Si
SLV 4	fin.	1043.8	1366	-0.0006257	0.0002807	0.0035	0.9		3183.56	3183.56		3.05	Si
SLV 3	ini.	-778.55	-2045	-0.0004383	0.0002807	0.0035	0.9		3189.29	3189.29		4.1	Si
SLV 3	fin.	1180.79	1525	-0.0007298	0.0002807	0.0035	0.9		3183.56	3183.56		2.7	Si
SLV 5	ini.	-1223.26	-3459	-0.0007614	0.0002807	0.0035	0.9		3189.29	3189.29		2.61	Si
SLV 5	fin.	1757.98	1999	-0.0012359	0.0002807	0.0035	0.9		3183.56	3183.56		1.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-1111.33	5890	0.9	0	1210	7137	9096	2295	8346		1.42	Si
SLV 1	fin.	1665.19	4219	0.9	0	261	7137	9096	2295	7397		1.75	Si
SLV 12	ini.	208.96	-136	0.9	0	659	7137	9096	2295	7796		57.19	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	fin.	-398.56	-1806	0.9	0	857	7137	9096	2295	7993		4.43	Si
SLV 3	ini.	-778.55	4417	0.9	0	1092	7137	9096	2295	8228		1.86	Si
SLV 3	fin.	1180.79	2747	0.9	0	456	7137	9096	2295	7592		2.76	Si
SLV 9	ini.	-986.43	5178	0.9	0	1187	7137	9096	2295	8324		1.61	Si
SLV 9	fin.	1353.1	3508	0.9	0	474	7137	9096	2295	7610		2.17	Si
SLV 2	ini.	-1025.2	5484	0.9	0	1181	7137	9096	2295	8318		1.52	Si
SLV 2	fin.	1528.2	3814	0.9	0	334	7137	9096	2295	7471		1.96	Si
SLV 5	ini.	-1223.26	6299	0.9	0	1257	7137	9096	2295	8394		1.33	Si
SLV 5	fin.	1757.98	4629	0.9	0	277	7137	9096	2295	7414		1.6	Si
SLV 10	ini.	-900.31	4772	0.9	0	1158	7137	9096	2295	8295		1.74	Si
SLV 10	fin.	1216.11	3102	0.9	0	518	7137	9096	2295	7654		2.47	Si
SLV 6	ini.	-1137.14	5893	0.9	0	1230	7137	9096	2295	8367		1.42	Si
SLV 6	fin.	1620.98	4223	0.9	0	347	7137	9096	2295	7484		1.77	Si
SLV 13	ini.	-321.89	2152	0.9	0	944	7137	9096	2295	8081		3.76	Si
SLV 13	fin.	315.62	482	0.9	0	748	7137	9096	2295	7884		16.37	Si
SLV 4	ini.	-692.42	4011	0.9	0	1060	7137	9096	2295	8197		2.04	Si
SLV 4	fin.	1043.8	2341	0.9	0	501	7137	9096	2295	7638		3.26	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.811	SLV 5	Si
V_SLV	1.333	SLV 5	Si
PF_SLU	2.161	SLU 81	Si
V_SLU	1.505	SLU 81	Si

Trave di accoppiamento 20

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
30.248	27.161	1.09	2.09	1	31.248	27.161	1.09	2.09	1	1	0.45	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_ Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRMC

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 64	ini.	-74.6	-545	-0.000298	0.0001872	0.0035	1		2735.8	2735.8	No	36.67	Si
SLU 64	fin.	319.26	-1036	-0.0001332	0.0001872	0.0035	1		2728.53	2728.53	No	8.55	Si
SLU 67	ini.	-77.96	-538	-0.0000311	0.0001872	0.0035	1		2735.8	2735.8	No	35.09	Si
SLU 67	fin.	320.84	-1034	-0.0001339	0.0001872	0.0035	1		2728.53	2728.53	No	8.5	Si
SLU 68	ini.	-80.2	-533	-0.000032	0.0001872	0.0035	1		2735.8	2735.8	No	34.11	Si
SLU 68	fin.	321.9	-1033	-0.0001343	0.0001872	0.0035	1		2728.53	2728.53	No	8.48	Si
SLU 71	ini.	-74.6	-545	-0.000298	0.0001872	0.0035	1		2735.8	2735.8	No	36.67	Si
SLU 71	fin.	319.26	-1036	-0.0001332	0.0001872	0.0035	1		2728.53	2728.53	No	8.55	Si
SLU 72	ini.	-77.96	-538	-0.0000311	0.0001872	0.0035	1		2735.8	2735.8	No	35.09	Si
SLU 72	fin.	320.84	-1034	-0.0001339	0.0001872	0.0035	1		2728.53	2728.53	No	8.5	Si
SLU 44	ini.	-99.2	-435	-0.0000397	0.0001872	0.0035	1		2735.8	2735.8	No	27.58	Si
SLU 44	fin.	319.45	-984	-0.0001332	0.0001872	0.0035	1		2728.53	2728.53	No	8.54	Si
SLU 47	ini.	-99.2	-435	-0.0000397	0.0001872	0.0035	1		2735.8	2735.8	No	27.58	Si
SLU 47	fin.	319.45	-984	-0.0001332	0.0001872	0.0035	1		2728.53	2728.53	No	8.54	Si
SLU 70	ini.	-77.96	-538	-0.0000311	0.0001872	0.0035	1		2735.8	2735.8	No	35.09	Si
SLU 70	fin.	320.84	-1034	-0.0001339	0.0001872	0.0035	1		2728.53	2728.53	No	8.5	Si
SLU 69	ini.	-74.6	-545	-0.000298	0.0001872	0.0035	1		2735.8	2735.8	No	36.67	Si
SLU 69	fin.	319.26	-1036	-0.0001332	0.0001872	0.0035	1		2728.53	2728.53	No	8.55	Si
SLU 65	ini.	-80.2	-533	-0.000032	0.0001872	0.0035	1		2735.8	2735.8	No	34.11	Si
SLU 65	fin.	321.9	-1033	-0.0001343	0.0001872	0.0035	1		2728.53	2728.53	No	8.48	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 52	ini.	-49.12	221	1	0	766	7930	6738	2550	8695	No	39.38	Si
SLU 52	fin.	310.34	680	1	0	829	7930	6737	2550	8759	No	12.87	Si



Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 65	ini.	-80.2	414	1	0	748	7930	6738	2550	8678	No	20.95	Si
SLU 65	fin.	321.9	684	1	0	828	7930	6737	2550	8758	No	12.8	Si
SLU 76	ini.	-30.11	135	1	0	782	7930	6738	2550	8711	No	64.56	Si
SLU 76	fin.	312.79	679	1	0	836	7930	6737	2550	8766	No	12.92	Si
SLU 55	ini.	-49.12	221	1	0	766	7930	6738	2550	8695	No	39.38	Si
SLU 55	fin.	310.34	680	1	0	829	7930	6737	2550	8759	No	12.87	Si
SLU 73	ini.	-30.11	135	1	0	782	7930	6738	2550	8711	No	64.56	Si
SLU 73	fin.	312.79	679	1	0	836	7930	6737	2550	8766	No	12.92	Si
SLU 47	ini.	-99.2	500	1	0	731	7930	6738	2550	8661	No	17.32	Si
SLU 47	fin.	319.45	686	1	0	821	7930	6737	2550	8750	No	12.75	Si
SLU 49	ini.	-96.96	500	1	0	732	7930	6738	2550	8662	No	17.32	Si
SLU 49	fin.	318.39	677	1	0	821	7930	6737	2550	8750	No	12.93	Si
SLU 44	ini.	-99.2	500	1	0	731	7930	6738	2550	8661	No	17.32	Si
SLU 44	fin.	319.45	686	1	0	821	7930	6737	2550	8750	No	12.75	Si
SLU 51	ini.	-96.96	500	1	0	732	7930	6738	2550	8662	No	17.32	Si
SLU 51	fin.	318.39	677	1	0	821	7930	6737	2550	8750	No	12.93	Si
SLU 68	ini.	-80.2	414	1	0	748	7930	6738	2550	8678	No	20.95	Si
SLU 68	fin.	321.9	684	1	0	828	7930	6737	2550	8758	No	12.8	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	-708.48	105	-0.0003078	0.0002807	0.0035	1		3929.63	3929.63		5.55	Si
SLV 7	fin.	903.84	-1716	-0.0004075	0.0002807	0.0035	1		3923.34	3923.34		4.34	Si
SLV 4	ini.	-728.61	538	-0.0003177	0.0002807	0.0035	1		3929.63	3929.63		5.39	Si
SLV 4	fin.	924.83	-1788	-0.0004186	0.0002807	0.0035	1		3923.34	3923.34		4.24	Si
SLV 1	ini.	-583.53	625	-0.0002484	0.0002807	0.0035	1		3929.63	3929.63		6.73	Si
SLV 1	fin.	787.75	-1647	-0.0003477	0.0002807	0.0035	1		3923.34	3923.34		4.98	Si
SLV 3	ini.	-837.9	719	-0.0003725	0.0002807	0.0035	1		3929.63	3929.63		4.69	Si
SLV 3	fin.	1039.65	-1975	-0.0004807	0.0002807	0.0035	1		3923.34	3923.34		3.77	Si
SLV 14	ini.	743.4	-1630	-0.0003256	0.0002807	0.0035	1		3923.34	3923.34		5.28	Si
SLV 14	fin.	-554.75	372	-0.0002351	0.0002807	0.0035	1		3929.63	3929.63		7.08	Si
SLV 11	ini.	-343.18	-517	-0.0001412	0.0002807	0.0035	1		3929.63	3929.63		11.45	Si
SLV 11	fin.	535.53	-1166	-0.0002267	0.0002807	0.0035	1		3923.34	3923.34		7.33	Si
SLV 10	ini.	613.98	-1015	-0.0002631	0.0002807	0.0035	1		3923.34	3923.34		6.39	Si
SLV 10	fin.	-418.95	113	-0.0001741	0.0002807	0.0035	1		3929.63	3929.63		9.38	Si
SLV 2	ini.	-474.25	443	-0.0001986	0.0002807	0.0035	1		3929.63	3929.63		8.29	Si
SLV 2	fin.	672.93	-1461	-0.0002912	0.0002807	0.0035	1		3923.34	3923.34		5.83	Si
SLV 8	ini.	-599.19	-77	-0.0002557	0.0002807	0.0035	1		3929.63	3929.63		6.56	Si
SLV 8	fin.	789.02	-1529	-0.0003483	0.0002807	0.0035	1		3923.34	3923.34		4.97	Si
SLV 13	ini.	634.11	-1449	-0.0002726	0.0002807	0.0035	1		3923.34	3923.34		6.19	Si
SLV 13	fin.	-439.94	185	-0.0001834	0.0002807	0.0035	1		3929.63	3929.63		8.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-474.25	2789	1	0	889	7930	10106	2550	8818		3.16	Si
SLV 2	fin.	672.93	2288	1	0	1228	7930	10106	2550	9158		4	Si
SLV 16	ini.	489.04	-2688	1	0	1240	7930	10106	2550	9170		3.41	Si
SLV 16	fin.	-302.86	-1686	1	0	970	7930	10106	2550	8899		5.28	Si
SLV 13	ini.	634.11	-1762	1	0	1227	7930	10106	2550	9156		5.2	Si
SLV 13	fin.	-439.94	-1758	1	0	942	7930	10106	2550	8871		5.05	Si
SLV 14	ini.	743.4	-2176	1	0	1254	7930	10106	2550	9184		4.22	Si
SLV 14	fin.	-554.75	-2169	1	0	904	7930	10106	2550	8833		4.07	Si
SLV 7	ini.	-708.48	357	1	0	958	7930	10106	2550	8887		24.91	Si
SLV 7	fin.	903.84	2186	1	0	1267	7930	10106	2550	9197		4.21	Si
SLV 15	ini.	379.75	-2274	1	0	1212	7930	10106	2550	9142		4.02	Si
SLV 15	fin.	-188.04	-1275	1	0	1005	7930	10106	2550	8935		7.01	Si
SLV 3	ini.	-837.9	2692	1	0	828	7930	10106	2550	8757		3.25	Si
SLV 3	fin.	1039.65	3182	1	0	1305	7930	10106	2550	9235		2.9	Si
SLV 4	ini.	-728.61	2278	1	0	868	7930	10106	2550	8798		3.86	Si
SLV 4	fin.	924.83	2771	1	0	1278	7930	10106	2550	9208		3.32	Si
SLV 1	ini.	-583.53	3203	1	0	849	7930	10106	2550	8779		2.74	Si
SLV 1	fin.	787.75	2699	1	0	1257	7930	10106	2550	9186		3.4	Si
SLV 5	ini.	139.4	2062	1	0	1018	7930	10106	2550	8948		4.34	Si
SLV 5	fin.	64.18	575	1	0	1092	7930	10106	2550	9022		15.68	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.774	SLV 3	Si
V_SLV	2.74	SLV 1	Si
PF_SLU	8.476	SLU 65	Si
V_SLU	12.752	SLU 44	Si

Trave di accoppiamento 21

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
30.248	27.161	3.99	4.89	0.9	31.248	27.161	3.99	4.89	0.9	1	0.45	30000



Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco armato solo su un lato_Corti

fb	fhk	fvk0	fhmedio	τ0	fv0	μ	φ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	elim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-432.33	-1078	-0.0002333	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.38	Si
SLU 76	fin.	178.63	355	-0.0000906	0.0001872	0.0035	0.9		2317.79	2317.79	No	12.98	Si
SLU 75	ini.	-430.57	-1077	-0.0002322	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.4	Si
SLU 75	fin.	175.27	346	-0.0000888	0.0001872	0.0035	0.9		2317.79	2317.79	No	13.22	Si
SLU 74	ini.	-427.94	-1075	-0.0002306	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.43	Si
SLU 74	fin.	170.25	333	-0.0000862	0.0001872	0.0035	0.9		2317.79	2317.79	No	13.61	Si
SLU 78	ini.	-430.57	-1077	-0.0002322	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.4	Si
SLU 78	fin.	175.27	346	-0.0000888	0.0001872	0.0035	0.9		2317.79	2317.79	No	13.22	Si
SLU 84	ini.	-451.69	-1158	-0.0002451	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.15	Si
SLU 84	fin.	160.27	317	-0.0000809	0.0001872	0.0035	0.9		2317.79	2317.79	No	14.46	Si
SLU 82	ini.	-451.69	-1158	-0.0002451	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.15	Si
SLU 82	fin.	160.27	317	-0.0000809	0.0001872	0.0035	0.9		2317.79	2317.79	No	14.46	Si
SLU 81	ini.	-449.06	-1155	-0.0002435	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.18	Si
SLU 81	fin.	155.25	304	-0.0000783	0.0001872	0.0035	0.9		2317.79	2317.79	No	14.93	Si
SLU 83	ini.	-449.06	-1155	-0.0002435	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.18	Si
SLU 83	fin.	155.25	304	-0.0000783	0.0001872	0.0035	0.9		2317.79	2317.79	No	14.93	Si
SLU 73	ini.	-432.33	-1078	-0.0002333	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.38	Si
SLU 73	fin.	178.63	355	-0.0000906	0.0001872	0.0035	0.9		2317.79	2317.79	No	12.98	Si
SLU 80	ini.	-430.57	-1077	-0.0002322	0.0001872	0.0035	0.9		2324.38	2324.38	No	5.4	Si
SLU 80	fin.	175.27	346	-0.0000888	0.0001872	0.0035	0.9		2317.79	2317.79	No	13.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-451.69	3079	0.9	0	701	7137	6064	2295	7838	No	2.55	Si
SLU 82	fin.	160.27	-476	0.9	0	470	7137	6064	2295	7606	No	15.98	Si
SLU 78	ini.	-430.57	2848	0.9	0	691	7137	6064	2295	7827	No	2.75	Si
SLU 78	fin.	175.27	-328	0.9	0	464	7137	6064	2295	7601	No	23.2	Si
SLU 76	ini.	-432.33	2857	0.9	0	691	7137	6064	2295	7827	No	2.74	Si
SLU 76	fin.	178.63	-318	0.9	0	462	7137	6064	2295	7599	No	23.9	Si
SLU 79	ini.	-427.94	2833	0.9	0	690	7137	6064	2295	7827	No	2.76	Si
SLU 79	fin.	170.25	-342	0.9	0	467	7137	6064	2295	7603	No	22.22	Si
SLU 73	ini.	-432.33	2857	0.9	0	691	7137	6064	2295	7827	No	2.74	Si
SLU 73	fin.	178.63	-318	0.9	0	462	7137	6064	2295	7599	No	23.9	Si
SLU 81	ini.	-449.06	3064	0.9	0	701	7137	6064	2295	7838	No	2.56	Si
SLU 81	fin.	155.25	-490	0.9	0	472	7137	6064	2295	7609	No	15.51	Si
SLU 84	ini.	-451.69	3079	0.9	0	701	7137	6064	2295	7838	No	2.55	Si
SLU 84	fin.	160.27	-476	0.9	0	470	7137	6064	2295	7606	No	15.98	Si
SLU 80	ini.	-430.57	2848	0.9	0	691	7137	6064	2295	7827	No	2.75	Si
SLU 80	fin.	175.27	-328	0.9	0	464	7137	6064	2295	7601	No	23.2	Si
SLU 83	ini.	-449.06	3064	0.9	0	701	7137	6064	2295	7838	No	2.56	Si
SLU 83	fin.	155.25	-490	0.9	0	472	7137	6064	2295	7609	No	15.51	Si
SLU 75	ini.	-430.57	2848	0.9	0	691	7137	6064	2295	7827	No	2.75	Si
SLU 75	fin.	175.27	-328	0.9	0	464	7137	6064	2295	7601	No	23.2	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	em	em_	emu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-466.48	-1031	-0.0002455	0.0002807	0.0035	0.9		3189.29	3189.29		6.84	Si
SLV 11	fin.	301.2	636	-0.0001542	0.0002807	0.0035	0.9		3183.56	3183.56		10.57	Si
SLV 4	ini.	-776.21	-1672	-0.0004368	0.0002807	0.0035	0.9		3189.29	3189.29		4.11	Si
SLV 4	fin.	602.37	1112	-0.0003267	0.0002807	0.0035	0.9		3183.56	3183.56		5.29	Si
SLV 7	ini.	-739.53	-1583	-0.0004127	0.0002807	0.0035	0.9		3189.29	3189.29		4.31	Si
SLV 7	fin.	563.53	1097	-0.0003031	0.0002807	0.0035	0.9		3183.56	3183.56		5.65	Si
SLV 8	ini.	-633.9	-1370	-0.0003454	0.0002807	0.0035	0.9		3189.29	3189.29		5.03	Si
SLV 8	fin.	455.76	907	-0.0002399	0.0002807	0.0035	0.9		3183.56	3183.56		6.99	Si
SLV 14	ini.	285.02	461	-0.0001456	0.0002807	0.0035	0.9		3183.56	3183.56		11.17	Si
SLV 14	fin.	-408.74	-713	-0.0002128	0.0002807	0.0035	0.9		3189.29	3189.29		7.8	Si
SLV 2	ini.	-625.14	-1379	-0.00034	0.0002807	0.0035	0.9		3189.29	3189.29		5.1	Si
SLV 2	fin.	465.7	826	-0.0002456	0.0002807	0.0035	0.9		3183.56	3183.56		6.84	Si



Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-730.77	-1591	-0.000407	0.0002807	0.0035	0.9		3189.29	3189.29		4.36	Si
SLV 1	fin.	573.46	1017	-0.0003091	0.0002807	0.0035	0.9		3183.56	3183.56		5.55	Si
SLV 13	ini.	179.39	249	-0.0000901	0.0002807	0.0035	0.9		3183.56	3183.56		17.75	Si
SLV 13	fin.	-300.98	-522	-0.0001538	0.0002807	0.0035	0.9		3189.29	3189.29		10.6	Si
SLV 3	ini.	-881.84	-1885	-0.0005084	0.0002807	0.0035	0.9		3189.29	3189.29		3.62	Si
SLV 3	fin.	710.13	1303	-0.0003945	0.0002807	0.0035	0.9		3183.56	3183.56		4.48	Si
SLV 12	ini.	-360.85	-819	-0.0001863	0.0002807	0.0035	0.9		3189.29	3189.29		8.84	Si
SLV 12	fin.	193.43	445	-0.0000973	0.0002807	0.0035	0.9		3183.56	3183.56		16.46	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c.int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-466.48	2480	0.9	0	955	7137	9096	2295	8092		3.26	Si
SLV 11	fin.	301.2	500	0.9	0	673	7137	9096	2295	7809		15.63	Si
SLV 4	ini.	-776.21	3513	0.9	0	1043	7137	9096	2295	8180		2.33	Si
SLV 4	fin.	602.37	1574	0.9	0	567	7137	9096	2295	7704		4.9	Si
SLV 14	ini.	285.02	-198	0.9	0	708	7137	9096	2295	7844		39.55	Si
SLV 14	fin.	-408.74	-2093	0.9	0	908	7137	9096	2295	8045		3.84	Si
SLV 3	ini.	-881.84	3907	0.9	0	1071	7137	9096	2295	8208		2.1	Si
SLV 3	fin.	710.13	1968	0.9	0	518	7137	9096	2295	7655		3.89	Si
SLV 8	ini.	-633.9	3035	0.9	0	1003	7137	9096	2295	8139		2.68	Si
SLV 8	fin.	455.76	1054	0.9	0	615	7137	9096	2295	7751		7.36	Si
SLV 12	ini.	-360.85	2085	0.9	0	924	7137	9096	2295	8060		3.87	Si
SLV 12	fin.	193.43	105	0.9	0	711	7137	9096	2295	7847		74.81	Si
SLV 7	ini.	-739.53	3430	0.9	0	1032	7137	9096	2295	8168		2.38	Si
SLV 7	fin.	563.53	1449	0.9	0	570	7137	9096	2295	7707		5.32	Si
SLV 13	ini.	179.39	197	0.9	0	748	7137	9096	2295	7885		40.12	Si
SLV 13	fin.	-300.98	-1699	0.9	0	878	7137	9096	2295	8015		4.72	Si
SLV 2	ini.	-625.14	2971	0.9	0	1004	7137	9096	2295	8141		2.74	Si
SLV 2	fin.	465.7	1070	0.9	0	633	7137	9096	2295	7769		7.26	Si
SLV 1	ini.	-730.77	3366	0.9	0	1033	7137	9096	2295	8169		2.43	Si
SLV 1	fin.	573.46	1465	0.9	0	590	7137	9096	2295	7726		5.27	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.617	SLV 3	Si
V_SLV	2.101	SLV 3	Si
PF_SLU	5.146	SLU 82	Si
V_SLU	2.546	SLU 82	Si

Trave di accoppiamento 22

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup.	H fin.	Luce	Spessore	R. Trazione
29.372	22.451	3.19	4.89	1.7	28.572	22.451	3.19	4.89	1.7	0.8	0.3	30000

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti

fb	f _{hk}	f _{vk0}	f _{hmedio}	τ_0	f _{v0}	μ	ϕ	f _{vk,lim}	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCC

Materiale	Fu Verticale	Fu Orizzontale	t _{fv}	t _{fo}	E	eu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									elim,conv / e,CNR DT-200						CRM / Fibrenet?				
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	α_t	α	elim,conv	e_{fd}	$\gamma_{F,d}$	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCC in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ϵ_m	$\epsilon_{m_}$	ϵ_{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	199.85	-1258	-0.0000276	0.0002246	0.0035	1.7		10818.78	10818.78	No	54.13	Si
SLU 74	fin.	-958.79	-2290	-0.0001377	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.29	Si
SLU 79	ini.	199.85	-1258	-0.0000276	0.0002246	0.0035	1.7		10818.78	10818.78	No	54.13	Si
SLU 79	fin.	-958.79	-2290	-0.0001377	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.29	Si
SLU 84	ini.	229.48	-1522	-0.0000318	0.0002246	0.0035	1.7		10818.78	10818.78	No	47.15	Si
SLU 84	fin.	-971.1	-2559	-0.0001395	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.15	Si
SLU 83	ini.	231.26	-1519	-0.000032	0.0002246	0.0035	1.7		10818.78	10818.78	No	46.78	Si
SLU 83	fin.	-974.37	-2560	-0.00014	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.11	Si
SLU 82	ini.	229.48	-1522	-0.0000318	0.0002246	0.0035	1.7		10818.78	10818.78	No	47.15	Si
SLU 82	fin.	-971.1	-2559	-0.0001395	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.15	Si
SLU 80	ini.	198.07	-1261	-0.0000274	0.0002246	0.0035	1.7		10818.78	10818.78	No	54.62	Si



Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	fin.	-955.51	-2289	-0.0001372	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.33	Si
SLU 77	ini.	199.85	-1258	-0.0000276	0.0002246	0.0035	1.7		10818.78	10818.78	No	54.13	Si
SLU 77	fin.	-958.79	-2290	-0.0001377	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.29	Si
SLU 75	ini.	198.07	-1261	-0.0000274	0.0002246	0.0035	1.7		10818.78	10818.78	No	54.62	Si
SLU 75	fin.	-955.51	-2289	-0.0001372	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.33	Si
SLU 78	ini.	198.07	-1261	-0.0000274	0.0002246	0.0035	1.7		10818.78	10818.78	No	54.62	Si
SLU 78	fin.	-955.51	-2289	-0.0001372	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.33	Si
SLU 81	ini.	231.26	-1519	-0.000032	0.0002246	0.0035	1.7		10818.78	10818.78	No	46.78	Si
SLU 81	fin.	-974.37	-2560	-0.00014	0.0002246	0.0035	1.7		10829.48	10829.48	No	11.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	199.85	513	1.7	0	942	6344	9164	4335	7285	No	14.19	Si
SLU 79	fin.	-958.79	-3999	1.7	0	1080	6344	9164	4335	7423	No	1.86	Si
SLU 77	ini.	199.85	513	1.7	0	942	6344	9164	4335	7285	No	14.19	Si
SLU 77	fin.	-958.79	-3999	1.7	0	1080	6344	9164	4335	7423	No	1.86	Si
SLU 83	ini.	231.26	936	1.7	0	978	6344	9164	4335	7322	No	7.83	Si
SLU 83	fin.	-974.37	-4249	1.7	0	1113	6344	9164	4335	7457	No	1.75	Si
SLU 75	ini.	198.07	525	1.7	0	942	6344	9164	4335	7286	No	13.88	Si
SLU 75	fin.	-955.51	-3988	1.7	0	1080	6344	9164	4335	7423	No	1.86	Si
SLU 84	ini.	229.48	947	1.7	0	979	6344	9164	4335	7323	No	7.73	Si
SLU 84	fin.	-971.1	-4238	1.7	0	1113	6344	9164	4335	7457	No	1.76	Si
SLU 82	ini.	229.48	947	1.7	0	979	6344	9164	4335	7323	No	7.73	Si
SLU 82	fin.	-971.1	-4238	1.7	0	1113	6344	9164	4335	7457	No	1.76	Si
SLU 74	ini.	199.85	513	1.7	0	942	6344	9164	4335	7285	No	14.19	Si
SLU 74	fin.	-958.79	-3999	1.7	0	1080	6344	9164	4335	7423	No	1.86	Si
SLU 81	ini.	231.26	936	1.7	0	978	6344	9164	4335	7322	No	7.83	Si
SLU 81	fin.	-974.37	-4249	1.7	0	1113	6344	9164	4335	7457	No	1.75	Si
SLU 80	ini.	198.07	525	1.7	0	942	6344	9164	4335	7286	No	13.88	Si
SLU 80	fin.	-955.51	-3988	1.7	0	1080	6344	9164	4335	7423	No	1.86	Si
SLU 78	ini.	198.07	525	1.7	0	942	6344	9164	4335	7286	No	13.88	Si
SLU 78	fin.	-955.51	-3988	1.7	0	1080	6344	9164	4335	7423	No	1.86	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	ε _m	ε _{m_}	ε _{mu}	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	883.24	921	-0.000125	0.0003369	0.0035	1.7		10408.07	10408.07		11.78	Si
SLV 1	fin.	-2346.03	-2113	-0.000354	0.0003369	0.0035	1.7		10419.4	10419.4		4.44	Si
SLV 10	ini.	323.05	-154	-0.0000448	0.0003369	0.0035	1.7		10408.07	10408.07		32.22	Si
SLV 10	fin.	-1144.54	-1557	-0.0001635	0.0003369	0.0035	1.7		10419.4	10419.4		9.1	Si
SLV 3	ini.	634.75	413	-0.000089	0.0003369	0.0035	1.7		10408.07	10408.07		16.4	Si
SLV 3	fin.	-1830.84	-1895	-0.0002694	0.0003369	0.0035	1.7		10419.4	10419.4		5.69	Si
SLV 5	ini.	724.86	634	-0.0001019	0.0003369	0.0035	1.7		10408.07	10408.07		14.36	Si
SLV 5	fin.	-1994.27	-1937	-0.0002957	0.0003369	0.0035	1.7		10419.4	10419.4		5.22	Si
SLV 2	ini.	865.67	887	-0.0001224	0.0003369	0.0035	1.7		10408.07	10408.07		12.02	Si
SLV 2	fin.	-2313.01	-2102	-0.0003485	0.0003369	0.0035	1.7		10419.4	10419.4		4.5	Si
SLV 15	ini.	-646.06	-2101	-0.0000905	0.0003369	0.0035	1.7		10419.4	10419.4		16.13	Si
SLV 15	fin.	891.52	-665	-0.0001262	0.0003369	0.0035	1.7		10408.07	10408.07		11.67	Si
SLV 4	ini.	617.18	378	-0.0000864	0.0003369	0.0035	1.7		10408.07	10408.07		16.86	Si
SLV 4	fin.	-1797.82	-1884	-0.0002641	0.0003369	0.0035	1.7		10419.4	10419.4		5.8	Si
SLV 6	ini.	707.29	600	-0.0000994	0.0003369	0.0035	1.7		10408.07	10408.07		14.72	Si
SLV 6	fin.	-1961.25	-1926	-0.0002904	0.0003369	0.0035	1.7		10419.4	10419.4		5.31	Si
SLV 9	ini.	340.61	-120	-0.0000472	0.0003369	0.0035	1.7		10408.07	10408.07		30.56	Si
SLV 9	fin.	-1177.56	-1568	-0.0001684	0.0003369	0.0035	1.7		10419.4	10419.4		8.85	Si
SLV 16	ini.	-663.63	-2135	-0.000093	0.0003369	0.0035	1.7		10419.4	10419.4		15.7	Si
SLV 16	fin.	924.54	-654	-0.000131	0.0003369	0.0035	1.7		10408.07	10408.07		11.26	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRMC in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-663.63	5103	1.7	0	1448	6344	13746	4335	7791		1.53	Si
SLV 16	fin.	924.54	2568	1.7	0	1223	6344	13746	4335	7566		2.95	Si
SLV 1	ini.	883.24	-5456	1.7	0	925	6344	13746	4335	7269		1.33	Si
SLV 1	fin.	-2346.03	-8001	1.7	0	1445	6344	13746	4335	7788		0.97	No
SLV 5	ini.	724.86	-4358	1.7	0	986	6344	13746	4335	7329		1.68	Si
SLV 5	fin.	-1994.27	-6907	1.7	0	1420	6344	13746	4335	7763		1.12	Si
SLV 15	ini.	-646.06	4992	1.7	0	1443	6344	13746	4335	7787		1.56	Si
SLV 15	fin.	891.52	2456	1.7	0	1224	6344	13746	4335	7568		3.08	Si
SLV 4	ini.	617.18	-3657	1.7	0	1037	6344	13746	4335	7381		2.02	Si
SLV 4	fin.	-1797.82	-6199	1.7	0	1412	6344	13746	4335	7756		1.25	Si
SLV 3	ini.	634.75	-3769	1.7	0	1030	6344	13746	4335	7374		1.96	Si
SLV 3	fin.	-1830.84	-6310	1.7	0	1414	6344	13746	4335	7757		1.23	Si
SLV 2	ini.	865.67	-5345	1.7	0	932	6344	13746	4335	7276		1.36	Si
SLV 2	fin.	-2313.01	-7890	1.7	0	1443	6344	13746	4335	7787		0.99	No
SLV 9	ini.	340.61	-1730	1.7	0	1130	6344	13746	4335	7474		4.32	Si
SLV 9	fin.	-1177.56	-4277	1.7	0	1366	6344	13746	4335	7710		1.8	Si
SLV 6	ini.	707.29	-4247	1.7	0	993	6344	13746	4335	7336		1.73	Si
SLV 6	fin.	-1961.25	-6796	1.7	0	1418	6344	13746	4335	7762		1.14	Si
SLV 10	ini.	323.05	-1619	1.7	0	1137	6344	13746	4335	7480		4.62	Si
SLV 10	fin.	-1144.54	-4166	1.7	0	1364	6344	13746	4335	7708		1.85	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.441	SLV 1	Si
V_SLV	0.973	SLV 1	No



Stato limite	Coeff.s.	Comb.	Verifica
PF SLU	11.114	SLU 81	Si
V SLU	1.755	SLU 81	Si