

COMUNE DI PIEVE DI TECO

IMPERIA



INTERVENTI DI MIGLIORAMENTO SISMICO

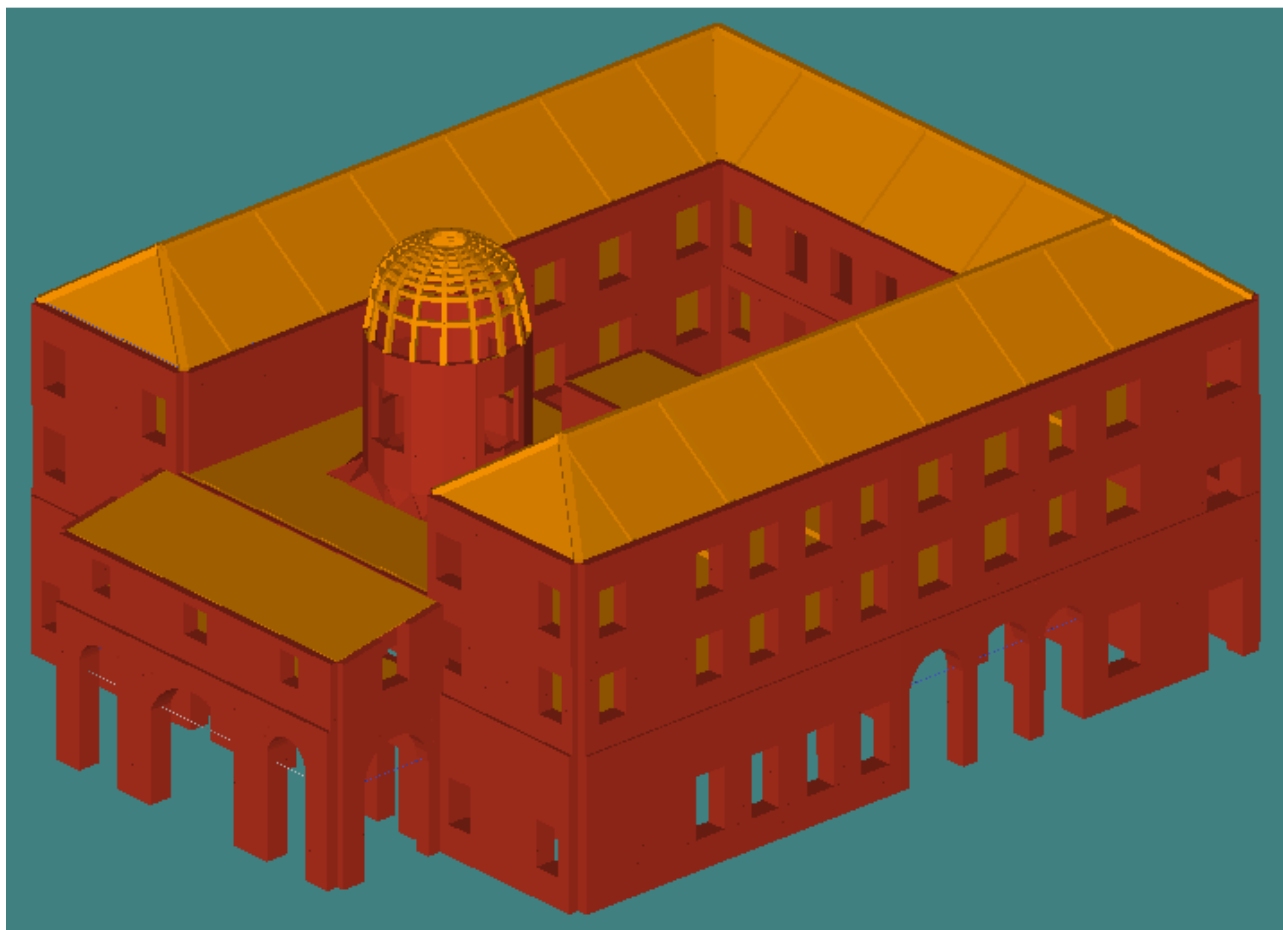
ex Caserma Manfredi
(ora centro COM e SAACS)

O.c.d.p.c. 171/2014 - D.G.R. 996/2016

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| PROGETTO | INTERVENTI MIGLIORAMENTO SISMICO CENTRO COM | | LIVELLO PROGETTAZIONE PROGETTO ESECUTIVO | | |
| TITOLO | RELAZIONE TECNICA ILLUSTRATIVA STRUTTURALE STATO DI FATTO | | IL PROGETTISTA | | IL COMMITTENTE |
| LOCALITA' | PIEVE DI TECO - PIAZZA BORELLI | | DISEGNATO | | APPROVATO |
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| DISEGNI DI RIFERIMENTO : | | | ARCHIVIO FILE: | | |
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COMUNE DI PIEVE DI TECO

O.c.d.p.c. 171/2014 - D.G.R. 996/2016. Interventi di miglioramento sismico
"ex Caserma Manfredi"



EX CASERMA MANFREDI

RELAZIONE DI CALCOLO STATO DI FATTO VALUTAZIONE SICUREZZA 30%

**Relazione di calcolo strutturale impostata e redatta secondo le modalità previste nel
D.M. 14 Gennaio 2008 cap. 8 "Costruzioni esistenti" e cap.10.**

INTESTAZIONE E CONTENUTI DELLA RELAZIONE

Contenuti della relazione:

RELAZIONE DI CALCOLO STRUTTURALE

- *Origine e Caratteristiche dei Codici di Calcolo*

- *Affidabilità dei codici utilizzati*

- *Validazione dei codici*

- *Tipo di analisi svolta*

- *Modalità di presentazione dei risultati*

- *Informazioni generali sull'elaborazione*

- *Giudizio motivato di accettabilità dei risultati*

STAMPA DEI DATI DI INGRESSO

- *Normative prese a riferimento*

- *Criteri adottati per le misure di sicurezza*

- *Criteri seguiti nella schematizzazione della struttura, dei vincoli e delle sconnessioni*

- *Interazione tra terreno e struttura*

- *Legami costitutivi adottati per la modellazione dei materiali e dei terreni*

- *Schematizzazione delle azioni, condizioni e combinazioni di carico*

- *Metodologie numeriche utilizzate per l'analisi strutturale*

- *Metodologie numeriche utilizzate per la progettazione e la verifica degli elementi strutturali*

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Il Progettista:

2 ottobre 2017

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RELAZIONE DI CALCOLO STRUTTURALE

Premessa

La presente relazione di calcolo strutturale, in conformità al §10.1 del DM 14/01/08, è comprensiva di una descrizione generale dell'opera e dei criteri generali di analisi e verifica. Segue inoltre le indicazioni fornite al §10.2 del DM stesso per quanto concerne analisi e verifiche svolte con l'ausilio di codici di calcolo.

Nella presente parte sono riportati i principali elementi di inquadramento del progetto esecutivo riguardante le strutture, in relazione agli strumenti urbanistici, al progetto architettonico, al progetto delle componenti tecnologiche in generale ed alle prestazioni attese dalla struttura.

Analisi storico-critica ed esito del rilievo geometrico-strutturale

Per edifici esistenti, in coerenza con il paragrafo 8.2 delle NTC-08, l'analisi storico-critica ed il rilievo geometrico-strutturale devono evidenziare i seguenti aspetti: (a) la costruzione riflette lo stato delle conoscenze al tempo della sua realizzazione; (b) possono essere insiti e non palesi difetti di impostazione e di realizzazione; (c) la costruzione può essere stata soggetta ad azioni, anche eccezionali, i cui effetti non siano completamente manifesti; (d) le strutture possono presentare degrado e/o modificazioni significative rispetto alla situazione originaria.

Analisi storico-critica

Per edifici esistenti, viene indicata la documentazione reperita e vengono esplicitate le informazioni desunte da ciascuno dei documenti esaminati per le finalità indicate al paragrafo 8.5.1 delle NTC-08.

VEDSAI RELAZIONE DESCRITTIVA

Esito del rilievo geometrico-strutturale

Per edifici esistenti, vengono descritte le modalità con cui è stato effettuato il rilievo geometrico strutturale e gli esiti di quest'ultimo, anche con riferimenti espliciti e puntuali agli elaborati grafici che saranno riportati nella parte "4.1. Rilievo geometrico-strutturale". Il rilievo delle strutture deve essere eseguito e restituito secondo le modalità e con le finalità riportate nei paragrafi 8.5.2 e 8.7 delle NTC-08.

VEDASI TAVOLE GRAFICHE

Descrizione generale dell'opera

| Descrizione generale dell'opera | |
|---------------------------------|--|
| Fabbricato ad uso | EDIFICIO STARTEGICO |
| Ubicazione | Comune di PIEVE DI TECO (IM) (Regione LIGURIA) |
| | Località PIEVE DI TECO (IM) |
| | Longitudine 7.914, Latitudine 44.047 |
| Numero di piani | Fuori terra |
| | Interrati |

| Principali caratteristiche della struttura | |
|---|----|
| Struttura regolare in pianta | SI |
| Struttura regolare in altezza | SI |
| Classe di duttilità | |
| Travi: ricalate o in spessore | |
| Pilastri | |
| Pilastri in falso | |
| Tipo di fondazione | |
| Condizioni per cui è necessario considerare la componente verticale del sisma | |

| Parametri della struttura | | | |
|----------------------------------|----------------|------------|-------------------|
| Classe d'uso | Vita Vn [anni] | Coeff. Uso | Periodo Vr [anni] |
| IV | 100.0 | 2.0 | 200.0 |

| Fattore di struttura |
|-----------------------------|
| Q=3.6 |

Quadro normativo di riferimento adottato

Le norme ed i documenti assunti quale riferimento per la progettazione strutturale vengono indicati di seguito.

Nel capitolo “normativa di riferimento” è comunque presente l’elenco completo delle normative disponibili.

| Progetto-verifica degli elementi | |
|---|-----------------|
| Progetto cemento armato | D.M. 14-01-2008 |
| Progetto acciaio | D.M. 14-01-2008 |
| Progetto legno | D.M. 14-01-2008 |
| Progetto muratura | D.M. 14-01-2008 |
| Azione sismica | |
| Norma applicata per l' azione sismica | D.M. 14-01-2008 |

Livelli di conoscenza e fattori di confidenza

Il livello di conoscenza, per edifici esistenti è LC2

Pertanto il fattore di confidenza è $FC=1,2$

Azioni di progetto sulla costruzione

Nei capitoli “modellazione delle azioni” e “schematizzazione dei casi di carico” sono indicate le azioni sulle costruzioni.

Nel prosieguo si indicano tipo di analisi strutturale condotta (statico, dinamico, lineare o non lineare) e il metodo adottato per la risoluzione del problema strutturale nonché le metodologie seguite per la verifica o per il progetto-verifica delle sezioni. Si riportano le combinazioni di carico adottate e, nel caso di calcoli non lineari, i percorsi di carico seguiti; le configurazioni studiate per la struttura in esame ***sono risultate effettivamente esaustive per la progettazione-verifica.***

La verifica della sicurezza degli elementi strutturali avviene con i metodi della scienza delle costruzioni. L'analisi strutturale è condotta con il metodo degli spostamenti per la valutazione dello stato tensodeformativo indotto da carichi statici. L'analisi strutturale è condotta con il metodo dell'analisi modale e dello spettro di risposta in termini di accelerazione per la valutazione dello stato tensodeformativo indotto da carichi dinamici (tra cui quelli di tipo sismico).

L'analisi strutturale viene effettuata con il metodo degli elementi finiti. Il metodo sopraindicato si basa sulla schematizzazione della struttura in elementi connessi solo in corrispondenza di un numero prefissato di punti denominati nodi. I nodi sono definiti dalle tre coordinate cartesiane in un sistema di riferimento globale. Le incognite del problema (nell'ambito del metodo degli spostamenti) sono le componenti di spostamento dei nodi riferite al sistema di riferimento globale (traslazioni secondo X, Y, Z, rotazioni attorno X, Y, Z). La soluzione del problema si ottiene con un sistema di equazioni algebriche lineari i cui termini noti sono costituiti dai carichi agenti sulla struttura opportunamente concentrati ai nodi:

$K \cdot u = F$ dove K = matrice di rigidezza

u = vettore spostamenti nodali

F = vettore forze nodali

Dagli spostamenti ottenuti con la risoluzione del sistema vengono quindi dedotte le sollecitazioni e/o le tensioni di ogni elemento, riferite generalmente ad una terna locale all'elemento stesso.

Il sistema di riferimento utilizzato è costituito da una terna cartesiana destrorsa XYZ. Si assume l'asse Z verticale ed orientato verso l'alto.

Gli elementi utilizzati per la modellazione dello schema statico della struttura sono i seguenti:

- Elemento tipo **TRUSS** (biella-D2)
- Elemento tipo **BEAM** (trave-D2)

- Elemento tipo **MEMBRANE** (membrana-D3)
- Elemento tipo **PLATE** (piastra-guscio-D3)
- Elemento tipo **BOUNDARY** (molla)
- Elemento tipo **STIFFNESS** (matrice di rigidità)
- Elemento tipo **BRICK** (elemento solido)
- Elemento tipo **SOLAIO** (macro elemento composto da più membrane)

Modello numerico

In questa parte viene descritto il modello numerico utilizzato (o i modelli numerici utilizzati) per l'analisi della struttura. La presentazione delle informazioni deve essere, coerentemente con le prescrizioni del paragrafo 10.2 delle NTC-08, tale da garantirne la leggibilità, la corretta interpretazione e la riproducibilità

| Tipo di analisi strutturale | |
|---|----|
| Statica lineare | SI |
| Statica non lineare | NO |
| Sismica statica lineare | NO |
| Sismica dinamica lineare | SI |
| Sismica statica non lineare (prop. masse) | NO |
| Sismica statica non lineare (prop. modo) | NO |
| Sismica statica non lineare (triangolare) | NO |
| Non linearità geometriche (fattore P delta) | NO |

Di seguito si indicano l'origine e le caratteristiche dei codici di calcolo utilizzati riportando titolo, produttore e distributore, versione, estremi della licenza d'uso:

| Informazioni sul codice di calcolo | |
|------------------------------------|--|
| Titolo: | PRO_SAP PROfessional Structural Analysis Program |
| Versione: | PROFESSIONAL (build 2017-04-177) |
| Produttore-Distributore: | 2S.I. Software e Servizi per l'Ingegneria s.r.l., Ferrara |
| Dati utente finale: | ING. AUGUSTO FORNO |

| | |
|-----------------|-----------------|
| Codice Licenza: | Licenza dsi3612 |
|-----------------|-----------------|

Un attento esame preliminare della documentazione a corredo del software **ha consentito di valutarne l'affidabilità e soprattutto l' idoneità al caso specifico**. La documentazione, fornita dal produttore e distributore del software, contiene una esauriente descrizione delle basi teoriche e degli algoritmi impiegati, l'individuazione dei campi d'impiego, nonché casi prova interamente risolti e commentati, corredati dei file di input necessari a riprodurre l'elaborazione:

| Affidabilità dei codici utilizzati |
|---|
| 2S.I. ha verificato l'affidabilità e la robustezza del codice di calcolo attraverso un numero significativo di casi prova in cui i risultati dell'analisi numerica sono stati confrontati con soluzioni teoriche. |
| E' possibile reperire la documentazione contenente alcuni dei più significativi casi trattati al seguente link: http://www.2si.it/Software/Affidabilità.htm |

| Modellazione della geometria e proprietà meccaniche: | |
|---|---------|
| nodi | 10959 |
| elementi D2 (per aste, travi, pilastri...) | 1152 |
| elementi D3 (per pareti, platee, gusci...) | 9673 |
| elementi solaio | 80 |
| elementi solidi | 0 |
| Dimensione del modello strutturale [cm]: | |
| X min = | 661.27 |
| Xmax = | 5310.00 |
| Ymin = | 1901.54 |
| Ymax = | 5471.48 |
| Zmin = | -0.00 |
| Zmax = | 2398.43 |
| Strutture verticali: | |
| Elementi di tipo asta | NO |
| Pilastri | SI |

| | |
|---|----|
| Pareti | SI |
| Setti (a comportamento membranale) | NO |
| Strutture non verticali: | |
| Elementi di tipo asta | SI |
| Travi | SI |
| Gusci | SI |
| Membrane | NO |
| Orizzontamenti: | |
| Solai con la proprietà piano rigido | SI |
| Solai senza la proprietà piano rigido | SI |
| Tipo di vincoli: | |
| Nodi vincolati rigidamente | SI |
| Nodi vincolati elasticamente | NO |
| Nodi con isolatori sismici | NO |
| Fondazioni puntuali (plinti/plinti su palo) | NO |
| Fondazioni di tipo trave | NO |
| Fondazioni di tipo platea | NO |
| Fondazioni con elementi solidi | NO |

Modellazione delle azioni

Si veda il capitolo **“Schematizzazione dei casi di carico”** per le informazioni necessarie alla comprensione ed alla ricostruzione delle azioni applicate al modello numerico, coerentemente con quanto indicato nella parte **“2.6. Azioni di progetto sulla costruzione”**.

Combinazioni e/o percorsi di carico

Si veda il capitolo **“Definizione delle combinazioni”** in cui sono indicate le combinazioni di carico adottate e, nel caso di calcoli non lineari, i percorsi di carico seguiti.

| Combinazioni dei casi di carico | |
|--|-------------|
| APPROCCIO PROGETTUALE | Approccio 2 |
| Tensioni ammissibili | NO |
| SLU | SI |

| | |
|-------------------------------------|----|
| SLV (SLU con sisma) | SI |
| SLC | NO |
| SLD | SI |
| SLO | NO |
| SLU GEO A2 (per approccio 1) | NO |
| SLU EQU | NO |
| Combinazione caratteristica (rara) | SI |
| Combinazione frequente | SI |
| Combinazione quasi permanente (SLE) | SI |
| SLA (accidentale quale incendio) | NO |

Principali risultati

I risultati devono costituire una sintesi completa ed efficace, presentata in modo da riassumere il comportamento della struttura, per ogni tipo di analisi svolta.

2.8.1. Risultati dell'analisi modale

Viene riportato il tipo di analisi modale condotta, restituiti i risultati della stessa e valutate le informazioni desumibili in merito al comportamento della struttura.

2.8.2. Deformate e sollecitazioni per condizioni di carico

Vengono riportati i principali risultati atti a descrivere il comportamento della struttura, in termini di stati di sollecitazione e di deformazione generalizzata, distinti per condizione elementare di carico o per combinazioni omogenee delle stesse.

2.8.3. Involuppo delle sollecitazioni maggiormente significative. L'analisi e la restituzione degli involuppi (nelle combinazioni considerate agli SLU e agli SLE) delle caratteristiche di sollecitazione devono essere finalizzate alla valutazione dello stato di sollecitazione nei diversi elementi della struttura.

2.8.4. Reazioni vincolari

Vengono riportate le reazioni dei vincoli nelle singole condizioni di carico e/o nelle combinazioni considerate.

2.8.5. Altri risultati significativi

Nella presente parte vengono riportati tutti gli altri risultati che il progettista ritiene di interesse per la descrizione e la comprensione del/i modello/i e del comportamento della struttura.

La presente relazione, oltre ad illustrare in modo esaustivo i dati in ingresso ed i risultati delle analisi in forma tabellare, riporta una serie di immagini:

per i dati in ingresso:

- modello solido della struttura
- numerazione di nodi e ed elementi
- configurazioni di carico statiche
- configurazioni di carico sismiche con baricentri delle masse e eccentricità

per le combinazioni più significative (statisticamente più gravose per la struttura)

- configurazioni deformate
- diagrammi e involuipi delle azioni interne
- mappe delle tensioni
- reazioni vincolari
- mappe delle pressioni sul terreno

per il progetto-verifica degli elementi

- diagrammi di armatura
- percentuali di sfruttamento
- mappe delle verifiche più significative per i vari stati limite

Informazioni generali sull'elaborazione e giudizio motivato di accettabilità dei risultati.

Il programma prevede una serie di controlli automatici (check) che consentono l'individuazione di errori di modellazione. Al termine dell'analisi un controllo automatico identifica la presenza di spostamenti o rotazioni anormali. Si può pertanto asserire che l'elaborazione sia corretta e completa. I risultati delle elaborazioni sono stati sottoposti a controlli che ne comprovano l'attendibilità. Tale valutazione ha compreso il confronto con i risultati di semplici calcoli, eseguiti con metodi tradizionali e adottati, anche in fase di primo proporzionamento della struttura. Inoltre, sulla base di considerazioni riguardanti gli stati tensionali e deformativi determinati, si è valutata la validità delle scelte operate in sede di schematizzazione e di modellazione della struttura e delle azioni. Si allega al termine della presente relazione elenco sintetico dei controlli svolti (verifiche di equilibrio tra reazioni vincolari e carichi applicati, comparazioni tra i risultati delle analisi e quelli di valutazioni semplificate, etc.) .

Verifiche agli stati limite ultimi

Nel capitolo relativo alla progettazione degli elementi strutturali agli SLU vengono indicate, con riferimento alla normativa adottata, le modalità ed i criteri seguiti per valutare la sicurezza della struttura nei confronti delle possibili situazioni di crisi ed i risultati delle valutazioni svolte. In via generale, oltre alle verifiche di resistenza e di spostamento, devono essere prese in considerazione verifiche nei confronti dei fenomeni di instabilità, locale e globale, di fatica, di duttilità, di degrado.

Verifiche agli stati limite di esercizio

Nel capitolo relativo alla progettazione degli elementi strutturali agli SLU vengono indicate, con riferimento alla normativa adottata, le modalità seguite per valutare l'affidabilità della struttura nei confronti delle possibili situazioni di perdita di funzionalità (per eccessive deformazioni, fessurazioni, vibrazioni, etc.) ed i risultati delle valutazioni svolte.

RELAZIONE SUI MATERIALI

Il capitolo Materiali riportata informazioni esaustive relative all'elenco dei materiali impiegati e loro modalità di posa in opera e ai valori di calcolo.

NORMATIVA DI RIFERIMENTO

1. D.Min. Infrastrutture Min. Interni e Prot. Civile 14 Gennaio 2008 e allegate "Norme tecniche per le costruzioni".
2. D.Min. Infrastrutture e trasporti 14 Settembre 2005 e allegate "Norme tecniche per le costruzioni".
3. D.M. LL.PP. 9 Gennaio 1996 "Norme tecniche per il calcolo, l'esecuzione ed il collaudo delle strutture in cemento armato, normale e precompresso e per le strutture metalliche".
4. D.M. LL.PP. 16 Gennaio 1996 "Norme tecniche relative ai <<Criteri generali per la verifica di sicurezza delle costruzioni e dei carichi e sovraccarichi>>".
5. D.M. LL.PP. 16 Gennaio 1996 "Norme tecniche per le costruzioni in zone sismiche".
6. Circolare 4/07/96, n.156AA.GG./STC. istruzioni per l'applicazione delle "Norme tecniche relative ai <<Criteri generali per la verifica di sicurezza delle costruzioni e dei carichi e sovraccarichi>>" di cui al D.M. 16/01/96.
7. Circolare 10/04/97, n.65AA.GG. istruzioni per l'applicazione delle "Norme tecniche per le costruzioni in zone sismiche" di cui al D.M. 16/01/96.
8. D.M. LL.PP. 20 Novembre 1987 "Norme tecniche per la progettazione, esecuzione e collaudo degli edifici in muratura e per il loro consolidamento".
9. Circolare 4 Gennaio 1989 n. 30787 "Istruzioni in merito alle norme tecniche per la progettazione, esecuzione e collaudo degli edifici in muratura e per il loro consolidamento".
10. D.M. LL.PP. 11 Marzo 1988 "Norme tecniche riguardanti le indagini sui terreni e sulle rocce, la stabilità dei pendii naturali e delle scarpate, i criteri generali e le prescrizioni per la progettazione, l'esecuzione e il collaudo delle opere di sostegno delle terre e delle opere di fondazione".
11. D.M. LL.PP. 3 Dicembre 1987 "Norme tecniche per la progettazione, esecuzione e collaudo delle costruzioni prefabbricate".
12. UNI 9502 - Procedimento analitico per valutare la resistenza al fuoco degli elementi costruttivi di conglomerato cementizio armato, normale e precompresso - edizione maggio 2001
13. Ordinanza del Presidente del Consiglio dei Ministri n. 3274 del 20 marzo 2003 "Primi elementi in materia di criteri generali per la classificazione sismica del territorio nazionale e di normative tecniche per le costruzioni in zona sismica" e successive modificazioni e integrazioni.
14. UNI EN 1990:2006 13/04/2006 Eurocodice 0 - Criteri generali di progettazione strutturale.
15. UNI EN 1991-1-1:2004 01/08/2004 Eurocodice 1 - Azioni sulle strutture - Parte 1-1: Azioni in generale - Pesì per unità di volume, pesì propri e sovraccarichi per gli edifici.
16. UNI EN 1991-2:2005 01/03/2005 Eurocodice 1 - Azioni sulle strutture - Parte 2: Carichi da traffico sui ponti.
17. UNI EN 1991-1-3:2004 01/10/2004 Eurocodice 1 - Azioni sulle strutture - Parte 1-3: Azioni in generale - Carichi da neve.
18. UNI EN 1991-1-4:2005 01/07/2005 Eurocodice 1 - Azioni sulle strutture - Parte 1-4: Azioni in generale - Azioni del vento.
19. UNI EN 1991-1-5:2004 01/10/2004 Eurocodice 1 - Azioni sulle strutture - Parte 1-5: Azioni in generale - Azioni termiche.
20. UNI EN 1992-1-1:2005 24/11/2005 Eurocodice 2 - Progettazione delle strutture di calcestruzzo - Parte 1-1: Regole generali e regole per gli edifici.
21. UNI EN 1992-1-2:2005 01/04/2005 Eurocodice 2 - Progettazione delle strutture di calcestruzzo - Parte 1-2: Regole generali - Progettazione strutturale contro l'incendio.
22. UNI EN 1993-1-1:2005 01/08/2005 Eurocodice 3 - Progettazione delle strutture di acciaio - Parte 1-1: Regole generali e regole per gli edifici.
23. UNI EN 1993-1-8:2005 01/08/2005 Eurocodice 3 - Progettazione delle strutture di acciaio - Parte 1-8: Progettazione dei collegamenti.
24. UNI EN 1994-1-1:2005 01/03/2005 Eurocodice 4 - Progettazione delle strutture composte acciaio-calcestruzzo - Parte 1-1: Regole generali e regole per gli edifici.
25. UNI EN 1994-2:2006 12/01/2006 Eurocodice 4 - Progettazione delle strutture composte acciaio-calcestruzzo - Parte 2: Regole generali e regole per i ponti.
26. UNI EN 1995-1-1:2005 01/02/2005 Eurocodice 5 - Progettazione delle strutture di legno - Parte 1-1: Regole generali - Regole comuni e regole per gli edifici.
27. UNI EN 1995-2:2005 01/01/2005 Eurocodice 5 - Progettazione delle strutture di legno - Parte 2: Ponti.
28. UNI EN 1996-1-1:2006 26/01/2006 Eurocodice 6 - Progettazione delle strutture di muratura - Parte 1-1: Regole generali per strutture di muratura armata e non armata.
29. UNI EN 1996-3:2006 09/03/2006 Eurocodice 6 - Progettazione delle strutture di muratura - Parte 3: Metodi di calcolo semplificato per strutture di muratura non armata.
30. UNI EN 1997-1:2005 01/02/2005 Eurocodice 7 - Progettazione geotecnica - Parte 1: Regole generali.
31. UNI EN 1998-1:2005 01/03/2005 Eurocodice 8 - Progettazione delle strutture per la resistenza sismica - Parte 1: Regole generali, azioni sismiche e regole per gli edifici.
32. UNI EN 1998-3:2005 01/08/2005 Eurocodice 8 - Progettazione delle strutture per la resistenza sismica - Parte 3: Valutazione e adeguamento degli edifici.
- UNI EN 1998-5:2005 01/01/2005 Eurocodice 8 - Progettazione delle strutture per la resistenza sismica - Parte 5: Fondazioni, strutture di contenimento ed aspetti geotecnici.

NOTA sul capitolo "normativa di riferimento": riporta l'elenco delle normative implementate nel software. Le norme utilizzate per la struttura oggetto della presente relazione sono indicate nel precedente capitolo "RELAZIONE DI CALCOLO STRUTTURALE" "ANALISI E VERIFICHE SVOLTE CON L'AUSILIO DI CODICI DI CALCOLO". Laddove nei capitoli successivi vengano richiamate norme antecedenti al DM 14.01.08 è dovuto o a progettazione simulata di edificio esistente o ad applicazione del punto 2.7 del DM 14.01.08

CARATTERISTICHE MATERIALI UTILIZZATI

LEGENDA TABELLA DATI MATERIALI

Il programma consente l'uso di materiali diversi. Sono previsti i seguenti tipi di materiale:

| | |
|---|-------------------------------|
| 1 | materiale tipo cemento armato |
| 2 | materiale tipo acciaio |
| 3 | materiale tipo muratura |
| 4 | materiale tipo legno |
| 5 | materiale tipo generico |

I materiali utilizzati nella modellazione sono individuati da una sigla identificativa ed un codice numerico (gli elementi strutturali richiamano quest'ultimo nella propria descrizione). Per ogni materiale vengono riportati in tabella i seguenti dati:

| | |
|----------------|---|
| <i>Young</i> | modulo di elasticità normale |
| <i>Poisson</i> | coefficiente di contrazione trasversale |
| <i>G</i> | modulo di elasticità tangenziale |
| <i>Gamma</i> | peso specifico |
| <i>Alfa</i> | coefficiente di dilatazione termica |

I dati soprariportati vengono utilizzati per la modellazione dello schema statico e per la determinazione dei carichi inerziali e termici. In relazione al tipo di materiale vengono riportati inoltre:

| | | | |
|---|-----------------------|---|--|
| 1 | cemento armato | Rck Fctm | resistenza caratteristica cubica resistenza media a trazione semplice |
| 2 | acciaio | Ft Fy Fd Fdt Sadm Sadmt | tensione di rottura a trazione tensione di snervamento resistenza di calcolo resistenza di calcolo per spess. t>40 mm tensione ammissibile tensione ammissibile per spess. t>40 mm |
| 3 | muratura | Resist. Fk Resist. Fvko | resistenza caratteristica a compressione resistenza caratteristica a taglio |
| 4 | legno | Resist. fc0k Resist. ft0k Resist. fmk Resist. fvk Modulo E0,05 Lamellare | Resistenza caratteristica (tensione amm. per REGLES) per compressione Resistenza caratteristica (tensione amm. per REGLES) per trazione Resistenza caratteristica (tensione amm. per REGLES) per flessione Resistenza caratteristica (tensione amm. per REGLES) per taglio Modulo elastico parallelo caratteristico lamellare o massiccio |

Vengono inoltre riportate le tabelle contenenti il riassunto delle informazioni assegnate nei criteri di progetto in uso.

Con riferimento al **Documento di Affidabilità** “*Test di validazione del software di calcolo PRO_SAP e dei moduli aggiuntivi PRO_SAP Modulo Geotecnico, PRO_CAD nodi acciaio e PRO_MST*” - versione Maggio 2011, disponibile per il download sul sito **www.2si.it**, si segnalano i seguenti esempi applicativi:

Modellazione di strutture in c.a.

| Test N° | Titolo |
|---------|---|
| 41 | GERARCHIA DELLE RESISTENZE PER TRAVI IN C.A. |
| 42 | GERARCHIA DELLE RESISTENZE PER PILASTRI IN C.A. |
| 43 | VERIFICA ALLE TA DI STRUTTURE IN C.A. |
| 44 | VERIFICA AGLI SLU DI STRUTTURE IN C.A. |
| 45 | VERIFICA A PUNZONAMENTO ALLO SLU DI PIASTRE IN C.A. |
| 46 | VERIFICA A PUNZONAMENTO ALLO SLU DI TRAVI IN C.A. |
| 47 | PROGETTAZIONE A TAGLIO DI STRUTTURE IN C.A. SECONDO IL D.M. 9/1/96 |
| 48 | PROGETTAZIONE A TAGLIO DI STRUTTURE IN C.A. SECONDO IL D.M. 14/1/2008 |
| 49 | VERIFICA ALLO SLE (TENSIONI E FESSURAZIONE) DI STRUTTURE IN C.A. |
| 50 | VERIFICA ALLO SLE (DEFORMAZIONE) DI STRUTTURE IN C.A. |
| 51 | FATTORE DI STRUTTURA |
| 52 | SOVRARESISTENZE |
| 53 | DETTAGLI COSTRUTTIVI C.A.: LIMITI D'ARMATURA PILASTRI E NODI TRAVE-PILASTRO |
| 54 | PARETI IN C.A. SNELLE IN ZONA SISMICA |
| 80 | ANALISI PUSHOVER DI UN EDIFICIO IN C.A. |
| 120 | PROGETTO E VERIFICA DI TRAVI PREM |

Modellazione di strutture in acciaio

| Test N° | Titolo |
|---------|--|
| 55 | VERIFICA DI STABILITA' DI ASTE COMPRESSE IN ACCIAIO – METODO OMEGA |
| 56 | LUCE LIBERA DI TRAVI E ASTE IN ACCIAIO |
| 57 | LUCE LIBERA DI COLONNE IN ACCIAIO |
| 58 | SVERGOLAMENTO DI TRAVI IN ACCIAIO |
| 59 | FATTORE DI STRUTTURA |
| 60 | ACCIAIO D.M.2008 |
| 61 | ACCIAIO EC3 |
| 62 | GERARCHIA RESISTENZE STRUTTURE IN ACCIAIO |

| | |
|-----------|--|
| 63 | STABILITA' DI ASTE COMPOSTE IN ACCIAIO |
| 73 | COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO CON PRESENZA IRRIGIDIMENTI TRASVERSALI |
| 74 | COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO CON PRESENZA DI UN PIATTO DI RINFORZO SALDATO ALL'ANIMA DELLA COLONNA |
| 75 | COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO CON PRESENZA DI DUE PIATTI DI RINFORZO SALDATI ALL'ANIMA DELLA COLONNA |
| 76 | COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO A DUE VIE SU ALI COLONNA |
| 77 | COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO A UNA VIA CON DUE COMBINAZIONI DI CARICO |
| 78 | COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO SU ANIMA SENZA RINFORZI A QUATTRO FILE DI BULLONI DI CUI UNA SU PIASTRA INFERIORE E UNA SU PIASTRA SUPERIORE |
| 79 | VERIFICA DELLA PIASTRA NODO TRAVE COLONNA |
| 85 | TELAIO ACCIAIO: CONTROVENTI CONCENTRICI |

Modellazione di strutture in muratura

| Test N° | Titolo |
|-----------|--|
| 81 | ANALISI PUSHOVER DI UNA STRUTTURA IN MURATURA |
| 84 | ANALISI ELASTO PLASTICA INCREMENTALE, PARETE IN MURATURA |
| 86 | VERIFICA NON SISMICA DELLE MURATURE (D.M. 87 TA) |
| 87 | VERIFICA NON SISMICA DELLE MURATURE (D.M. 2005 SL) |
| 88 | FATTORE DI STRUTTURA |

Modellazione di strutture in legno

| Test N° | Titolo |
|-----------|---|
| 17 | SOLAIO: MISTO LEGNO-CALCESTRUZZO |
| 89 | VERIFICA ALLO SLU DI STRUTTURE IN LEGNO SECONDO EC5 |
| 90 | VERIFICA ALLO SLE DI STRUTTURE IN LEGNO SECONDO EC5 |
| 91 | FATTORE DI STRUTTURA |
| 92 | VERIFICHE EC5 |
| 93 | SNELLEZZE EC5 |

| | |
|------------|---|
| 94 | VERIFICA AL FUOCO DI STRUTTURE IN LEGNO SECONDO EC5 |
| 117 | PROGETTO E VERIFICA DI GUSCI IN MATERIALE XLAM |
| 118 | PROGETTO E VERIFICA DI PARETI IN MATERIALE XLAM E RELATIVI COLLEGAMENTI |
| 119 | PROGETTO E VERIFICA DI SOLAI IN MATERIALE XLAM |

| Id | Tipo / Note | | Young | Poisson | G | Gamma | Alfa |
|----|---|---------|-----------|---------|-----------|----------|----------|
| | | daN/cm2 | daN/cm2 | | daN/cm2 | daN/cm3 | |
| 1 | Calcestruzzo Classe C25/30 | | 3.145e+05 | 0.12 | 1.404e+05 | 2.50e-03 | 1.00e-05 |
| | Rck | 300.0 | | | | | |
| | fctm | 25.6 | | | | | |
| 10 | acciaio Fe360 - S235 | | 2.100e+06 | 0.30 | 8.077e+05 | 7.85e-03 | 1.00e-05 |
| | ft | 3600.0 | | | | | |
| | fy | 2350.0 | | | | | |
| | fd | 2350.0 | | | | | |
| | fdt | 2100.0 | | | | | |
| | sadm | 1600.0 | | | | | |
| | sadmt | 1400.0 | | | | | |
| 11 | acciaio Fe430 - S275 | | 2.100e+06 | 0.30 | 8.077e+05 | 7.85e-03 | 1.00e-05 |
| | ft | 4300.0 | | | | | |
| | fy | 2750.0 | | | | | |
| | fd | 2750.0 | | | | | |
| | fdt | 2500.0 | | | | | |
| | sadm | 1900.0 | | | | | |
| | sadmt | 1700.0 | | | | | |
| 31 | muratura a spacco buona | | 2.262e+04 | 0.25 | 7540.0 | 2.10e-03 | 1.00e-05 |
| | Resist. fk | 60.0 | | | | | |
| | Resist. fvko | 1.2 | | | | | |
| 32 | muratura in mattoni e calce buona | | 1.800e+04 | 0.25 | 7500.0 | 1.80e-03 | 1.00e-05 |
| | Resist. fk | 58.0 | | | | | |
| | Resist. fvko | 1.4 | | | | | |
| 33 | muratura in pietra squadrata | | 3.360e+04 | 0.30 | 1.032e+04 | 2.20e-03 | 1.00e-05 |
| | Resist. fk | 90.0 | | | | | |
| | Resist. fvko | 1.8 | | | | | |
| 42 | legno conifera C24 - UNI EN 338 1997 Per EC5 | | 1.100e+05 | 0.0 | 6900.0 | 4.00e-04 | 0.0 |
| | Modulo E0,05 | | 7.400e+04 | | | | |
| | LamellareMateriale non massiccio e pertanto da considerare come lamellareNo | | | | | | |
| | Resist. fc0k | 210.0 | | | | | |
| | Resist. ft0k | 140.0 | | | | | |
| | Resist. fmk | 240.0 | | | | | |
| | Resist. fvk | 25.0 | | | | | |
| 44 | legno E = 1.160e+05 Cat II per Regles | | 1.160e+05 | 0.0 | 4.060e+04 | 8.00e-04 | 1.00e-05 |
| | Modulo E0,05 | | 9.396e+04 | | | | |
| | LamellareMateriale non massiccio e pertanto da considerare come lamellareNo | | | | | | |
| | Resist. fc0k | 102.0 | | | | | |
| | Resist. ft0k | 92.0 | | | | | |
| | Resist. fmk | 117.0 | | | | | |
| | Resist. fvk | 15.0 | | | | | |
| 45 | legno E = 1.300e+05 Cat I per Regles | | 1.300e+05 | 0.0 | 4.560e+04 | 8.00e-04 | 1.00e-05 |
| | Modulo E0,05 | | 1.053e+05 | | | | |
| | LamellareMateriale non massiccio e pertanto da considerare come lamellareNo | | | | | | |
| | Resist. fc0k | 128.0 | | | | | |
| | Resist. ft0k | 153.0 | | | | | |
| | Resist. fmk | 138.0 | | | | | |
| | Resist. fvk | 20.0 | | | | | |
| 51 | muratura E = 3.200e+04 | | 3.200e+04 | 0.0 | 9400.0 | 2.10e-03 | 1.00e-05 |
| | Resist. fk | 96.0 | | | | | |
| | Resist. fvko | 1.7 | | | | | |
| 53 | muratura in pietra squadrata consolidata con rete | | 3.360e+04 | 0.30 | 1.032e+04 | 2.20e-03 | 1.00e-05 |
| | Resist. fk | 90.0 | | | | | |
| | Resist. fvko | 1.8 | | | | | |
| 54 | muratura in mattoni e calce buona rinforzata | | 1.800e+04 | 0.25 | 7500.0 | 1.80e-03 | 1.00e-05 |
| | Resist. fk | 58.0 | | | | | |

| Id | Tipo / Note | Young | Poisson | G | Gamma | Alfa |
|----|---|-----------|---------|-----------|----------|----------|
| 55 | Resist. fvko | 1.4 | | | | |
| | muratura a spacco buona rinforzata | 2.262e+04 | 0.25 | 7540.0 | 2.10e-03 | 1.00e-05 |
| | Resist. fk | 60.0 | | | | |
| 56 | Resist. fvko | 1.2 | | | | |
| | muratura in pietra squadrata | 3.360e+04 | 0.30 | 1.032e+04 | 2.20e-03 | 1.00e-05 |
| | Resist. fk | 90.0 | | | | |
| 58 | Resist. fvko | 3.3 | | | | |
| | muratura a spacco buona rinforzata con rete | 2.262e+04 | 0.25 | 7540.0 | 2.10e-03 | 1.00e-05 |
| | Resist. fk | 72.0 | | | | |
| 59 | Resist. fvko | 1.8 | | | | |
| | muratura a spacco buona rinforzata con rete | 2.262e+04 | 0.25 | 7540.0 | 2.10e-03 | 1.00e-05 |
| | Resist. fk | 72.0 | | | | |
| | Resist. fvko | 1.8 | | | | |

| Aste acc. | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|---------------------------|--------|--------|--------|---------|---------|---------|
| Generalità | | | | | | |
| Beta assegnato | 0.80 | 0.80 | 0.80 | | | |
| Verifica come controvento | Si | No | No | | | |
| Usa condizioni I e II | Si | Si | Si | | | |
| Coefficiente gamma M0 | 1.05 | 1.05 | 1.05 | | | |
| Coefficiente gamma M1 | 1.05 | 1.05 | 1.05 | | | |
| Coefficiente gamma M2 | 1.25 | 1.25 | 1.25 | | | |

| Pilastrini acc. | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|-------------------------------|-----------|-----------|-----------|---------|---------|---------|
| Lunghezze libere | | | | | | |
| Metodo di calcolo 2-2 | Assegnato | Assegnato | Assegnato | | | |
| 2-2 Beta assegnato | 2.00 | 2.00 | 2.00 | | | |
| 2-2 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| Metodo di calcolo 3-3 | Assegnato | Assegnato | Assegnato | | | |
| 3-3 Beta assegnato | 2.00 | 2.00 | 2.00 | | | |
| 3-3 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| 1-1 Beta assegnato | 1.00 | 1.00 | 1.00 | | | |
| 1-1 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| Generalità | | | | | | |
| Coefficiente gamma M0 | 1.05 | 1.05 | 1.05 | | | |
| Coefficiente gamma M1 | 1.05 | 1.05 | 1.05 | | | |
| Coefficiente gamma M2 | 1.25 | 1.25 | 1.25 | | | |
| Effetti del 2 ordine | Si | Si | No | | | |
| Momenti equivalenti | Si | Si | Si | | | |
| Usa condizioni I e II | Si | Si | Si | | | |

| Travi acc. | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|-------------------------------|--------|--------|--------|---------|---------|---------|
| Lunghezze libere | | | | | | |
| 3-3 Beta * L automatico | Si | Si | Si | | | |
| 3-3 Beta assegnato | 1.00 | 1.00 | 1.00 | | | |
| 3-3 Beta assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| 2-2 Beta * L automatico | Si | Si | Si | | | |
| 2-2 Beta assegnato | 1.00 | 1.00 | 1.00 | | | |
| 2-2 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| 1-1 Beta * L automatico | Si | Si | Si | | | |
| 1-1 Beta assegnato | 1.00 | 1.00 | 1.00 | | | |
| 1-1 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| Generalità | | | | | | |
| Coefficiente gamma M0 | 1.05 | 1.05 | 1.05 | | | |
| Coefficiente gamma M1 | 1.05 | 1.05 | 1.05 | | | |
| Coefficiente gamma M2 | 1.25 | 1.25 | 1.25 | | | |
| Luce di taglio per GR [cm] | 1.00 | 1.00 | 1.00 | | | |
| Usa condizioni I e II | Si | Si | Si | | | |
| Momenti equivalenti | Si | Si | Si | | | |

| Pareti c.a. | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|--------------------------------------|-----------------------------|-----------------------------|------------------|---------|---------|---------|
| Generalità | | | | | | |
| Progetto armatura | Composto con parete sismica | Composto con parete sismica | Singolo elemento | | | |
| Armatura | | | | | | |
| Inclinazione Av [gradi] | 90.00 | 90.00 | 90.00 | | | |
| Angolo Av-Ao [gradi] | 90.00 | 90.00 | 90.00 | | | |
| Minima tesa | 0.25 | 0.25 | 0.25 | | | |
| Massima tesa | 4.00 | 4.00 | 4.00 | | | |
| Maglia unica centrale | No | No | No | | | |
| Unico strato verticale | No | No | No | | | |
| Unico strato orizzontale | No | No | No | | | |
| Copriferro [cm] | 2.00 | 2.00 | 2.00 | | | |
| Maglia V | | | | | | |
| diametro | 10 | 10 | 10 | | | |
| passo | 25 | 25 | 25 | | | |
| diametro aggiuntivi | 12 | 12 | 12 | | | |
| Maglia O | | | | | | |
| diametro | 8 | 8 | 8 | | | |
| passo | 25 | 25 | 25 | | | |
| diametro aggiuntivi | 8 | 8 | 8 | | | |
| Stati limite ultimi | | | | | | |
| Tensione fy [daN/cm2] | 4500.00 | 4500.00 | 4300.00 | | | |
| Tipo acciaio | tipo C | tipo C | tipo C | | | |
| Coefficiente gamma s | 1.15 | 1.15 | 1.15 | | | |
| Coefficiente gamma c | 1.50 | 1.50 | 1.50 | | | |
| Fattore di confidenza FC | 0.0 | 0.0 | 0.0 | | | |
| Verifiche con N costante | Si | Si | Si | | | |
| Tensioni ammissibili | | | | | | |
| Tensione amm. cls [daN/cm2] | 97.50 | 97.50 | 97.50 | | | |
| Tensione amm. acciaio [daN/cm2] | 2600.00 | 2600.00 | 2600.00 | | | |
| Rapporto omogeneizzazione N | 15.00 | 15.00 | 15.00 | | | |
| Massimo rapporto area compressa/tesa | 1.00 | 1.00 | 1.00 | | | |
| Parete sismica | | | | | | |
| Fattore amplificazione taglio V | 1.50 | 1.50 | 1.50 | | | |
| Hcrit. par. 7.4.4.5.1 [cm] | 0.0 | 0.0 | 0.0 | | | |
| Hcrit. par. 7.4.6.1.4 [cm] | 0.0 | 0.0 | 0.0 | | | |
| Usa diagramma di fig. 7.4.2 | No | No | No | | | |
| Vincolo lati | nessun lato | nessun lato | nessun lato | | | |
| Verifica come fascia | No | No | No | | | |
| Diametro di estremità | 0 | 0 | 0 | | | |
| Zona confinata | | | | | | |
| Minima tesa | 1.00 | 1.00 | 1.00 | | | |
| Massima tesa | 4.00 | 4.00 | 4.00 | | | |
| Distanza barre [cm] | 2.00 | 2.00 | 2.00 | | | |
| Interferro | 2 | 2 | 2 | | | |
| Armatura inclinata | | | | | | |
| Area barre [cm2] | 0.0 | 0.0 | 0.0 | | | |
| Angolo orizzontale [gradi] | 0.0 | 0.0 | 0.0 | | | |
| Distanza di base [cm] | 0.0 | 0.0 | 0.0 | | | |
| Resistenza al fuoco | | | | | | |
| 3- intradosso | No | No | No | | | |
| 3+ estradosso | No | No | No | | | |
| Tempo di esposizione R | 15 | 15 | 120 | | | |

| Gusci c.a. | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|---------------------------|--------|--------|--------|---------|---------|---------|
| Armatura | | | | | | |
| Inclinazione Ax [gradi] | 0.0 | 0.0 | 0.0 | | | |
| Angolo Ax-Ay [gradi] | 90.00 | 90.00 | 90.00 | | | |
| Minima tesa | 0.31 | 0.31 | 0.33 | | | |
| Massima tesa | 2.00 | 0.78 | 0.81 | | | |
| Maglia unica centrale | No | No | No | | | |
| Copriferro [cm] | 2.00 | 2.00 | 2.00 | | | |
| Maglia x | | | | | | |
| diametro | 8 | 10 | 10 | | | |
| passo | 20 | 20 | 20 | | | |
| diametro aggiuntivi | 8 | 12 | 12 | | | |

| Gusci c.a. | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|--------------------------------------|---------------|---------------|---------------|----------------|----------------|----------------|
| Maglia y | | | | | | |
| diametro | 8 | 10 | 10 | | | |
| passo | 20 | 20 | 20 | | | |
| diametro aggiuntivi | 8 | 12 | 12 | | | |
| Stati limite ultimi | | | | | | |
| Tensione fy [daN/cm2] | 4500.00 | 4500.00 | 4300.00 | | | |
| Tipo acciaio | tipo C | tipo C | tipo C | | | |
| Coefficiente gamma s | 1.15 | 1.15 | 1.15 | | | |
| Coefficiente gamma c | 1.50 | 1.50 | 1.50 | | | |
| Fattore di confidenza FC | 0.0 | 0.0 | 0.0 | | | |
| Verifiche con N costante | Si | Si | Si | | | |
| Applica SLU da DIN | No | No | No | | | |
| Tensioni ammissibili | | | | | | |
| Tensione amm. cls [daN/cm2] | 97.50 | 97.50 | 97.50 | | | |
| Tensione amm. acciaio [daN/cm2] | 2600.00 | 2600.00 | 2600.00 | | | |
| Rapporto omogeneizzazione N | 15.00 | 15.00 | 15.00 | | | |
| Massimo rapporto area compressa/tesa | 1.00 | 1.00 | 1.00 | | | |
| Resistenza al fuoco | | | | | | |
| 3- intradosso | No | No | No | | | |
| 3+ estradosso | No | No | No | | | |
| Tempo di esposizione R | 15 | 15 | 120 | | | |

| Travi c.a. | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|--------------------------------------|---------------|---------------|---------------|----------------|----------------|----------------|
| Generalità | | | | | | |
| Progetta a filo | No | No | No | | | |
| Af inf: da q*L*L / | 0.0 | 0.0 | 0.0 | | | |
| Armatura | | | | | | |
| Minima tesa | 0.31 | 0.31 | 0.33 | | | |
| Minima compressa | 0.31 | 0.31 | 0.33 | | | |
| Massima tesa | 0.78 | 0.78 | 0.81 | | | |
| Da sezione | Si | Si | No | | | |
| Usa armatura teorica | No | No | No | | | |
| Stati limite ultimi | | | | | | |
| Tensione fy [daN/cm2] | 4500.00 | 4500.00 | 4300.00 | | | |
| Tensione fy staffe [daN/cm2] | 4500.00 | 4500.00 | 4300.00 | | | |
| Tipo acciaio | tipo C | tipo C | tipo C | | | |
| Coefficiente gamma s | 1.15 | 1.15 | 1.15 | | | |
| Coefficiente gamma c | 1.50 | 1.50 | 1.50 | | | |
| Fattore di confidenza FC | 0.0 | 0.0 | 0.0 | | | |
| Verifiche con N costante | Si | Si | Si | | | |
| Fattore di redistribuzione | 0.0 | 0.0 | 0.0 | | | |
| Modello per il confinamento | | | | | | |
| Relazione tensio-deformativa | Mander | Mander | Mander | | | |
| Incrudimento acciaio | 5.000e-03 | 5.000e-03 | 5.000e-03 | | | |
| Fattore lambda | 1.00 | 1.00 | 1.00 | | | |
| epsilon max,s | 4.000e-02 | 4.000e-02 | 4.000e-02 | | | |
| epsilon cu2 | 4.500e-03 | 4.500e-03 | 4.500e-03 | | | |
| epsilon c2 | 0.0 | 0.0 | 0.0 | | | |
| epsilon cy | 0.0 | 0.0 | 0.0 | | | |
| Tensioni ammissibili | | | | | | |
| Tensione amm. cls [daN/cm2] | 97.50 | 97.50 | 97.50 | | | |
| Tensione amm. acciaio [daN/cm2] | 2600.00 | 2600.00 | 2600.00 | | | |
| Rapporto omogeneizzazione N | 15.00 | 15.00 | 15.00 | | | |
| Massimo rapporto area compressa/tesa | 1.00 | 1.00 | 1.00 | | | |
| Staffe | | | | | | |
| Diametro staffe | 0.0 | 0.0 | 0.0 | | | |
| Passo minimo [cm] | 5.00 | 5.00 | 5.00 | | | |
| Passo massimo [cm] | 30.00 | 30.00 | 30.00 | | | |
| Passo raffittito [cm] | 15.00 | 15.00 | 15.00 | | | |
| Lunghezza zona raffittita [cm] | 50.00 | 50.00 | 50.00 | | | |
| Ctg(Teta) Max | 2.50 | 2.50 | 2.50 | | | |
| Percentuale sagomati | 0.0 | 0.0 | 0.0 | | | |
| Luce di taglio per GR [cm] | 1.00 | 1.00 | 1.00 | | | |
| Adotta scorrimento medio | No | No | Si | | | |
| Torsione non essenziale inclusa | Si | Si | Si | | | |

| Pilastri c.a. | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|------------------------------------|-----------------|-----------------|-------------------------|----------------|----------------|----------------|
| Generalità | | | | | | |
| Progetto armatura | Privilegia lati | Privilegia lati | Disponi come da sezione | | | |
| Progetta a filo | No | No | No | | | |
| Effetti del 2 ordine | Si | Si | No | | | |
| Beta per 2-2 | 1.00 | 1.00 | 1.00 | | | |
| Beta per 3-3 | 1.00 | 1.00 | 1.00 | | | |
| Armatura | | | | | | |
| Massima tesa | 4.00 | 4.00 | 4.00 | | | |
| Minima tesa | 1.00 | 1.00 | 1.00 | | | |
| Stati limite ultimi | | | | | | |
| Tensione fy [daN/cm2] | 4500.00 | 4500.00 | 4300.00 | | | |
| Tensione fy staffe [daN/cm2] | 4500.00 | 4500.00 | 4300.00 | | | |
| Tipo acciaio | tipo C | tipo C | tipo C | | | |
| Coefficiente gamma s | 1.15 | 1.15 | 1.15 | | | |
| Coefficiente gamma c | 1.50 | 1.50 | 1.50 | | | |
| Fattore di confidenza FC | 0.0 | 0.0 | 0.0 | | | |
| Verifiche con N costante | Si | Si | Si | | | |
| Modello per il confinamento | | | | | | |
| Relazione tensio-deformativa | Mander | Mander | Mander | | | |
| Incrudimento acciaio | 5.000e-03 | 5.000e-03 | 5.000e-03 | | | |
| Fattore lambda | 1.00 | 1.00 | 1.00 | | | |
| epsilon max,s | 4.000e-02 | 4.000e-02 | 4.000e-02 | | | |
| epsilon cu2 | 4.500e-03 | 4.500e-03 | 4.500e-03 | | | |
| epsilon c2 | 0.0 | 0.0 | 0.0 | | | |
| epsilon cy | 0.0 | 0.0 | 0.0 | | | |
| Tensioni ammissibili | | | | | | |
| Tensione amm. cls [daN/cm2] | 97.50 | 97.50 | 97.50 | | | |
| Tensione amm. acciaio [daN/cm2] | 2600.00 | 2600.00 | 2600.00 | | | |
| Rapporto omogeneizzazione N | 15.00 | 15.00 | 15.00 | | | |
| Staffe | | | | | | |
| Diametro staffe | 0.0 | 0.0 | 0.0 | | | |
| Passo minimo [cm] | 5.00 | 5.00 | 5.00 | | | |
| Passo massimo [cm] | 25.00 | 25.00 | 25.00 | | | |
| Passo raffittito [cm] | 15.00 | 15.00 | 15.00 | | | |
| Lunghezza zona raffittita [cm] | 45.00 | 45.00 | 45.00 | | | |
| Ctg(Teta) Max | 2.50 | 2.50 | 2.50 | | | |
| Luce di taglio per GR [cm] | 1.00 | 1.00 | 1.00 | | | |
| Massimizza gerarchia | Si | Si | Si | | | |

| Muratura | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|------------------------------|---------------|---------------|---------------|----------------|----------------|----------------|
| Lunghezze libere | | | | | | |
| Altezza interpiano [cm] | 0.0 | 0.0 | 300.00 | | | |
| Rho | 0.85 | 0.85 | 0.85 | | | |
| Snellezza limite | 20.00 | 20.00 | 20.00 | | | |
| Generalità | | | | | | |
| Gamma non sismico | 2.00 | 0.0 | 2.00 | | | |
| Gamma sismico | 2.00 | 0.0 | 2.00 | | | |
| Fattore di confidenza FC | 0.0 | 0.0 | 0.0 | | | |
| Tolleranza azioni [daN/cm2] | 0.0 | 0.0 | 0.0 | | | |
| Media valori per quota | Si | Si | Si | | | |
| Media valori per elemento | Si | Si | Si | | | |
| Verifica come fascia | No | No | No | | | |
| Usa formula [7.8.3] | No | Si | No | | | |

| Legno | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|-------------------------------|---------------|---------------|---------------|----------------|----------------|----------------|
| Lunghezze libere | | | | | | |
| aste | | | | | | |
| Beta assegnato | 0.80 | 0.80 | 0.80 | | | |
| travi | | | | | | |
| 3-3 Beta * L automatico | No | Si | Si | | | |
| 3-3 Beta assegnato | 1.00 | 1.00 | 1.00 | | | |
| 3-3 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| 2-2 Beta * L automatico | No | Si | Si | | | |
| 2-2 Beta assegnato | 1.00 | 1.00 | 1.00 | | | |
| 2-2 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| 1-1 Beta * L automatico | No | Si | Si | | | |

| Legno | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|---------------------------------|-------------------|-------------------|-------------------|----------------|----------------|----------------|
| 1-1 Beta assegnato | 1.00 | 1.00 | 1.00 | | | |
| 1-1 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| pilastrì | | | | | | |
| Metodo di calcolo 3-3 | Assegnato | Assegnato | Assegnato | | | |
| 3-3 Beta assegnato | 1.00 | 2.00 | 2.00 | | | |
| 3-3 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| Metodo di calcolo 2-2 | Assegnato | Assegnato | Assegnato | | | |
| 2-2 Beta assegnato | 1.00 | 2.00 | 2.00 | | | |
| 2-2 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| 1-1 Beta assegnato | 1.00 | 1.00 | 1.00 | | | |
| 1-1 Beta * L assegnato [cm] | 0.0 | 0.0 | 0.0 | | | |
| Generalità | | | | | | |
| Gamma non sismico | 1.50 | 1.50 | 1.30 | | | |
| Gamma sismico | 1.10 | 1.10 | 1.00 | | | |
| Fattore di confidenza FC | 0.0 | 0.0 | 0.0 | | | |
| Classificazione | | | | | | |
| Classe di servizio | 2 (media umidità) | 2 (media umidità) | 2 (media umidità) | | | |
| Per classe di servizio 1 | | | | | | |
| Kmod permanente | 0.60 | 0.60 | 0.60 | | | |
| Kmod lunga | 0.70 | 0.70 | 0.70 | | | |
| Kmod media | 0.80 | 0.80 | 0.80 | | | |
| Kmod breve | 0.90 | 0.90 | 0.90 | | | |
| Kmod istantanea | 1.00 | 1.00 | 1.10 | | | |
| Kdef | 0.60 | 0.60 | 0.60 | | | |
| Per classe di servizio 2 | | | | | | |
| Kmod permanente | 0.60 | 0.60 | 0.60 | | | |
| Kmod lunga | 0.70 | 0.70 | 0.70 | | | |
| Kmod media | 0.80 | 0.80 | 0.80 | | | |
| Kmod breve | 0.90 | 0.90 | 0.90 | | | |
| Kmod istantanea | 1.00 | 1.00 | 1.10 | | | |
| Kdef | 0.80 | 0.80 | 0.80 | | | |
| Per classe di servizio 3 | | | | | | |
| Kmod permanente | 0.50 | 0.50 | 0.50 | | | |
| Kmod lunga | 0.55 | 0.55 | 0.55 | | | |
| Kmod media | 0.65 | 0.65 | 0.65 | | | |
| Kmod breve | 0.70 | 0.70 | 0.70 | | | |
| Kmod istantanea | 0.90 | 0.90 | 0.90 | | | |
| Kdef | 2.00 | 2.00 | 2.00 | | | |

| XLAM | 1/7/.. | 2/8/.. | 3/9/.. | 4/10/.. | 5/11/.. | 6/12/.. |
|-----------------------------------|---------------|---------------|---------------|----------------|----------------|----------------|
| Generalità | | | | | | |
| L direzione 1 [*] [cm] | 1.00 | 1.00 | 0.0 | | | |
| L direzione 2 [cm] | 0.0 | 0.0 | 0.0 | | | |
| Verifica V da D.38 | No | No | No | | | |
| Verifica M da M.5-45 | No | No | No | | | |
| Media valori elementi | Si | Si | Si | | | |
| Connessioni pareti | | | | | | |
| rvpk [daN/cm] | 50.00 | 50.00 | 50.00 | | | |
| rvtk [daN/cm] | 50.00 | 50.00 | 50.00 | | | |
| rvlk [daN/cm] | 50.00 | 50.00 | 50.00 | | | |
| RHk [daN] | 5000.00 | 5000.00 | 5000.00 | | | |
| dH [cm] | 25.00 | 25.00 | 25.00 | | | |
| fch90k [daN/cm2] | 20.00 | 20.00 | 20.00 | | | |
| Pannelli solaio | | | | | | |
| f ist<L/ | 500.00 | 500.00 | 500.00 | | | |
| f inf<L/ | 350.00 | 350.00 | 350.00 | | | |
| Verifica vibrazioni (EC5 7.3) | No | No | No | | | |
| E massetto collaborante [daN/cm2] | 200000.00 | 200000.00 | 200000.00 | | | |
| t massetto collaborante [cm] | 4.00 | 4.00 | 4.00 | | | |
| Smorzamento percentuale | 0.0 | 0.0 | 0.0 | | | |
| Resistenza al fuoco | | | | | | |
| Spessore carbonizzazione [cm] | 0.0 | 0.0 | 0.0 | | | |
| 3- intradosso | No | No | No | | | |
| 3+ estradosso | No | No | No | | | |

MODELLAZIONE DELLE SEZIONI

LEGENDA TABELLA DATI SEZIONI

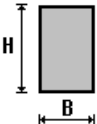
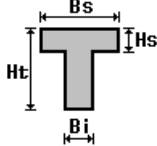
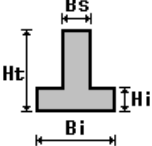
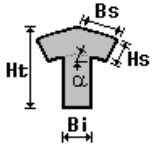
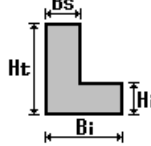
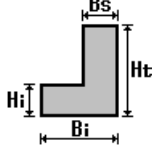
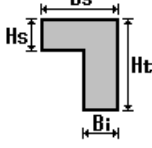
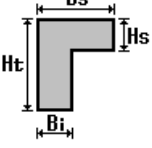
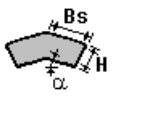
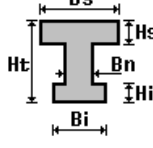
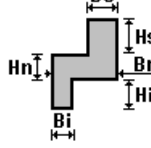
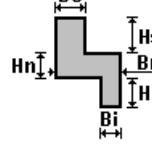
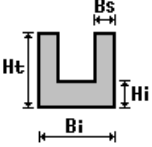
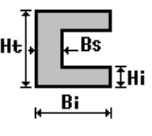
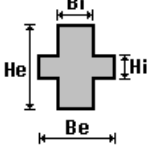
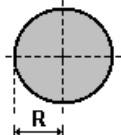
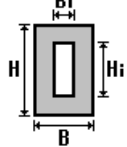
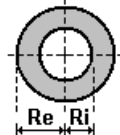
Il programma consente l'uso di sezioni diverse. Sono previsti i seguenti tipi di sezione:

- 1 sezione di tipo generico
- 2 profilati semplici
- 3 profilati accoppiati e speciali

Le sezioni utilizzate nella modellazione sono individuate da una sigla identificativa ed un codice numerico (gli elementi strutturali richiamano quest'ultimo nella propria descrizione). Per ogni sezione vengono riportati in tabella i seguenti dati:

| | |
|--------------|---|
| Area | area della sezione |
| A V2 | area della sezione/fattore di taglio (per il taglio in direzione 2) |
| A V3 | area della sezione/fattore di taglio (per il taglio in direzione 3) |
| Jt | fattore torsionale di rigidezza |
| J2-2 | momento d'inerzia della sezione riferito all'asse 2 |
| J3-3 | momento d'inerzia della sezione riferito all'asse 3 |
| W2-2 | modulo di resistenza della sezione riferito all'asse 2 |
| W3-3 | modulo di resistenza della sezione riferito all'asse 3 |
| Wp2-2 | modulo di resistenza plastico della sezione riferito all'asse 2 |
| Wp3-3 | modulo di resistenza plastico della sezione riferito all'asse 3 |

I dati sopra riportati vengono utilizzati per la determinazione dei carichi inerziali e per la definizione delle rigidezze degli elementi strutturali; qualora il valore di Area V2 (e/o Area V3) sia nullo la deformabilità per taglio V2 (e/o V3) è trascurata. La valutazione delle caratteristiche inerziali delle sezioni è condotta nel riferimento 2-3 dell'elemento.

| | | | | | |
|--|---|---|---|---|---|
|  rettangolare |  a T |  a T rovescia |  a T di colmo |  a L |  a L specchiata |
|  a L specchiata rovescia |  a L rovescia |  a L di colmo |  a doppio T |  a quattro specchiata |  a quattro |
|  a U |  a C |  a croce |  circolare |  rettangolare cava |  circolare cava |

Per quanto concerne i profilati semplici ed accoppiati l'asse 2 del riferimento coincide con l'asse x riportato nei più diffusi profilati.

Per quanto concerne le sezioni di tipo generico (tipo 1.):

i valori dimensionali con prefisso B sono riferiti all'asse 2

i valori dimensionali con prefisso H sono riferiti all'asse 3

Con riferimento al **Documento di Affidabilità** “*Test di validazione del software di calcolo PRO_SAP e dei moduli aggiuntivi PRO_SAP Modulo Geotecnico, PRO_CAD nodi acciaio e PRO_MST*” - versione Settembre 2014, disponibile per il download sul sito **www.2si.it**, si segnalano i seguenti esempi applicativi:

| Test N° | Titolo |
|------------|---|
| 1 | CARATTERISTICHE GEOMETRICHE E INERZIALI |
| 45 | VERIFICA AGLI SLU DI STRUTTURE IN C.A. |
| 48 | PROGETTAZIONE A TAGLIO DI STRUTTURE IN C.A. SECONDO IL D.M. 9/1/96 |
| 49 | PROGETTAZIONE A TAGLIO DI STRUTTURE IN C.A. SECONDO IL D.M. 14/1/2008 |
| 50 | VERIFICA ALLO SLE (TENSIONI E FESSURAZIONE) DI STRUTTURE IN C.A. |
| 51 | VERIFICA ALLO SLE (DEFORMAZIONE) DI STRUTTURE IN C.A. |
| 104 | ANALISI DI RESISTENZA AL FUOCO |

| Id | Tipo | Area | A V2 | A V3 | Jt | J 2-2 | J 3-3 | W 2-2 | W 3-3 | Wp 2-2 | Wp 3-3 |
|----|-------------------------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | cm2 | cm2 | cm2 | cm4 | cm4 | cm4 | cm3 | cm3 | cm3 | cm3 |
| 1 | Circolare: r=1.80 | 10.18 | 8.59 | 8.59 | 16.49 | 8.24 | 8.24 | 4.58 | 4.58 | 7.78 | 7.78 |
| 2 | Rettangolare: b=35 h=35 | 1225.00 | 1020.83 | 1020.83 | 2.109e+05 | 1.251e+05 | 1.251e+05 | 7145.83 | 7145.83 | 1.072e+04 | 1.072e+04 |
| 3 | Rettangolare: b=30 h=70 | 2100.00 | 1750.00 | 1750.00 | 4.599e+05 | 1.575e+05 | 8.575e+05 | 1.050e+04 | 2.450e+04 | 1.575e+04 | 3.675e+04 |
| 4 | Rettangolare: b=40 h=40 | 1600.00 | 1333.33 | 1333.33 | 3.599e+05 | 2.133e+05 | 2.133e+05 | 1.067e+04 | 1.067e+04 | 1.600e+04 | 1.600e+04 |
| 5 | LU 100x10 | 19.20 | 0.0 | 0.0 | 6.33 | 177.00 | 177.00 | 24.60 | 24.60 | 24.60 | 24.60 |
| 6 | HEA 180 | 45.30 | 0.0 | 0.0 | 14.80 | 925.00 | 2510.00 | 102.70 | 293.60 | 156.50 | 324.90 |
| 7 | Rettangolare: b=25 h=25 | 625.00 | 520.83 | 520.83 | 5.491e+04 | 3.255e+04 | 3.255e+04 | 2604.17 | 2604.17 | 3906.25 | 3906.25 |

MODELLAZIONE STRUTTURA: NODI

LEGENDA TABELLA DATI NODI

Il programma utilizza per la modellazione nodi strutturali.

Ogni nodo è individuato dalle coordinate cartesiane nel sistema di riferimento globale (X Y Z).

Ad ogni nodo è eventualmente associato un codice di vincolamento rigido, un codice di fondazione speciale, ed un set di sei molle (tre per le traslazioni, tre per le rotazioni). Le tabelle sottoriportate riflettono le succitate possibilità. In particolare per ogni nodo viene indicato in tabella:

| | |
|-------------|---------------------------|
| Nodo | numero del nodo. |
| X | valore della coordinata X |
| Y | valore della coordinata Y |
| Z | valore della coordinata Z |

Per i nodi ai quali sia associato un codice di vincolamento rigido, un codice di fondazione speciale o un set di molle viene indicato in tabella:

| | |
|----------------|---|
| Nodo | numero del nodo. |
| X | valore della coordinata X |
| Y | valore della coordinata Y |
| Z | valore della coordinata Z |
| Note | eventuale codice di vincolo (es. v=10010 sei valori relativi ai sei gradi di libertà previsti per il nodo TxTyTzRxRyRz, il valore 1 indica che lo spostamento o rotazione relativo è impedito, il valore 0 indica che lo spostamento o rotazione relativo è libero). |
| Note | (FS = 1, 2,...) eventuale codice del tipo di fondazione speciale (1, 2,... fanno riferimento alle tipologie: plinto, palo, plinto su pali,...) che è collegato al nodo. (ISO = "id SIGLA") indice e sigla identificativa dell' eventuale isolatore sismico assegnato al nodo |
| Rig. TX | valore della rigidezza dei vincoli elastici eventualmente applicati al nodo, nello specifico TX (idem per TY, TZ, RX, RY, RZ). |

Per strutture sismicamente isolate viene inoltre inserita la tabella delle caratteristiche per gli isolatori utilizzati; le caratteristiche sono indicate in conformità al cap. 7.10 del D.M. 14/01/08

TABELLA DATI NODI

| Nodo | X | Y | Z | Nodo | X | Y | Z | Nodo | X | Y | Z |
|------|--------|--------|-------|------|--------|--------|-------|------|--------|--------|-------|
| | cm | cm | cm | | cm | cm | cm | | cm | cm | cm |
| 1 | 661.3 | 5397.1 | 234.0 | 2 | 661.3 | 5471.5 | 312.0 | 3 | 1471.0 | 2856.0 | 780.0 |
| 5 | 5309.0 | 3278.9 | 312.0 | 6 | 762.2 | 4950.7 | 780.0 | 7 | 5309.0 | 3278.9 | 234.0 |
| 8 | 1471.0 | 2856.0 | 546.0 | 9 | 5309.0 | 3278.9 | 156.0 | 12 | 3031.0 | 4516.0 | 780.0 |
| 13 | 5309.0 | 3278.9 | 78.0 | 14 | 2514.5 | 2856.0 | 473.0 | 15 | 5309.1 | 3229.2 | 780.0 |
| 16 | 1972.6 | 4516.0 | 575.2 | 17 | 5309.1 | 3229.2 | 702.0 | 18 | 2791.0 | 4516.0 | 780.0 |
| 19 | 5309.1 | 3229.2 | 624.0 | 20 | 2791.0 | 4516.0 | 468.0 | 21 | 5309.1 | 3229.2 | 546.0 |
| 22 | 1958.1 | 4516.0 | 673.5 | 23 | 5309.1 | 3229.2 | 468.0 | 24 | 2391.0 | 4516.0 | 780.0 |
| 25 | 5309.1 | 3229.2 | 390.0 | 26 | 2391.0 | 4516.0 | 473.0 | 27 | 5309.1 | 3229.2 | 312.0 |
| 28 | 1896.5 | 4516.0 | 688.0 | 29 | 5309.1 | 3229.2 | 234.0 | 30 | 1991.0 | 4516.0 | 780.0 |
| 31 | 5309.1 | 3229.2 | 156.0 | 32 | 1991.0 | 4516.0 | 473.0 | 34 | 1911.0 | 4516.0 | 780.0 |
| 35 | 5309.1 | 3229.2 | 78.0 | 36 | 1671.0 | 4516.0 | 780.0 | 37 | 5309.6 | 2997.1 | 780.0 |
| 38 | 1671.0 | 4516.0 | 468.0 | 39 | 5309.5 | 3004.6 | 741.8 | 41 | 4789.3 | 4572.1 | 78.0 |
| 42 | 2751.0 | 4516.0 | 473.0 | 43 | 4777.7 | 4572.1 | 78.0 | 45 | 4766.1 | 4572.1 | 78.0 |
| 46 | 1267.1 | 5471.5 | 156.0 | 47 | 5181.0 | 4572.1 | 156.0 | 48 | 4676.5 | 4157.3 | 830.0 |
| 49 | 5192.6 | 4572.1 | 156.0 | 50 | 3031.0 | 3984.0 | 546.0 | 51 | 1267.1 | 5471.5 | 234.0 |
| 52 | 1267.1 | 5471.5 | 312.0 | 54 | 5215.8 | 4572.1 | 234.0 | 55 | 2351.0 | 4516.0 | 473.0 |
| 56 | 5204.2 | 4572.1 | 234.0 | 58 | 5181.0 | 4572.1 | 234.0 | 59 | 2431.0 | 4516.0 | 473.0 |
| 60 | 5192.6 | 4572.1 | 234.0 | 61 | 1267.1 | 5471.5 | 390.0 | 62 | 5309.6 | 2954.9 | 737.2 |
| 63 | 1267.1 | 5471.5 | 468.0 | 64 | 5309.6 | 2970.7 | 693.5 | 66 | 4801.0 | 4572.1 | 156.0 |
| 67 | 1951.0 | 4516.0 | 473.0 | 68 | 4789.3 | 4572.1 | 156.0 | 70 | 4777.7 | 4572.1 | 156.0 |
| 71 | 2031.0 | 4516.0 | 473.0 | 72 | 5215.8 | 4572.1 | 312.0 | 73 | 1267.1 | 5471.5 | 546.0 |
| 74 | 5204.2 | 4572.1 | 312.0 | 75 | 1267.1 | 5471.5 | 624.0 | 76 | 5181.0 | 4572.1 | 312.0 |
| 78 | 5192.6 | 4572.1 | 312.0 | 80 | 5215.8 | 4572.1 | 390.0 | 82 | 5204.2 | 4572.1 | 390.0 |
| 83 | 1711.0 | 4516.0 | 473.0 | 85 | 1267.1 | 5471.5 | 702.0 | 86 | 5309.7 | 2906.7 | 729.9 |
| 87 | 1267.1 | 5471.5 | 780.0 | 88 | 4766.1 | 4572.1 | 156.0 | 89 | 1166.1 | 5471.5 | 78.0 |
| 90 | 4801.0 | 4572.1 | 234.0 | 91 | 2764.3 | 4516.0 | 473.0 | 92 | 4789.3 | 4572.1 | 234.0 |
| 93 | 2748.1 | 4516.0 | 538.1 | 94 | 5181.0 | 4572.1 | 390.0 | 95 | 2734.2 | 4516.0 | 532.3 |
| 96 | 5192.6 | 4572.1 | 390.0 | 97 | 661.3 | 5397.1 | 312.0 | 101 | 4801.0 | 4572.1 | 78.0 |
| 102 | 5309.7 | 2932.4 | 679.0 | 103 | 2711.2 | 4516.0 | 593.2 | 104 | 2700.6 | 4516.0 | 582.6 |
| 105 | 2656.1 | 4516.0 | 630.1 | 106 | 2650.3 | 4516.0 | 616.2 | 107 | 2591.0 | 4516.0 | 643.0 |
| 108 | 2591.0 | 4516.0 | 628.0 | 109 | 2525.9 | 4516.0 | 630.1 | 110 | 2531.7 | 4516.0 | 616.2 |
| 111 | 2470.8 | 4516.0 | 593.2 | 112 | 2481.4 | 4516.0 | 582.6 | 113 | 2433.9 | 4516.0 | 538.1 |
| 114 | 2447.8 | 4516.0 | 532.3 | 115 | 2417.7 | 4516.0 | 473.0 | 117 | 2777.7 | 4516.0 | 473.0 |

| | | | | | | | | | | | |
|-----|--------|--------|-------|-----|--------|--------|-------|-----|--------|--------|-------|
| 118 | 2769.5 | 4516.0 | 582.2 | 119 | 2791.0 | 4516.0 | 624.0 | 120 | 2751.1 | 4516.0 | 686.5 |
| 121 | 2673.5 | 4516.0 | 704.9 | 122 | 2691.0 | 4516.0 | 780.0 | 123 | 2591.0 | 4516.0 | 711.4 |
| 124 | 2591.0 | 4516.0 | 780.0 | 125 | 2404.3 | 4516.0 | 473.0 | 126 | 2412.5 | 4516.0 | 582.2 |
| 127 | 2391.0 | 4516.0 | 626.4 | 128 | 2430.9 | 4516.0 | 686.5 | 130 | 4777.7 | 4572.1 | 234.0 |
| 131 | 4766.1 | 4572.1 | 234.0 | 132 | 4801.0 | 4572.1 | 312.0 | 133 | 5091.8 | 4572.1 | 642.6 |
| 134 | 5125.3 | 4572.1 | 602.4 | 135 | 5133.5 | 4572.1 | 610.6 | 136 | 5155.5 | 4572.1 | 563.0 |
| 137 | 5165.6 | 4572.1 | 568.8 | 138 | 5174.5 | 4572.1 | 517.2 | 139 | 5309.8 | 2899.4 | 664.9 |
| 140 | 5309.7 | 2917.8 | 632.2 | 141 | 4789.3 | 4572.1 | 312.0 | 142 | 4777.7 | 4572.1 | 312.0 |
| 143 | 4766.1 | 4572.1 | 312.0 | 144 | 5185.7 | 4572.1 | 520.2 | 145 | 5192.6 | 4572.1 | 468.0 |
| 146 | 5181.0 | 4572.1 | 468.0 | 150 | 5309.5 | 3012.1 | 702.7 | 151 | 5309.7 | 2939.0 | 780.0 |
| 152 | 4801.0 | 4572.1 | 390.0 | 153 | 4789.3 | 4572.1 | 390.0 | 154 | 2508.5 | 4516.0 | 704.9 |
| 155 | 2491.0 | 4516.0 | 780.0 | 156 | 1166.1 | 5471.5 | 156.0 | 157 | 1166.1 | 5471.5 | 234.0 |
| 158 | 1166.1 | 5471.5 | 312.0 | 159 | 1166.1 | 5471.5 | 390.0 | 160 | 1166.1 | 5471.5 | 468.0 |
| 161 | 1166.1 | 5471.5 | 546.0 | 162 | 1166.1 | 5471.5 | 624.0 | 163 | 1166.1 | 5471.5 | 702.0 |
| 164 | 1166.1 | 5471.5 | 780.0 | 165 | 2364.3 | 4516.0 | 473.0 | 166 | 2348.1 | 4516.0 | 538.1 |
| 167 | 2334.2 | 4516.0 | 532.3 | 168 | 2311.2 | 4516.0 | 593.2 | 169 | 2300.6 | 4516.0 | 582.6 |
| 170 | 2256.1 | 4516.0 | 630.1 | 171 | 2250.3 | 4516.0 | 616.2 | 172 | 2191.0 | 4516.0 | 643.0 |
| 173 | 2191.0 | 4516.0 | 628.0 | 174 | 2125.9 | 4516.0 | 630.1 | 175 | 2131.7 | 4516.0 | 616.2 |
| 176 | 2070.8 | 4516.0 | 593.2 | 177 | 2081.4 | 4516.0 | 582.6 | 178 | 2033.9 | 4516.0 | 538.1 |
| 179 | 2047.8 | 4516.0 | 532.3 | 180 | 4777.7 | 4572.1 | 390.0 | 181 | 5215.8 | 4572.1 | 78.0 |
| 182 | 5204.2 | 4572.1 | 78.0 | 183 | 5181.0 | 4572.1 | 78.0 | 184 | 5192.6 | 4572.1 | 78.0 |
| 185 | 5215.8 | 4572.1 | 156.0 | 186 | 5204.2 | 4572.1 | 156.0 | 187 | 5309.8 | 2881.0 | 780.0 |
| 188 | 5309.8 | 2881.0 | 702.0 | 189 | 5309.8 | 2881.0 | 624.0 | 190 | 5309.8 | 2881.0 | 546.0 |
| 191 | 5309.8 | 2881.0 | 468.0 | 192 | 5309.8 | 2881.0 | 390.0 | 193 | 5309.8 | 2881.0 | 312.0 |
| 194 | 5309.8 | 2881.0 | 234.0 | 195 | 5309.8 | 2881.0 | 156.0 | 197 | 5309.8 | 2881.0 | 78.0 |
| 198 | 5309.9 | 2831.3 | 780.0 | 199 | 5309.9 | 2831.3 | 702.0 | 200 | 5310.0 | 2781.5 | 702.0 |
| 201 | 5309.9 | 2831.3 | 624.0 | 202 | 5310.0 | 2781.5 | 624.0 | 203 | 5309.9 | 2831.3 | 546.0 |
| 204 | 5310.0 | 2781.5 | 546.0 | 205 | 2017.7 | 4516.0 | 473.0 | 206 | 1065.2 | 5471.5 | 78.0 |
| 207 | 2377.7 | 4516.0 | 473.0 | 208 | 2369.5 | 4516.0 | 582.2 | 210 | 2351.1 | 4516.0 | 686.5 |
| 211 | 2273.5 | 4516.0 | 704.9 | 212 | 2291.0 | 4516.0 | 780.0 | 213 | 2191.0 | 4516.0 | 711.4 |
| 214 | 2191.0 | 4516.0 | 780.0 | 215 | 2004.3 | 4516.0 | 473.0 | 216 | 2012.5 | 4516.0 | 582.2 |
| 217 | 1991.0 | 4516.0 | 626.4 | 218 | 2030.9 | 4516.0 | 686.5 | 219 | 2108.5 | 4516.0 | 704.9 |
| 220 | 2091.0 | 4516.0 | 780.0 | 221 | 1697.7 | 4516.0 | 473.0 | 222 | 1707.8 | 4516.0 | 524.0 |
| 223 | 1720.1 | 4516.0 | 518.9 | 224 | 1736.7 | 4516.0 | 567.3 | 225 | 1746.1 | 4516.0 | 557.9 |
| 226 | 1780.0 | 4516.0 | 596.2 | 227 | 1785.1 | 4516.0 | 583.9 | 228 | 1831.0 | 4516.0 | 606.3 |
| 229 | 1831.0 | 4516.0 | 593.0 | 230 | 1882.0 | 4516.0 | 596.2 | 231 | 5309.9 | 2831.3 | 468.0 |
| 232 | 5310.0 | 2781.5 | 468.0 | 233 | 5309.9 | 2831.3 | 390.0 | 234 | 5310.0 | 2781.5 | 390.0 |
| 235 | 5309.9 | 2831.3 | 312.0 | 236 | 5310.0 | 2781.5 | 312.0 | 237 | 5309.9 | 2831.3 | 234.0 |
| 238 | 5310.0 | 2781.5 | 234.0 | 239 | 5309.9 | 2831.3 | 156.0 | 240 | 5310.0 | 2781.5 | 156.0 |
| 242 | 5309.9 | 2831.3 | 78.0 | 243 | 5310.0 | 2781.5 | 78.0 | 244 | 5306.3 | 4572.1 | 780.0 |
| 245 | 5310.0 | 2781.5 | 780.0 | 246 | 4675.6 | 4572.1 | 780.0 | 247 | 4679.3 | 2781.5 | 780.0 |
| 248 | 4673.8 | 5467.1 | 780.0 | 249 | 3708.4 | 2273.4 | 546.0 | 255 | 3708.4 | 2273.4 | 624.0 |
| 256 | 1876.9 | 4516.0 | 583.9 | 257 | 1925.3 | 4516.0 | 567.3 | 258 | 1915.9 | 4516.0 | 557.9 |
| 259 | 1954.2 | 4516.0 | 524.0 | 260 | 1941.9 | 4516.0 | 518.9 | 261 | 1964.3 | 4516.0 | 473.0 |
| 262 | 1684.3 | 4516.0 | 473.0 | 263 | 1689.4 | 4516.0 | 575.2 | 264 | 1671.0 | 4516.0 | 624.0 |
| 265 | 1703.9 | 4516.0 | 673.5 | 266 | 1765.5 | 4516.0 | 688.0 | 267 | 1751.0 | 4516.0 | 780.0 |
| 268 | 1831.0 | 4516.0 | 693.0 | 269 | 1831.0 | 4516.0 | 780.0 | 270 | 1977.7 | 4516.0 | 473.0 |
| 273 | 2764.3 | 5471.5 | 473.0 | 274 | 2391.0 | 5471.5 | 189.2 | 275 | 2404.3 | 5471.5 | 189.2 |
| 276 | 1671.0 | 4516.0 | 312.0 | 277 | 1684.3 | 4516.0 | 312.0 | 278 | 1697.7 | 4516.0 | 312.0 |
| 279 | 1711.0 | 4516.0 | 312.0 | 280 | 2764.3 | 5471.5 | 312.0 | 281 | 2751.0 | 5471.5 | 312.0 |
| 282 | 4591.9 | 5467.3 | 78.0 | 284 | 4591.9 | 5467.3 | 156.0 | 285 | 4591.9 | 5467.3 | 234.0 |
| 286 | 4591.9 | 5467.3 | 312.0 | 287 | 4591.9 | 5467.3 | 390.0 | 288 | 4591.9 | 5467.3 | 468.0 |
| 289 | 4591.9 | 5467.3 | 546.0 | 290 | 4591.9 | 5467.3 | 624.0 | 291 | 4591.9 | 5467.3 | 702.0 |
| 292 | 4591.9 | 5467.3 | 780.0 | 293 | 4510.1 | 5467.5 | 78.0 | 295 | 4510.1 | 5467.5 | 156.0 |
| 296 | 4510.1 | 5467.5 | 234.0 | 297 | 4510.1 | 5467.5 | 312.0 | 298 | 4510.1 | 5467.5 | 390.0 |
| 299 | 4510.1 | 5467.5 | 468.0 | 300 | 4510.1 | 5467.5 | 546.0 | 301 | 4510.1 | 5467.5 | 624.0 |
| 302 | 4510.1 | 5467.5 | 702.0 | 303 | 4510.1 | 5467.5 | 780.0 | 304 | 4428.2 | 5467.7 | 78.0 |
| 306 | 4428.2 | 5467.7 | 156.0 | 307 | 2417.7 | 5471.5 | 189.2 | 308 | 1671.0 | 4516.0 | 234.0 |
| 309 | 1684.3 | 4516.0 | 234.0 | 310 | 1697.7 | 4516.0 | 234.0 | 311 | 1711.0 | 4516.0 | 234.0 |
| 312 | 2777.7 | 5471.5 | 473.0 | 313 | 2777.7 | 5471.5 | 312.0 | 314 | 2431.0 | 5471.5 | 189.2 |
| 315 | 1671.0 | 4516.0 | 156.0 | 316 | 1684.3 | 4516.0 | 156.0 | 317 | 1697.7 | 4516.0 | 156.0 |
| 318 | 1711.0 | 4516.0 | 156.0 | 319 | 2791.0 | 5471.5 | 312.0 | 320 | 2764.3 | 5471.5 | 234.0 |
| 321 | 2364.3 | 5471.5 | 94.6 | 322 | 1671.0 | 4516.0 | 78.0 | 323 | 1684.3 | 4516.0 | 78.0 |
| 324 | 1697.7 | 4516.0 | 78.0 | 325 | 1711.0 | 4516.0 | 78.0 | 326 | 2751.0 | 5471.5 | 234.0 |
| 327 | 2351.0 | 5471.5 | 94.6 | 331 | 1964.3 | 4516.0 | 378.4 | 332 | 1951.0 | 4516.0 | 378.4 |
| 333 | 4428.2 | 5467.7 | 234.0 | 334 | 4428.2 | 5467.7 | 312.0 | 335 | 4428.2 | 5467.7 | 390.0 |
| 336 | 4428.2 | 5467.7 | 468.0 | 337 | 4428.2 | 5467.7 | 546.0 | 338 | 4428.2 | 5467.7 | 624.0 |
| 339 | 4428.2 | 5467.7 | 702.0 | 340 | 4428.2 | 5467.7 | 780.0 | 341 | 4346.3 | 5467.9 | 78.0 |
| 343 | 4346.3 | 5467.9 | 156.0 | 344 | 4346.3 | 5467.9 | 234.0 | 345 | 4346.3 | 5467.9 | 312.0 |
| 346 | 4346.3 | 5467.9 | 390.0 | 347 | 4346.3 | 5467.9 | 468.0 | 348 | 4346.3 | 5467.9 | 546.0 |
| 349 | 4346.3 | 5467.9 | 624.0 | 350 | 4346.3 | 5467.9 | 702.0 | 351 | 4346.3 | 5467.9 | 780.0 |
| 352 | 4264.5 | 5468.1 | 78.0 | 354 | 4264.5 | 5468.1 | 156.0 | 355 | 4264.5 | 5468.1 | 234.0 |
| 356 | 4264.5 | 5468.1 | 312.0 | 357 | 4264.5 | 5468.1 | 390.0 | 358 | 1977.7 | 4516.0 | 378.4 |
| 359 | 1991.0 | 4516.0 | 378.4 | 360 | 1065.2 | 5471.5 | 156.0 | 361 | 2004.3 | 4516.0 | 378.4 |
| 362 | 1065.2 | 5471.5 | 234.0 | 363 | 2017.7 | 4516.0 | 378.4 | 364 | 2031.0 | 4516.0 | 378.4 |
| 365 | 1964.3 | 4516.0 | 283.8 | 366 | 1951.0 | 4516.0 | 283.8 | 367 | 1977.7 | 4516.0 | 283.8 |
| 368 | 1991.0 | 4516.0 | 283.8 | 369 | 2004.3 | 4516.0 | 283.8 | 370 | 2017.7 | 4516.0 | 283.8 |

| | | | | | | | | | | | |
|-----|--------|--------|-------|-----|--------|--------|-------|-----|--------|--------|-------|
| 371 | 2031.0 | 4516.0 | 283.8 | 372 | 1964.3 | 4516.0 | 189.2 | 373 | 1951.0 | 4516.0 | 189.2 |
| 374 | 1977.7 | 4516.0 | 189.2 | 375 | 1991.0 | 4516.0 | 189.2 | 376 | 2004.3 | 4516.0 | 189.2 |
| 377 | 2017.7 | 4516.0 | 189.2 | 378 | 2031.0 | 4516.0 | 189.2 | 379 | 1964.3 | 4516.0 | 94.6 |
| 380 | 1951.0 | 4516.0 | 94.6 | 381 | 1977.7 | 4516.0 | 94.6 | 382 | 1991.0 | 4516.0 | 94.6 |
| 383 | 4264.5 | 5468.1 | 468.0 | 384 | 4264.5 | 5468.1 | 546.0 | 385 | 4264.5 | 5468.1 | 624.0 |
| 386 | 4264.5 | 5468.1 | 702.0 | 387 | 4264.5 | 5468.1 | 780.0 | 388 | 4221.8 | 5468.2 | 78.0 |
| 390 | 4221.8 | 5468.2 | 156.0 | 391 | 4221.8 | 5468.2 | 234.0 | 392 | 4221.8 | 5468.2 | 312.0 |
| 393 | 4221.8 | 5468.2 | 390.0 | 394 | 4221.8 | 5468.2 | 468.0 | 395 | 4221.8 | 5468.2 | 546.0 |
| 396 | 4221.8 | 5468.2 | 624.0 | 397 | 4221.8 | 5468.2 | 702.0 | 398 | 4221.8 | 5468.2 | 780.0 |
| 399 | 4100.8 | 5468.4 | 78.0 | 401 | 4100.8 | 5468.4 | 156.0 | 402 | 4100.8 | 5468.4 | 234.0 |
| 403 | 4100.8 | 5468.4 | 312.0 | 404 | 4100.8 | 5468.4 | 390.0 | 405 | 4100.8 | 5468.4 | 468.0 |
| 406 | 4100.8 | 5468.4 | 546.0 | 407 | 4100.8 | 5468.4 | 624.0 | 408 | 4100.8 | 5468.4 | 702.0 |
| 409 | 2004.3 | 4516.0 | 94.6 | 410 | 2017.7 | 4516.0 | 94.6 | 411 | 2031.0 | 4516.0 | 94.6 |
| 417 | 1065.2 | 5471.5 | 312.0 | 418 | 2364.3 | 4516.0 | 378.4 | 419 | 2351.0 | 4516.0 | 378.4 |
| 420 | 1065.2 | 5471.5 | 390.0 | 421 | 2377.7 | 4516.0 | 378.4 | 422 | 2391.0 | 4516.0 | 378.4 |
| 423 | 1065.2 | 5471.5 | 468.0 | 424 | 2404.3 | 4516.0 | 378.4 | 425 | 1065.2 | 5471.5 | 546.0 |
| 426 | 2417.7 | 4516.0 | 378.4 | 427 | 2431.0 | 4516.0 | 378.4 | 428 | 2364.3 | 4516.0 | 283.8 |
| 429 | 2351.0 | 4516.0 | 283.8 | 430 | 2377.7 | 4516.0 | 283.8 | 431 | 2391.0 | 4516.0 | 283.8 |
| 432 | 2404.3 | 4516.0 | 283.8 | 433 | 2417.7 | 4516.0 | 283.8 | 434 | 4100.8 | 5468.4 | 780.0 |
| 435 | 4018.9 | 5468.6 | 78.0 | 437 | 4018.9 | 5468.6 | 156.0 | 438 | 4018.9 | 5468.6 | 234.0 |
| 439 | 4018.9 | 5468.6 | 312.0 | 440 | 4018.9 | 5468.6 | 390.0 | 441 | 4018.9 | 5468.6 | 468.0 |
| 442 | 4018.9 | 5468.6 | 546.0 | 443 | 4018.9 | 5468.6 | 624.0 | 444 | 4018.9 | 5468.6 | 702.0 |
| 445 | 4018.9 | 5468.6 | 780.0 | 446 | 3937.0 | 5468.8 | 78.0 | 448 | 3937.0 | 5468.8 | 156.0 |
| 449 | 1632.9 | 1901.5 | 908.0 | 450 | 4677.2 | 3793.5 | 780.0 | 451 | 4677.1 | 3866.2 | 780.0 |
| 452 | 3937.0 | 5468.8 | 468.0 | 453 | 3937.0 | 5468.8 | 546.0 | 454 | 3937.0 | 5468.8 | 624.0 |
| 455 | 3937.0 | 5468.8 | 702.0 | 456 | 3937.0 | 5468.8 | 780.0 | 457 | 3855.2 | 5469.0 | 78.0 |
| 459 | 3855.2 | 5469.0 | 156.0 | 460 | 2431.0 | 4516.0 | 283.8 | 461 | 2364.3 | 4516.0 | 189.2 |
| 462 | 2351.0 | 4516.0 | 189.2 | 463 | 2377.7 | 4516.0 | 189.2 | 464 | 2391.0 | 4516.0 | 189.2 |
| 465 | 2404.3 | 4516.0 | 189.2 | 466 | 2417.7 | 4516.0 | 189.2 | 467 | 2431.0 | 4516.0 | 189.2 |
| 468 | 2364.3 | 4516.0 | 94.6 | 469 | 2351.0 | 4516.0 | 94.6 | 470 | 2377.7 | 4516.0 | 94.6 |
| 471 | 2391.0 | 4516.0 | 94.6 | 472 | 2404.3 | 4516.0 | 94.6 | 473 | 2417.7 | 4516.0 | 94.6 |
| 474 | 2431.0 | 4516.0 | 94.6 | 480 | 1065.2 | 5471.5 | 624.0 | 481 | 2764.3 | 4516.0 | 390.0 |
| 482 | 2751.0 | 4516.0 | 390.0 | 483 | 1065.2 | 5471.5 | 702.0 | 484 | 2777.7 | 4516.0 | 390.0 |
| 485 | 3855.2 | 5469.0 | 234.0 | 486 | 3855.2 | 5469.0 | 312.0 | 487 | 3855.2 | 5469.0 | 390.0 |
| 488 | 3855.2 | 5469.0 | 468.0 | 489 | 3855.2 | 5469.0 | 546.0 | 490 | 3855.2 | 5469.0 | 624.0 |
| 491 | 3855.2 | 5469.0 | 702.0 | 492 | 3855.2 | 5469.0 | 780.0 | 493 | 3773.3 | 5469.2 | 78.0 |
| 495 | 3773.3 | 5469.2 | 156.0 | 496 | 3773.3 | 5469.2 | 234.0 | 497 | 3773.3 | 5469.2 | 312.0 |
| 498 | 3773.3 | 5469.2 | 390.0 | 499 | 3773.3 | 5469.2 | 468.0 | 500 | 3773.3 | 5469.2 | 546.0 |
| 501 | 3773.3 | 5469.2 | 624.0 | 502 | 3773.3 | 5469.2 | 702.0 | 503 | 3773.3 | 5469.2 | 780.0 |
| 504 | 3691.5 | 5469.4 | 78.0 | 506 | 3691.5 | 5469.4 | 156.0 | 507 | 3691.5 | 5469.4 | 234.0 |
| 508 | 3691.5 | 5469.4 | 312.0 | 509 | 3691.5 | 5469.4 | 390.0 | 510 | 3691.5 | 5469.4 | 468.0 |
| 511 | 2791.0 | 4516.0 | 390.0 | 512 | 2764.3 | 4516.0 | 234.0 | 513 | 2751.0 | 4516.0 | 234.0 |
| 514 | 2777.7 | 4516.0 | 234.0 | 515 | 2791.0 | 4516.0 | 234.0 | 516 | 2764.3 | 4516.0 | 156.0 |
| 517 | 2751.0 | 4516.0 | 156.0 | 518 | 2777.7 | 4516.0 | 156.0 | 519 | 2791.0 | 4516.0 | 156.0 |
| 520 | 2764.3 | 4516.0 | 78.0 | 521 | 2751.0 | 4516.0 | 78.0 | 522 | 2777.7 | 4516.0 | 78.0 |
| 523 | 2791.0 | 4516.0 | 78.0 | 526 | 1267.1 | 5471.5 | 78.0 | 527 | 1697.7 | 5471.5 | 392.5 |
| 529 | 2184.6 | 2856.0 | 532.3 | 530 | 3031.0 | 3296.0 | 546.0 | 531 | 1065.2 | 4950.0 | 986.0 |
| 532 | 1972.6 | 5471.5 | 575.2 | 533 | 2791.0 | 5471.5 | 780.0 | 534 | 2791.0 | 5471.5 | 473.0 |
| 535 | 1958.1 | 5471.5 | 673.5 | 536 | 3691.5 | 5469.4 | 546.0 | 537 | 3691.5 | 5469.4 | 624.0 |
| 538 | 3691.5 | 5469.4 | 702.0 | 539 | 3691.5 | 5469.4 | 780.0 | 540 | 3609.6 | 5469.6 | 78.0 |
| 542 | 3609.6 | 5469.6 | 156.0 | 543 | 4676.9 | 3939.0 | 780.0 | 544 | 4676.8 | 4011.8 | 780.0 |
| 545 | 4676.6 | 4084.5 | 780.0 | 546 | 3609.6 | 5469.6 | 468.0 | 547 | 3609.6 | 5469.6 | 546.0 |
| 548 | 3609.6 | 5469.6 | 624.0 | 549 | 3609.6 | 5469.6 | 702.0 | 550 | 3609.6 | 5469.6 | 780.0 |
| 551 | 3527.7 | 5469.8 | 78.0 | 553 | 3527.7 | 5469.8 | 156.0 | 554 | 3527.7 | 5469.8 | 234.0 |
| 555 | 3527.7 | 5469.8 | 312.0 | 556 | 3527.7 | 5469.8 | 390.0 | 557 | 3527.7 | 5469.8 | 468.0 |
| 558 | 3527.7 | 5469.8 | 546.0 | 559 | 3527.7 | 5469.8 | 624.0 | 560 | 3527.7 | 5469.8 | 702.0 |
| 561 | 3527.7 | 5469.8 | 780.0 | 562 | 2391.0 | 5471.5 | 780.0 | 563 | 2391.0 | 5471.5 | 473.0 |
| 564 | 1896.5 | 5471.5 | 688.0 | 565 | 1991.0 | 5471.5 | 780.0 | 566 | 1991.0 | 5471.5 | 473.0 |
| 567 | 1911.0 | 5471.5 | 780.0 | 568 | 1671.0 | 5471.5 | 780.0 | 569 | 1671.0 | 5471.5 | 468.0 |
| 571 | 2751.0 | 5471.5 | 473.0 | 573 | 1065.2 | 5471.5 | 780.0 | 574 | 2538.4 | 2050.3 | 468.0 |
| 575 | 2154.5 | 2856.0 | 473.0 | 576 | 964.2 | 5471.5 | 78.0 | 579 | 2351.0 | 5471.5 | 473.0 |
| 581 | 2431.0 | 5471.5 | 473.0 | 582 | 964.2 | 5471.5 | 156.0 | 583 | 964.2 | 5471.5 | 234.0 |
| 585 | 1951.0 | 5471.5 | 473.0 | 587 | 3445.9 | 5470.0 | 78.0 | 589 | 3445.9 | 5470.0 | 156.0 |
| 590 | 3445.9 | 5470.0 | 234.0 | 591 | 3445.9 | 5470.0 | 312.0 | 592 | 3445.9 | 5470.0 | 390.0 |
| 593 | 3445.9 | 5470.0 | 468.0 | 594 | 3445.9 | 5470.0 | 546.0 | 595 | 3445.9 | 5470.0 | 624.0 |
| 596 | 3445.9 | 5470.0 | 702.0 | 597 | 3445.9 | 5470.0 | 780.0 | 598 | 3364.0 | 5470.2 | 78.0 |
| 600 | 3364.0 | 5470.2 | 156.0 | 601 | 3364.0 | 5470.2 | 234.0 | 602 | 3364.0 | 5470.2 | 312.0 |
| 603 | 3364.0 | 5470.2 | 390.0 | 604 | 3364.0 | 5470.2 | 468.0 | 605 | 3364.0 | 5470.2 | 546.0 |
| 606 | 3364.0 | 5470.2 | 624.0 | 607 | 3364.0 | 5470.2 | 702.0 | 608 | 3364.0 | 5470.2 | 780.0 |
| 609 | 3282.2 | 5470.3 | 78.0 | 611 | 3282.2 | 5470.3 | 156.0 | 612 | 4676.5 | 4157.3 | 780.0 |
| 613 | 2031.0 | 5471.5 | 473.0 | 614 | 964.2 | 5471.5 | 312.0 | 615 | 964.2 | 5471.5 | 390.0 |
| 616 | 2777.7 | 5471.5 | 234.0 | 617 | 2791.0 | 5471.5 | 234.0 | 619 | 1711.0 | 5471.5 | 473.0 |
| 620 | 964.2 | 5471.5 | 468.0 | 621 | 964.2 | 5471.5 | 546.0 | 622 | 964.2 | 5471.5 | 624.0 |
| 623 | 964.2 | 5471.5 | 702.0 | 624 | 2748.1 | 5471.5 | 538.1 | 625 | 2734.2 | 5471.5 | 532.3 |
| 626 | 2711.2 | 5471.5 | 593.2 | 627 | 2700.6 | 5471.5 | 582.6 | 628 | 2656.1 | 5471.5 | 630.1 |
| 629 | 2650.3 | 5471.5 | 616.2 | 630 | 2591.0 | 5471.5 | 643.0 | 631 | 2591.0 | 5471.5 | 628.0 |
| 632 | 2525.9 | 5471.5 | 630.1 | 633 | 2531.7 | 5471.5 | 616.2 | 634 | 2470.8 | 5471.5 | 593.2 |

| | | | | | | | | | | | |
|------|--------|--------|-------|------|--------|--------|-------|------|--------|--------|-------|
| 635 | 2481.4 | 5471.5 | 582.6 | 636 | 2433.9 | 5471.5 | 538.1 | 637 | 2447.8 | 5471.5 | 532.3 |
| 1903 | 661.3 | 2645.3 | 702.0 | 1904 | 661.3 | 2645.3 | 780.0 | 1905 | 661.3 | 2570.9 | 78.0 |
| 1907 | 661.3 | 2570.9 | 156.0 | 1908 | 661.3 | 2570.9 | 234.0 | 1909 | 661.3 | 2570.9 | 312.0 |
| 1910 | 661.3 | 2570.9 | 390.0 | 1911 | 661.3 | 2570.9 | 468.0 | 1912 | 3481.0 | 4076.0 | 468.0 |
| 1913 | 3481.0 | 4076.0 | 546.0 | 1914 | 3481.0 | 4076.0 | 624.0 | 1915 | 3481.0 | 4076.0 | 702.0 |
| 1916 | 3481.0 | 4076.0 | 780.0 | 1917 | 3121.0 | 4076.0 | 78.0 | 1919 | 3121.0 | 4076.0 | 156.0 |
| 1920 | 3121.0 | 4076.0 | 234.0 | 1921 | 3121.0 | 4076.0 | 312.0 | 1922 | 3121.0 | 4076.0 | 390.0 |
| 1923 | 3121.0 | 4076.0 | 468.0 | 1924 | 3121.0 | 4076.0 | 546.0 | 1925 | 3121.0 | 4076.0 | 624.0 |
| 1926 | 3121.0 | 4076.0 | 702.0 | 1927 | 3121.0 | 4076.0 | 780.0 | 1928 | 3211.0 | 4076.0 | 78.0 |
| 1930 | 3211.0 | 4076.0 | 156.0 | 1931 | 3211.0 | 4076.0 | 234.0 | 1932 | 3211.0 | 4076.0 | 312.0 |
| 1933 | 3211.0 | 4076.0 | 390.0 | 1934 | 3211.0 | 4076.0 | 468.0 | 1935 | 3211.0 | 4076.0 | 546.0 |
| 1936 | 3211.0 | 4076.0 | 624.0 | 1937 | 3211.0 | 4076.0 | 702.0 | 1938 | 3211.0 | 4076.0 | 780.0 |
| 1939 | 661.3 | 2570.9 | 546.0 | 1940 | 661.3 | 2570.9 | 624.0 | 1941 | 661.3 | 2570.9 | 702.0 |
| 1942 | 661.3 | 2570.9 | 780.0 | 1943 | 661.3 | 2496.5 | 78.0 | 1945 | 661.3 | 2496.5 | 156.0 |
| 1946 | 661.3 | 2496.5 | 234.0 | 1947 | 3301.0 | 4076.0 | 78.0 | 1949 | 3301.0 | 4076.0 | 156.0 |
| 1950 | 661.3 | 2496.5 | 312.0 | 1951 | 661.3 | 2496.5 | 390.0 | 1952 | 661.3 | 2496.5 | 468.0 |
| 1953 | 661.3 | 2496.5 | 546.0 | 1954 | 661.3 | 2496.5 | 624.0 | 1955 | 661.3 | 2496.5 | 702.0 |
| 1956 | 3301.0 | 4076.0 | 234.0 | 1957 | 3301.0 | 4076.0 | 312.0 | 1958 | 661.3 | 2496.5 | 780.0 |
| 1959 | 661.3 | 2422.2 | 78.0 | 1961 | 661.3 | 2422.2 | 156.0 | 1962 | 1671.0 | 5280.4 | 390.0 |
| 1963 | 1671.0 | 5280.4 | 468.0 | 1964 | 3301.0 | 4076.0 | 390.0 | 1965 | 3301.0 | 4076.0 | 468.0 |
| 1966 | 3301.0 | 4076.0 | 546.0 | 1967 | 3301.0 | 4076.0 | 624.0 | 1968 | 3301.0 | 4076.0 | 702.0 |
| 1969 | 3301.0 | 4076.0 | 780.0 | 1970 | 3391.0 | 4076.0 | 78.0 | 1972 | 3391.0 | 4076.0 | 156.0 |
| 1973 | 3391.0 | 4076.0 | 234.0 | 1974 | 4221.5 | 4589.2 | 78.0 | 1976 | 4221.5 | 4589.2 | 156.0 |
| 1977 | 4221.5 | 4589.2 | 234.0 | 1978 | 4221.5 | 4589.2 | 312.0 | 1979 | 4221.5 | 4589.2 | 390.0 |
| 1980 | 4221.5 | 4589.2 | 468.0 | 1981 | 4221.5 | 4589.2 | 546.0 | 1982 | 4221.5 | 4589.2 | 624.0 |
| 1983 | 4221.5 | 4589.2 | 702.0 | 1984 | 661.3 | 2422.2 | 234.0 | 1985 | 4221.5 | 4589.2 | 780.0 |
| 1986 | 4221.5 | 4662.4 | 78.0 | 1988 | 4221.5 | 4662.4 | 156.0 | 1989 | 4221.5 | 4662.4 | 234.0 |
| 1990 | 661.3 | 2422.2 | 312.0 | 1991 | 661.3 | 2422.2 | 390.0 | 1992 | 661.3 | 2422.2 | 468.0 |
| 1993 | 661.3 | 2422.2 | 546.0 | 1994 | 661.3 | 2422.2 | 624.0 | 1995 | 661.3 | 2422.2 | 702.0 |
| 1996 | 661.3 | 2422.2 | 780.0 | 1997 | 661.3 | 2347.8 | 78.0 | 1999 | 661.3 | 2347.8 | 156.0 |
| 2000 | 661.3 | 2347.8 | 234.0 | 2001 | 661.3 | 2347.8 | 312.0 | 2002 | 661.3 | 2347.8 | 390.0 |
| 2003 | 661.3 | 2347.8 | 468.0 | 2004 | 661.3 | 2347.8 | 546.0 | 2005 | 661.3 | 2347.8 | 624.0 |
| 2006 | 661.3 | 2347.8 | 702.0 | 2007 | 661.3 | 2347.8 | 780.0 | 2008 | 661.3 | 2273.4 | 78.0 |
| 2010 | 661.3 | 2273.4 | 156.0 | 2011 | 661.3 | 2273.4 | 234.0 | 2012 | 661.3 | 2273.4 | 312.0 |
| 2013 | 1671.0 | 5280.4 | 546.0 | 2014 | 1671.0 | 5280.4 | 624.0 | 2015 | 4221.5 | 4662.4 | 312.0 |
| 2016 | 4221.5 | 4662.4 | 390.0 | 2017 | 4221.5 | 4662.4 | 468.0 | 2018 | 4221.5 | 4662.4 | 546.0 |
| 2019 | 4221.5 | 4662.4 | 624.0 | 2020 | 4221.5 | 4662.4 | 702.0 | 2021 | 4221.5 | 4662.4 | 780.0 |
| 2022 | 4221.6 | 4735.7 | 78.0 | 2024 | 4221.6 | 4735.7 | 156.0 | 2025 | 4221.6 | 4735.7 | 234.0 |
| 2026 | 4221.6 | 4735.7 | 312.0 | 2027 | 4221.6 | 4735.7 | 390.0 | 2028 | 4221.6 | 4735.7 | 468.0 |
| 2029 | 4221.6 | 4735.7 | 546.0 | 2030 | 4221.6 | 4735.7 | 624.0 | 2031 | 4221.6 | 4735.7 | 702.0 |
| 2032 | 4221.6 | 4735.7 | 780.0 | 2033 | 4221.6 | 4808.9 | 78.0 | 2035 | 4221.6 | 4808.9 | 156.0 |
| 2036 | 4221.6 | 4808.9 | 234.0 | 2037 | 4221.6 | 4808.9 | 312.0 | 2038 | 4221.6 | 4808.9 | 390.0 |
| 2039 | 4221.6 | 4808.9 | 468.0 | 2040 | 4221.6 | 4808.9 | 546.0 | 2041 | 661.3 | 2273.4 | 390.0 |
| 2042 | 661.3 | 2273.4 | 468.0 | 2043 | 661.3 | 2273.4 | 546.0 | 2044 | 661.3 | 2273.4 | 624.0 |
| 2045 | 661.3 | 2273.4 | 702.0 | 2046 | 661.3 | 2273.4 | 780.0 | 2047 | 661.3 | 2199.0 | 78.0 |
| 2049 | 661.3 | 2199.0 | 156.0 | 2050 | 661.3 | 2199.0 | 234.0 | 2051 | 661.3 | 2199.0 | 312.0 |
| 2052 | 661.3 | 2199.0 | 390.0 | 2053 | 661.3 | 2199.0 | 468.0 | 2054 | 661.3 | 2199.0 | 546.0 |
| 2055 | 661.3 | 2199.0 | 624.0 | 2056 | 661.3 | 2199.0 | 702.0 | 2057 | 661.3 | 2199.0 | 780.0 |
| 2058 | 661.3 | 2124.7 | 78.0 | 2060 | 661.3 | 2124.7 | 156.0 | 2061 | 661.3 | 2124.7 | 234.0 |
| 2062 | 661.3 | 2124.7 | 312.0 | 2063 | 661.3 | 2124.7 | 390.0 | 2064 | 1671.0 | 5280.4 | 702.0 |
| 2065 | 1671.0 | 5280.4 | 780.0 | 2066 | 4221.6 | 4808.9 | 624.0 | 2067 | 4221.6 | 4808.9 | 702.0 |
| 2068 | 4221.6 | 4808.9 | 780.0 | 2069 | 4221.6 | 4882.2 | 78.0 | 2071 | 4221.6 | 4882.2 | 156.0 |
| 2072 | 4221.6 | 4882.2 | 234.0 | 2073 | 4221.6 | 4882.2 | 312.0 | 2074 | 4221.6 | 4882.2 | 390.0 |
| 2075 | 4221.6 | 4882.2 | 468.0 | 2076 | 4221.6 | 4882.2 | 546.0 | 2077 | 4221.6 | 4882.2 | 624.0 |
| 2078 | 4221.6 | 4882.2 | 702.0 | 2079 | 4221.6 | 4882.2 | 780.0 | 2080 | 4221.6 | 4955.4 | 78.0 |
| 2082 | 4221.6 | 4955.4 | 156.0 | 2083 | 4221.6 | 4955.4 | 234.0 | 2084 | 4221.6 | 4955.4 | 312.0 |
| 2085 | 4221.6 | 4955.4 | 390.0 | 2086 | 4221.6 | 4955.4 | 468.0 | 2087 | 4221.6 | 4955.4 | 546.0 |
| 2088 | 4221.6 | 4955.4 | 624.0 | 2089 | 4221.6 | 4955.4 | 702.0 | 2090 | 4221.6 | 4955.4 | 780.0 |
| 2091 | 4221.7 | 5028.7 | 78.0 | 2092 | 661.3 | 2124.7 | 468.0 | 2093 | 661.3 | 2124.7 | 546.0 |
| 2094 | 661.3 | 2124.7 | 624.0 | 2095 | 661.3 | 2124.7 | 702.0 | 2096 | 661.3 | 2124.7 | 780.0 |
| 2097 | 661.3 | 2050.3 | 78.0 | 2099 | 661.3 | 2050.3 | 156.0 | 2100 | 661.3 | 2050.3 | 234.0 |
| 2101 | 661.3 | 2050.3 | 312.0 | 2102 | 661.3 | 2050.3 | 390.0 | 2103 | 661.3 | 2050.3 | 468.0 |
| 2104 | 661.3 | 2050.3 | 546.0 | 2105 | 661.3 | 2050.3 | 624.0 | 2106 | 661.3 | 2050.3 | 702.0 |
| 2107 | 661.3 | 2050.3 | 780.0 | 2108 | 661.3 | 1975.9 | 78.0 | 2110 | 661.3 | 1975.9 | 156.0 |
| 2111 | 661.3 | 1975.9 | 234.0 | 2112 | 661.3 | 1975.9 | 312.0 | 2113 | 661.3 | 1975.9 | 390.0 |
| 2114 | 661.3 | 1975.9 | 468.0 | 2115 | 1671.0 | 5375.9 | 78.0 | 2118 | 4221.7 | 5028.7 | 156.0 |
| 2119 | 4221.7 | 5028.7 | 234.0 | 2120 | 4221.7 | 5028.7 | 312.0 | 2121 | 4221.7 | 5028.7 | 390.0 |
| 2122 | 4221.7 | 5028.7 | 468.0 | 2123 | 4221.7 | 5028.7 | 546.0 | 2124 | 4221.7 | 5028.7 | 624.0 |
| 2125 | 4221.7 | 5028.7 | 702.0 | 2126 | 4221.7 | 5028.7 | 780.0 | 2127 | 4221.7 | 5101.9 | 78.0 |
| 2129 | 4221.7 | 5101.9 | 156.0 | 2130 | 4221.7 | 5101.9 | 234.0 | 2131 | 4221.7 | 5101.9 | 312.0 |
| 2132 | 4221.7 | 5101.9 | 390.0 | 2133 | 4221.7 | 5101.9 | 468.0 | 2134 | 4221.7 | 5101.9 | 546.0 |
| 2135 | 4221.7 | 5101.9 | 624.0 | 2136 | 4221.7 | 5101.9 | 702.0 | 2137 | 4221.7 | 5101.9 | 780.0 |
| 2138 | 4221.7 | 5175.2 | 78.0 | 2140 | 4221.7 | 5175.2 | 156.0 | 2141 | 4221.7 | 5175.2 | 234.0 |
| 2142 | 4221.7 | 5175.2 | 312.0 | 2143 | 661.3 | 1975.9 | 546.0 | 2144 | 661.3 | 1975.9 | 624.0 |
| 2145 | 661.3 | 1975.9 | 702.0 | 2146 | 661.3 | 1975.9 | 780.0 | 2147 | 661.3 | 1901.5 | 78.0 |
| 2148 | 661.3 | 1901.5 | 156.0 | 2149 | 661.3 | 1901.5 | 234.0 | 2150 | 661.3 | 1901.5 | 312.0 |
| 2151 | 661.3 | 1901.5 | 390.0 | 2152 | 661.3 | 4231.5 | 273.0 | 2153 | 661.3 | 4231.5 | 323.0 |

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|------|--------|--------|-------|------|--------|--------|-------|------|--------|--------|-------|
| 2154 | 661.3 | 4331.5 | 223.0 | 2155 | 661.3 | 4331.5 | 273.0 | 2156 | 661.3 | 4331.5 | 323.0 |
| 4410 | 904.2 | 3091.5 | 234.0 | 4411 | 904.2 | 3091.5 | 312.0 | 4412 | 904.2 | 3091.5 | 390.0 |
| 4413 | 904.2 | 3091.5 | 468.0 | 4414 | 904.2 | 3091.5 | 546.0 | 4415 | 904.2 | 3091.5 | 624.0 |
| 4417 | 2487.9 | 2856.0 | 686.5 | 4418 | 1831.0 | 2856.0 | 473.0 | 4421 | 2487.8 | 2856.0 | 473.0 |
| 4423 | 2167.8 | 2856.0 | 473.0 | 4424 | 1511.0 | 2856.0 | 473.0 | 4425 | 2501.2 | 2856.0 | 473.0 |
| 4426 | 2484.9 | 2856.0 | 538.1 | 4427 | 2471.0 | 2856.0 | 532.3 | 4428 | 2448.1 | 2856.0 | 593.2 |
| 4429 | 2437.4 | 2856.0 | 582.6 | 4430 | 2392.9 | 2856.0 | 630.1 | 4431 | 2387.2 | 2856.0 | 616.2 |
| 4432 | 2327.8 | 2856.0 | 643.0 | 4433 | 2327.8 | 2856.0 | 628.0 | 4434 | 2262.8 | 2856.0 | 630.1 |
| 4435 | 2268.5 | 2856.0 | 616.2 | 4436 | 2207.6 | 2856.0 | 593.2 | 4437 | 2218.2 | 2856.0 | 582.6 |
| 4438 | 2170.8 | 2856.0 | 538.1 | 4439 | 4674.5 | 5103.3 | 78.0 | 4440 | 4674.7 | 5030.5 | 78.0 |
| 4441 | 4674.8 | 4957.7 | 78.0 | 4442 | 4675.0 | 4885.0 | 78.0 | 4443 | 4675.1 | 4812.2 | 78.0 |
| 4444 | 4675.3 | 4739.4 | 78.0 | 4445 | 4675.4 | 4666.7 | 78.0 | 4446 | 4676.1 | 4335.1 | 78.0 |
| 4447 | 4675.7 | 4516.0 | 78.0 | 4448 | 4675.9 | 4448.4 | 78.0 | 4449 | 4676.0 | 4375.6 | 78.0 |
| 4452 | 4676.5 | 4157.3 | 78.0 | 4453 | 4676.6 | 4084.5 | 78.0 | 4454 | 4676.8 | 4011.8 | 78.0 |
| 4455 | 4676.9 | 3939.0 | 78.0 | 4456 | 4677.1 | 3866.2 | 78.0 | 4457 | 4677.2 | 3793.5 | 78.0 |
| 4460 | 4676.1 | 4335.1 | 156.0 | 4461 | 4677.9 | 3502.4 | 78.0 | 4462 | 4678.0 | 3429.6 | 78.0 |
| 4463 | 4678.2 | 3356.9 | 78.0 | 4464 | 4678.3 | 3284.1 | 78.0 | 4465 | 4678.5 | 3211.3 | 78.0 |
| 4466 | 4678.6 | 3138.6 | 78.0 | 4469 | 4679.1 | 2920.3 | 78.0 | 4470 | 4679.2 | 2856.0 | 78.0 |
| 4471 | 4676.1 | 4335.1 | 312.0 | 4472 | 4679.5 | 2702.0 | 78.0 | 4473 | 4679.7 | 2629.2 | 78.0 |
| 4474 | 4679.8 | 2556.4 | 78.0 | 4475 | 4680.0 | 2483.7 | 78.0 | 4476 | 4680.1 | 2410.9 | 78.0 |
| 4477 | 4680.3 | 2348.0 | 78.0 | 4478 | 4680.4 | 2265.4 | 78.0 | 4479 | 4680.6 | 2192.6 | 78.0 |
| 4480 | 4680.7 | 2119.8 | 78.0 | 4481 | 4680.9 | 2047.1 | 78.0 | 4482 | 3708.4 | 2348.0 | 702.0 |
| 4483 | 4681.0 | 1974.3 | 78.0 | 4484 | 4673.8 | 5467.1 | 156.0 | 4485 | 4673.9 | 5394.3 | 156.0 |
| 4486 | 4674.1 | 5321.6 | 156.0 | 4487 | 4674.2 | 5248.8 | 156.0 | 4488 | 4674.4 | 5176.0 | 156.0 |
| 4489 | 4674.5 | 5103.3 | 156.0 | 4490 | 4674.7 | 5030.5 | 156.0 | 4491 | 4674.8 | 4957.7 | 156.0 |
| 4492 | 4675.0 | 4885.0 | 156.0 | 4493 | 4675.1 | 4812.2 | 156.0 | 4494 | 4675.3 | 4739.4 | 156.0 |
| 4495 | 4675.4 | 4666.7 | 156.0 | 4496 | 4676.1 | 4335.1 | 390.0 | 4497 | 4675.7 | 4516.0 | 156.0 |
| 4498 | 4675.9 | 4448.4 | 156.0 | 4499 | 4676.0 | 4375.6 | 156.0 | 4502 | 4676.5 | 4157.3 | 156.0 |
| 4503 | 4676.6 | 4084.5 | 156.0 | 4504 | 4676.8 | 4011.8 | 156.0 | 4505 | 4676.9 | 3939.0 | 156.0 |
| 4506 | 4677.1 | 3866.2 | 156.0 | 4507 | 4677.2 | 3793.5 | 156.0 | 4511 | 4677.9 | 3502.4 | 156.0 |
| 4512 | 4678.0 | 3429.6 | 156.0 | 4513 | 4678.2 | 3356.9 | 156.0 | 4514 | 4678.3 | 3284.1 | 156.0 |
| 4515 | 4678.5 | 3211.3 | 156.0 | 4516 | 4678.6 | 3138.6 | 156.0 | 4519 | 4679.1 | 2920.3 | 156.0 |
| 4520 | 4679.2 | 2856.0 | 156.0 | 4521 | 4676.1 | 4335.1 | 234.0 | 4522 | 4679.5 | 2702.0 | 156.0 |
| 4523 | 4679.7 | 2629.2 | 156.0 | 4524 | 4679.8 | 2556.4 | 156.0 | 4525 | 4680.0 | 2483.7 | 156.0 |
| 4526 | 4680.1 | 2410.9 | 156.0 | 4527 | 4680.3 | 2348.0 | 156.0 | 4528 | 4680.4 | 2265.4 | 156.0 |
| 4529 | 4680.6 | 2192.6 | 156.0 | 4530 | 4680.7 | 2119.8 | 156.0 | 4531 | 4680.9 | 2047.1 | 156.0 |
| 4532 | 3708.4 | 2348.0 | 780.0 | 4533 | 4681.0 | 1974.3 | 156.0 | 4534 | 4673.8 | 5467.1 | 234.0 |
| 4535 | 4673.9 | 5394.3 | 234.0 | 4536 | 4676.1 | 4335.1 | 414.0 | 4537 | 4674.2 | 5248.8 | 234.0 |
| 4538 | 4674.4 | 5176.0 | 234.0 | 4539 | 4674.5 | 5103.3 | 234.0 | 4540 | 4674.7 | 5030.5 | 234.0 |
| 4541 | 4674.8 | 4957.7 | 234.0 | 4542 | 4675.0 | 4885.0 | 234.0 | 4543 | 4675.1 | 4812.2 | 234.0 |
| 4544 | 4676.2 | 4302.8 | 414.0 | 4545 | 4675.4 | 4666.7 | 234.0 | 4547 | 4675.7 | 4516.0 | 234.0 |
| 4548 | 4675.9 | 4448.4 | 234.0 | 4549 | 4676.0 | 4375.6 | 234.0 | 4552 | 4676.5 | 4157.3 | 234.0 |
| 4553 | 4676.6 | 4084.5 | 234.0 | 4554 | 4676.8 | 4011.8 | 234.0 | 4555 | 4676.9 | 3939.0 | 234.0 |
| 4556 | 4677.1 | 3866.2 | 234.0 | 4557 | 4677.2 | 3793.5 | 234.0 | 4561 | 4677.9 | 3502.4 | 234.0 |
| 4562 | 4678.0 | 3429.6 | 234.0 | 4563 | 4678.2 | 3356.9 | 234.0 | 4564 | 4678.3 | 3284.1 | 234.0 |
| 4565 | 4678.5 | 3211.3 | 234.0 | 4566 | 4678.6 | 3138.6 | 234.0 | 4569 | 4679.1 | 2920.3 | 234.0 |
| 4570 | 4679.2 | 2856.0 | 234.0 | 4571 | 4678.7 | 3098.0 | 78.0 | 4572 | 4679.5 | 2702.0 | 234.0 |
| 4573 | 4678.8 | 3065.8 | 414.0 | 4574 | 4679.8 | 2556.4 | 234.0 | 4575 | 4680.0 | 2483.7 | 234.0 |
| 4576 | 4680.1 | 2410.9 | 234.0 | 4577 | 4680.3 | 2348.0 | 234.0 | 4578 | 4680.4 | 2265.4 | 234.0 |
| 4579 | 4680.6 | 2192.6 | 234.0 | 4580 | 4680.7 | 2119.8 | 234.0 | 4581 | 4678.7 | 3098.0 | 414.0 |
| 4583 | 4681.0 | 1974.3 | 234.0 | 4584 | 4673.8 | 5467.1 | 312.0 | 4585 | 4673.9 | 5394.3 | 312.0 |
| 4586 | 4676.3 | 4230.1 | 414.0 | 4587 | 4674.2 | 5248.8 | 312.0 | 4588 | 4674.4 | 5176.0 | 312.0 |
| 4589 | 4674.5 | 5103.3 | 312.0 | 4590 | 4674.7 | 5030.5 | 312.0 | 4591 | 4674.8 | 4957.7 | 312.0 |
| 4592 | 4675.0 | 4885.0 | 312.0 | 4593 | 4675.1 | 4812.2 | 312.0 | 4594 | 4676.4 | 4197.8 | 414.0 |
| 4595 | 4675.4 | 4666.7 | 312.0 | 4596 | 4678.7 | 3098.0 | 156.0 | 4597 | 4675.7 | 4516.0 | 312.0 |
| 4598 | 4675.9 | 4448.4 | 312.0 | 4599 | 4676.0 | 4375.6 | 312.0 | 4602 | 4676.5 | 4157.3 | 312.0 |
| 4603 | 4676.6 | 4084.5 | 312.0 | 4604 | 4676.8 | 4011.8 | 312.0 | 4605 | 4676.9 | 3939.0 | 312.0 |
| 4606 | 4677.1 | 3866.2 | 312.0 | 4607 | 4677.2 | 3793.5 | 312.0 | 4611 | 4677.9 | 3502.4 | 312.0 |
| 4612 | 4678.0 | 3429.6 | 312.0 | 4613 | 4678.2 | 3356.9 | 312.0 | 4614 | 4678.3 | 3284.1 | 312.0 |
| 4615 | 4678.5 | 3211.3 | 312.0 | 4616 | 4678.6 | 3138.6 | 312.0 | 4619 | 4679.1 | 2920.3 | 312.0 |
| 4620 | 4679.2 | 2856.0 | 312.0 | 4621 | 4678.7 | 3098.0 | 312.0 | 4622 | 4679.5 | 2702.0 | 312.0 |
| 4623 | 4678.9 | 2993.0 | 414.0 | 4624 | 4679.8 | 2556.4 | 312.0 | 4625 | 4680.0 | 2483.7 | 312.0 |
| 4626 | 4680.1 | 2410.9 | 312.0 | 4627 | 4680.3 | 2348.0 | 312.0 | 4628 | 4680.4 | 2265.4 | 312.0 |
| 4629 | 4680.6 | 2192.6 | 312.0 | 4630 | 4680.7 | 2119.8 | 312.0 | 4631 | 4679.0 | 2960.8 | 414.0 |
| 4632 | 3708.4 | 2273.4 | 78.0 | 4633 | 4681.0 | 1974.3 | 312.0 | 4634 | 4673.8 | 5467.1 | 390.0 |
| 4635 | 4673.9 | 5394.3 | 390.0 | 4636 | 4674.1 | 5321.6 | 390.0 | 4637 | 4674.2 | 5248.8 | 390.0 |
| 4638 | 4674.4 | 5176.0 | 390.0 | 4639 | 4674.5 | 5103.3 | 390.0 | 4640 | 4674.7 | 5030.5 | 390.0 |
| 4641 | 4674.8 | 4957.7 | 390.0 | 4642 | 4675.0 | 4885.0 | 390.0 | 4643 | 4675.1 | 4812.2 | 390.0 |
| 4644 | 4675.3 | 4739.4 | 390.0 | 4645 | 4675.4 | 4666.7 | 390.0 | 4646 | 4678.7 | 3098.0 | 390.0 |
| 4647 | 4675.7 | 4516.0 | 390.0 | 4648 | 4675.9 | 4448.4 | 390.0 | 4649 | 4676.0 | 4375.6 | 390.0 |
| 4651 | 4678.7 | 3098.0 | 234.0 | 4652 | 4676.5 | 4157.3 | 390.0 | 4653 | 4676.6 | 4084.5 | 390.0 |
| 4654 | 4676.8 | 4011.8 | 390.0 | 4655 | 4676.9 | 3939.0 | 390.0 | 4656 | 4677.1 | 3866.2 | 390.0 |
| 4657 | 4677.2 | 3793.5 | 390.0 | 4661 | 4677.9 | 3502.4 | 390.0 | 4662 | 4678.0 | 3429.6 | 390.0 |
| 4663 | 4678.2 | 3356.9 | 390.0 | 4664 | 4678.3 | 3284.1 | 390.0 | 4665 | 4678.5 | 3211.3 | 390.0 |
| 4666 | 4678.6 | 3138.6 | 390.0 | 4669 | 4679.1 | 2920.3 | 390.0 | 4670 | 4679.2 | 2856.0 | 390.0 |
| 4672 | 4679.5 | 2702.0 | 390.0 | 4673 | 4679.7 | 2629.2 | 390.0 | 4674 | 4679.8 | 2556.4 | 390.0 |
| 4675 | 4680.0 | 2483.7 | 390.0 | 4676 | 4680.1 | 2410.9 | 390.0 | 4677 | 4680.3 | 2348.0 | 390.0 |

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|---------|--------|--------|-------|------|--------|--------|-------|------|--------|--------|-------|
| 4678 | 4680.4 | 2265.4 | 390.0 | 4679 | 4680.6 | 2192.6 | 390.0 | 4680 | 4680.7 | 2119.8 | 390.0 |
| 4681 | 4680.9 | 2047.1 | 390.0 | 4682 | 3708.4 | 2273.4 | 156.0 | 4683 | 4681.0 | 1974.3 | 390.0 |
| OMISSIS | | | | | | | | | | | |

| Nodo | X cm | Y cm | Z cm | Note | Rig. TX daN/cm | Rig. TY daN/cm | Rig. TZ daN/cm | Rig. RX daN cm/rad | Rig. RY daN cm/rad | Rig. RZ daN cm/rad |
|------|---------|---------|---------|----------|-------------------|-------------------|-------------------|-----------------------|-----------------------|-----------------------|
| 4 | 661.3 | 1901.5 | 0.0 | v=111000 | | | | | | |
| 10 | 3031.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 11 | 5309.0 | 3278.9 | 0.0 | v=111000 | | | | | | |
| 33 | 5309.1 | 3229.2 | 0.0 | v=111000 | | | | | | |
| 40 | 2751.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 44 | 2791.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 53 | 2351.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 57 | 2431.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 65 | 1951.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 69 | 2031.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 77 | 2377.7 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 79 | 2391.0 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 81 | 1711.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 84 | 4680.7 | 2119.8 | 0.0 | v=111000 | | | | | | |
| 98 | 4789.3 | 4572.1 | 0.0 | v=111000 | | | | | | |
| 99 | 4777.7 | 4572.1 | 0.0 | v=111000 | | | | | | |
| 100 | 4766.1 | 4572.1 | 0.0 | v=111000 | | | | | | |
| 116 | 1166.1 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 129 | 4680.9 | 2047.1 | 0.0 | v=111000 | | | | | | |
| 147 | 5215.8 | 4572.1 | 0.0 | v=111000 | | | | | | |
| 148 | 5204.2 | 4572.1 | 0.0 | v=111000 | | | | | | |
| 149 | 5192.6 | 4572.1 | 0.0 | v=111000 | | | | | | |
| 196 | 5309.8 | 2881.0 | 0.0 | v=111000 | | | | | | |
| 209 | 1065.2 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 241 | 5309.9 | 2831.3 | 0.0 | v=111000 | | | | | | |
| 250 | 5306.3 | 4572.1 | 0.0 | v=111000 | | | | | | |
| 251 | 5310.0 | 2781.5 | 0.0 | v=111000 | | | | | | |
| 252 | 4675.6 | 4572.1 | 0.0 | v=111000 | | | | | | |
| 253 | 4679.3 | 2781.5 | 0.0 | v=111000 | | | | | | |
| 254 | 4673.8 | 5467.1 | 0.0 | v=111000 | | | | | | |
| 271 | 2404.3 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 272 | 2417.7 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 283 | 4591.9 | 5467.3 | 0.0 | v=111000 | | | | | | |
| 294 | 4510.1 | 5467.5 | 0.0 | v=111000 | | | | | | |
| 305 | 4428.2 | 5467.7 | 0.0 | v=111000 | | | | | | |
| 328 | 1671.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 329 | 1684.3 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 330 | 1697.7 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 342 | 4346.3 | 5467.9 | 0.0 | v=111000 | | | | | | |
| 353 | 4264.5 | 5468.1 | 0.0 | v=111000 | | | | | | |
| 389 | 4221.8 | 5468.2 | 0.0 | v=111000 | | | | | | |
| 400 | 4100.8 | 5468.4 | 0.0 | v=111000 | | | | | | |
| 412 | 1964.3 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 413 | 1977.7 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 414 | 1991.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 415 | 2004.3 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 416 | 2017.7 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 436 | 4018.9 | 5468.6 | 0.0 | v=111000 | | | | | | |
| 447 | 3937.0 | 5468.8 | 0.0 | v=111000 | | | | | | |
| 458 | 3855.2 | 5469.0 | 0.0 | v=111000 | | | | | | |
| 475 | 2364.3 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 476 | 2377.7 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 477 | 2391.0 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 478 | 2404.3 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 479 | 2417.7 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 494 | 3773.3 | 5469.2 | 0.0 | v=111000 | | | | | | |
| 505 | 3691.5 | 5469.4 | 0.0 | v=111000 | | | | | | |
| 524 | 2764.3 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 525 | 2777.7 | 4516.0 | 0.0 | v=111000 | | | | | | |
| 528 | 1267.1 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 541 | 3609.6 | 5469.6 | 0.0 | v=111000 | | | | | | |
| 552 | 3527.7 | 5469.8 | 0.0 | v=111000 | | | | | | |
| 570 | 2751.0 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 572 | 2791.0 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 577 | 964.2 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 578 | 2351.0 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 580 | 2431.0 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 584 | 1951.0 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 586 | 2031.0 | 5471.5 | 0.0 | v=111000 | | | | | | |
| 588 | 3445.9 | 5470.0 | 0.0 | v=111000 | | | | | | |
| 599 | 3364.0 | 5470.2 | 0.0 | v=111000 | | | | | | |

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|------|--------|--------|-----|----------|
| 610 | 3282.2 | 5470.3 | 0.0 | v=111000 |
| 618 | 1711.0 | 5471.5 | 0.0 | v=111000 |
| 646 | 3200.3 | 5470.5 | 0.0 | v=111000 |
| 657 | 3118.4 | 5470.7 | 0.0 | v=111000 |
| 693 | 3036.6 | 5470.9 | 0.0 | v=111000 |
| 704 | 2954.7 | 5471.1 | 0.0 | v=111000 |
| 730 | 2872.9 | 5471.3 | 0.0 | v=111000 |
| 751 | 4593.5 | 4516.0 | 0.0 | v=111000 |
| 762 | 4511.3 | 4516.0 | 0.0 | v=111000 |
| 798 | 4429.0 | 4516.0 | 0.0 | v=111000 |
| 809 | 4346.8 | 4516.0 | 0.0 | v=111000 |
| 845 | 4264.6 | 4516.0 | 0.0 | v=111000 |
| 856 | 4221.5 | 4515.9 | 0.0 | v=111000 |
| 867 | 4100.1 | 4516.0 | 0.0 | v=111000 |
| 876 | 2764.3 | 5471.5 | 0.0 | v=111000 |
| 882 | 2777.7 | 5471.5 | 0.0 | v=111000 |
| 883 | 2364.3 | 5471.5 | 0.0 | v=111000 |
| 884 | 1671.0 | 5471.5 | 0.0 | v=111000 |
| 885 | 1684.3 | 5471.5 | 0.0 | v=111000 |
| 886 | 1697.7 | 5471.5 | 0.0 | v=111000 |
| 891 | 762.2 | 5471.5 | 0.0 | v=111000 |
| 903 | 4017.8 | 4516.0 | 0.0 | v=111000 |
| 914 | 3935.6 | 4516.0 | 0.0 | v=111000 |
| 943 | 1964.3 | 5471.5 | 0.0 | v=111000 |
| 950 | 3853.4 | 4516.0 | 0.0 | v=111000 |
| 961 | 3771.1 | 4516.0 | 0.0 | v=111000 |
| 970 | 1977.7 | 5471.5 | 0.0 | v=111000 |
| 971 | 1991.0 | 5471.5 | 0.0 | v=111000 |
| 972 | 2004.3 | 5471.5 | 0.0 | v=111000 |
| 973 | 2017.7 | 5471.5 | 0.0 | v=111000 |
| 997 | 3688.9 | 4516.0 | 0.0 | v=111000 |
| 1008 | 3606.7 | 4516.0 | 0.0 | v=111000 |
| 1019 | 3524.4 | 4516.0 | 0.0 | v=111000 |
| 1049 | 3481.0 | 4516.0 | 0.0 | v=111000 |
| 1060 | 3359.9 | 4516.0 | 0.0 | v=111000 |
| 1071 | 3277.7 | 4516.0 | 0.0 | v=111000 |
| 1075 | 661.3 | 5322.7 | 0.0 | v=111000 |
| 1086 | 661.3 | 5248.4 | 0.0 | v=111000 |
| 1093 | 661.3 | 5471.5 | 0.0 | v=111000 |
| 1107 | 3195.5 | 4516.0 | 0.0 | v=111000 |
| 1118 | 3113.2 | 4516.0 | 0.0 | v=111000 |
| 1123 | 661.3 | 5174.0 | 0.0 | v=111000 |
| 1134 | 661.3 | 5099.6 | 0.0 | v=111000 |
| 1144 | 661.3 | 5025.2 | 0.0 | v=111000 |
| 1155 | 3113.4 | 2856.0 | 0.0 | v=111000 |
| 1166 | 3195.8 | 2856.0 | 0.0 | v=111000 |
| 1181 | 661.3 | 4950.9 | 0.0 | v=111000 |
| 1192 | 661.3 | 4876.5 | 0.0 | v=111000 |
| 1201 | 3278.2 | 2856.0 | 0.0 | v=111000 |
| 1212 | 3360.6 | 2856.0 | 0.0 | v=111000 |
| 1223 | 3481.9 | 2856.0 | 0.0 | v=111000 |
| 1230 | 661.3 | 4802.1 | 0.0 | v=111000 |
| 1241 | 661.3 | 4727.7 | 0.0 | v=111000 |
| 1258 | 3525.5 | 2856.0 | 0.0 | v=111000 |
| 1269 | 3607.9 | 2856.0 | 0.0 | v=111000 |
| 1279 | 661.3 | 4653.4 | 0.0 | v=111000 |
| 1290 | 661.3 | 4579.0 | 0.0 | v=111000 |
| 1304 | 3708.4 | 2856.0 | 0.0 | v=111000 |
| 1315 | 3772.7 | 2856.0 | 0.0 | v=111000 |
| 1326 | 3855.1 | 2856.0 | 0.0 | v=111000 |
| 1328 | 661.3 | 4516.0 | 0.0 | v=111000 |
| 1339 | 661.3 | 4430.3 | 0.0 | v=111000 |
| 1350 | 661.3 | 4355.9 | 0.0 | v=111000 |
| 1361 | 3937.5 | 2856.0 | 0.0 | v=111000 |
| 1372 | 4019.9 | 2856.0 | 0.0 | v=111000 |
| 1388 | 661.3 | 4281.5 | 0.0 | v=111000 |
| 1399 | 661.3 | 4207.1 | 0.0 | v=111000 |
| 1407 | 4102.3 | 2856.0 | 0.0 | v=111000 |
| 1418 | 4221.0 | 2856.0 | 0.0 | v=111000 |
| 1437 | 661.3 | 4132.8 | 0.0 | v=111000 |
| 1448 | 661.3 | 4058.4 | 0.0 | v=111000 |
| 1453 | 4267.2 | 2856.0 | 0.0 | v=111000 |
| 1464 | 4349.6 | 2856.0 | 0.0 | v=111000 |
| 1475 | 4432.0 | 2856.0 | 0.0 | v=111000 |
| 1486 | 661.3 | 3984.0 | 0.0 | v=111000 |
| 1500 | 661.3 | 3909.6 | 0.0 | v=111000 |
| 1507 | 4514.4 | 2856.0 | 0.0 | v=111000 |

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|------|--------|--------|-----|----------|
| 1523 | 661.3 | 3835.3 | 0.0 | v=111000 |
| 1529 | 4596.8 | 2856.0 | 0.0 | v=111000 |
| 1539 | 661.3 | 3760.9 | 0.0 | v=111000 |
| 1550 | 661.3 | 3686.5 | 0.0 | v=111000 |
| 1563 | 3708.4 | 2199.0 | 0.0 | v=111000 |
| 1572 | 3481.6 | 3296.0 | 0.0 | v=111000 |
| 1575 | 3391.4 | 3296.0 | 0.0 | v=111000 |
| 1588 | 661.3 | 3612.1 | 0.0 | v=111000 |
| 1599 | 661.3 | 3537.8 | 0.0 | v=111000 |
| 1619 | 3301.3 | 3296.0 | 0.0 | v=111000 |
| 1630 | 3211.2 | 3296.0 | 0.0 | v=111000 |
| 1637 | 661.3 | 3463.4 | 0.0 | v=111000 |
| 1648 | 661.3 | 3389.0 | 0.0 | v=111000 |
| 1665 | 3121.1 | 3296.0 | 0.0 | v=111000 |
| 1676 | 3481.8 | 2929.3 | 0.0 | v=111000 |
| 1686 | 661.3 | 3314.6 | 0.0 | v=111000 |
| 1699 | 661.3 | 3240.3 | 0.0 | v=111000 |
| 1709 | 3481.8 | 3002.7 | 0.0 | v=111000 |
| 1720 | 3481.7 | 3076.0 | 0.0 | v=111000 |
| 1731 | 3481.7 | 3149.3 | 0.0 | v=111000 |
| 1737 | 661.3 | 3165.9 | 0.0 | v=111000 |
| 1748 | 661.3 | 3091.5 | 0.0 | v=111000 |
| 1766 | 3481.6 | 3222.7 | 0.0 | v=111000 |
| 1778 | 3481.0 | 4076.0 | 0.0 | v=111000 |
| 1781 | 3481.0 | 4442.7 | 0.0 | v=111000 |
| 1786 | 661.3 | 3017.2 | 0.0 | v=111000 |
| 1797 | 661.3 | 2942.8 | 0.0 | v=111000 |
| 1808 | 661.3 | 2868.4 | 0.0 | v=111000 |
| 1816 | 3481.0 | 4369.3 | 0.0 | v=111000 |
| 1827 | 3481.0 | 4296.0 | 0.0 | v=111000 |
| 1846 | 661.3 | 2794.0 | 0.0 | v=111000 |
| 1857 | 661.3 | 2719.7 | 0.0 | v=111000 |
| 1862 | 3481.0 | 4222.7 | 0.0 | v=111000 |
| 1873 | 3481.0 | 4149.3 | 0.0 | v=111000 |
| 1895 | 661.3 | 2645.3 | 0.0 | v=111000 |
| 1906 | 661.3 | 2570.9 | 0.0 | v=111000 |
| 1918 | 3121.0 | 4076.0 | 0.0 | v=111000 |
| 1929 | 3211.0 | 4076.0 | 0.0 | v=111000 |
| 1944 | 661.3 | 2496.5 | 0.0 | v=111000 |
| 1948 | 3301.0 | 4076.0 | 0.0 | v=111000 |
| 1960 | 661.3 | 2422.2 | 0.0 | v=111000 |
| 1971 | 3391.0 | 4076.0 | 0.0 | v=111000 |
| 1975 | 4221.5 | 4589.2 | 0.0 | v=111000 |
| 1987 | 4221.5 | 4662.4 | 0.0 | v=111000 |
| 1998 | 661.3 | 2347.8 | 0.0 | v=111000 |
| 2009 | 661.3 | 2273.4 | 0.0 | v=111000 |
| 2023 | 4221.6 | 4735.7 | 0.0 | v=111000 |
| 2034 | 4221.6 | 4808.9 | 0.0 | v=111000 |
| 2048 | 661.3 | 2199.0 | 0.0 | v=111000 |
| 2059 | 661.3 | 2124.7 | 0.0 | v=111000 |
| 2070 | 4221.6 | 4882.2 | 0.0 | v=111000 |
| 2081 | 4221.6 | 4955.4 | 0.0 | v=111000 |
| 2098 | 661.3 | 2050.3 | 0.0 | v=111000 |
| 2109 | 661.3 | 1975.9 | 0.0 | v=111000 |
| 2116 | 1671.0 | 5375.9 | 0.0 | v=111000 |
| 2117 | 4221.7 | 5028.7 | 0.0 | v=111000 |
| 2128 | 4221.7 | 5101.9 | 0.0 | v=111000 |
| 2139 | 4221.7 | 5175.2 | 0.0 | v=111000 |
| 2160 | 1570.0 | 5471.5 | 0.0 | v=111000 |
| 2175 | 4221.7 | 5248.4 | 0.0 | v=111000 |
| 2186 | 4221.7 | 5321.7 | 0.0 | v=111000 |
| 2207 | 1469.1 | 5471.5 | 0.0 | v=111000 |
| 2222 | 4221.8 | 5394.9 | 0.0 | v=111000 |
| 2246 | 1368.1 | 5471.5 | 0.0 | v=111000 |
| 2256 | 1471.0 | 1901.5 | 0.0 | v=111000 |
| 2260 | 1671.0 | 4611.5 | 0.0 | v=111000 |
| 2274 | 3708.4 | 1975.9 | 0.0 | v=111000 |
| 2275 | 3708.4 | 2050.3 | 0.0 | v=111000 |
| 2295 | 3708.4 | 2124.7 | 0.0 | v=111000 |
| 2307 | 1671.0 | 4707.1 | 0.0 | v=111000 |
| 2318 | 1671.0 | 4802.6 | 0.0 | v=111000 |
| 2323 | 3708.4 | 2794.0 | 0.0 | v=111000 |
| 2334 | 3708.4 | 2719.7 | 0.0 | v=111000 |
| 2346 | 3708.4 | 2645.3 | 0.0 | v=111000 |
| 2356 | 661.3 | 5397.1 | 0.0 | v=111000 |
| 2368 | 1671.0 | 4993.7 | 0.0 | v=111000 |
| 2371 | 1471.0 | 4516.0 | 0.0 | v=111000 |

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|------|--------|--------|-----|----------|
| 2385 | 3708.4 | 2570.9 | 0.0 | v=111000 |
| 2401 | 1671.0 | 5089.3 | 0.0 | v=111000 |
| 2412 | 1671.0 | 5184.8 | 0.0 | v=111000 |
| 2421 | 1471.0 | 2856.0 | 0.0 | v=111000 |
| 2424 | 3708.4 | 2496.5 | 0.0 | v=111000 |
| 2435 | 3708.4 | 2422.2 | 0.0 | v=111000 |
| 2446 | 3708.4 | 2348.0 | 0.0 | v=111000 |
| 2451 | 2791.0 | 4993.7 | 0.0 | v=111000 |
| 2453 | 2791.0 | 4802.6 | 0.0 | v=111000 |
| 2456 | 2791.0 | 5089.3 | 0.0 | v=111000 |
| 2475 | 2791.0 | 5184.8 | 0.0 | v=111000 |
| 2499 | 2791.0 | 5375.9 | 0.0 | v=111000 |
| 2548 | 2791.0 | 4707.1 | 0.0 | v=111000 |
| 2589 | 985.2 | 4516.0 | 0.0 | v=111000 |
| 2600 | 1066.1 | 4516.0 | 0.0 | v=111000 |
| 2611 | 1147.1 | 4516.0 | 0.0 | v=111000 |
| 2622 | 1228.1 | 4516.0 | 0.0 | v=111000 |
| 2633 | 1309.1 | 4516.0 | 0.0 | v=111000 |
| 2644 | 1390.0 | 4516.0 | 0.0 | v=111000 |
| 2670 | 1471.0 | 1975.9 | 0.0 | v=111000 |
| 2685 | 1471.0 | 4430.3 | 0.0 | v=111000 |
| 2696 | 1471.0 | 4355.9 | 0.0 | v=111000 |
| 2707 | 1471.0 | 4281.5 | 0.0 | v=111000 |
| 2721 | 1471.0 | 4207.1 | 0.0 | v=111000 |
| 2733 | 1471.0 | 4132.8 | 0.0 | v=111000 |
| 2746 | 1471.0 | 4058.4 | 0.0 | v=111000 |
| 2757 | 1471.0 | 3984.0 | 0.0 | v=111000 |
| 2767 | 1471.0 | 3909.6 | 0.0 | v=111000 |
| 2778 | 1471.0 | 3835.3 | 0.0 | v=111000 |
| 2790 | 1471.0 | 3760.9 | 0.0 | v=111000 |
| 2801 | 1471.0 | 3686.5 | 0.0 | v=111000 |
| 2812 | 1471.0 | 3612.1 | 0.0 | v=111000 |
| 2823 | 1471.0 | 3537.8 | 0.0 | v=111000 |
| 2834 | 1471.0 | 3463.4 | 0.0 | v=111000 |
| 2845 | 1471.0 | 3389.0 | 0.0 | v=111000 |
| 2856 | 1471.0 | 3314.6 | 0.0 | v=111000 |
| 2867 | 1471.0 | 3240.3 | 0.0 | v=111000 |
| 2878 | 1471.0 | 3165.9 | 0.0 | v=111000 |
| 2890 | 1471.0 | 3091.5 | 0.0 | v=111000 |
| 2901 | 1471.0 | 3017.2 | 0.0 | v=111000 |
| 2912 | 1471.0 | 2942.8 | 0.0 | v=111000 |
| 2930 | 1471.0 | 2124.7 | 0.0 | v=111000 |
| 2936 | 1471.0 | 2794.0 | 0.0 | v=111000 |
| 2948 | 1390.0 | 4132.8 | 0.0 | v=111000 |
| 2959 | 1471.0 | 2645.3 | 0.0 | v=111000 |
| 2970 | 1471.0 | 2570.9 | 0.0 | v=111000 |
| 2981 | 1471.0 | 2496.5 | 0.0 | v=111000 |
| 3003 | 1471.0 | 2347.8 | 0.0 | v=111000 |
| 3014 | 1471.0 | 2273.4 | 0.0 | v=111000 |
| 3025 | 1471.0 | 2199.0 | 0.0 | v=111000 |
| 3033 | 742.2 | 1901.5 | 0.0 | v=111000 |
| 3034 | 823.2 | 1901.5 | 0.0 | v=111000 |
| 3035 | 904.2 | 1901.5 | 0.0 | v=111000 |
| 3036 | 985.2 | 1901.5 | 0.0 | v=111000 |
| 3037 | 1066.1 | 1901.5 | 0.0 | v=111000 |
| 3038 | 1147.1 | 1901.5 | 0.0 | v=111000 |
| 3039 | 1228.1 | 1901.5 | 0.0 | v=111000 |
| 3040 | 1309.1 | 1901.5 | 0.0 | v=111000 |
| 3041 | 1390.0 | 1901.5 | 0.0 | v=111000 |
| 3142 | 2280.7 | 1901.5 | 0.0 | v=111000 |
| 3153 | 1552.0 | 1901.5 | 0.0 | v=111000 |
| 3154 | 1632.9 | 1901.5 | 0.0 | v=111000 |
| 3155 | 1713.9 | 1901.5 | 0.0 | v=111000 |
| 3156 | 1794.9 | 1901.5 | 0.0 | v=111000 |
| 3157 | 1875.9 | 1901.5 | 0.0 | v=111000 |
| 3158 | 1956.8 | 1901.5 | 0.0 | v=111000 |
| 3159 | 2037.8 | 1901.5 | 0.0 | v=111000 |
| 3160 | 2118.8 | 1901.5 | 0.0 | v=111000 |
| 3161 | 2199.8 | 1901.5 | 0.0 | v=111000 |
| 3262 | 3090.5 | 1901.5 | 0.0 | v=111000 |
| 3273 | 2361.7 | 1901.5 | 0.0 | v=111000 |
| 3274 | 2442.7 | 1901.5 | 0.0 | v=111000 |
| 3275 | 2538.4 | 1901.5 | 0.0 | v=111000 |
| 3276 | 2604.6 | 1901.5 | 0.0 | v=111000 |
| 3277 | 2685.6 | 1901.5 | 0.0 | v=111000 |
| 3279 | 2847.5 | 1901.5 | 0.0 | v=111000 |
| 3280 | 2928.5 | 1901.5 | 0.0 | v=111000 |

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|------|--------|--------|-----|----------|
| 3281 | 3031.0 | 1901.5 | 0.0 | v=111000 |
| 3372 | 1844.3 | 2856.0 | 0.0 | v=111000 |
| 3373 | 1857.7 | 2856.0 | 0.0 | v=111000 |
| 3393 | 3171.4 | 1901.5 | 0.0 | v=111000 |
| 3394 | 3252.4 | 1901.5 | 0.0 | v=111000 |
| 3395 | 3333.4 | 1901.5 | 0.0 | v=111000 |
| 3396 | 3414.3 | 1901.5 | 0.0 | v=111000 |
| 3398 | 3576.3 | 1901.5 | 0.0 | v=111000 |
| 3399 | 3657.3 | 1901.5 | 0.0 | v=111000 |
| 3400 | 3708.4 | 1901.5 | 0.0 | v=111000 |
| 3401 | 3819.2 | 1901.5 | 0.0 | v=111000 |
| 3502 | 4681.2 | 1901.5 | 0.0 | v=111000 |
| 3513 | 3981.2 | 1901.5 | 0.0 | v=111000 |
| 3514 | 4062.1 | 1901.5 | 0.0 | v=111000 |
| 3515 | 4143.1 | 1901.5 | 0.0 | v=111000 |
| 3516 | 4224.1 | 1901.5 | 0.0 | v=111000 |
| 3517 | 4305.0 | 1901.5 | 0.0 | v=111000 |
| 3518 | 4386.0 | 1901.5 | 0.0 | v=111000 |
| 3519 | 4467.0 | 1901.5 | 0.0 | v=111000 |
| 3520 | 4548.0 | 1901.5 | 0.0 | v=111000 |
| 3521 | 4628.9 | 1901.5 | 0.0 | v=111000 |
| 3612 | 3031.0 | 2856.0 | 0.0 | v=111000 |
| 3631 | 2538.4 | 1975.9 | 0.0 | v=111000 |
| 3669 | 1066.1 | 4132.8 | 0.0 | v=111000 |
| 3679 | 3031.0 | 4207.1 | 0.0 | v=111000 |
| 3691 | 3031.0 | 4132.8 | 0.0 | v=111000 |
| 3704 | 3031.0 | 4076.0 | 0.0 | v=111000 |
| 3715 | 3031.0 | 3984.0 | 0.0 | v=111000 |
| 3802 | 3031.0 | 3389.0 | 0.0 | v=111000 |
| 3813 | 3031.0 | 3296.0 | 0.0 | v=111000 |
| 3824 | 3031.0 | 3240.3 | 0.0 | v=111000 |
| 3826 | 2538.4 | 2124.7 | 0.0 | v=111000 |
| 3835 | 3031.0 | 3165.9 | 0.0 | v=111000 |
| 3847 | 3031.0 | 3091.5 | 0.0 | v=111000 |
| 3869 | 3031.0 | 2942.8 | 0.0 | v=111000 |
| 3889 | 2538.4 | 2794.0 | 0.0 | v=111000 |
| 3915 | 2538.4 | 2645.3 | 0.0 | v=111000 |
| 3926 | 2538.4 | 2570.9 | 0.0 | v=111000 |
| 3937 | 2538.4 | 2496.5 | 0.0 | v=111000 |
| 3948 | 2538.4 | 2422.2 | 0.0 | v=111000 |
| 3959 | 2538.4 | 2347.8 | 0.0 | v=111000 |
| 3970 | 2538.4 | 2273.4 | 0.0 | v=111000 |
| 3981 | 2538.4 | 2199.0 | 0.0 | v=111000 |
| 3987 | 2971.0 | 4516.0 | 0.0 | v=111000 |
| 4006 | 2911.0 | 4516.0 | 0.0 | v=111000 |
| 4017 | 2851.0 | 4516.0 | 0.0 | v=111000 |
| 4027 | 1065.2 | 4950.0 | 0.0 | v=111000 |
| 4030 | 1065.2 | 5024.5 | 0.0 | v=111000 |
| 4050 | 1065.2 | 5099.0 | 0.0 | v=111000 |
| 4061 | 1065.2 | 5173.5 | 0.0 | v=111000 |
| 4072 | 1065.2 | 5248.0 | 0.0 | v=111000 |
| 4083 | 1065.2 | 5322.5 | 0.0 | v=111000 |
| 4094 | 1065.2 | 5397.0 | 0.0 | v=111000 |
| 4105 | 964.2 | 4950.2 | 0.0 | v=111000 |
| 4116 | 863.2 | 4950.4 | 0.0 | v=111000 |
| 4127 | 762.2 | 4950.7 | 0.0 | v=111000 |
| 4144 | 2948.9 | 2856.0 | 0.0 | v=111000 |
| 4155 | 2866.8 | 2856.0 | 0.0 | v=111000 |
| 4166 | 2784.7 | 2856.0 | 0.0 | v=111000 |
| 4177 | 2702.6 | 2856.0 | 0.0 | v=111000 |
| 4188 | 2620.5 | 2856.0 | 0.0 | v=111000 |
| 4199 | 2538.4 | 2856.0 | 0.0 | v=111000 |
| 4213 | 2501.2 | 2856.0 | 0.0 | v=111000 |
| 4214 | 2514.5 | 2856.0 | 0.0 | v=111000 |
| 4243 | 1484.3 | 2856.0 | 0.0 | v=111000 |
| 4244 | 2127.8 | 2856.0 | 0.0 | v=111000 |
| 4245 | 2141.2 | 2856.0 | 0.0 | v=111000 |
| 4246 | 1497.7 | 2856.0 | 0.0 | v=111000 |
| 4247 | 2154.5 | 2856.0 | 0.0 | v=111000 |
| 4265 | 2045.7 | 2856.0 | 0.0 | v=111000 |
| 4276 | 1963.6 | 2856.0 | 0.0 | v=111000 |
| 4287 | 1881.5 | 2856.0 | 0.0 | v=111000 |
| 4319 | 742.2 | 3091.5 | 0.0 | v=111000 |
| 4342 | 1390.0 | 3091.5 | 0.0 | v=111000 |
| 4364 | 1228.1 | 3091.5 | 0.0 | v=111000 |
| 4375 | 1147.1 | 3091.5 | 0.0 | v=111000 |
| 4397 | 985.2 | 3091.5 | 0.0 | v=111000 |

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|------|--------|--------|-----|----------|
| 4408 | 904.2 | 3091.5 | 0.0 | v=111000 |
| 4416 | 1831.0 | 2856.0 | 0.0 | v=111000 |
| 4419 | 1511.0 | 2856.0 | 0.0 | v=111000 |
| 4420 | 2487.8 | 2856.0 | 0.0 | v=111000 |
| 4422 | 2167.8 | 2856.0 | 0.0 | v=111000 |
| 4450 | 4675.0 | 4885.0 | 0.0 | v=111000 |
| 4451 | 4675.1 | 4812.2 | 0.0 | v=111000 |
| 4458 | 4675.3 | 4739.4 | 0.0 | v=111000 |
| 4459 | 4675.4 | 4666.7 | 0.0 | v=111000 |
| 4467 | 4675.7 | 4516.0 | 0.0 | v=111000 |
| 4468 | 4675.9 | 4448.4 | 0.0 | v=111000 |
| 4500 | 4676.0 | 4375.6 | 0.0 | v=111000 |
| 4501 | 4673.9 | 5394.3 | 0.0 | v=111000 |
| 4508 | 4674.1 | 5321.6 | 0.0 | v=111000 |
| 4509 | 4676.5 | 4157.3 | 0.0 | v=111000 |
| 4510 | 4676.6 | 4084.5 | 0.0 | v=111000 |
| 4517 | 4676.8 | 4011.8 | 0.0 | v=111000 |
| 4518 | 4676.9 | 3939.0 | 0.0 | v=111000 |
| 4546 | 4676.1 | 4335.1 | 0.0 | v=111000 |
| 4550 | 4677.1 | 3866.2 | 0.0 | v=111000 |
| 4551 | 4677.2 | 3793.5 | 0.0 | v=111000 |
| 4558 | 4674.2 | 5248.8 | 0.0 | v=111000 |
| 4559 | 4674.4 | 5176.0 | 0.0 | v=111000 |
| 4560 | 4674.5 | 5103.3 | 0.0 | v=111000 |
| 4567 | 4677.9 | 3502.4 | 0.0 | v=111000 |
| 4568 | 4678.0 | 3429.6 | 0.0 | v=111000 |
| 4582 | 3708.4 | 2273.4 | 0.0 | v=111000 |
| 4600 | 4678.2 | 3356.9 | 0.0 | v=111000 |
| 4601 | 4678.3 | 3284.1 | 0.0 | v=111000 |
| 4608 | 4678.5 | 3211.3 | 0.0 | v=111000 |
| 4609 | 4678.6 | 3138.6 | 0.0 | v=111000 |
| 4610 | 4674.7 | 5030.5 | 0.0 | v=111000 |
| 4617 | 4674.8 | 4957.7 | 0.0 | v=111000 |
| 4618 | 4679.1 | 2920.3 | 0.0 | v=111000 |
| 4650 | 4679.2 | 2856.0 | 0.0 | v=111000 |
| 4658 | 4679.5 | 2702.0 | 0.0 | v=111000 |
| 4659 | 4679.7 | 2629.2 | 0.0 | v=111000 |
| 4660 | 4679.8 | 2556.4 | 0.0 | v=111000 |
| 4667 | 4680.0 | 2483.7 | 0.0 | v=111000 |
| 4668 | 4680.1 | 2410.9 | 0.0 | v=111000 |
| 4671 | 4678.7 | 3098.0 | 0.0 | v=111000 |
| 4821 | 4679.0 | 2960.8 | 0.0 | v=111000 |
| 4932 | 5307.5 | 3969.4 | 0.0 | v=111000 |
| 4933 | 5307.6 | 3963.5 | 0.0 | v=111000 |
| 4934 | 5307.6 | 3957.7 | 0.0 | v=111000 |
| 4952 | 4681.0 | 1974.3 | 0.0 | v=111000 |
| 4958 | 5308.7 | 3396.0 | 0.0 | v=111000 |
| 4959 | 5308.7 | 3390.1 | 0.0 | v=111000 |
| 4960 | 5308.8 | 3384.3 | 0.0 | v=111000 |
| 4984 | 5308.7 | 3401.8 | 0.0 | v=111000 |
| 4985 | 5306.5 | 4460.4 | 0.0 | v=111000 |
| 4986 | 5306.6 | 4448.1 | 0.0 | v=111000 |
| 4987 | 5306.6 | 4435.8 | 0.0 | v=111000 |
| 5012 | 5307.1 | 4161.3 | 0.0 | v=111000 |
| 5013 | 5307.2 | 4149.0 | 0.0 | v=111000 |
| 5014 | 5307.2 | 4136.7 | 0.0 | v=111000 |
| 5039 | 5307.1 | 4173.5 | 0.0 | v=111000 |
| 5040 | 5306.6 | 4423.5 | 0.0 | v=111000 |
| 5041 | 5309.1 | 3216.9 | 0.0 | v=111000 |
| 5042 | 5309.1 | 3204.6 | 0.0 | v=111000 |
| 5043 | 5309.2 | 3192.4 | 0.0 | v=111000 |
| 5068 | 5309.7 | 2917.8 | 0.0 | v=111000 |
| 5069 | 5309.7 | 2905.6 | 0.0 | v=111000 |
| 5070 | 5309.8 | 2893.3 | 0.0 | v=111000 |
| 5095 | 5309.7 | 2930.1 | 0.0 | v=111000 |
| 5096 | 5309.2 | 3180.1 | 0.0 | v=111000 |
| 5098 | 4676.4 | 4197.8 | 0.0 | v=111000 |
| 5168 | 4677.8 | 3542.9 | 0.0 | v=111000 |
| 5254 | 5227.5 | 4572.1 | 0.0 | v=111000 |
| 5256 | 5219.5 | 2781.5 | 0.0 | v=111000 |
| 5258 | 5207.9 | 2781.5 | 0.0 | v=111000 |
| 5278 | 4754.5 | 4572.1 | 0.0 | v=111000 |
| 5306 | 5231.2 | 2781.5 | 0.0 | v=111000 |
| 5327 | 4758.2 | 2781.5 | 0.0 | v=111000 |
| 5348 | 5306.4 | 4522.4 | 0.0 | v=111000 |
| 5359 | 5306.5 | 4472.6 | 0.0 | v=111000 |
| 5362 | 4677.3 | 3752.9 | 0.0 | v=111000 |

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|------|--------|--------|-----|----------|
| 5377 | 4680.3 | 2348.0 | 0.0 | v=111000 |
| 5380 | 4680.4 | 2265.4 | 0.0 | v=111000 |
| 5383 | 4680.6 | 2192.6 | 0.0 | v=111000 |
| 5415 | 4801.0 | 4572.1 | 0.0 | v=111000 |
| 5416 | 5181.0 | 4572.1 | 0.0 | v=111000 |
| 5436 | 5307.2 | 4124.5 | 0.0 | v=111000 |
| 5447 | 5307.3 | 4074.7 | 0.0 | v=111000 |
| 5458 | 5307.4 | 4025.0 | 0.0 | v=111000 |
| 5469 | 5307.5 | 3975.3 | 0.0 | v=111000 |
| 5473 | 5196.3 | 2781.5 | 0.0 | v=111000 |
| 5476 | 5307.6 | 3951.8 | 0.0 | v=111000 |
| 5499 | 4793.0 | 2781.5 | 0.0 | v=111000 |
| 5500 | 4781.4 | 2781.5 | 0.0 | v=111000 |
| 5501 | 4769.8 | 2781.5 | 0.0 | v=111000 |
| 5528 | 4804.7 | 2781.5 | 0.0 | v=111000 |
| 5529 | 5184.7 | 2781.5 | 0.0 | v=111000 |
| 5601 | 5308.8 | 3378.4 | 0.0 | v=111000 |
| 5612 | 5308.9 | 3328.7 | 0.0 | v=111000 |
| 5621 | 3789.4 | 2348.0 | 0.0 | v=111000 |
| 5632 | 3870.3 | 2348.0 | 0.0 | v=111000 |
| 5643 | 3951.3 | 2348.0 | 0.0 | v=111000 |
| 5654 | 4032.3 | 2348.0 | 0.0 | v=111000 |
| 5665 | 4113.3 | 2348.0 | 0.0 | v=111000 |
| 5676 | 4194.3 | 2348.0 | 0.0 | v=111000 |
| 5687 | 4275.3 | 2348.0 | 0.0 | v=111000 |
| 5698 | 4356.3 | 2348.0 | 0.0 | v=111000 |
| 5709 | 4437.3 | 2348.0 | 0.0 | v=111000 |
| 5720 | 4518.3 | 2348.0 | 0.0 | v=111000 |
| 5731 | 4599.3 | 2348.0 | 0.0 | v=111000 |
| 5741 | 4221.3 | 4076.0 | 0.0 | v=111000 |
| 5742 | 4221.1 | 3296.0 | 0.0 | v=111000 |
| 5743 | 4221.1 | 3361.0 | 0.0 | v=111000 |
| 5744 | 4221.3 | 4011.0 | 0.0 | v=111000 |
| 5745 | 4221.4 | 4141.0 | 0.0 | v=111000 |
| 5746 | 4221.1 | 3231.0 | 0.0 | v=111000 |
| 7074 | 823.2 | 4132.8 | 0.0 | v=111000 |
| 7148 | 904.2 | 4132.8 | 0.0 | v=111000 |
| 7230 | 985.2 | 4132.8 | 0.0 | v=111000 |
| 7281 | 3539.0 | 2346.5 | 0.0 | v=111000 |
| 7361 | 3454.4 | 2345.8 | 0.0 | v=111000 |
| 7455 | 3369.7 | 2345.0 | 0.0 | v=111000 |
| 7571 | 3285.0 | 2344.3 | 0.0 | v=111000 |
| 7645 | 3200.3 | 2343.5 | 0.0 | v=111000 |
| 7734 | 3115.7 | 2342.8 | 0.0 | v=111000 |
| 7858 | 3031.0 | 2342.1 | 0.0 | v=111000 |
| 7924 | 3031.0 | 2268.6 | 0.0 | v=111000 |
| 7994 | 3031.0 | 2195.2 | 0.0 | v=111000 |
| 8202 | 3031.0 | 2121.8 | 0.0 | v=111000 |
| 8253 | 3031.0 | 2048.4 | 0.0 | v=111000 |
| 8325 | 3031.0 | 1975.0 | 0.0 | v=111000 |
| 8420 | 3623.7 | 2347.3 | 0.0 | v=111000 |

MODELLAZIONE DELLA STRUTTURA: ELEMENTI SOLAIO-PANNELLO

LEGENDA TABELLA DATI SOLAI-PANNELLI

Il programma utilizza per la modellazione elementi a tre o più nodi denominati in generale solaio o pannello.

Ogni elemento solaio-pannello è individuato da una poligonale di nodi 1,2, ..., N.

L'elemento solaio è utilizzato in primo luogo per la modellazione dei carichi agenti sugli elementi strutturali. In secondo luogo può essere utilizzato per la corretta ripartizione delle forze orizzontali agenti nel proprio piano. L'elemento balcone è derivato dall'elemento solaio.

I carichi agenti sugli elementi solaio, raccolti in un archivio, sono direttamente assegnati agli elementi utilizzando le informazioni raccolte nell'archivio (es. i coefficienti combinatori). La tabella seguente riporta i dati utilizzati per la definizione dei carichi e delle masse.

L'elemento pannello è utilizzato solo per l'applicazione dei carichi, quali pesi delle tamponature o spinte dovute al vento o terre. In questo caso i carichi sono applicati in analogia agli altri elementi strutturali (si veda il cap. SCHEMATIZZAZIONE DEI CASI DI CARICO).

| | |
|-----------------|--|
| Id.Arch. | Identificativo dell' archivio |
| Tipo | Tipo di carico Variab. Carico variabile generico Var. rid. Carico variabile generico con riduzione in funzione dell' area (c.5.5. ...) Neve Carico di neve |
| G1k | carico permanente (comprensivo del peso proprio) |
| G2k | carico permanente non strutturale e non compiutamente definito |
| Qk | carico variabile |
| Fatt. A | fattore di riduzione del carico variabile (0.5 o 0.75) per tipo "Var.rid." |
| S sis. | fattore di riduzione del carico variabile per la definizione delle masse sismiche per D.M. 96 (vedi NOTA sul capitolo "normativa di riferimento") |
| Psi 0 | Coefficiente combinatorio dei valori caratteristici delle azioni variabili: per valore raro |
| Psi 1 | Coefficiente combinatorio dei valori caratteristici delle azioni variabili: per valore frequente |
| Psi 2 | Coefficiente combinatorio dei valori caratteristici delle azioni variabili: per valore quasi permanente |
| Psi S 2 | Coefficiente di combinazione che fornisce il valore quasi-permanente dell'azione variabile: per la definizione delle masse sismiche |
| Fatt. Fi | Coefficiente di correlazione dei carichi per edifici |

Ogni elemento è caratterizzato da un insieme di proprietà riportate in tabella che ne completano la modellazione. In particolare per ogni elemento viene indicato in tabella:

| | |
|-----------------|--|
| Elem | numero dell'elemento |
| Tipo | codice di comportamento S elemento utilizzato solo per scarico C elemento utilizzato per scarico e per modellazione piano rigido P elemento utilizzato come pannello M scarico monodirezionale B scarico bidirezionale |
| Id.Arch. | Identificativo dell' archivio |
| Mat | codice del materiale assegnato all'elemento |
| Spessore | spessore dell'elemento (costante) |
| Orditura | angolo (rispetto all'asse X) della direzione dei travetti principali |
| Gk | carico permanente solaio (comprensivo del peso proprio) |
| Qk | carico variabile solaio |
| Nodi | numero dei nodi che definiscono l'elemento (5 per riga) |

Nel caso in cui si sia proceduto alla progettazione dei solai con le tensioni ammissibili vengono riportate le massime tensioni nell'elemento (massima compressione nel calcestruzzo, massima tensione nell'acciaio, massima tensione tangenziale); nel caso in cui si sia proceduto alla progettazione con il metodo degli stati limite vengono riportati il rapporto x/d e le verifiche per sollecitazioni proporzionali nonché le verifiche in esercizio.

In particolare i simboli utilizzati in tabella assumono il seguente significato:

| | |
|---|--|
| Elem. | numero identificativo dell'elemento |
| Stato | Codici di verifica relativi alle tensioni normali e alle tensioni tangenziali |
| Note | Viene riportato il codice relativo alla sezione(s) e relativo al materiale(m); |
| Pos. | Ascissa del punto di verifica |
| F ist, F infi | Frecce istantanee e a tempo infinito |
| Momento | Momento flettente |
| Taglio | Sollecitazione di taglio |
| Af inf. | Area di armatura longitudinale posta all'intradosso della trave |
| Af sup. | Area di armatura longitudinale posta all'estradosso della trave |
| AfV | Area dell'armatura atta ad assorbire le azioni di taglio |
| Beff | Base della sezione di cls per l'assorbimento del taglio |
| simboli utilizzati con il metodo delle tensioni ammissibili: | |

| | |
|---|---|
| sc max | Massima tensione di compressione del calcestruzzo |
| sf max | Massima tensione nell'acciaio |
| tau max | Massima tensione tangenziale nel cls |
| simboli utilizzati con il metodo degli stati limite: | |
| x/d | rapporto tra posizione dell'asse neutro e altezza utile alla rottura della sezione (per sola flessione) |
| verif. | rapporto Sd/Su con sollecitazioni ultime proporzionali: valore minore o uguale a 1 per verifica positiva |
| Verif.V | rapporto Sd/Su con sollecitazioni taglianti proporzionali: valore minore o uguale a 1 per verifica positiva |
| rRfck | rapporto tra la massima compressione nel calcestruzzo e la tensione fck in combinazioni rare [normalizzato a 1] |
| rFfck | rapporto tra la massima compressione nel calcestruzzo e la tensione fck in combinazioni frequenti [normalizzato a 1] |
| rPfck | rapporto tra la massima compressione nel calcestruzzo e la tensione fck in combinazioni quasi permanenti [normalizzato a 1] |
| rRfyk | rapporto tra la massima tensione nell'acciaio e la tensione fyk in combinazioni frequenti [normalizzato a 1] |
| rFyk | rapporto tra la massima tensione nell'acciaio e la tensione fyk in combinazioni rare [normalizzato a 1] |
| rPfyk | rapporto tra la massima tensione nell'acciaio e la tensione fyk in combinazioni quasi permanenti [normalizzato a 1] |
| wR | apertura caratteristica delle fessure in combinazioni rare [mm] |
| wF | apertura caratteristica delle fessure in combinazioni frequenti [mm] |
| wP | apertura caratteristica delle fessure in combinazioni quasi permanenti [mm] |

Nel caso in cui si sia proceduto alla verifica delle tamponature secondo il D.M. 14.01.2008 - §7.2.3 viene riportata una tabella riassuntiva delle verifiche degli elementi pannello. La verifica confronta i momenti sollecitanti indotti dal sisma con i momenti resistenti, secondo tre ipotesi, due basate sulla resistenza a pressoflessione della tamponatura ed una basata sul cinetismo a seguito della formazione di tre cerniere plastiche sulla tamponatura (rif. Ufficio di Vigilanza sulle Costruzioni, Provincia di Terni).

Qualora la tamponatura sia di tipo antiespulsione (nelle due possibili varianti ordinaria o armata) viene condotta una verifica con meccanismo ad arco con degrado di resistenza. La verifica confronta le pressioni sollecitanti indotte dal sisma con le pressioni resistenti che la tamponatura sviluppa attraverso il meccanismo ad arco. La verifica considera anche il degrado di resistenza dovuto al danneggiamento nel piano della tamponatura.

Per quest'ultima tamponatura sono disponibili, in funzione del materiale impiegato (materiale [52] o materiale [53]):

- **Tamponatura Antiespulsione ordinaria Poroton® Cis Edil** sp.30 cm; con metodo di verifica per meccanismo ad arco con degrado di resistenza, sviluppato attraverso i risultati di un progetto di ricerca sperimentale condotto dall'Università degli Studi di Padova. Utilizzabile per il materiale [52].
- **Tamponatura Antiespulsione armata Poroton® Cis Edil** sp.30 cm; con metodo di verifica per meccanismo ad arco con degrado di resistenza, sviluppato attraverso i risultati di un progetto di ricerca sperimentale condotto dall'Università degli Studi di Padova. Utilizzabile per il materiale [53].

La verifica è stata calibrata sulla base di prove sperimentali sul sistema di Tamponatura Antiespulsione anche in presenza di aperture. (rif. Rapporti di Prova redatti dal Dipartimento ICEA - Università degli Studi di Padova di test sperimentali condotti sul sistema Tamponatura Antiespulsione di Cis Edil)

In particolare i simboli utilizzati in tabella assumono il seguente significato:

| | |
|--------------------|--|
| Elem. | Numero identificativo dell'elemento |
| Stato | Codice di verifica |
| Ver. c.c. | Verifica nell'ipotesi di trave appoggiata con carico concentrato in mezzera |
| Ver. c.d. | Verifica nell'ipotesi di trave appoggiata con carico distribuito |
| Ver. c.cin. | Verifica nell'ipotesi di cinetismo con formazione di cerniere plastiche in appoggio e mezzera |
| Ver. CIS | Rapporto pa/pr (valore minore o uguale a 1 per verifica positiva) |
| Z | Quota del baricentro dell'elemento |
| T1 | Periodo proprio dell'edificio nella direzione di interesse (ortogonale al pannello) |
| Ta | Periodo proprio della parete |
| Sa | Accelerazione massima, adimensionalizzata allo SLV |
| pa | Pressione sulla parete causata dall'azione sismica |
| pr | Pressione resistente del meccanismo ad arco |
| Drift | Spostamento relativo interpiano allo SLV valutato secondo il D.M. 14.01.2008 - § 7.3.3.3 |
| Beta a | Coef. riduttivo per tener conto del danneggiamento del piano dipendente dallo spostamento, ottenuto sperimentalmente |

Con riferimento al **Documento di Affidabilità "Test di validazione del software di calcolo PRO_SAP e dei moduli aggiuntivi PRO_SAP Modulo Geotecnico, PRO_CAD nodi acciaio e PRO_MST"** - versione Maggio 2011, disponibile per il download sul sito **www.2si.it**, si segnalano i seguenti esempi applicativi:

| Test N° | Titolo |
|------------|---|
| 14 | ANALISI DEI CARICHI PER UN SOLAIO DI COPERTURA |
| 15 | EFFETTI DELLO SPESSORE SULLA RIGIDEZZA DEI SOLAI |
| 16 | SOLAIO: CONFRONTO FRA RIGIDO E DEFORMABILE |
| 17 | SOLAIO: MISTO LEGNO-CALCESTRUZZO |
| 28 | FRECCIA DI SOLAI IN C.A. |
| 119 | PROGETTO E VERIFICA DI SOLAI IN MATERIALE XLAM |

| ID Arch. | Tipo | G1k daN/cm2 | G2k daN/cm2 | Qk daN/cm2 | Fatt. A | s sis. | Psi 0 | Psi 1 | Psi 2 | Psi S 2 | Fatt. Fi |
|----------|---------|----------------|----------------|---------------|---------|--------|-------|-------|-------|---------|----------|
| 1 | Variab. | 4.50e-02 | 1.00e-02 | 2.00e-02 | | 1.00 | 0.70 | 0.70 | 0.60 | 0.60 | 1.00 |
| 2 | Variab. | 6.00e-02 | 2.00e-02 | 4.00e-02 | | 1.00 | 0.70 | 0.70 | 0.60 | 0.60 | 1.00 |
| 3 | Neve | 1.00e-02 | 8.00e-03 | 1.20e-02 | | 1.00 | 0.50 | 0.20 | 0.0 | 0.0 | 1.00 |
| 6 | Neve | 8.00e-03 | 1.00e-02 | 1.20e-02 | | 1.00 | 0.50 | 0.20 | 0.0 | 0.0 | 1.00 |

| Elem. | Tipo | ID Arch. | Mat. | Spessore | Orditura | G1k daN/cm2 | G2k daN/cm2 | Qk daN/cm2 | Nodo 1/6.. | Nodo 2/7.. | Nodo 3/8.. | Nodo.. | Nodo.. |
|-------|------|----------|------|----------|----------|----------------|----------------|---------------|------------|------------|------------|--------|--------|
| 1 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 4208 | 3969 | 7919 | 3614 | |
| 2 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 8173 | 8167 | 8161 | 8155 | 8149 |
| | | | | | | | | | 8552 | 8554 | 8556 | 8558 | 8560 |
| | | | | | | | | | 8562 | 8564 | 7460 | 7424 | 7413 |
| | | | | | | | | | 7377 | 7366 | 7355 | 8182 | 8188 |
| | | | | | | | | | 8194 | 8271 | 8270 | | |
| 3 | CB | 1 | m=44 | 7.0 | 0.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 8138 | 8132 | 8126 | 8120 | 8114 |
| | | | | | | | | | 8530 | 8532 | 8534 | 8536 | 8538 |
| | | | | | | | | | 8540 | 8542 | 8544 | 8546 | 8548 |
| | | | | | | | | | 8550 | 8552 | 8149 | 8155 | 8161 |
| | | | | | | | | | 8167 | 8173 | 8270 | 8260 | 5966 |
| | | | | | | | | | 6071 | 5971 | 5976 | 5978 | 5980 |
| | | | | | | | | | 5982 | 8301 | 8300 | | |
| 4 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 6758 | 6747 | 6715 | 6693 | 6658 |
| | | | | | | | | | 8518 | 8520 | 8522 | 8524 | 8526 |
| | | | | | | | | | 8528 | 8530 | 8114 | 8120 | 8126 |
| | | | | | | | | | 8132 | 8138 | 8300 | 8290 | 8037 |
| | | | | | | | | | 8027 | 8011 | 8002 | 7991 | 6793 |
| 5 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 8436 | 8425 | 8414 | 8403 | 8392 |
| | | | | | | | | | 8381 | 8370 | 8359 | 8348 | 8337 |
| | | | | | | | | | 8326 | 8504 | 8506 | 8508 | 8510 |
| | | | | | | | | | 8512 | 8514 | 7971 | 8518 | 6658 |
| | | | | | | | | | 6693 | 6715 | 6747 | 6758 | 6793 |
| | | | | | | | | | 6804 | 6815 | 6850 | 6861 | 6896 |
| | | | | | | | | | 6907 | 6391 | 6236 | 7854 | 6249 |
| | | | | | | | | | 7969 | 6849 | 7075 | | |
| 6 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 7694 | 7743 | 7247 | 7248 | 7249 |
| | | | | | | | | | 7250 | 7258 | 7259 | 7260 | 7269 |
| | | | | | | | | | 7270 | 7306 | 8493 | 8496 | 8498 |
| | | | | | | | | | 8500 | 8502 | 8504 | 8326 | 8337 |
| | | | | | | | | | 8348 | 8359 | 8370 | 8381 | 8392 |
| | | | | | | | | | 8403 | 8414 | 8425 | 8436 | 7075 |
| | | | | | | | | | 7692 | | | | |
| 7 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 5985 | 5913 | 5909 | 7244 | 7633 |
| | | | | | | | | | 7494 | 5925 | 8270 | 8271 | 8194 |
| | | | | | | | | | 8188 | 8182 | 7355 | 7319 | 7308 |
| | | | | | | | | | 7272 | 7261 | 7225 | 7214 | 7203 |
| | | | | | | | | | 7173 | 7162 | 6406 | 6395 | 6384 |
| | | | | | | | | | 6349 | 6338 | 6304 | | |
| 8 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 6293 | 6282 | 6251 | 6649 | 6304 |
| | | | | | | | | | 6338 | 6349 | 6384 | 6395 | 6406 |
| | | | | | | | | | 7162 | 7151 | 7115 | 7104 | 7068 |
| | | | | | | | | | 8097 | 6802 | 6757 | 6707 | 6669 |
| | | | | | | | | | 6620 | 6572 | | | |
| 9 | CB | 1 | m=44 | 7.0 | 0.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 6546 | 6557 | 6592 | 6603 | 6604 |
| | | | | | | | | | 6066 | 6064 | 6060 | 6058 | 6044 |
| | | | | | | | | | 6046 | 6048 | 6304 | 6649 | 6251 |
| | | | | | | | | | 6282 | 6293 | 6572 | 6533 | 6520 |
| | | | | | | | | | 6510 | 6499 | 6488 | 6482 | 6471 |

| | | | | | | | | | | | | | |
|----|----|---|------|------|------|----------|----------|----------|-------|-------|-------|-------|-------|
| 10 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 6454 | 6423 | 6375 | | |
| | | | | | | | | | 7056 | 7021 | 7010 | 6999 | 6964 |
| | | | | | | | | | 6527 | 6502 | 6491 | 6456 | 6445 |
| | | | | | | | | | 6604 | 6603 | 6592 | 6557 | 6546 |
| | | | | | | | | | 6375 | 6346 | 6292 | 6259 | 6222 |
| 11 | CB | 1 | m=51 | 7.0 | 0.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 6173 | 6939 | | | |
| | | | | | | | | | 6376 | 8102 | 6846 | 6463 | |
| | | | | | | | | | 8246 | 6130 | 8257 | 6242 | 7186 |
| | | | | | | | | | 6277 | 7038 | 6131 | 8057 | 8014 |
| | | | | | | | | | 7647 | 6619 | 6879 | 7160 | 7502 |
| 12 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 7821 | 8333 | 8334 | | |
| | | | | | | | | | 6604 | 6445 | 6456 | 6491 | 6502 |
| | | | | | | | | | 6527 | 6964 | 6953 | 6918 | 6907 |
| | | | | | | | | | 6896 | 6861 | 6850 | 6815 | 6804 |
| | | | | | | | | | 6793 | 7991 | 8002 | 8011 | 8027 |
| 13 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 8037 | 8290 | 8300 | 5906 | 5904 |
| | | | | | | | | | 5902 | 5916 | 5918 | 5920 | 5922 |
| | | | | | | | | | 6698 | 6915 | 6734 | 6153 | 8246 |
| | | | | | | | | | 8334 | 6276 | 8226 | 8100 | 7030 |
| | | | | | | | | | 6992 | 6981 | 6943 | 6932 | 6921 |
| 14 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 6883 | | | | |
| | | | | | | | | | 6463 | 6846 | 8088 | 6774 | |
| | | | | | | | | | 10931 | 10771 | 10740 | 10645 | 10644 |
| | | | | | | | | | 10643 | 10641 | 10114 | 10121 | 10191 |
| | | | | | | | | | 10161 | 9344 | | | |
| 15 | CB | 1 | m=51 | 7.0 | 0.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 7910 | 7911 | 7941 | 7942 | 7943 |
| | | | | | | | | | 7955 | 7957 | 7958 | 7978 | 6123 |
| | | | | | | | | | 7231 | 7236 | 7237 | 7239 | 7541 |
| | | | | | | | | | 7542 | 7543 | 7545 | 7546 | 7594 |
| | | | | | | | | | 8038 | 8056 | 8059 | 8061 | 8062 |
| 16 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 8063 | 8067 | 8069 | 8073 | 8319 |
| | | | | | | | | | 7667 | 7668 | 7669 | 7678 | 7679 |
| | | | | | | | | | 7680 | 7691 | 7692 | 7075 | 6849 |
| | | | | | | | | | 7969 | 6249 | 7854 | 6236 | 6391 |
| | | | | | | | | | 6907 | 6918 | 6953 | 6964 | 6999 |
| 17 | CM | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 7010 | 7021 | 7056 | 6939 | 7653 |
| | | | | | | | | | 7649 | 7551 | 2558 | 8378 | 8286 |
| | | | | | | | | | 7878 | 7749 | 7697 | 7539 | 7338 |
| | | | | | | | | | 7289 | 7228 | 8236 | 7596 | 8268 |
| | | | | | | | | | 8102 | 6376 | 6365 | 6327 | 6316 |
| 18 | CM | 2 | m=44 | 10.0 | 0.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 6278 | 6262 | 6224 | 6213 | 6174 |
| | | | | | | | | | 6163 | 6124 | 6113 | 7861 | 6934 |
| | | | | | | | | | 3050 | 3049 | 3048 | 3047 | 3046 |
| | | | | | | | | | 3045 | 3044 | 3043 | 3042 | 2257 |
| | | | | | | | | | 2669 | 2666 | 2665 | 2869 | 3024 |
| 19 | CM | 2 | m=44 | 10.0 | 0.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 3013 | 3002 | 2991 | 2980 | 2969 |
| | | | | | | | | | 2958 | 2946 | 3 | 2922 | 2911 |
| | | | | | | | | | 2900 | 4351 | 4362 | 4373 | 4384 |
| | | | | | | | | | 4395 | 4406 | 4230 | 4311 | 4334 |
| | | | | | | | | | 1757 | 1795 | 1806 | 1844 | 1855 |
| 20 | CM | 2 | m=44 | 10.0 | 0.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 1893 | 1904 | 1942 | 1958 | 1996 |
| | | | | | | | | | 2007 | 2046 | 2057 | 2096 | 2107 |
| | | | | | | | | | 2146 | 1286 | | | |
| | | | | | | | | | 4334 | 4311 | 4230 | 4406 | 4395 |
| | | | | | | | | | 4384 | 4373 | 4362 | 4351 | 2900 |
| 21 | CB | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 2889 | 2877 | 2866 | 2855 | 2844 |
| | | | | | | | | | 2833 | 2822 | 2811 | 2800 | 2789 |
| | | | | | | | | | 2777 | 2766 | 2756 | 2745 | 2732 |
| | | | | | | | | | 2720 | 2706 | 2695 | 2422 | 1034 |
| | | | | | | | | | 2642 | 2631 | 2620 | 2609 | 2598 |
| 22 | CM | 2 | m=44 | 10.0 | 0.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 2587 | 2576 | 2565 | 1337 | 1348 |
| | | | | | | | | | 1386 | 1397 | 1435 | 1446 | 1484 |
| | | | | | | | | | 1498 | 1521 | 1537 | 1548 | 1586 |
| | | | | | | | | | 1597 | 1635 | 1646 | 1684 | 1697 |
| | | | | | | | | | 1735 | 1746 | 1757 | | |
| 23 | CM | 2 | m=44 | 10.0 | 0.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 2565 | 2576 | 2587 | 2598 | 2609 |
| | | | | | | | | | 2620 | 2631 | 2642 | 1034 | 2422 |
| | | | | | | | | | 4142 | 36 | 2305 | 2316 | 2355 |
| | | | | | | | | | 2366 | 2399 | 2410 | 2258 | 2065 |
| | | | | | | | | | 2370 | 568 | 2205 | 2216 | 2255 |
| 24 | CB | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 87 | 164 | 573 | 4103 | 4092 |
| | | | | | | | | | 4081 | 4070 | 4059 | 4048 | 4047 |
| | | | | | | | | | 4114 | 4125 | 6 | 1190 | 1228 |
| | | | | | | | | | 1239 | 1277 | 1288 | 1299 | 1337 |
| | | | | | | | | | 1164 | 1199 | 1210 | 1221 | 1256 |
| 25 | CB | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 1693 | 1718 | 1729 | 1764 | 1775 |
| | | | | | | | | | 1616 | 1617 | 1628 | 1663 | 1674 |

| | | | | | | | | | | | | | |
|----|----|---|------|------|------|----------|----------|----------|-------|-------|-------|-------|-------|
| | | | | | | | | | 3823 | 3834 | 3846 | 3857 | 3868 |
| | | | | | | | | | 3879 | 3614 | | | |
| 22 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 2257 | 3288 | 4208 | 3 | |
| 23 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 267 | 269 | 34 | 30 | 220 |
| | | | | | | | | | 214 | 212 | 24 | 155 | 124 |
| | | | | | | | | | 122 | 18 | 2547 | 2450 | 2526 |
| | | | | | | | | | 2525 | 2474 | 2473 | 2485 | 2498 |
| | | | | | | | | | 2509 | 533 | 671 | 673 | 679 |
| | | | | | | | | | 562 | 766 | 768 | 774 | 565 |
| | | | | | | | | | 567 | 824 | 822 | 568 | 2370 |
| | | | | | | | | | 2065 | 2258 | 2410 | 2399 | 2366 |
| | | | | | | | | | 2355 | 2316 | 2305 | 36 | |
| 24 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 3287 | 3286 | 3285 | 3284 | 3283 |
| | | | | | | | | | 3282 | 8401 | 8312 | 8243 | 8086 |
| | | | | | | | | | 7982 | 7919 | 4926 | 4904 | 4924 |
| | | | | | | | | | 4920 | 4916 | 3969 | 3980 | 3815 |
| | | | | | | | | | 3627 | 3628 | 3630 | 3288 | |
| 25 | CM | 2 | m=44 | 10.0 | 0.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 245 | 244 | 246 | 247 | |
| 26 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 4026 | 4015 | 4004 | 12 | 1152 |
| | | | | | | | | | 1116 | 1105 | 1069 | 1058 | 1047 |
| | | | | | | | | | 1017 | 1006 | 995 | 959 | 948 |
| | | | | | | | | | 912 | 901 | 865 | 1985 | 2021 |
| | | | | | | | | | 2032 | 2068 | 2079 | 2090 | 2126 |
| | | | | | | | | | 2137 | 2173 | 2184 | 2220 | 2231 |
| | | | | | | | | | 398 | 434 | 445 | 456 | 492 |
| | | | | | | | | | 503 | 539 | 550 | 561 | 597 |
| | | | | | | | | | 608 | 644 | 655 | 691 | 702 |
| | | | | | | | | | 713 | 748 | 533 | 2509 | 2498 |
| | | | | | | | | | 2485 | 2473 | 2474 | 2525 | 2526 |
| | | | | | | | | | 2450 | 2547 | 18 | | |
| 27 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 3263 | 3410 | 3409 | 3408 | 3407 |
| | | | | | | | | | 3406 | 3405 | 3404 | 3403 | 2273 |
| | | | | | | | | | 2271 | 2270 | 2294 | 1153 | 4532 |
| | | | | | | | | | 8593 | 7344 | 7437 | 7527 | 7631 |
| | | | | | | | | | 7715 | 7828 | 7919 | 7982 | 8086 |
| | | | | | | | | | 8243 | 8312 | 8401 | 3282 | |
| 28 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 1313 | 4532 | 3862 | 2806 | |
| 29 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 4532 | 3403 | 3503 | 3862 | |
| 30 | CM | 2 | m=44 | 10.0 | 90.0 | 6.00e-02 | 2.00e-02 | 4.00e-02 | 248 | 398 | 865 | 708 | |
| 31 | CB | 3 | m=42 | 5.0 | 0.0 | 1.00e-02 | 8.00e-03 | 1.20e-02 | 7971 | 8628 | 8609 | 7972 | |
| 32 | CM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9132 | 10093 | 9321 | 9627 | |
| 33 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 8900 | 10387 | 9344 | 10161 | |
| 34 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 8905 | 8900 | 10161 | 10191 | |
| 35 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10658 | 8897 | 8889 | 8891 | |
| 36 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9505 | 10866 | 8897 | 10658 | |
| 37 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9118 | 9075 | 10866 | 9505 | |
| 38 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10917 | 10921 | 10767 | 9075 | |
| 39 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9749 | 10917 | 9075 | 9118 | |
| 40 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9811 | 10620 | 10921 | 10917 | |
| 41 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9838 | 9811 | 10917 | 9749 | |
| 42 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9703 | 9743 | 9838 | 9749 | |
| 43 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9118 | 9526 | 9703 | 9749 | |
| 44 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9505 | 9893 | 9526 | 9118 | |
| 45 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9893 | 9505 | 10658 | | |
| 46 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10301 | 9918 | 10207 | | |
| 47 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10048 | 8895 | 8905 | 10082 | |
| 48 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 8895 | 9502 | 10387 | 8905 | |
| 49 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 8888 | 9207 | 9502 | 8895 | |
| 50 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 8891 | 8976 | 9207 | 8888 | |
| 51 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10866 | 8930 | 9004 | 8897 | |
| 52 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9075 | 10767 | 8930 | 10866 | |
| 53 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9979 | 10908 | 9779 | | |
| 54 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9871 | 9548 | 10832 | 9918 | |
| 55 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9743 | 9548 | 9871 | 9838 | |
| 56 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9871 | 10453 | 10620 | 9838 | |
| 57 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10453 | 9871 | 9918 | 10301 | |
| 58 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9893 | 10658 | 8891 | 10676 | |
| 59 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10676 | 8891 | 8888 | 10102 | |
| 60 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10102 | 8888 | 8895 | 10048 | |
| 61 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9779 | 9224 | 9183 | 9160 | 9125 |
| | | | | | | | | | 9978 | 9979 | | | |
| 62 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9979 | 9978 | 9125 | 9113 | 9073 |
| | | | | | | | | | 9060 | 9047 | 9009 | 8992 | 8944 |
| | | | | | | | | | 9994 | 10004 | | | |
| 63 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10004 | 9994 | 8944 | 8929 | 8915 |
| | | | | | | | | | 8983 | 9411 | 10732 | 10660 | 10026 |
| | | | | | | | | | 10033 | | | | |

| | | | | | | | | | | | | | |
|----|----|---|------|-----|------|----------|----------|----------|------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 64 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10033 9744 10077 | 10026 10516 10095 | 10660 10520 | 10585 10634 | 10100 10539 |
| 65 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10095 10291 10121 | 10077 10418 | 10539 10474 | 9935 10647 | 10044 10118 |
| 66 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10121 9493 10191 | 10118 9379 | 10647 10574 | 10874 10063 | 10927 10181 |
| 67 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10191 8905 9918 | 10181 9670 | 10063 10207 | 10082 | 8901 |
| 68 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9918 | 10832 | 9670 | | |
| 69 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9918 | 10832 | 9670 | | |
| 70 | SM | 6 | m=44 | 1.0 | 90.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 8897 | 9004 | 8976 | 8889 | |
| 71 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 9692 9967 | 10318 9715 | 9778 | 10908 | 9979 |
| 72 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10424 9724 9993 | 10317 9715 | 10264 9967 | 10106 9979 | 10091 10004 |
| 73 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10500 10478 10022 | 10491 10477 | 10490 9993 | 10489 10004 | 10479 10033 |
| 74 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10137 10502 10052 | 10131 10501 | 10129 10022 | 10125 10033 | 10007 10095 |
| 75 | SM | 6 | m=44 | 1.0 | 0.0 | 8.00e-03 | 1.00e-02 | 1.20e-02 | 10640 10139 10114 | 10578 10138 10641 | 10169 10052 | 10144 10095 | 10141 10121 |
| 76 | CM | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 6883 | 6774 | 6487 | 6153 | |
| 77 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 7030 | 8334 | 7647 | 7175 | |
| 78 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 6277 8487 7294 8207 | 8085 6240 5991 7038 | 6892 8097 7655 | 6554 7518 7736 | 5975 7687 7652 |
| 79 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 8097 | 7173 | 7659 | 7518 | |
| 80 | CB | 1 | m=44 | 7.0 | 90.0 | 4.50e-02 | 1.00e-02 | 2.00e-02 | 7173 8564 7822 | 7214 8572 7728 | 7272 8580 7659 | 7355 7970 | 7413 7880 |

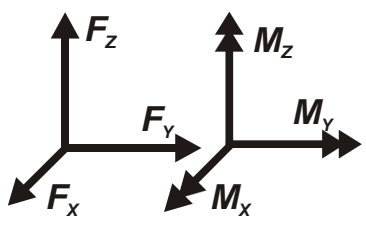
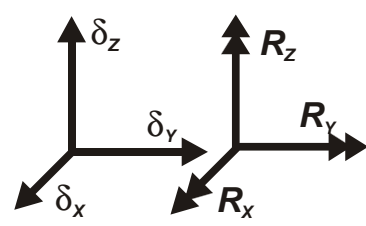
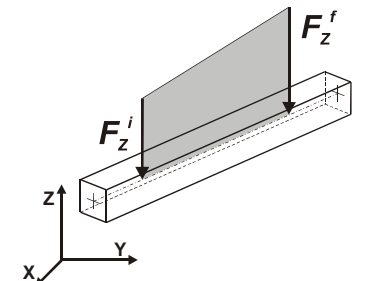
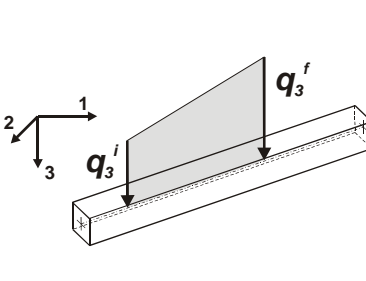
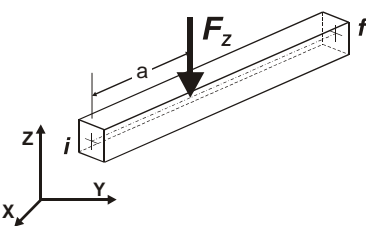
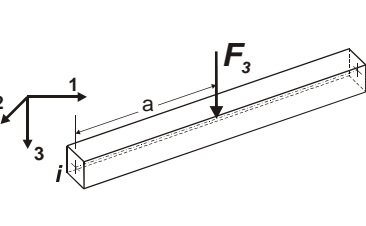
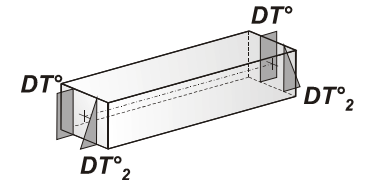
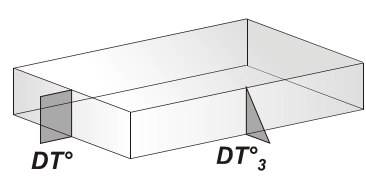
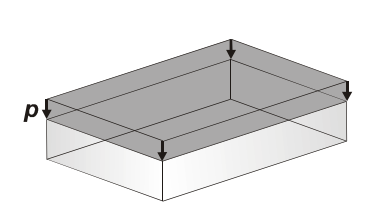
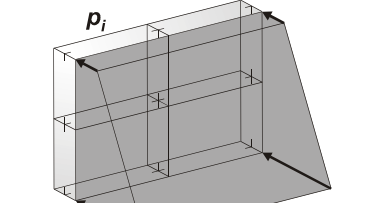
MODELLAZIONE DELLE AZIONI

LEGENDA TABELLA DATI AZIONI

Il programma consente l'uso di diverse tipologie di carico (azioni). Le azioni utilizzate nella modellazione sono individuate da una sigla identificativa ed un codice numerico (gli elementi strutturali richiamano quest'ultimo nella propria descrizione). Per ogni azione applicata alla struttura viene di riportato il codice, il tipo e la sigla identificativa. Le tabelle successive dettagliano i valori caratteristici di ogni azione in relazione al tipo. Le tabelle riportano infatti i seguenti dati in relazione al tipo:

| | |
|-----------|--|
| 1 | carico concentrato nodale 6 dati (forza F_x , F_y , F_z , momento M_x , M_y , M_z) |
| 2 | spostamento nodale impresso 6 dati (spostamento T_x, T_y, T_z , rotazione R_x, R_y, R_z) |
| 3 | carico distribuito globale su elemento tipo trave 7 dati ($f_x, f_y, f_z, m_x, m_y, m_z$, ascissa di inizio carico) 7 dati ($f_x, f_y, f_z, m_x, m_y, m_z$, ascissa di fine carico) |
| 4 | carico distribuito locale su elemento tipo trave 7 dati ($f_1, f_2, f_3, m_1, m_2, m_3$, ascissa di inizio carico) 7 dati ($f_1, f_2, f_3, m_1, m_2, m_3$, ascissa di fine carico) |
| 5 | carico concentrato globale su elemento tipo trave 7 dati ($F_x, F_y, F_z, M_x, M_y, M_z$, ascissa di carico) |
| 6 | carico concentrato locale su elemento tipo trave 7 dati ($F_1, F_2, F_3, M_1, M_2, M_3$, ascissa di carico) |
| 7 | variazione termica applicata ad elemento tipo trave 7 dati (variazioni termiche: uniforme, media e differenza in altezza e larghezza al nodo iniziale e finale) |
| 8 | carico di pressione uniforme su elemento tipo piastra 1 dato (pressione) |
| 9 | carico di pressione variabile su elemento tipo piastra 4 dati (pressione, quota, pressione, quota) |
| 10 | variazione termica applicata ad elemento tipo piastra 2 dati (variazioni termiche: media e differenza nello spessore) |
| 11 | carico variabile generale su elementi tipo trave e piastra 1 dato descrizione della tipologia 4 dati per segmento (posizione, valore, posizione, valore) |

| | |
|-----------|--|
| | la tipologia precisa l'ascissa di definizione, la direzione del carico, la modalità di carico e la larghezza d'influenza per gli elementi tipo trave |
| 12 | gruppo di carichi con impronta su piastra 9 dati (numero di ripetizioni in direzione X e Y, valore di ciascun carico, posizione centrale del primo, dimensioni dell'impronta, interasse tra i carichi) |

| | |
|--|--|
|  <p>Carico concentrato nodale</p> |  <p>Spostamento impresso</p> |
|  <p>Carico distribuito globale</p> |  <p>Carico distribuito locale</p> |
|  <p>Carico concentrato globale</p> |  <p>Carico concentrato locale</p> |
|  <p>Carico termico 2D</p> |  <p>Carico termico 3D</p> |
|  <p>Carico pressione uniforme</p> |  <p>Carico pressione variabile</p> |

SCHEMATIZZAZIONE DEI CASI DI CARICO

LEGENDA TABELLA CASI DI CARICO

Il programma consente l'applicazione di diverse tipologie di casi di carico.

Sono previsti i seguenti 11 tipi di casi di carico:

| | Sigla | Tipo | Descrizione |
|-----------|--------------|-------------|---|
| 1 | Ggk | A | caso di carico comprensivo del peso proprio struttura |
| 2 | Gk | NA | caso di carico con azioni permanenti |
| 3 | Qk | NA | caso di carico con azioni variabili |
| 4 | Gsk | A | caso di carico comprensivo dei carichi permanenti sui solai e sulle coperture |
| 5 | Qsk | A | caso di carico comprensivo dei carichi variabili sui solai |
| 6 | Qnk | A | caso di carico comprensivo dei carichi di neve sulle coperture |
| 7 | Qtk | SA | caso di carico comprensivo di una variazione termica agente sulla struttura |
| 8 | Qvk | NA | caso di carico comprensivo di azioni da vento sulla struttura |
| 9 | Esk | SA | caso di carico sismico con analisi statica equivalente |
| 10 | Edk | SA | caso di carico sismico con analisi dinamica |
| 11 | Etk | NA | caso di carico comprensivo di azioni derivanti dall' incremento di spinta delle terre in condizione sismica |
| 12 | Pk | NA | caso di carico comprensivo di azioni derivanti da coazioni, cedimenti e precompressioni |

Sono di tipo automatico A (ossia non prevedono introduzione dati da parte dell'utente) i seguenti casi di carico: 1-Ggk; 4-Gsk; 5-Qsk; 6-Qnk.

Sono di tipo semi-automatico SA (ossia prevedono una minima introduzione dati da parte dell'utente) i seguenti casi di carico:

7-Qtk, in quanto richiede solo il valore della variazione termica;

9-Esk e 10-Edk, in quanto richiedono il valore dell'angolo di ingresso del sisma e l'individuazione dei casi di carico partecipanti alla definizione delle masse.

Sono di tipo non automatico NA ossia prevedono la diretta applicazione di carichi generici agli elementi strutturali (si veda il precedente punto Modellazione delle Azioni) i restanti casi di carico.

Nella tabella successiva vengono riportati i casi di carico agenti sulla struttura, con l'indicazione dei dati relativi al caso di carico stesso:

Numero Tipo e Sigla identificativa, Valore di riferimento del caso di carico (se previsto).

In successione, per i casi di carico non automatici, viene riportato l'elenco di nodi ed elementi direttamente caricati con la sigla identificativa del carico.

Per i casi di carico di tipo sismico (9-Esk e 10-Edk), viene riportata la tabella di definizione delle masse: per ogni caso di carico partecipante alla definizione delle masse viene indicata la relativa aliquota (partecipazione) considerata. Si precisa che per i caso di carico 5-Qsk e 6-Qnk la partecipazione è prevista localmente per ogni elemento solaio o copertura presente nel modello (si confronti il valore Sksol nel capitolo relativo agli elementi solai) e pertanto la loro partecipazione è di norma pari a uno.

| CDC | Tipo | Sigla Id | Note |
|------------|-------------|--|--|
| 1 | Ggk | CDC=Ggk (peso proprio della struttura) | |
| 2 | Gsk | CDC=G1sk (permanente solai-coperture) | |
| 3 | Gsk | CDC=G2sk (permanente solai-coperture n.c.d.) | |
| 4 | Qsk | CDC=Qsk (variabile solai) | |
| 5 | Edk | CDC=Ed (dinamico SLU) alfa=0.0 (ecc. +) | partecipazione:1.00 per 1 CDC=Ggk (peso proprio della struttura) |
| | | | partecipazione:1.00 per 2 CDC=G1sk (permanente solai-coperture) |
| | | | partecipazione:1.00 per 3 CDC=G2sk (permanente solai-coperture n.c.d.) |
| | | | partecipazione:1.00 per 4 CDC=Qsk (variabile solai) |
| | | | partecipazione:1.00 per 13 CDC=Qnk (carico da neve) |
| 6 | Edk | CDC=Ed (dinamico SLU) alfa=0.0 (ecc. -) | come precedente CDC sismico |
| 7 | Edk | CDC=Ed (dinamico SLU) alfa=90.00 (ecc. +) | come precedente CDC sismico |
| 8 | Edk | CDC=Ed (dinamico SLU) alfa=90.00 (ecc. -) | come precedente CDC sismico |
| 9 | Edk | CDC=Ed (dinamico SLD) alfa=0.0 (ecc. +) | come precedente CDC sismico |
| 10 | Edk | CDC=Ed (dinamico SLD) alfa=0.0 (ecc. -) | come precedente CDC sismico |
| 11 | Edk | CDC=Ed (dinamico SLD) alfa=90.00 (ecc. +) | come precedente CDC sismico |
| 12 | Edk | CDC=Ed (dinamico SLD) alfa=90.00 (ecc. -) | come precedente CDC sismico |
| 13 | Qnk | CDC=Qnk (carico da neve) | |

DEFINIZIONE DELLE COMBINAZIONI

LEGENDA TABELLA COMBINAZIONI DI CARICO

Il programma combina i diversi tipi di casi di carico (CDC) secondo le regole previste dalla normativa vigente.

Le combinazioni previste sono destinate al controllo di sicurezza della struttura ed alla verifica degli spostamenti e delle sollecitazioni.

La prima tabella delle combinazioni riportata di seguito comprende le seguenti informazioni: *Numero, Tipo, Sigla identificativa*. Una seconda tabella riporta il *peso nella combinazione* assunto per ogni caso di carico.

Ai fini delle verifiche degli stati limite si definiscono le seguenti combinazioni delle azioni:

Combinazione fondamentale SLU

$$\gamma G_1 \cdot G_1 + \gamma G_2 \cdot G_2 + \gamma P \cdot P + \gamma Q_1 \cdot Q_{k1} + \gamma Q_2 \cdot \psi_{02} \cdot Q_{k2} + \gamma Q_3 \cdot \psi_{03} \cdot Q_{k3} + \dots$$

Combinazione caratteristica (rara) SLE

$$G_1 + G_2 + P + Q_{k1} + \psi_{02} \cdot Q_{k2} + \psi_{03} \cdot Q_{k3} + \dots$$

Combinazione frequente SLE

$$G_1 + G_2 + P + \psi_{11} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \psi_{23} \cdot Q_{k3} + \dots$$

Combinazione quasi permanente SLE

$$G_1 + G_2 + P + \psi_{21} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \psi_{23} \cdot Q_{k3} + \dots$$

Combinazione sismica, impiegata per gli stati limite ultimi e di esercizio connessi all'azione sismica E

$$E + G_1 + G_2 + P + \psi_{21} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \dots$$

Combinazione eccezionale, impiegata per gli stati limite connessi alle azioni eccezionali

$$G_1 + G_2 + P + \psi_{21} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \dots$$

Dove:

NTC 2008 Tabella 2.5.I

| Destinazione d'uso/azione | ψ_0 | ψ_1 | ψ_2 |
|---|----------|----------|----------|
| Categoria A residenziali | 0,70 | 0,50 | 0,30 |
| Categoria B uffici | 0,70 | 0,50 | 0,30 |
| Categoria C ambienti suscettibili di affollamento | 0,70 | 0,70 | 0,60 |
| Categoria D ambienti ad uso commerciale | 0,70 | 0,70 | 0,60 |
| Categoria E biblioteche, archivi, magazzini,... | 1,00 | 0,90 | 0,80 |
| Categoria F Rimesse e parcheggi (autoveicoli $\leq 30\text{kN}$) | 0,70 | 0,70 | 0,60 |
| Categoria G Rimesse e parcheggi (autoveicoli $> 30\text{kN}$) | 0,70 | 0,50 | 0,30 |
| Categoria H Coperture | 0,00 | 0,00 | 0,00 |
| Vento | 0,60 | 0,20 | 0,00 |
| Neve a quota $\leq 1000\text{ m}$ | 0,50 | 0,20 | 0,00 |
| Neve a quota $> 1000\text{ m}$ | 0,70 | 0,50 | 0,20 |
| Variazioni Termiche | 0,60 | 0,50 | 0,00 |

Nelle verifiche possono essere adottati in alternativa due diversi approcci progettuali:

- per l'approccio 1 si considerano due diverse combinazioni di gruppi di coefficienti di sicurezza parziali per le azioni, per i materiali e per la resistenza globale (combinazione 1 con coefficienti A1 e combinazione 2 con coefficienti A2),
- per l'approccio 2 si definisce un'unica combinazione per le azioni, per la resistenza dei materiali e per la resistenza globale (con coefficienti A1).

NTC 2008 Tabella 2.6.I

| | | Coefficiente γ_f | EQU | A1 | A2 |
|--|-------------|----------------------------|------------|-----------|-----------|
| Carichi permanenti | Favorevoli | γ_{G1} | 0,9 | 1,0 | 1,0 |
| | Sfavorevoli | | 1,1 | 1,3 | 1,0 |
| Carichi permanenti non strutturali (Non compiutamente definiti) | Favorevoli | γ_{G2} | 0,0 | 0,0 | 0,0 |
| | Sfavorevoli | | 1,5 | 1,5 | 1,3 |
| Carichi variabili | Favorevoli | γ_{Qi} | 0,0 | 0,0 | 0,0 |
| | Sfavorevoli | | 1,5 | 1,5 | 1,3 |

| Cmb | Tipo | Sigla Id | effetto P-delta |
|-----|----------|--------------------------------|-----------------|
| 1 | SLU | Comb. SLU A1 1 | |
| 2 | SLU | Comb. SLU A1 2 | |
| 3 | SLU | Comb. SLU A1 3 | |
| 4 | SLU | Comb. SLU A1 4 | |
| 5 | SLU | Comb. SLU A1 5 | |
| 6 | SLU | Comb. SLU A1 6 | |
| 7 | SLU | Comb. SLU A1 7 | |
| 8 | SLU | Comb. SLU A1 8 | |
| 9 | SLU | Comb. SLU A1 9 | |
| 10 | SLU | Comb. SLU A1 10 | |
| 11 | SLU | Comb. SLU A1 11 | |
| 12 | SLU | Comb. SLU A1 12 | |
| 13 | SLU | Comb. SLU A1 13 | |
| 14 | SLU | Comb. SLU A1 14 | |
| 15 | SLU | Comb. SLU A1 (SLV sism.) 15 | |
| 16 | SLU | Comb. SLU A1 (SLV sism.) 16 | |
| 17 | SLU | Comb. SLU A1 (SLV sism.) 17 | |
| 18 | SLU | Comb. SLU A1 (SLV sism.) 18 | |
| 19 | SLU | Comb. SLU A1 (SLV sism.) 19 | |
| 20 | SLU | Comb. SLU A1 (SLV sism.) 20 | |
| 21 | SLU | Comb. SLU A1 (SLV sism.) 21 | |
| 22 | SLU | Comb. SLU A1 (SLV sism.) 22 | |
| 23 | SLU | Comb. SLU A1 (SLV sism.) 23 | |
| 24 | SLU | Comb. SLU A1 (SLV sism.) 24 | |
| 25 | SLU | Comb. SLU A1 (SLV sism.) 25 | |
| 26 | SLU | Comb. SLU A1 (SLV sism.) 26 | |
| 27 | SLU | Comb. SLU A1 (SLV sism.) 27 | |
| 28 | SLU | Comb. SLU A1 (SLV sism.) 28 | |
| 29 | SLU | Comb. SLU A1 (SLV sism.) 29 | |
| 30 | SLU | Comb. SLU A1 (SLV sism.) 30 | |
| 31 | SLU | Comb. SLU A1 (SLV sism.) 31 | |
| 32 | SLU | Comb. SLU A1 (SLV sism.) 32 | |
| 33 | SLU | Comb. SLU A1 (SLV sism.) 33 | |
| 34 | SLU | Comb. SLU A1 (SLV sism.) 34 | |
| 35 | SLU | Comb. SLU A1 (SLV sism.) 35 | |
| 36 | SLU | Comb. SLU A1 (SLV sism.) 36 | |
| 37 | SLU | Comb. SLU A1 (SLV sism.) 37 | |
| 38 | SLU | Comb. SLU A1 (SLV sism.) 38 | |
| 39 | SLU | Comb. SLU A1 (SLV sism.) 39 | |
| 40 | SLU | Comb. SLU A1 (SLV sism.) 40 | |
| 41 | SLU | Comb. SLU A1 (SLV sism.) 41 | |
| 42 | SLU | Comb. SLU A1 (SLV sism.) 42 | |
| 43 | SLU | Comb. SLU A1 (SLV sism.) 43 | |
| 44 | SLU | Comb. SLU A1 (SLV sism.) 44 | |
| 45 | SLU | Comb. SLU A1 (SLV sism.) 45 | |
| 46 | SLU | Comb. SLU A1 (SLV sism.) 46 | |
| 47 | SLD(sis) | Comb. SLE (SLD Danno sism.) 47 | |
| 48 | SLD(sis) | Comb. SLE (SLD Danno sism.) 48 | |
| 49 | SLD(sis) | Comb. SLE (SLD Danno sism.) 49 | |
| 50 | SLD(sis) | Comb. SLE (SLD Danno sism.) 50 | |
| 51 | SLD(sis) | Comb. SLE (SLD Danno sism.) 51 | |
| 52 | SLD(sis) | Comb. SLE (SLD Danno sism.) 52 | |
| 53 | SLD(sis) | Comb. SLE (SLD Danno sism.) 53 | |
| 54 | SLD(sis) | Comb. SLE (SLD Danno sism.) 54 | |
| 55 | SLD(sis) | Comb. SLE (SLD Danno sism.) 55 | |
| 56 | SLD(sis) | Comb. SLE (SLD Danno sism.) 56 | |
| 57 | SLD(sis) | Comb. SLE (SLD Danno sism.) 57 | |
| 58 | SLD(sis) | Comb. SLE (SLD Danno sism.) 58 | |
| 59 | SLD(sis) | Comb. SLE (SLD Danno sism.) 59 | |
| 60 | SLD(sis) | Comb. SLE (SLD Danno sism.) 60 | |
| 61 | SLD(sis) | Comb. SLE (SLD Danno sism.) 61 | |
| 62 | SLD(sis) | Comb. SLE (SLD Danno sism.) 62 | |
| 63 | SLD(sis) | Comb. SLE (SLD Danno sism.) 63 | |
| 64 | SLD(sis) | Comb. SLE (SLD Danno sism.) 64 | |
| 65 | SLD(sis) | Comb. SLE (SLD Danno sism.) 65 | |
| 66 | SLD(sis) | Comb. SLE (SLD Danno sism.) 66 | |
| 67 | SLD(sis) | Comb. SLE (SLD Danno sism.) 67 | |
| 68 | SLD(sis) | Comb. SLE (SLD Danno sism.) 68 | |
| 69 | SLD(sis) | Comb. SLE (SLD Danno sism.) 69 | |
| 70 | SLD(sis) | Comb. SLE (SLD Danno sism.) 70 | |
| 71 | SLD(sis) | Comb. SLE (SLD Danno sism.) 71 | |

| Cmb | Tipo | Sigla Id | effetto P-delta |
|-----|----------|--------------------------------|-----------------|
| 72 | SLD(sis) | Comb. SLE (SLD Danno sism.) 72 | |
| 73 | SLD(sis) | Comb. SLE (SLD Danno sism.) 73 | |
| 74 | SLD(sis) | Comb. SLE (SLD Danno sism.) 74 | |
| 75 | SLD(sis) | Comb. SLE (SLD Danno sism.) 75 | |
| 76 | SLD(sis) | Comb. SLE (SLD Danno sism.) 76 | |
| 77 | SLD(sis) | Comb. SLE (SLD Danno sism.) 77 | |
| 78 | SLD(sis) | Comb. SLE (SLD Danno sism.) 78 | |
| 79 | SLE(r) | Comb. SLE(rara) 79 | |
| 80 | SLE(r) | Comb. SLE(rara) 80 | |
| 81 | SLE(r) | Comb. SLE(rara) 81 | |
| 82 | SLE(r) | Comb. SLE(rara) 82 | |
| 83 | SLE(r) | Comb. SLE(rara) 83 | |
| 84 | SLE(r) | Comb. SLE(rara) 84 | |
| 85 | SLE(r) | Comb. SLE(rara) 85 | |
| 86 | SLE(f) | Comb. SLE(freq.) 86 | |
| 87 | SLE(f) | Comb. SLE(freq.) 87 | |
| 88 | SLE(f) | Comb. SLE(freq.) 88 | |
| 89 | SLE(f) | Comb. SLE(freq.) 89 | |
| 90 | SLE(f) | Comb. SLE(freq.) 90 | |
| 91 | SLE(p) | Comb. SLE(perm.) 91 | |
| 92 | SLE(p) | Comb. SLE(perm.) 92 | |

| Cmb | CDC 1/15... | CDC 2/16... | CDC 3/17... | CDC 4/18... | CDC 5/19... | CDC 6/20... | CDC 7/21... | CDC 8/22... | CDC 9/23... | CDC 10/24... | CDC 11/25... | CDC 12/26... | CDC 13/27... | CDC 14/28... |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| 1 | 1.30 | 1.30 | 1.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 2 | 1.30 | 1.30 | 1.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.75 |
| 3 | 1.30 | 1.30 | 1.50 | 1.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 1.30 | 1.30 | 1.50 | 1.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.75 |
| 5 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.75 |
| 7 | 1.00 | 1.00 | 0.0 | 1.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8 | 1.00 | 1.00 | 0.0 | 1.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.75 |
| 9 | 1.30 | 1.30 | 1.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.50 |
| 10 | 1.30 | 1.30 | 1.50 | 1.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | 1.30 | 1.30 | 1.50 | 1.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.50 |
| 12 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.50 |
| 13 | 1.00 | 1.00 | 0.0 | 1.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | 1.00 | 1.00 | 0.0 | 1.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.50 |
| 15 | 1.00 | 1.00 | 1.00 | 0.60 | -1.00 | 0.0 | -0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 1.00 | 1.00 | 1.00 | 0.60 | -1.00 | 0.0 | 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 | 1.00 | 1.00 | 1.00 | 0.60 | 1.00 | 0.0 | -0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 18 | 1.00 | 1.00 | 1.00 | 0.60 | 1.00 | 0.0 | 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19 | 1.00 | 1.00 | 1.00 | 0.60 | -1.00 | 0.0 | 0.0 | -0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20 | 1.00 | 1.00 | 1.00 | 0.60 | -1.00 | 0.0 | 0.0 | 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21 | 1.00 | 1.00 | 1.00 | 0.60 | 1.00 | 0.0 | 0.0 | -0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 | 1.00 | 1.00 | 1.00 | 0.60 | 1.00 | 0.0 | 0.0 | 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 23 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | -1.00 | -0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | -1.00 | 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 25 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 1.00 | -0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 1.00 | 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 27 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | -1.00 | 0.0 | -0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 28 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | -1.00 | 0.0 | 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 29 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 1.00 | 0.0 | -0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 1.00 | 0.0 | 0.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 31 | 1.00 | 1.00 | 1.00 | 0.60 | -0.30 | 0.0 | -1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 32 | 1.00 | 1.00 | 1.00 | 0.60 | -0.30 | 0.0 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 33 | 1.00 | 1.00 | 1.00 | 0.60 | 0.30 | 0.0 | -1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 34 | 1.00 | 1.00 | 1.00 | 0.60 | 0.30 | 0.0 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 35 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | -0.30 | -1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 36 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | -0.30 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 37 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.30 | -1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 38 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.30 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 39 | 1.00 | 1.00 | 1.00 | 0.60 | -0.30 | 0.0 | 0.0 | -1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40 | 1.00 | 1.00 | 1.00 | 0.60 | -0.30 | 0.0 | 0.0 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41 | 1.00 | 1.00 | 1.00 | 0.60 | 0.30 | 0.0 | 0.0 | -1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 42 | 1.00 | 1.00 | 1.00 | 0.60 | 0.30 | 0.0 | 0.0 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 43 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | -0.30 | 0.0 | -1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 44 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | -0.30 | 0.0 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.30 | 0.0 | -1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 46 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.30 | 0.0 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Cmb | CDC 1/15... | CDC 2/16... | CDC 3/17... | CDC 4/18... | CDC 5/19... | CDC 6/20... | CDC 7/21... | CDC 8/22... | CDC 9/23... | CDC 10/24... | CDC 11/25... | CDC 12/26... | CDC 13/27... | CDC 14/28... |
|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 47 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -1.00 | 0.0 | -0.30 | 0.0 | 0.0 | |
| 48 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -1.00 | 0.0 | 0.30 | 0.0 | 0.0 | |
| 49 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | 0.0 | -0.30 | 0.0 | 0.0 | |
| 50 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | 0.0 | 0.30 | 0.0 | 0.0 | |
| 51 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -1.00 | 0.0 | 0.0 | -0.30 | 0.0 | |
| 52 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -1.00 | 0.0 | 0.0 | 0.30 | 0.0 | |
| 53 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | 0.0 | 0.0 | -0.30 | 0.0 | |
| 54 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | 0.0 | 0.0 | 0.30 | 0.0 | |
| 55 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -1.00 | -0.30 | 0.0 | 0.0 | |
| 56 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -1.00 | 0.30 | 0.0 | 0.0 | |
| 57 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | -0.30 | 0.0 | 0.0 | |
| 58 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | 0.30 | 0.0 | 0.0 | |
| 59 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -1.00 | 0.0 | -0.30 | 0.0 | |
| 60 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -1.00 | 0.0 | 0.30 | 0.0 | |
| 61 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | 0.0 | -0.30 | 0.0 | |
| 62 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | 0.0 | 0.30 | 0.0 | |
| 63 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -0.30 | 0.0 | -1.00 | 0.0 | 0.0 | |
| 64 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -0.30 | 0.0 | 1.00 | 0.0 | 0.0 | |
| 65 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.30 | 0.0 | -1.00 | 0.0 | 0.0 | |
| 66 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.30 | 0.0 | 1.00 | 0.0 | 0.0 | |
| 67 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.30 | -1.00 | 0.0 | 0.0 | |
| 68 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.30 | 1.00 | 0.0 | 0.0 | |
| 69 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.30 | -1.00 | 0.0 | 0.0 | |
| 70 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.30 | 1.00 | 0.0 | 0.0 | |
| 71 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -0.30 | 0.0 | 0.0 | -1.00 | 0.0 | |
| 72 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | -0.30 | 0.0 | 0.0 | 1.00 | 0.0 | |
| 73 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.30 | 0.0 | 0.0 | -1.00 | 0.0 | |
| 74 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.30 | 0.0 | 0.0 | 1.00 | 0.0 | |
| 75 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.30 | 0.0 | -1.00 | 0.0 | |
| 76 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.30 | 0.0 | 1.00 | 0.0 | |
| 77 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.30 | 0.0 | -1.00 | 0.0 | |
| 78 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.30 | 0.0 | 1.00 | 0.0 | |
| 79 | 1.00 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 80 | 1.00 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.50 | |
| 81 | 1.00 | 1.00 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 82 | 1.00 | 1.00 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.50 | |
| 83 | 1.00 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | |
| 84 | 1.00 | 1.00 | 1.00 | 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 85 | 1.00 | 1.00 | 1.00 | 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.00 | |
| 86 | 1.00 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 87 | 1.00 | 1.00 | 1.00 | 0.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 88 | 1.00 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.20 | |
| 89 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 90 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.20 | |
| 91 | 1.00 | 1.00 | 1.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 92 | 1.00 | 1.00 | 1.00 | 0.60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |

AZIONE SISMICA

VALUTAZIONE DELL' AZIONE SISMICA

L'azione sismica sulle costruzioni è valutata a partire dalla "pericolosità sismica di base", in condizioni ideali di sito di riferimento rigido con superficie topografica orizzontale.

Allo stato attuale, la pericolosità sismica su reticolo di riferimento nell'intervallo di riferimento è fornita dai dati pubblicati sul sito <http://esse1.mi.ingv.it/>. Per punti non coincidenti con il reticolo di riferimento e periodi di ritorno non contemplati direttamente si opera come indicato nell' allegato alle NTC (rispettivamente media pesata e interpolazione).

L' azione sismica viene definita in relazione ad un periodo di riferimento V_r che si ricava, per ciascun tipo di costruzione, moltiplicandone la vita nominale per il coefficiente d'uso (vedi tabella Parametri della struttura). Fissato il periodo di riferimento V_r e la probabilità di superamento P_{ver} associata a ciascuno degli stati limite considerati, si ottiene il periodo di ritorno T_r e i relativi parametri di pericolosità sismica (vedi tabella successiva):

ag: accelerazione orizzontale massima del terreno;

Fo: valore massimo del fattore di amplificazione dello spettro in accelerazione orizzontale;

T*c: periodo di inizio del tratto a velocità costante dello spettro in accelerazione orizzontale;

| Parametri della struttura | | | | | |
|---------------------------|-------------------|------------|----------------------|---------------|-----------------------|
| Classe d'uso | Vita V_n [anni] | Coeff. Uso | Periodo V_r [anni] | Tipo di suolo | Categoria topografica |

| | | | | | |
|----|-------|-----|-------|---|----|
| IV | 100.0 | 2.0 | 200.0 | E | T1 |
|----|-------|-----|-------|---|----|

Individuati su reticolo di riferimento i parametri di pericolosità sismica si valutano i parametri spettrali riportati in tabella:

S è il coefficiente che tiene conto della categoria di sottosuolo e delle condizioni topografiche

mediante la relazione seguente $S = S_s \cdot S_t$ (3.2.5)

Fo è il fattore che quantifica l'amplificazione spettrale massima, su sito di riferimento rigido orizzontale

Fv è il fattore che quantifica l'amplificazione spettrale massima verticale, in termini di accelerazione orizzontale massima del terreno ag su sito di riferimento rigido orizzontale

Tb è il periodo corrispondente all'inizio del tratto dello spettro ad accelerazione costante.

Tc è il periodo corrispondente all'inizio del tratto dello spettro a velocità costante.

Td è il periodo corrispondente all'inizio del tratto dello spettro a spostamento costante.

| Id nodo | Longitudine | Latitudine | Distanza |
|---------|-------------|------------|----------|
| | | | Km |
| Loc. | 7.914 | 44.047 | |
| 18456 | 7.858 | 44.000 | 6.859 |
| 18457 | 7.928 | 44.004 | 4.894 |
| 18235 | 7.923 | 44.054 | 1.056 |
| 18234 | 7.854 | 44.050 | 4.791 |

| SL | Pver | Tr | ag | Fo | T*c |
|-----|------|-------|-------|-------|-------|
| | | Anni | g | | sec |
| SLO | 97.0 | 57.0 | 0.046 | 2.600 | 0.220 |
| SLD | 90.0 | 87.0 | 0.061 | 2.540 | 0.240 |
| SLV | 46.0 | 325.0 | 0.125 | 2.440 | 0.280 |
| SLC | 43.0 | 356.0 | 0.131 | 2.440 | 0.280 |

| SL | ag | S | Fo | Fv | Tb | Tc | Td |
|-----|-------|-------|-------|-------|-------|-------|-------|
| | g | | | | sec | sec | sec |
| SLO | 0.046 | 1.600 | 2.600 | 0.754 | 0.155 | 0.464 | 1.784 |
| SLD | 0.061 | 1.600 | 2.540 | 0.847 | 0.163 | 0.488 | 1.844 |
| SLV | 0.125 | 1.600 | 2.440 | 1.166 | 0.179 | 0.536 | 2.101 |
| SLC | 0.131 | 1.600 | 2.440 | 1.191 | 0.179 | 0.536 | 2.123 |

RISULTATI ANALISI SISMICHE

LEGENDA TABELLA ANALISI SISMICHE

Il programma consente l'analisi di diverse configurazioni sismiche.

Sono previsti, infatti, i seguenti casi di carico:

- | | |
|----------------|--|
| 9. Esk | caso di carico sismico con analisi statica equivalente |
| 10. Edk | caso di carico sismico con analisi dinamica |

Ciascun caso di carico è caratterizzato da un angolo di ingresso e da una configurazione di masse determinante la forza sismica complessiva (si rimanda al capitolo relativo ai casi di carico per chiarimenti inerenti questo aspetto).

Nella colonna Note, in funzione della norma in uso sono riportati i parametri fondamentali che caratterizzano l'azione sismica: in particolare possono essere presenti i seguenti valori:

| | |
|-----------------------------------|---|
| Angolo di ingresso | Angolo di ingresso dell'azione sismica orizzontale |
| Fattore di importanza | Fattore di importanza dell'edificio, in base alla categoria di appartenenza |
| Zona sismica | Zona sismica |
| Accelerazione ag | Accelerazione orizzontale massima sul suolo |
| Categoria suolo | Categoria di profilo stratigrafico del suolo di fondazione |
| Fattore di struttura q | Fattore dipendente dalla tipologia strutturale |
| Fattore di sito S | Fattore dipendente dalla stratigrafia e dal profilo topografico |
| Classe di duttilità CD | Classe di duttilità della struttura – "A" duttilità alta, "B" duttilità bassa |
| Fattore riduz. SLD | Fattore di riduzione dello spettro elastico per lo stato limite di danno |
| Periodo proprio T1 | Periodo proprio di vibrazione della struttura |
| Coefficiente Lambda | Coefficiente dipendente dal periodo proprio T1 e dal numero di piani della struttura |
| Ordinata spettro Sd(T1) | Valore delle ordinate dello spettro di progetto per lo stato limite ultimo, componente orizzontale (verticale Svd) |
| Ordinata spettro Se(T1) | Valore delle ordinate dello spettro elastico ridotta del fattore SLD per lo stato limite di danno, componente orizzontale (verticale Sve) |
| Ordinata spettro S (Tb-Tc) | Valore dell' ordinata dello spettro in uso nel tratto costante |
| numero di modi considerati | Numero di modi di vibrare della struttura considerati nell'analisi dinamica |

Per ciascun caso di carico sismico viene riportato l'insieme di dati sotto riportati (le masse sono espresse in unità di forza):

- a) **analisi sismica statica equivalente:**
 - quota, posizione del centro di applicazione e azione orizzontale risultante, posizione del baricentro delle rigidezze, rapporto r/L_s (per strutture a nucleo), indici di regolarità e/r secondo EC8 4.2.3.2
 - azione sismica complessiva
- b) **analisi sismica dinamica con spettro di risposta:**
 - quota, posizione del centro di massa e massa risultante, posizione del baricentro delle rigidezze, rapporto r/L_s (per strutture a nucleo), indici di regolarità e/r secondo EC8 4.2.3.2
 - frequenza, periodo, accelerazione spettrale, massa eccitata nelle tre direzioni globali per tutti i modi
 - massa complessiva ed aliquota di massa complessiva eccitata.

Per ciascuna combinazione sismica definita SLD o SLO viene riportato il livello di deformazione ϵ_{dT} (dr) degli elementi strutturali verticali. Per semplicità di consultazione il livello è espresso anche in unità $1000 \cdot \epsilon_{dT}/h$ da confrontare direttamente con i valori forniti nella norma (es. 5 per edifici con tamponamenti collegati rigidamente alla struttura, 10.0 per edifici con tamponamenti collegati elasticamente, 3 per edifici in muratura ordinaria, 4 per edifici in muratura armata).

Qualora si applichi il D.M. 96 (vedi NOTA sul capitolo "normativa di riferimento") l'analisi sismica dinamica può essere comprensiva di sollecitazione verticale contemporanea a quella orizzontale, nel qual caso è effettuata una sovrapposizione degli effetti in ragione della radice dei quadrati degli effetti stessi. Per ciascuna combinazione sismica - analisi effettuate con il D.M. 96 (vedi NOTA sul capitolo "normativa di riferimento") - viene riportato il livello di deformazione ϵ_{dT} , ϵ_{dP} e ϵ_{dD} degli elementi strutturali verticali. Per semplicità di consultazione il livello è espresso in unità $1000 \cdot \epsilon_{dT}/h$ da confrontare direttamente con il valore 2 o 4 per la verifica.

Per gli edifici sismicamente isolati si riportano di seguito le verifiche condotte sui dispositivi di isolamento. Le verifiche sono effettuate secondo l'allegato 10.A dell'Ordinanza 3274 e smi. In particolare la tabella, per ogni combinazione SLU (SLC per il DM 14-01-2008) sismica riporta il codice di verifica e i valori utilizzati per la verifica: spostamento d_E , area ridotta e dimensione A_2 , azione verticale, deformazioni di taglio dell'elastomero e tensioni nell'acciaio.

| | |
|---------------------|--|
| Nodo | Nodo di appoggio dell' isolatore |
| Cmb | Combinazione oggetto della verifica |
| Verif. | Codice di verifica ok – verifica positiva , NV – verifica negativa, ND – verifica non completata |
| dE | Spostamento relativo tra le due facce (amplificato del 20% per Ordinanza 3274 e smi) combinato con la regola del 30% |
| Ang fi | Angolo utilizzato per il calcolo dell' area ridotta Ar (per dispositivi circolari) |
| V | Azione verticale agente |
| Ar | Area ridotta efficace |
| Dim A2 | Dimensione utile per il calcolo della deformazione per rotazione |
| Sig s | Tensione nell' inserto in acciaio |
| Gam c(a,s,t) | Deformazioni di taglio dell' elastomero |
| Vcr | Carico critico per instabilità |

Affinché la verifica sia positiva deve essere:

- 1) $V > 0$
- 2) $Sig s < f_{yk}$
- 3) $Gam t < 5$
- 4) $Gam s < Gam * (caratteristica\ dell'\ elastomero)$
- 5) $Gam s < 2$
- 6) $V < 0.5 V_{cr}$

Con riferimento al **Documento di Affidabilità “Test di validazione del software di calcolo PRO_SAP e dei moduli aggiuntivi PRO_SAP Modulo Geotecnico, PRO_CAD nodi acciaio e PRO_MST”** - versione Maggio 2011, disponibile per il download sul sito **www.2si.it**, si segnalano i seguenti esempi applicativi:

| Test N° | Titolo |
|-----------|--|
| 23 | DM 2008: SPETTRO |
| 29 | SISMICA 1000/H, SOMMA V, EFFETTO P-δ |
| 30 | ANALISI DI UN EDIFICIO CON ISOLATORI SISMICI |
| 70 | MASSE SISMICHE |
| 75 | PROGETTO DI ISOLATORI ELASTOMERICI |
| 76 | VERIFICA DI ISOLATORI ELASTOMERICI |
| 77 | VERIFICA DI ISOLATORI FRICTION PENDULUM |

| CDC | Tipo | Sigla Id | Note |
|-----|------|---|---|
| 5 | Edk | CDC=Ed (dinamico SLU) alfa=0.0 (ecc. +) | |
| | | | verifica esistenti: fattore FC 1.200 |
| | | | categoria suolo: E |
| | | | fattore di sito S = 1.600 |
| | | | ordinata spettro (tratto Tb-Tc) = 0.136 g |
| | | | angolo di ingresso: 0.0 |
| | | | eccentricità aggiuntiva: positiva |
| | | | periodo proprio T1: 0.227 sec. |
| | | | fattore di struttura q: 3.600 |
| | | | fattore per spost. mu d: 7.149 |
| | | | classe di duttilità CD: B |
| | | | numero di modi considerati: 66 |
| | | | combinaz. modale: CQC |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| cm | daN | cm | cm | cm | cm | cm | cm | | | |
| 2398.43 | 225.38 | 3851.25 | 3685.79 | 0.0 | -10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 2387.29 | 348.62 | 3851.25 | 3685.79 | 0.0 | -13.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2372.45 | 406.44 | 3851.25 | 3685.79 | 0.0 | -16.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2353.36 | 467.17 | 3851.25 | 3685.79 | 0.0 | -19.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2329.16 | 532.48 | 3851.25 | 3685.79 | 0.0 | -23.12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2298.35 | 606.14 | 3851.25 | 3685.79 | 0.0 | -26.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2258.02 | 793.11 | 3851.25 | 3685.79 | 0.0 | -29.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2150.00 | 1125.96 | 3851.25 | 3685.79 | 0.0 | -32.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2060.00 | 4.769e+04 | 2472.99 | 3685.70 | 0.0 | -130.77 | 2383.06 | 3690.52 | 1.390 | 0.053 | 0.003 |
| 1960.00 | 6603.35 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1943.95 | 6.727e+04 | 2783.57 | 3568.68 | 0.0 | -147.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.75 | 3285.75 | 3771.88 | 5155.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.53 | 2156.92 | 4346.64 | 5155.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1940.66 | 1.133e+04 | 1016.86 | 3636.74 | 0.0 | -147.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1931.38 | 2.097e+04 | 1050.89 | 3688.24 | 0.0 | -74.37 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1867.50 | 1.130e+04 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.395 | 0.0 | 0.0 |
| 1775.00 | 9277.13 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.281 | 0.0 | 0.0 |
| 1770.00 | 5768.41 | 2378.28 | 3690.32 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1720.00 | 2.411e+05 | 2601.62 | 3775.89 | 0.0 | -178.50 | 882.57 | 3946.91 | 1.143 | 0.593 | 0.096 |
| 1682.50 | 7250.34 | 3851.25 | 3685.79 | 0.0 | -34.27 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1642.00 | 3.027e+05 | 2604.36 | 3813.16 | 0.0 | -178.50 | 915.04 | 3946.89 | 1.143 | 0.544 | 0.075 |
| 1590.00 | 7250.34 | 3851.25 | 3685.79 | 0.0 | -34.27 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1564.00 | 2.586e+05 | 2648.19 | 3789.92 | 0.0 | -178.50 | 825.89 | 3863.21 | 1.137 | 0.709 | 0.042 |
| 1497.50 | 9210.54 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1486.00 | 2.206e+05 | 2646.92 | 3774.60 | 0.0 | -178.50 | 804.35 | 3862.73 | 1.138 | 0.768 | 0.050 |
| 1408.00 | 2.244e+05 | 2601.55 | 3776.23 | 0.0 | -178.50 | 799.48 | 3862.71 | 1.138 | 0.764 | 0.049 |
| 1405.00 | 1.155e+04 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1330.00 | 2.364e+05 | 2591.48 | 3794.52 | 0.0 | -178.50 | 885.91 | 3944.67 | 1.144 | 0.588 | 0.085 |
| 1312.50 | 9818.02 | 3851.44 | 3685.13 | 0.0 | -36.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1266.00 | 2.110e+05 | 2605.27 | 3816.06 | 0.0 | -178.50 | 885.91 | 3944.67 | 1.144 | 0.592 | 0.072 |
| 1220.00 | 1.084e+06 | 2761.39 | 3699.32 | 0.0 | -178.50 | 2496.34 | 3776.54 | 1.573 | 0.098 | 0.032 |
| 1206.25 | 1116.37 | 4756.32 | 3676.71 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1196.67 | 571.81 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.37 | 1969.29 | 3598.51 | 3809.61 | 0.0 | -23.61 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.30 | 625.16 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1192.50 | 778.59 | 4834.79 | 3856.00 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.13 | 1432.32 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.06 | 1433.97 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1185.83 | 721.53 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1183.60 | 1934.92 | 3481.28 | 3686.00 | 0.0 | -16.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1182.74 | 1589.19 | 4221.22 | 3686.00 | 0.0 | -7.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.55 | 1970.74 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.48 | 1971.37 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1178.75 | 398.66 | 4913.37 | 3975.64 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.59 | 2016.46 | 4221.22 | 3686.00 | 0.0 | -14.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.33 | 467.42 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1167.74 | 2869.58 | 3481.28 | 3686.00 | 0.0 | -24.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.72 | 1471.38 | 3589.09 | 3799.68 | 0.0 | -22.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.59 | 428.10 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.99 | 3412.22 | 4048.29 | 3922.39 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.93 | 2822.59 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.25 | 954.85 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.12 | 953.08 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1158.73 | 2692.29 | 4221.22 | 3686.00 | 0.0 | -21.12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.67 | 326.88 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.25 | 1120.86 | 5072.15 | 3436.99 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1150.00 | 513.38 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1147.20 | 1355.24 | 3481.28 | 3686.00 | 0.0 | -13.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1146.39 | 3712.91 | 3481.28 | 3686.00 | 0.0 | -31.64 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1145.49 | 728.01 | 4221.22 | 3686.00 | 0.0 | -6.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1144.00 | 6987.90 | 3851.25 | 3686.25 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1143.85 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1142.00 | 4.023e+05 | 2746.29 | 3711.48 | 0.0 | -178.50 | 2316.65 | 3827.93 | 1.560 | 0.165 | 0.047 |
| 1141.09 | 1236.70 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1140.97 | 1234.32 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1138.73 | 2999.05 | 4221.22 | 3686.00 | 0.0 | -27.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1137.50 | 1239.02 | 5150.49 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1127.18 | 943.14 | 4221.22 | 3686.00 | 0.0 | -12.31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1125.64 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1123.75 | 1056.77 | 5229.32 | 3676.94 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1115.47 | 1842.89 | 3481.28 | 3686.00 | 0.0 | -19.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.98 | 1.842e+04 | 5175.61 | 3713.42 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.86 | 1672.24 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1097.46 | 1276.70 | 4221.22 | 3686.00 | 0.0 | -17.87 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1096.07 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1072.77 | 2292.16 | 3481.28 | 3686.00 | 0.0 | -24.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1071.62 | 3126.64 | 3481.28 | 3686.00 | 0.0 | -33.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1069.75 | 5522.07 | 3851.25 | 3686.52 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.10 | 2059.28 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.01 | 2054.62 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1065.60 | 1864.03 | 4221.22 | 3686.00 | 0.0 | -29.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1064.00 | 3.704e+05 | 2950.68 | 3690.88 | 0.0 | -178.50 | 2471.04 | 3827.31 | 1.522 | 0.182 | 0.053 |
| 1057.45 | 1519.34 | 4221.22 | 3686.00 | 0.0 | -22.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1056.27 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1020.75 | 1842.89 | 3481.28 | 3686.00 | 0.0 | -28.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.07 | 1584.13 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.00 | 1578.97 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1008.71 | 990.30 | 4221.22 | 3686.00 | 0.0 | -26.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1007.78 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 993.19 | 1772.71 | 3481.28 | 3686.00 | 0.0 | -35.36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 991.90 | 2924.63 | 3851.25 | 3686.82 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 989.05 | 1025.97 | 4221.22 | 3686.00 | 0.0 | -31.11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 986.00 | 3.407e+05 | 2938.41 | 3693.07 | 0.0 | -178.50 | 2160.49 | 3685.87 | 1.530 | 0.301 | 0.003 |
| 961.39 | 1355.24 | 3481.28 | 3686.00 | 0.0 | -31.72 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.86 | 1090.81 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.81 | 1085.53 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 956.58 | 4975.61 | 4221.21 | 3660.70 | 0.0 | -64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 953.10 | 509.94 | 4221.22 | 3686.00 | 0.0 | -29.72 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 952.46 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 951.13 | 1.009e+04 | 4221.22 | 3679.57 | 0.0 | -71.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 935.47 | 8808.93 | 4221.22 | 3695.09 | 0.0 | -79.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 912.24 | 1276.17 | 3481.28 | 3686.00 | 0.0 | -36.34 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 911.58 | 1929.45 | 3851.25 | 3687.25 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 908.00 | 3.865e+05 | 2922.61 | 3696.26 | 0.0 | -178.50 | 2538.39 | 3664.51 | 1.462 | 0.137 | 0.013 |
| 896.98 | 1042.50 | 3481.28 | 3686.00 | 0.0 | -33.67 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 895.69 | 1544.29 | 3851.25 | 3687.35 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 892.43 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 887.26 | 278.87 | 4221.22 | 3686.00 | 0.0 | -31.21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 849.94 | 2149.89 | 4221.22 | 3686.00 | 0.0 | -64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 840.79 | 150.71 | 4221.22 | 3686.00 | 0.0 | -64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 839.04 | 4458.34 | 4221.22 | 3686.00 | 0.0 | -70.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.47 | 301.43 | 4221.22 | 3686.00 | 0.0 | -69.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.00 | 3.560e+05 | 2928.97 | 3695.44 | 0.0 | -178.50 | 2610.37 | 3664.49 | 1.449 | 0.113 | 0.013 |
| 821.62 | 3653.08 | 4221.22 | 3685.58 | 0.0 | -81.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 807.73 | 4259.95 | 4221.22 | 3686.00 | 0.0 | -75.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 800.84 | 301.43 | 4221.22 | 3686.00 | 0.0 | -74.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 780.00 | 1.464e+06 | 2778.47 | 3680.55 | 0.0 | -178.50 | 2751.82 | 3709.29 | 1.442 | 0.010 | 0.012 |
| 760.02 | 1856.89 | 4221.22 | 3685.88 | 0.0 | -79.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 755.69 | 255.42 | 4221.22 | 3685.94 | 0.0 | -78.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 743.35 | 1001.59 | 5308.15 | 3676.82 | 0.0 | -62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 741.79 | 2093.31 | 5308.15 | 3676.82 | 0.0 | -67.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 737.22 | 2353.28 | 5308.15 | 3676.82 | 0.0 | -72.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 735.21 | 975.72 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 733.98 | 711.12 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.92 | 2074.77 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.84 | 1469.14 | 5308.15 | 3676.82 | 0.0 | -6.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.95 | 2316.26 | 5308.15 | 3676.82 | 0.0 | -77.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.44 | 1608.08 | 5308.15 | 3676.82 | 0.0 | -12.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 726.20 | 2430.68 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 723.87 | 1833.87 | 5308.15 | 3676.82 | 0.0 | -19.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 716.26 | 1819.39 | 5308.15 | 3676.82 | 0.0 | -25.58 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 715.52 | 2745.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 711.37 | 6603.06 | 2274.63 | 4411.46 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 705.78 | 865.63 | 5308.15 | 3676.82 | 0.0 | -62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.90 | 1.447e+04 | 2274.57 | 4410.60 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.39 | 483.99 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.66 | 1816.49 | 5308.15 | 3676.82 | 0.0 | -66.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.42 | 720.77 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.00 | 5.429e+05 | 2795.67 | 3605.19 | 0.0 | -178.50 | 2743.07 | 3638.77 | 1.424 | 0.019 | 0.014 |
| 700.49 | 1014.00 | 2784.68 | 2344.92 | 0.0 | -0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 697.84 | 2095.38 | 5072.50 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 695.60 | 1108.59 | 5308.15 | 3676.82 | 0.0 | -5.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.51 | 2057.83 | 5308.15 | 3676.82 | 0.0 | -70.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.04 | 2310.45 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 689.06 | 1145.31 | 2784.68 | 2344.92 | 0.0 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 688.82 | 1255.19 | 5308.15 | 3676.82 | 0.0 | -10.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 687.96 | 4850.52 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 686.48 | 1.471e+04 | 2273.73 | 4389.35 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 684.41 | 1919.30 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 678.97 | 2117.14 | 5308.15 | 3676.82 | 0.0 | -74.45 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 677.68 | 1491.32 | 5308.15 | 3676.82 | 0.0 | -16.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 673.51 | 4422.37 | 1829.52 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 670.89 | 1181.11 | 2784.68 | 2344.92 | 0.0 | -0.24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 669.62 | 427.16 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 668.20 | 489.54 | 5308.15 | 3676.82 | 0.0 | -62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 664.92 | 1509.28 | 5308.15 | 3676.82 | 0.0 | -77.74 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.52 | 1019.91 | 5308.15 | 3676.82 | 0.0 | -65.73 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.05 | 2152.87 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.75 | 916.22 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.44 | 1628.35 | 5308.15 | 3676.82 | 0.0 | -21.31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 661.78 | 264.38 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.37 | 554.52 | 5308.15 | 3676.82 | 0.0 | -4.52 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.00 | 102.15 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 656.76 | 1235.47 | 5308.15 | 3676.82 | 0.0 | -26.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 655.93 | 141.77 | 5308.15 | 3676.82 | 0.0 | -62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 652.58 | 68.79 | 5308.15 | 3676.82 | 0.0 | -4.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.67 | 214.75 | 5308.15 | 3676.82 | 0.0 | -65.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.53 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 649.81 | 1133.76 | 5308.15 | 3676.82 | 0.0 | -69.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 648.19 | 630.33 | 5308.15 | 3676.82 | 0.0 | -8.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 643.00 | 3324.21 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 642.61 | 1158.68 | 5011.54 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 639.18 | 214.75 | 5308.15 | 3676.82 | 0.0 | -68.42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.54 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.24 | 1376.71 | 5308.15 | 3676.82 | 0.0 | -75.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 631.48 | 751.65 | 5308.15 | 3676.82 | 0.0 | -13.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 630.06 | 7207.70 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 628.00 | 1718.04 | 4395.95 | 3898.35 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.37 | 2756.80 | 2198.29 | 5065.00 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.22 | 68.79 | 5308.15 | 3676.82 | 0.0 | -12.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 624.00 | 5.299e+05 | 2813.85 | 3598.29 | 0.0 | -178.50 | 2769.97 | 3638.78 | 1.419 | 0.016 | 0.017 |
| 619.32 | 214.75 | 5308.15 | 3676.82 | 0.0 | -71.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.78 | 248.18 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.46 | 1196.08 | 5308.15 | 3676.82 | 0.0 | -23.66 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 616.20 | 1033.37 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 613.78 | 1333.08 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.98 | 516.08 | 2784.68 | 2344.92 | 0.0 | -0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.57 | 1230.58 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.00 | 21.20 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 608.63 | 849.78 | 5308.15 | 3676.82 | 0.0 | -17.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 606.33 | 1097.85 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 603.81 | 68.79 | 5308.15 | 3676.82 | 0.0 | -16.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.50 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.35 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 601.87 | 1314.73 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 599.56 | 862.34 | 5308.15 | 3676.82 | 0.0 | -74.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 598.33 | 969.40 | 5308.15 | 3676.83 | 0.0 | -78.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 596.18 | 2277.57 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 595.61 | 817.85 | 5308.15 | 3676.82 | 0.0 | -27.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.43 | 214.75 | 5308.15 | 3676.82 | 0.0 | -73.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.21 | 7593.48 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.00 | 125.55 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 588.13 | 570.73 | 2784.68 | 2344.92 | 0.0 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 583.87 | 251.09 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.60 | 1033.37 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.39 | 769.13 | 5308.15 | 3676.83 | 0.0 | -76.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.21 | 6201.74 | 2280.31 | 4502.99 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.53 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.15 | 660.73 | 5308.15 | 3676.82 | 0.0 | -20.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.89 | 68.79 | 5308.15 | 3676.82 | 0.0 | -20.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.20 | 1709.69 | 1856.31 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 571.15 | 782.09 | 5308.15 | 3676.82 | 0.0 | -25.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 568.81 | 867.58 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.53 | 533.35 | 2784.68 | 2344.92 | 0.0 | -0.26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.28 | 2186.12 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 566.46 | 491.89 | 5308.15 | 3676.83 | 0.0 | -75.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.28 | 167.18 | 5308.15 | 3676.82 | 0.0 | -74.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.00 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 557.85 | 251.09 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 551.77 | 582.90 | 2784.68 | 2344.92 | 0.0 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 546.69 | 451.43 | 5308.15 | 3676.82 | 0.0 | -23.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.00 | 5.236e+05 | 2827.40 | 3603.86 | 0.0 | -178.50 | 2687.50 | 3638.81 | 1.452 | 0.051 | 0.014 |
| 545.56 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 543.08 | 68.79 | 5308.15 | 3676.82 | 0.0 | -23.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 542.57 | 619.13 | 2206.02 | 3920.36 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.69 | 473.38 | 2180.10 | 2856.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.17 | 756.61 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 538.06 | 4252.63 | 2274.15 | 4404.69 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 536.17 | 1120.02 | 3925.27 | 4126.52 | 0.0 | -134.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 533.06 | 476.07 | 5308.15 | 3676.82 | 0.0 | -28.61 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 532.32 | 1030.21 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 524.02 | 1148.18 | 1828.94 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 521.04 | 438.87 | 5308.15 | 3676.82 | 0.0 | -27.37 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 520.18 | 566.50 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 518.92 | 251.09 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 517.18 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 509.02 | 275.00 | 5308.15 | 3676.82 | 0.0 | -26.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 506.15 | 66.44 | 5308.15 | 3676.82 | 0.0 | -25.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 504.39 | 330.33 | 2784.68 | 2344.92 | 0.0 | -0.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 500.00 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 473.00 | 1.385e+04 | 2271.65 | 4515.62 | 0.0 | -130.77 | 2206.91 | 4525.00 | 1.263 | 0.005 | 0.009 |
| 468.00 | 4.924e+05 | 2856.16 | 3615.63 | 0.0 | -178.50 | 2794.30 | 3827.00 | 1.537 | 0.024 | 0.081 |
| 459.41 | 211.22 | 2784.68 | 2344.92 | 0.0 | -0.27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 449.21 | 145.37 | 2784.68 | 2344.92 | 0.0 | -0.26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 446.94 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 414.00 | 3927.52 | 4677.55 | 3647.94 | 0.0 | -68.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 392.50 | 1068.99 | 1695.02 | 5069.18 | 0.0 | -47.77 | 1697.67 | 5069.18 | 0.463 | 0.021 | 1.6061e-05 |
| 390.00 | 4.483e+05 | 2857.31 | 3622.35 | 0.0 | -178.50 | 2528.81 | 3654.36 | 1.495 | 0.124 | 0.013 |
| 378.40 | 6039.26 | 2191.00 | 5069.17 | 0.0 | -47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 323.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | -5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 312.00 | 4.298e+05 | 2879.83 | 3597.49 | 0.0 | -178.50 | 2446.08 | 3674.23 | 1.505 | 0.165 | 0.030 |
| 283.80 | 6039.26 | 2191.00 | 5069.17 | 0.0 | -47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 273.00 | 334.07 | 661.27 | 4281.50 | 0.0 | -5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 234.00 | 4.249e+05 | 2877.82 | 3582.57 | 0.0 | -178.50 | 2410.52 | 3666.47 | 1.517 | 0.179 | 0.033 |
| 223.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | -5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 189.20 | 6039.26 | 2191.00 | 5069.17 | 0.0 | -47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 156.00 | 4.503e+05 | 2869.01 | 3596.89 | 0.0 | -178.50 | 2679.22 | 3544.37 | 1.490 | 0.071 | 0.021 |
| 94.60 | 6039.26 | 2191.00 | 5069.17 | 0.0 | -47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 78.00 | 4.736e+05 | 2870.52 | 3603.03 | 0.0 | -178.50 | 2674.31 | 3549.62 | 1.496 | 0.073 | 0.021 |
| Risulta | 1.104e+07 | | | | | | | | | |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| | Hz | sec | g | daN | | daN | | daN | | | |
| 1 | 2.259 | 0.443 | 0.136 | 3.554e+05 | 3.2 | 1.79 | 1.62e-05 | 2.01 | 1.82e-05 | 0.0 | 0.0 |
| 2 | 2.770 | 0.361 | 0.136 | 2.119e+04 | 0.2 | 1.358e+06 | 12.3 | 1.87 | 1.69e-05 | 0.0 | 0.0 |
| 3 | 3.146 | 0.318 | 0.136 | 1.096e+06 | 9.9 | 1.632e+05 | 1.5 | 0.04 | 0.0 | 0.0 | 0.0 |
| 4 | 3.459 | 0.289 | 0.136 | 1.212e+05 | 1.1 | 1.853e+06 | 16.8 | 105.18 | 9.53e-04 | 0.0 | 0.0 |
| 5 | 4.144 | 0.241 | 0.136 | 6559.77 | 5.94e-02 | 1.354e+06 | 12.3 | 30.04 | 2.72e-04 | 0.0 | 0.0 |
| 6 | 4.190 | 0.239 | 0.136 | 3.971e+05 | 3.6 | 4.681e+04 | 0.4 | 2.13 | 1.93e-05 | 0.0 | 0.0 |
| 7 | 4.412 | 0.227 | 0.136 | 6.451e+06 | 58.4 | 6.011e+04 | 0.5 | 511.68 | 4.63e-03 | 0.0 | 0.0 |
| 8 | 4.513 | 0.222 | 0.136 | 1.519e+04 | 0.1 | 1.759e+06 | 15.9 | 1.47 | 1.33e-05 | 0.0 | 0.0 |
| 9 | 4.767 | 0.210 | 0.136 | 14.56 | 1.32e-04 | 1.627e+05 | 1.5 | 3.16 | 2.86e-05 | 0.0 | 0.0 |
| 10 | 4.939 | 0.202 | 0.136 | 8256.64 | 7.48e-02 | 4.440e+05 | 4.0 | 9.88 | 8.95e-05 | 0.0 | 0.0 |
| 11 | 5.141 | 0.195 | 0.136 | 665.05 | 6.02e-03 | 5.952e+04 | 0.5 | 3.59 | 3.26e-05 | 0.0 | 0.0 |
| 12 | 5.271 | 0.190 | 0.136 | 346.84 | 3.14e-03 | 7.221e+04 | 0.7 | 150.45 | 1.36e-03 | 0.0 | 0.0 |
| 13 | 5.632 | 0.178 | 0.136 | 2933.28 | 2.66e-02 | 3.052e+05 | 2.8 | 152.21 | 1.38e-03 | 0.0 | 0.0 |
| 14 | 5.731 | 0.175 | 0.138 | 2744.19 | 2.49e-02 | 52.47 | 4.75e-04 | 610.41 | 5.53e-03 | 0.0 | 0.0 |
| 15 | 5.814 | 0.172 | 0.138 | 1248.86 | 1.13e-02 | 1.835e+04 | 0.2 | 452.61 | 4.10e-03 | 0.0 | 0.0 |
| 16 | 5.891 | 0.170 | 0.139 | 1267.45 | 1.15e-02 | 6320.32 | 5.72e-02 | 1351.30 | 1.22e-02 | 0.0 | 0.0 |
| 17 | 5.928 | 0.169 | 0.140 | 1.022e+05 | 0.9 | 1.306e+04 | 0.1 | 24.16 | 2.19e-04 | 0.0 | 0.0 |
| 18 | 6.147 | 0.163 | 0.142 | 3202.37 | 2.90e-02 | 1.018e+04 | 9.22e-02 | 986.77 | 8.94e-03 | 0.0 | 0.0 |
| 19 | 6.206 | 0.161 | 0.142 | 1.142e+05 | 1.0 | 1.521e+05 | 1.4 | 365.23 | 3.31e-03 | 0.0 | 0.0 |
| 20 | 6.310 | 0.158 | 0.143 | 1.205e+05 | 1.1 | 3.477e+05 | 3.1 | 1920.09 | 1.74e-02 | 0.0 | 0.0 |
| 21 | 6.399 | 0.156 | 0.144 | 1.243e+04 | 0.1 | 1.976e+04 | 0.2 | 101.48 | 9.19e-04 | 0.0 | 0.0 |
| 22 | 6.450 | 0.155 | 0.145 | 2952.53 | 2.67e-02 | 2.917e+04 | 0.3 | 37.25 | 3.37e-04 | 0.0 | 0.0 |
| 23 | 6.624 | 0.151 | 0.146 | 240.86 | 2.18e-03 | 114.59 | 1.04e-03 | 146.23 | 1.32e-03 | 0.0 | 0.0 |
| 24 | 6.749 | 0.148 | 0.147 | 3409.24 | 3.09e-02 | 4185.73 | 3.79e-02 | 16.06 | 1.45e-04 | 0.0 | 0.0 |
| 25 | 6.865 | 0.146 | 0.148 | 2827.79 | 2.56e-02 | 6.343e+04 | 0.6 | 7.51 | 6.80e-05 | 0.0 | 0.0 |
| 26 | 7.000 | 0.143 | 0.149 | 1.614e+05 | 1.5 | 129.32 | 1.17e-03 | 527.17 | 4.78e-03 | 0.0 | 0.0 |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|----------------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| 27 | 7.027 | 0.142 | 0.149 | 1.113e+04 | 0.1 | 3.414e+04 | 0.3 | 1374.39 | 1.24e-02 | 0.0 | 0.0 |
| 28 | 7.135 | 0.140 | 0.150 | 6909.68 | 6.26e-02 | 2.019e+05 | 1.8 | 657.07 | 5.95e-03 | 0.0 | 0.0 |
| 29 | 7.307 | 0.137 | 0.151 | 4.461e+04 | 0.4 | 2.656e+04 | 0.2 | 574.64 | 5.21e-03 | 0.0 | 0.0 |
| 30 | 7.373 | 0.136 | 0.152 | 2.840e+04 | 0.3 | 0.92 | 8.31e-06 | 231.42 | 2.10e-03 | 0.0 | 0.0 |
| 31 | 7.386 | 0.135 | 0.152 | 5.193e+04 | 0.5 | 7.209e+04 | 0.7 | 1018.02 | 9.22e-03 | 0.0 | 0.0 |
| 32 | 7.469 | 0.134 | 0.152 | 4115.35 | 3.73e-02 | 1.201e+04 | 0.1 | 2731.39 | 2.47e-02 | 0.0 | 0.0 |
| 33 | 7.589 | 0.132 | 0.153 | 1.179e+04 | 0.1 | 5.503e+04 | 0.5 | 553.36 | 5.01e-03 | 0.0 | 0.0 |
| 34 | 7.667 | 0.130 | 0.153 | 1.741e+04 | 0.2 | 2.245e+04 | 0.2 | 1997.82 | 1.81e-02 | 0.0 | 0.0 |
| 35 | 7.868 | 0.127 | 0.155 | 4.111e+04 | 0.4 | 1.598e+04 | 0.1 | 5.22 | 4.73e-05 | 0.0 | 0.0 |
| 36 | 7.873 | 0.127 | 0.155 | 2382.73 | 2.16e-02 | 3.587e+04 | 0.3 | 765.59 | 6.93e-03 | 0.0 | 0.0 |
| 37 | 7.924 | 0.126 | 0.155 | 5.997e+04 | 0.5 | 1.291e+04 | 0.1 | 102.08 | 9.25e-04 | 0.0 | 0.0 |
| 38 | 7.969 | 0.125 | 0.155 | 1.077e+04 | 9.75e-02 | 5.518e+04 | 0.5 | 90.63 | 8.21e-04 | 0.0 | 0.0 |
| 39 | 8.114 | 0.123 | 0.156 | 1303.04 | 1.18e-02 | 1.757e+04 | 0.2 | 2205.66 | 2.00e-02 | 0.0 | 0.0 |
| 40 | 8.152 | 0.123 | 0.156 | 432.59 | 3.92e-03 | 5.327e+04 | 0.5 | 1011.10 | 9.16e-03 | 0.0 | 0.0 |
| 41 | 8.181 | 0.122 | 0.156 | 350.85 | 3.18e-03 | 2045.30 | 1.85e-02 | 2287.98 | 2.07e-02 | 0.0 | 0.0 |
| 42 | 8.277 | 0.121 | 0.157 | 1.046e+04 | 9.47e-02 | 5774.40 | 5.23e-02 | 15.68 | 1.42e-04 | 0.0 | 0.0 |
| 43 | 8.283 | 0.121 | 0.157 | 1082.75 | 9.81e-03 | 3619.35 | 3.28e-02 | 3187.86 | 2.89e-02 | 0.0 | 0.0 |
| 44 | 8.335 | 0.120 | 0.157 | 2.17 | 1.96e-05 | 8806.02 | 7.98e-02 | 26.13 | 2.37e-04 | 0.0 | 0.0 |
| 45 | 8.367 | 0.120 | 0.157 | 2345.84 | 2.12e-02 | 3.913e+04 | 0.4 | 121.00 | 1.10e-03 | 0.0 | 0.0 |
| 46 | 8.416 | 0.119 | 0.158 | 64.31 | 5.83e-04 | 6.990e+04 | 0.6 | 2770.18 | 2.51e-02 | 0.0 | 0.0 |
| 47 | 8.454 | 0.118 | 0.158 | 3263.67 | 2.96e-02 | 6015.81 | 5.45e-02 | 38.53 | 3.49e-04 | 0.0 | 0.0 |
| 48 | 8.492 | 0.118 | 0.158 | 74.84 | 6.78e-04 | 8875.87 | 8.04e-02 | 80.37 | 7.28e-04 | 0.0 | 0.0 |
| 49 | 8.588 | 0.116 | 0.158 | 2.620e+04 | 0.2 | 5.295e+04 | 0.5 | 1540.70 | 1.40e-02 | 0.0 | 0.0 |
| 50 | 8.612 | 0.116 | 0.159 | 1.143e+04 | 0.1 | 4862.26 | 4.40e-02 | 107.66 | 9.75e-04 | 0.0 | 0.0 |
| 51 | 8.678 | 0.115 | 0.159 | 1303.27 | 1.18e-02 | 7.900e+04 | 0.7 | 1498.58 | 1.36e-02 | 0.0 | 0.0 |
| 52 | 8.747 | 0.114 | 0.159 | 870.08 | 7.88e-03 | 1.379e+04 | 0.1 | 2125.41 | 1.93e-02 | 0.0 | 0.0 |
| 53 | 8.772 | 0.114 | 0.159 | 2979.05 | 2.70e-02 | 7394.46 | 6.70e-02 | 150.61 | 1.36e-03 | 0.0 | 0.0 |
| 54 | 8.817 | 0.113 | 0.160 | 1.531e+04 | 0.1 | 4465.04 | 4.04e-02 | 464.55 | 4.21e-03 | 0.0 | 0.0 |
| 55 | 8.929 | 0.112 | 0.160 | 2607.29 | 2.36e-02 | 2.604e+04 | 0.2 | 568.07 | 5.15e-03 | 0.0 | 0.0 |
| 56 | 8.960 | 0.112 | 0.160 | 7076.89 | 6.41e-02 | 1.928e+04 | 0.2 | 492.45 | 4.46e-03 | 0.0 | 0.0 |
| 57 | 8.976 | 0.111 | 0.160 | 6305.36 | 5.71e-02 | 1.448e+04 | 0.1 | 717.62 | 6.50e-03 | 0.0 | 0.0 |
| 58 | 8.997 | 0.111 | 0.160 | 1.616e+04 | 0.1 | 813.42 | 7.37e-03 | 294.84 | 2.67e-03 | 0.0 | 0.0 |
| 59 | 9.057 | 0.110 | 0.161 | 5053.55 | 4.58e-02 | 2.575e+04 | 0.2 | 747.41 | 6.77e-03 | 0.0 | 0.0 |
| 60 | 9.120 | 0.110 | 0.161 | 3.106e+04 | 0.3 | 4663.84 | 4.22e-02 | 427.47 | 3.87e-03 | 0.0 | 0.0 |
| 61 | 9.154 | 0.109 | 0.161 | 4666.47 | 4.23e-02 | 1.042e+04 | 9.44e-02 | 567.18 | 5.14e-03 | 0.0 | 0.0 |
| 62 | 9.175 | 0.109 | 0.161 | 737.88 | 6.68e-03 | 6208.37 | 5.62e-02 | 539.52 | 4.89e-03 | 0.0 | 0.0 |
| 63 | 9.209 | 0.109 | 0.161 | 5740.19 | 5.20e-02 | 1.009e+04 | 9.14e-02 | 45.85 | 4.15e-04 | 0.0 | 0.0 |
| 64 | 9.232 | 0.108 | 0.161 | 1.321e+04 | 0.1 | 1280.93 | 1.16e-02 | 4.85 | 4.39e-05 | 0.0 | 0.0 |
| 65 | 9.265 | 0.108 | 0.162 | 1.399e+04 | 0.1 | 4.108e+04 | 0.4 | 46.63 | 4.22e-04 | 0.0 | 0.0 |
| 66 | 9.280 | 0.108 | 0.162 | 1251.92 | 1.13e-02 | 1.818e+04 | 0.2 | 455.16 | 4.12e-03 | 0.0 | 0.0 |
| Risulta | | | | 9.480e+06 | | 9.402e+06 | | 4.016e+04 | | | |
| In percentuale | | | | 85.87 | | 85.17 | | 0.36 | | | |

| CDC | Tipo | Sigla Id | Note |
|-----|------|---|---|
| 6 | Edk | CDC=Ed (dinamico SLU) alfa=0.0 (ecc. -) | |
| | | | verifica esistenti: fattore FC 1.200 |
| | | | categoria suolo: E |
| | | | fattore di sito S = 1.600 |
| | | | ordinata spettro (tratto Tb-Tc) = 0.136 g |
| | | | angolo di ingresso:0.0 |
| | | | eccentricità aggiuntiva: negativa |
| | | | periodo proprio T1: 0.247 sec. |
| | | | fattore di struttura q: 3.600 |
| | | | fattore per spost. mu d: 6.632 |
| | | | classe di duttilità CD: B |
| | | | numero di modi considerati: 66 |
| | | | combinaz. modale: CQC |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| cm | daN | cm | cm | cm | cm | cm | cm | | | |
| 2398.43 | 225.38 | 3851.25 | 3685.79 | 0.0 | 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2387.29 | 348.62 | 3851.25 | 3685.79 | 0.0 | 13.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2372.45 | 406.44 | 3851.25 | 3685.79 | 0.0 | 16.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2353.36 | 467.17 | 3851.25 | 3685.79 | 0.0 | 19.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 2329.16 | 532.48 | 3851.25 | 3685.79 | 0.0 | 23.12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2298.35 | 606.14 | 3851.25 | 3685.79 | 0.0 | 26.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2258.02 | 793.11 | 3851.25 | 3685.79 | 0.0 | 29.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2150.00 | 1125.96 | 3851.25 | 3685.79 | 0.0 | 32.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2060.00 | 4.769e+04 | 2472.99 | 3685.70 | 0.0 | 130.77 | 2383.06 | 3690.52 | 1.390 | 0.053 | 0.003 |
| 1960.00 | 6603.35 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1943.95 | 6.727e+04 | 2783.57 | 3568.68 | 0.0 | 147.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.75 | 3285.75 | 3771.88 | 5155.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.53 | 2156.92 | 4346.64 | 5155.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1940.66 | 1.133e+04 | 1016.86 | 3636.74 | 0.0 | 147.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1931.38 | 2.097e+04 | 1050.89 | 3688.24 | 0.0 | 74.37 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1867.50 | 1.130e+04 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.395 | 0.0 | 0.0 |
| 1775.00 | 9277.13 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.281 | 0.0 | 0.0 |
| 1770.00 | 5768.41 | 2378.28 | 3690.32 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1720.00 | 2.411e+05 | 2601.62 | 3775.89 | 0.0 | 178.50 | 882.57 | 3946.91 | 1.143 | 0.593 | 0.096 |
| 1682.50 | 7250.34 | 3851.25 | 3685.79 | 0.0 | 34.27 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1642.00 | 3.027e+05 | 2604.36 | 3813.16 | 0.0 | 178.50 | 915.04 | 3946.89 | 1.143 | 0.544 | 0.075 |
| 1590.00 | 7250.34 | 3851.25 | 3685.79 | 0.0 | 34.27 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1564.00 | 2.586e+05 | 2648.19 | 3789.92 | 0.0 | 178.50 | 825.89 | 3863.21 | 1.137 | 0.709 | 0.042 |
| 1497.50 | 9210.54 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1486.00 | 2.206e+05 | 2646.92 | 3774.60 | 0.0 | 178.50 | 804.35 | 3862.73 | 1.138 | 0.768 | 0.050 |
| 1408.00 | 2.244e+05 | 2601.55 | 3776.23 | 0.0 | 178.50 | 799.48 | 3862.71 | 1.138 | 0.764 | 0.049 |
| 1405.00 | 1.155e+04 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1330.00 | 2.364e+05 | 2591.48 | 3794.52 | 0.0 | 178.50 | 885.91 | 3944.67 | 1.144 | 0.588 | 0.085 |
| 1312.50 | 9818.02 | 3851.44 | 3685.13 | 0.0 | 36.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1266.00 | 2.110e+05 | 2605.27 | 3816.06 | 0.0 | 178.50 | 885.91 | 3944.67 | 1.144 | 0.592 | 0.072 |
| 1220.00 | 1.084e+06 | 2761.39 | 3699.32 | 0.0 | 178.50 | 2496.34 | 3776.54 | 1.573 | 0.098 | 0.032 |
| 1206.25 | 1116.37 | 4756.32 | 3676.71 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1196.67 | 571.81 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.37 | 1969.29 | 3598.51 | 3809.61 | 0.0 | 23.61 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.30 | 625.16 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1192.50 | 778.59 | 4834.79 | 3856.00 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.13 | 1432.32 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.06 | 1433.97 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1185.83 | 721.53 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1183.60 | 1934.92 | 3481.28 | 3686.00 | 0.0 | 16.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1182.74 | 1589.19 | 4221.22 | 3686.00 | 0.0 | 7.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.55 | 1970.74 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.48 | 1971.37 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1178.75 | 398.66 | 4913.37 | 3975.64 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.59 | 2016.46 | 4221.22 | 3686.00 | 0.0 | 14.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.33 | 467.42 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1167.74 | 2869.58 | 3481.28 | 3686.00 | 0.0 | 24.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.72 | 1471.38 | 3589.09 | 3799.68 | 0.0 | 22.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.59 | 428.10 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.99 | 3412.22 | 4048.29 | 3922.39 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.93 | 2822.59 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.25 | 954.85 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.12 | 953.08 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1158.73 | 2692.29 | 4221.22 | 3686.00 | 0.0 | 21.12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.67 | 326.88 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.25 | 1120.86 | 5072.15 | 3436.99 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1150.00 | 513.38 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1147.20 | 1355.24 | 3481.28 | 3686.00 | 0.0 | 13.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1146.39 | 3712.91 | 3481.28 | 3686.00 | 0.0 | 31.64 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1145.49 | 728.01 | 4221.22 | 3686.00 | 0.0 | 6.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1144.00 | 6987.90 | 3851.25 | 3686.25 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1143.85 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1142.00 | 4.023e+05 | 2746.29 | 3711.48 | 0.0 | 178.50 | 2316.65 | 3827.93 | 1.560 | 0.165 | 0.047 |
| 1141.09 | 1236.70 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1140.97 | 1234.32 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1138.73 | 2999.05 | 4221.22 | 3686.00 | 0.0 | 27.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1137.50 | 1239.02 | 5150.49 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1127.18 | 943.14 | 4221.22 | 3686.00 | 0.0 | 12.31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1125.64 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1123.75 | 1056.77 | 5229.32 | 3676.94 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1115.47 | 1842.89 | 3481.28 | 3686.00 | 0.0 | 19.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.98 | 1.842e+04 | 5175.61 | 3713.42 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.86 | 1672.24 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1097.46 | 1276.70 | 4221.22 | 3686.00 | 0.0 | 17.87 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1096.07 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1072.77 | 2292.16 | 3481.28 | 3686.00 | 0.0 | 24.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1071.62 | 3126.64 | 3481.28 | 3686.00 | 0.0 | 33.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1069.75 | 5522.07 | 3851.25 | 3686.52 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.10 | 2059.28 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.01 | 2054.62 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1065.60 | 1864.03 | 4221.22 | 3686.00 | 0.0 | 29.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1064.00 | 3.704e+05 | 2950.68 | 3690.88 | 0.0 | 178.50 | 2471.04 | 3827.31 | 1.522 | 0.182 | 0.053 |
| 1057.45 | 1519.34 | 4221.22 | 3686.00 | 0.0 | 22.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1056.27 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1020.75 | 1842.89 | 3481.28 | 3686.00 | 0.0 | 28.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.07 | 1584.13 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.00 | 1578.97 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1008.71 | 990.30 | 4221.22 | 3686.00 | 0.0 | 26.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1007.78 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 993.19 | 1772.71 | 3481.28 | 3686.00 | 0.0 | 35.36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 991.90 | 2924.63 | 3851.25 | 3686.82 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 989.05 | 1025.97 | 4221.22 | 3686.00 | 0.0 | 31.11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 986.00 | 3.407e+05 | 2938.41 | 3693.07 | 0.0 | 178.50 | 2160.49 | 3685.87 | 1.530 | 0.301 | 0.003 |
| 961.39 | 1355.24 | 3481.28 | 3686.00 | 0.0 | 31.72 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.86 | 1090.81 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.81 | 1085.53 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 956.58 | 4975.61 | 4221.21 | 3660.70 | 0.0 | 64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 953.10 | 509.94 | 4221.22 | 3686.00 | 0.0 | 29.72 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 952.46 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 951.13 | 1.009e+04 | 4221.22 | 3679.57 | 0.0 | 71.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 935.47 | 8808.93 | 4221.22 | 3695.09 | 0.0 | 79.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 912.24 | 1276.17 | 3481.28 | 3686.00 | 0.0 | 36.34 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 911.58 | 1929.45 | 3851.25 | 3687.25 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 908.00 | 3.865e+05 | 2922.61 | 3696.26 | 0.0 | 178.50 | 2538.39 | 3664.51 | 1.462 | 0.137 | 0.013 |
| 896.98 | 1042.50 | 3481.28 | 3686.00 | 0.0 | 33.67 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 895.69 | 1544.29 | 3851.25 | 3687.35 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 892.43 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 887.26 | 278.87 | 4221.22 | 3686.00 | 0.0 | 31.21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 849.94 | 2149.89 | 4221.22 | 3686.00 | 0.0 | 64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 840.79 | 150.71 | 4221.22 | 3686.00 | 0.0 | 64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 839.04 | 4458.34 | 4221.22 | 3686.00 | 0.0 | 70.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.47 | 301.43 | 4221.22 | 3686.00 | 0.0 | 69.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.00 | 3.560e+05 | 2928.97 | 3695.44 | 0.0 | 178.50 | 2610.37 | 3664.49 | 1.449 | 0.113 | 0.013 |
| 821.62 | 3653.08 | 4221.22 | 3685.58 | 0.0 | 81.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 807.73 | 4259.95 | 4221.22 | 3686.00 | 0.0 | 75.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 800.84 | 301.43 | 4221.22 | 3686.00 | 0.0 | 74.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 780.00 | 1.464e+06 | 2778.47 | 3680.55 | 0.0 | 178.50 | 2751.82 | 3709.29 | 1.442 | 0.010 | 0.012 |
| 760.02 | 1856.89 | 4221.22 | 3685.88 | 0.0 | 79.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 755.69 | 255.42 | 4221.22 | 3685.94 | 0.0 | 78.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 743.35 | 1001.59 | 5308.15 | 3676.82 | 0.0 | 62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 741.79 | 2093.31 | 5308.15 | 3676.82 | 0.0 | 67.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 737.22 | 2353.28 | 5308.15 | 3676.82 | 0.0 | 72.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 735.21 | 975.72 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 733.98 | 711.12 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.92 | 2074.77 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.84 | 1469.14 | 5308.15 | 3676.82 | 0.0 | 6.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.95 | 2316.26 | 5308.15 | 3676.82 | 0.0 | 77.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.44 | 1608.08 | 5308.15 | 3676.82 | 0.0 | 12.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 726.20 | 2430.68 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 723.87 | 1833.87 | 5308.15 | 3676.82 | 0.0 | 19.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 716.26 | 1819.39 | 5308.15 | 3676.82 | 0.0 | 25.58 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 715.52 | 2745.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 711.37 | 6603.06 | 2274.63 | 4411.46 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 705.78 | 865.63 | 5308.15 | 3676.82 | 0.0 | 62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.90 | 1.447e+04 | 2274.57 | 4410.60 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.39 | 483.99 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.66 | 1816.49 | 5308.15 | 3676.82 | 0.0 | 66.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.42 | 720.77 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.00 | 5.429e+05 | 2795.67 | 3605.19 | 0.0 | 178.50 | 2743.07 | 3638.77 | 1.424 | 0.019 | 0.014 |
| 700.49 | 1014.00 | 2784.68 | 2344.92 | 0.0 | 0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 697.84 | 2095.38 | 5072.50 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 695.60 | 1108.59 | 5308.15 | 3676.82 | 0.0 | 5.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.51 | 2057.83 | 5308.15 | 3676.82 | 0.0 | 70.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.04 | 2310.45 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 689.06 | 1145.31 | 2784.68 | 2344.92 | 0.0 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 688.82 | 1255.19 | 5308.15 | 3676.82 | 0.0 | 10.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 687.96 | 4850.52 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 686.48 | 1.471e+04 | 2273.73 | 4389.35 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 684.41 | 1919.30 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 678.97 | 2117.14 | 5308.15 | 3676.82 | 0.0 | 74.45 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 677.68 | 1491.32 | 5308.15 | 3676.82 | 0.0 | 16.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 673.51 | 4422.37 | 1829.52 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 670.89 | 1181.11 | 2784.68 | 2344.92 | 0.0 | 0.24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 669.62 | 427.16 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 668.20 | 489.54 | 5308.15 | 3676.82 | 0.0 | 62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 664.92 | 1509.28 | 5308.15 | 3676.82 | 0.0 | 77.74 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.52 | 1019.91 | 5308.15 | 3676.82 | 0.0 | 65.73 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.05 | 2152.87 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.75 | 916.22 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.44 | 1628.35 | 5308.15 | 3676.82 | 0.0 | 21.31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 661.78 | 264.38 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.37 | 554.52 | 5308.15 | 3676.82 | 0.0 | 4.52 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.00 | 102.15 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 656.76 | 1235.47 | 5308.15 | 3676.82 | 0.0 | 26.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 655.93 | 141.77 | 5308.15 | 3676.82 | 0.0 | 62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 652.58 | 68.79 | 5308.15 | 3676.82 | 0.0 | 4.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.67 | 214.75 | 5308.15 | 3676.82 | 0.0 | 65.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.53 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 649.81 | 1133.76 | 5308.15 | 3676.82 | 0.0 | 69.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 648.19 | 630.33 | 5308.15 | 3676.82 | 0.0 | 8.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 643.00 | 3324.21 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 642.61 | 1158.68 | 5011.54 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 639.18 | 214.75 | 5308.15 | 3676.82 | 0.0 | 68.42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.54 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.24 | 1376.71 | 5308.15 | 3676.82 | 0.0 | 75.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 631.48 | 751.65 | 5308.15 | 3676.82 | 0.0 | 13.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 630.06 | 7207.70 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 628.00 | 1718.04 | 4395.95 | 3898.35 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.37 | 2756.80 | 2198.29 | 5065.00 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.22 | 68.79 | 5308.15 | 3676.82 | 0.0 | 12.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 624.00 | 5.299e+05 | 2813.85 | 3598.29 | 0.0 | 178.50 | 2769.97 | 3638.78 | 1.419 | 0.016 | 0.017 |
| 619.32 | 214.75 | 5308.15 | 3676.82 | 0.0 | 71.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.78 | 248.18 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.46 | 1196.08 | 5308.15 | 3676.82 | 0.0 | 23.66 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 616.20 | 1033.37 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 613.78 | 1333.08 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.98 | 516.08 | 2784.68 | 2344.92 | 0.0 | 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.57 | 1230.58 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.00 | 21.20 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 608.63 | 849.78 | 5308.15 | 3676.82 | 0.0 | 17.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 606.33 | 1097.85 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 603.81 | 68.79 | 5308.15 | 3676.82 | 0.0 | 16.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.50 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.35 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 601.87 | 1314.73 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 599.56 | 862.34 | 5308.15 | 3676.82 | 0.0 | 74.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 598.33 | 969.40 | 5308.15 | 3676.83 | 0.0 | 78.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 596.18 | 2277.57 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 595.61 | 817.85 | 5308.15 | 3676.82 | 0.0 | 27.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.43 | 214.75 | 5308.15 | 3676.82 | 0.0 | 73.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.21 | 7593.48 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.00 | 125.55 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 588.13 | 570.73 | 2784.68 | 2344.92 | 0.0 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 583.87 | 251.09 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.60 | 1033.37 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.39 | 769.13 | 5308.15 | 3676.83 | 0.0 | 76.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.21 | 6201.74 | 2280.31 | 4502.99 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.53 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.15 | 660.73 | 5308.15 | 3676.82 | 0.0 | 20.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.89 | 68.79 | 5308.15 | 3676.82 | 0.0 | 20.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.20 | 1709.69 | 1856.31 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 571.15 | 782.09 | 5308.15 | 3676.82 | 0.0 | 25.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 568.81 | 867.58 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.53 | 533.35 | 2784.68 | 2344.92 | 0.0 | 0.26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.28 | 2186.12 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 566.46 | 491.89 | 5308.15 | 3676.83 | 0.0 | 75.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.28 | 167.18 | 5308.15 | 3676.82 | 0.0 | 74.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.00 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 557.85 | 251.09 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 551.77 | 582.90 | 2784.68 | 2344.92 | 0.0 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.69 | 451.43 | 5308.15 | 3676.82 | 0.0 | 23.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.00 | 5.236e+05 | 2827.40 | 3603.86 | 0.0 | 178.50 | 2687.50 | 3638.81 | 1.452 | 0.051 | 0.014 |
| 545.56 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 543.08 | 68.79 | 5308.15 | 3676.82 | 0.0 | 23.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 542.57 | 619.13 | 2206.02 | 3920.36 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.69 | 473.38 | 2180.10 | 2856.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.17 | 756.61 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 538.06 | 4252.63 | 2274.15 | 4404.69 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 536.17 | 1120.02 | 3925.27 | 4126.52 | 0.0 | 134.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 533.06 | 476.07 | 5308.15 | 3676.82 | 0.0 | 28.61 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 532.32 | 1030.21 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 524.02 | 1148.18 | 1828.94 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 521.04 | 438.87 | 5308.15 | 3676.82 | 0.0 | 27.37 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 520.18 | 566.50 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 518.92 | 251.09 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 517.18 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 509.02 | 275.00 | 5308.15 | 3676.82 | 0.0 | 26.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 506.15 | 66.44 | 5308.15 | 3676.82 | 0.0 | 25.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 504.39 | 330.33 | 2784.68 | 2344.92 | 0.0 | 0.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 500.00 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 473.00 | 1.385e+04 | 2271.65 | 4515.62 | 0.0 | 130.77 | 2206.91 | 4525.00 | 1.263 | 0.005 | 0.009 |
| 468.00 | 4.924e+05 | 2856.16 | 3615.63 | 0.0 | 178.50 | 2794.30 | 3827.00 | 1.537 | 0.024 | 0.081 |
| 459.41 | 211.22 | 2784.68 | 2344.92 | 0.0 | 0.27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 449.21 | 145.37 | 2784.68 | 2344.92 | 0.0 | 0.26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 446.94 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 414.00 | 3927.52 | 4677.55 | 3647.94 | 0.0 | 68.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 392.50 | 1068.99 | 1695.02 | 5069.18 | 0.0 | 47.77 | 1697.67 | 5069.18 | 0.463 | 0.021 | 1.6061e-05 |
| 390.00 | 4.483e+05 | 2857.31 | 3622.35 | 0.0 | 178.50 | 2528.81 | 3654.36 | 1.495 | 0.124 | 0.013 |
| 378.40 | 6039.26 | 2191.00 | 5069.17 | 0.0 | 47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 323.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 312.00 | 4.298e+05 | 2879.83 | 3597.49 | 0.0 | 178.50 | 2446.08 | 3674.23 | 1.505 | 0.165 | 0.030 |
| 283.80 | 6039.26 | 2191.00 | 5069.17 | 0.0 | 47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 273.00 | 334.07 | 661.27 | 4281.50 | 0.0 | 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 234.00 | 4.249e+05 | 2877.82 | 3582.57 | 0.0 | 178.50 | 2410.52 | 3666.47 | 1.517 | 0.179 | 0.033 |
| 223.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 189.20 | 6039.26 | 2191.00 | 5069.17 | 0.0 | 47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 156.00 | 4.503e+05 | 2869.01 | 3596.89 | 0.0 | 178.50 | 2679.22 | 3544.37 | 1.490 | 0.071 | 0.021 |
| 94.60 | 6039.26 | 2191.00 | 5069.17 | 0.0 | 47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 78.00 | 4.736e+05 | 2870.52 | 3603.03 | 0.0 | 178.50 | 2674.31 | 3549.62 | 1.496 | 0.073 | 0.021 |
| Risulta | 1.104e+07 | | | | | | | | | |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| | Hz | sec | g | daN | | daN | | daN | | | |
| 1 | 2.261 | 0.442 | 0.136 | 3.687e+05 | 3.3 | 3.08 | 2.79e-05 | 1.91 | 1.73e-05 | 0.0 | 0.0 |
| 2 | 2.773 | 0.361 | 0.136 | 1.702e+04 | 0.2 | 1.371e+06 | 12.4 | 1.98 | 1.80e-05 | 0.0 | 0.0 |
| 3 | 3.163 | 0.316 | 0.136 | 1.244e+06 | 11.3 | 1.612e+05 | 1.5 | 0.21 | 1.89e-06 | 0.0 | 0.0 |
| 4 | 3.459 | 0.289 | 0.136 | 1.501e+05 | 1.4 | 1.840e+06 | 16.7 | 110.68 | 1.00e-03 | 0.0 | 0.0 |
| 5 | 4.041 | 0.247 | 0.136 | 3.602e+06 | 32.6 | 7614.72 | 6.90e-02 | 302.28 | 2.74e-03 | 0.0 | 0.0 |
| 6 | 4.144 | 0.241 | 0.136 | 4248.89 | 3.85e-02 | 1.353e+06 | 12.3 | 19.91 | 1.80e-04 | 0.0 | 0.0 |
| 7 | 4.353 | 0.230 | 0.136 | 2.000e+06 | 18.1 | 4.242e+05 | 3.8 | 57.52 | 5.21e-04 | 0.0 | 0.0 |
| 8 | 4.533 | 0.221 | 0.136 | 2.283e+05 | 2.1 | 1.371e+06 | 12.4 | 24.93 | 2.26e-04 | 0.0 | 0.0 |
| 9 | 4.782 | 0.209 | 0.136 | 7.593e+04 | 0.7 | 1.250e+05 | 1.1 | 13.19 | 1.20e-04 | 0.0 | 0.0 |
| 10 | 4.995 | 0.200 | 0.136 | 1.876e+05 | 1.7 | 6.655e+05 | 6.0 | 32.15 | 2.91e-04 | 0.0 | 0.0 |
| 11 | 5.257 | 0.190 | 0.136 | 2.144e+05 | 1.9 | 6.069e+04 | 0.5 | 181.03 | 1.64e-03 | 0.0 | 0.0 |
| 12 | 5.293 | 0.189 | 0.136 | 3.534e+05 | 3.2 | 8243.01 | 7.47e-02 | 9.51 | 8.62e-05 | 0.0 | 0.0 |
| 13 | 5.637 | 0.177 | 0.136 | 2567.73 | 2.33e-02 | 2.995e+05 | 2.7 | 158.97 | 1.44e-03 | 0.0 | 0.0 |
| 14 | 5.734 | 0.174 | 0.138 | 2857.96 | 2.59e-02 | 626.25 | 5.67e-03 | 797.31 | 7.22e-03 | 0.0 | 0.0 |
| 15 | 5.777 | 0.173 | 0.138 | 7666.34 | 6.94e-02 | 3312.55 | 3.00e-02 | 269.47 | 2.44e-03 | 0.0 | 0.0 |
| 16 | 5.874 | 0.170 | 0.139 | 8296.48 | 7.51e-02 | 1.314e+04 | 0.1 | 769.61 | 6.97e-03 | 0.0 | 0.0 |
| 17 | 5.993 | 0.167 | 0.140 | 6.483e+04 | 0.6 | 3535.90 | 3.20e-02 | 164.37 | 1.49e-03 | 0.0 | 0.0 |
| 18 | 6.156 | 0.162 | 0.142 | 1248.81 | 1.13e-02 | 9254.26 | 8.38e-02 | 1418.62 | 1.28e-02 | 0.0 | 0.0 |
| 19 | 6.261 | 0.160 | 0.143 | 2.489e+04 | 0.2 | 3.185e+05 | 2.9 | 0.29 | 2.62e-06 | 0.0 | 0.0 |
| 20 | 6.410 | 0.156 | 0.144 | 2.188e+05 | 2.0 | 1.789e+05 | 1.6 | 1861.60 | 1.69e-02 | 0.0 | 0.0 |
| 21 | 6.603 | 0.151 | 0.146 | 687.87 | 6.23e-03 | 5625.49 | 5.10e-02 | 15.18 | 1.38e-04 | 0.0 | 0.0 |
| 22 | 6.782 | 0.147 | 0.147 | 4216.23 | 3.82e-02 | 2.840e+04 | 0.3 | 525.67 | 4.76e-03 | 0.0 | 0.0 |
| 23 | 6.824 | 0.147 | 0.148 | 1.438e+04 | 0.1 | 4.177e+04 | 0.4 | 1.93 | 1.75e-05 | 0.0 | 0.0 |
| 24 | 6.893 | 0.145 | 0.148 | 1419.44 | 1.29e-02 | 2597.53 | 2.35e-02 | 711.99 | 6.45e-03 | 0.0 | 0.0 |
| 25 | 6.992 | 0.143 | 0.149 | 66.13 | 5.99e-04 | 1.476e+04 | 0.1 | 2042.41 | 1.85e-02 | 0.0 | 0.0 |
| 26 | 7.101 | 0.141 | 0.150 | 2.458e+04 | 0.2 | 103.13 | 9.34e-04 | 0.33 | 3.01e-06 | 0.0 | 0.0 |
| 27 | 7.123 | 0.140 | 0.150 | 1082.76 | 9.81e-03 | 2.085e+05 | 1.9 | 694.55 | 6.29e-03 | 0.0 | 0.0 |
| 28 | 7.292 | 0.137 | 0.151 | 1.463e+05 | 1.3 | 5.868e+04 | 0.5 | 283.69 | 2.57e-03 | 0.0 | 0.0 |
| 29 | 7.383 | 0.135 | 0.152 | 1.038e+04 | 9.40e-02 | 1.925e+04 | 0.2 | 30.41 | 2.75e-04 | 0.0 | 0.0 |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|----------------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| 30 | 7.458 | 0.134 | 0.152 | 3.492e+04 | 0.3 | 2.335e+04 | 0.2 | 2620.97 | 2.37e-02 | 0.0 | 0.0 |
| 31 | 7.523 | 0.133 | 0.153 | 2911.41 | 2.64e-02 | 44.65 | 4.04e-04 | 1641.42 | 1.49e-02 | 0.0 | 0.0 |
| 32 | 7.536 | 0.133 | 0.153 | 4.775e+04 | 0.4 | 29.48 | 2.67e-04 | 491.58 | 4.45e-03 | 0.0 | 0.0 |
| 33 | 7.662 | 0.131 | 0.153 | 1.362e+04 | 0.1 | 6.715e+04 | 0.6 | 513.98 | 4.66e-03 | 0.0 | 0.0 |
| 34 | 7.701 | 0.130 | 0.154 | 5.190e+04 | 0.5 | 4.848e+04 | 0.4 | 344.92 | 3.12e-03 | 0.0 | 0.0 |
| 35 | 7.828 | 0.128 | 0.154 | 1.939e+04 | 0.2 | 6005.59 | 5.44e-02 | 562.29 | 5.09e-03 | 0.0 | 0.0 |
| 36 | 7.867 | 0.127 | 0.155 | 1607.62 | 1.46e-02 | 1.008e+04 | 9.13e-02 | 1993.36 | 1.81e-02 | 0.0 | 0.0 |
| 37 | 7.886 | 0.127 | 0.155 | 1.186e+04 | 0.1 | 5201.80 | 4.71e-02 | 153.47 | 1.39e-03 | 0.0 | 0.0 |
| 38 | 7.962 | 0.126 | 0.155 | 6.285e+04 | 0.6 | 1.176e+05 | 1.1 | 1904.19 | 1.72e-02 | 0.0 | 0.0 |
| 39 | 7.986 | 0.125 | 0.155 | 4.125e+04 | 0.4 | 2076.03 | 1.88e-02 | 641.10 | 5.81e-03 | 0.0 | 0.0 |
| 40 | 8.087 | 0.124 | 0.156 | 3.074e+04 | 0.3 | 6120.43 | 5.54e-02 | 778.75 | 7.05e-03 | 0.0 | 0.0 |
| 41 | 8.154 | 0.123 | 0.156 | 2.407e+04 | 0.2 | 63.19 | 5.72e-04 | 2816.03 | 2.55e-02 | 0.0 | 0.0 |
| 42 | 8.188 | 0.122 | 0.156 | 2168.34 | 1.96e-02 | 764.71 | 6.93e-03 | 667.10 | 6.04e-03 | 0.0 | 0.0 |
| 43 | 8.246 | 0.121 | 0.157 | 1.87 | 1.70e-05 | 5192.51 | 4.70e-02 | 868.46 | 7.87e-03 | 0.0 | 0.0 |
| 44 | 8.295 | 0.121 | 0.157 | 2111.54 | 1.91e-02 | 347.65 | 3.15e-03 | 97.73 | 8.85e-04 | 0.0 | 0.0 |
| 45 | 8.363 | 0.120 | 0.157 | 2.008e+04 | 0.2 | 2.013e+05 | 1.8 | 13.64 | 1.24e-04 | 0.0 | 0.0 |
| 46 | 8.380 | 0.119 | 0.157 | 1.107e+04 | 0.1 | 1.859e+04 | 0.2 | 967.37 | 8.76e-03 | 0.0 | 0.0 |
| 47 | 8.447 | 0.118 | 0.158 | 127.26 | 1.15e-03 | 3023.35 | 2.74e-02 | 334.38 | 3.03e-03 | 0.0 | 0.0 |
| 48 | 8.556 | 0.117 | 0.158 | 2367.12 | 2.14e-02 | 7262.67 | 6.58e-02 | 3281.21 | 2.97e-02 | 0.0 | 0.0 |
| 49 | 8.664 | 0.115 | 0.159 | 7205.82 | 6.53e-02 | 1.654e+04 | 0.1 | 64.93 | 5.88e-04 | 0.0 | 0.0 |
| 50 | 8.700 | 0.115 | 0.159 | 5651.79 | 5.12e-02 | 8883.70 | 8.05e-02 | 380.97 | 3.45e-03 | 0.0 | 0.0 |
| 51 | 8.723 | 0.115 | 0.159 | 1.595e+04 | 0.1 | 1.129e+05 | 1.0 | 5004.52 | 4.53e-02 | 0.0 | 0.0 |
| 52 | 8.859 | 0.113 | 0.160 | 1407.29 | 1.27e-02 | 1202.72 | 1.09e-02 | 183.07 | 1.66e-03 | 0.0 | 0.0 |
| 53 | 8.878 | 0.113 | 0.160 | 5376.34 | 4.87e-02 | 4487.66 | 4.06e-02 | 94.76 | 8.58e-04 | 0.0 | 0.0 |
| 54 | 8.954 | 0.112 | 0.160 | 1600.86 | 1.45e-02 | 1910.44 | 1.73e-02 | 0.11 | 0.0 | 0.0 | 0.0 |
| 55 | 9.010 | 0.111 | 0.160 | 9059.92 | 8.21e-02 | 5487.36 | 4.97e-02 | 127.92 | 1.16e-03 | 0.0 | 0.0 |
| 56 | 9.037 | 0.111 | 0.161 | 1.091e+04 | 9.88e-02 | 2004.40 | 1.82e-02 | 849.08 | 7.69e-03 | 0.0 | 0.0 |
| 57 | 9.059 | 0.110 | 0.161 | 25.44 | 2.30e-04 | 3.614e+04 | 0.3 | 989.75 | 8.97e-03 | 0.0 | 0.0 |
| 58 | 9.075 | 0.110 | 0.161 | 2.61 | 2.36e-05 | 1.339e+04 | 0.1 | 2004.08 | 1.82e-02 | 0.0 | 0.0 |
| 59 | 9.108 | 0.110 | 0.161 | 5738.36 | 5.20e-02 | 2820.49 | 2.55e-02 | 1583.58 | 1.43e-02 | 0.0 | 0.0 |
| 60 | 9.149 | 0.109 | 0.161 | 1465.09 | 1.33e-02 | 1.362e+04 | 0.1 | 177.42 | 1.61e-03 | 0.0 | 0.0 |
| 61 | 9.176 | 0.109 | 0.161 | 7298.03 | 6.61e-02 | 11.93 | 1.08e-04 | 1044.76 | 9.46e-03 | 0.0 | 0.0 |
| 62 | 9.183 | 0.109 | 0.161 | 14.06 | 1.27e-04 | 1.413e+04 | 0.1 | 560.46 | 5.08e-03 | 0.0 | 0.0 |
| 63 | 9.215 | 0.109 | 0.161 | 1321.73 | 1.20e-02 | 153.37 | 1.39e-03 | 60.60 | 5.49e-04 | 0.0 | 0.0 |
| 64 | 9.226 | 0.108 | 0.161 | 552.21 | 5.00e-03 | 210.18 | 1.90e-03 | 140.86 | 1.28e-03 | 0.0 | 0.0 |
| 65 | 9.289 | 0.108 | 0.162 | 4557.89 | 4.13e-02 | 2.766e+04 | 0.3 | 293.07 | 2.65e-03 | 0.0 | 0.0 |
| 66 | 9.302 | 0.107 | 0.162 | 288.86 | 2.62e-03 | 237.89 | 2.15e-03 | 1521.46 | 1.38e-02 | 0.0 | 0.0 |
| Risulta | | | | 9.439e+06 | | 9.378e+06 | | 4.628e+04 | | | |
| In percentuale | | | | 85.50 | | 84.95 | | 0.42 | | | |

| CDC | Tipo | Sigla Id | Note |
|-----|------|---|---|
| 7 | Edk | CDC=Ed (dinamico SLU) alfa=90.00 (ecc. +) | |
| | | | verifica esistenti: fattore FC 1.200 |
| | | | categoria suolo: E |
| | | | fattore di sito S = 1.600 |
| | | | ordinata spettro (tratto Tb-Tc) = 0.136 g |
| | | | angolo di ingresso:90.00 |
| | | | eccentricità aggiuntiva: positiva |
| | | | periodo proprio T1: 0.287 sec. |
| | | | fattore di struttura q: 3.600 |
| | | | fattore per spost. mu d: 5.849 |
| | | | classe di duttilità CD: B |
| | | | numero di modi considerati: 66 |
| | | | combinaz. modale: CQC |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| cm | daN | cm | cm | cm | cm | cm | cm | | | |
| 2398.43 | 225.38 | 3851.25 | 3685.79 | 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2387.29 | 348.62 | 3851.25 | 3685.79 | 13.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2372.45 | 406.44 | 3851.25 | 3685.79 | 16.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2353.36 | 467.17 | 3851.25 | 3685.79 | 19.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2329.16 | 532.48 | 3851.25 | 3685.79 | 23.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2298.35 | 606.14 | 3851.25 | 3685.79 | 26.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2258.02 | 793.11 | 3851.25 | 3685.79 | 29.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 2150.00 | 1125.96 | 3851.25 | 3685.79 | 32.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2060.00 | 4.769e+04 | 2472.99 | 3685.70 | 165.99 | 0.0 | 2383.06 | 3690.52 | 1.390 | 0.053 | 0.003 |
| 1960.00 | 6603.35 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1943.95 | 6.727e+04 | 2783.57 | 3568.68 | 145.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.75 | 3285.75 | 3771.88 | 5155.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.53 | 2156.92 | 4346.64 | 5155.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1940.66 | 1.133e+04 | 1016.86 | 3636.74 | 14.24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1931.38 | 2.097e+04 | 1050.89 | 3688.24 | 15.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1867.50 | 1.130e+04 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.395 | 0.0 | 0.0 |
| 1775.00 | 9277.13 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.281 | 0.0 | 0.0 |
| 1770.00 | 5768.41 | 2378.28 | 3690.32 | 165.99 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1720.00 | 2.411e+05 | 2601.62 | 3775.89 | 200.99 | 0.0 | 882.57 | 3946.91 | 1.143 | 0.593 | 0.096 |
| 1682.50 | 7250.34 | 3851.25 | 3685.79 | 34.27 | 0.0 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1642.00 | 3.027e+05 | 2604.36 | 3813.16 | 200.99 | 0.0 | 915.04 | 3946.89 | 1.143 | 0.544 | 0.075 |
| 1590.00 | 7250.34 | 3851.25 | 3685.79 | 34.27 | 0.0 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1564.00 | 2.586e+05 | 2648.19 | 3789.92 | 200.99 | 0.0 | 825.89 | 3863.21 | 1.137 | 0.709 | 0.042 |
| 1497.50 | 9210.54 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1486.00 | 2.206e+05 | 2646.92 | 3774.60 | 200.99 | 0.0 | 804.35 | 3862.73 | 1.138 | 0.768 | 0.050 |
| 1408.00 | 2.244e+05 | 2601.55 | 3776.23 | 200.99 | 0.0 | 799.48 | 3862.71 | 1.138 | 0.764 | 0.049 |
| 1405.00 | 1.155e+04 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1330.00 | 2.364e+05 | 2591.48 | 3794.52 | 200.99 | 0.0 | 885.91 | 3944.67 | 1.144 | 0.588 | 0.085 |
| 1312.50 | 9818.02 | 3851.44 | 3685.13 | 36.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1266.00 | 2.110e+05 | 2605.27 | 3816.06 | 200.99 | 0.0 | 885.91 | 3944.67 | 1.144 | 0.592 | 0.072 |
| 1220.00 | 1.084e+06 | 2761.39 | 3699.32 | 200.99 | 0.0 | 2496.34 | 3776.54 | 1.573 | 0.098 | 0.032 |
| 1206.25 | 1116.37 | 4756.32 | 3676.71 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1196.67 | 571.81 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.37 | 1969.29 | 3598.51 | 3809.61 | 18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.30 | 625.16 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1192.50 | 778.59 | 4834.79 | 3856.00 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.13 | 1432.32 | 3851.17 | 4076.00 | 7.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.06 | 1433.97 | 3851.32 | 3296.00 | 7.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1185.83 | 721.53 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1183.60 | 1934.92 | 3481.28 | 3686.00 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1182.74 | 1589.19 | 4221.22 | 3686.00 | 2.30e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.55 | 1970.74 | 3851.17 | 4076.00 | 15.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.48 | 1971.37 | 3851.32 | 3296.00 | 15.68 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1178.75 | 398.66 | 4913.37 | 3975.64 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.59 | 2016.46 | 4221.22 | 3686.00 | 4.57e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.33 | 467.42 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1167.74 | 2869.58 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.72 | 1471.38 | 3589.09 | 3799.68 | 18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.59 | 428.10 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.99 | 3412.22 | 4048.29 | 3922.39 | 68.79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.93 | 2822.59 | 3851.32 | 3296.00 | 23.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.25 | 954.85 | 3851.17 | 4076.00 | 6.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.12 | 953.08 | 3851.32 | 3296.00 | 6.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1158.73 | 2692.29 | 4221.22 | 3686.00 | 6.76e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.67 | 326.88 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.25 | 1120.86 | 5072.15 | 3436.99 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1150.00 | 513.38 | 3698.40 | 3686.93 | 18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1147.20 | 1355.24 | 3481.28 | 3686.00 | 9.32e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1146.39 | 3712.91 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1145.49 | 728.01 | 4221.22 | 3686.00 | 2.01e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1144.00 | 6987.90 | 3851.25 | 3686.25 | 30.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1143.85 | 1026.76 | 3698.40 | 3686.93 | 21.63 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1142.00 | 4.023e+05 | 2746.29 | 3711.48 | 212.54 | 0.0 | 2316.65 | 3827.93 | 1.560 | 0.165 | 0.047 |
| 1141.09 | 1236.70 | 3851.17 | 4076.00 | 12.89 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1140.97 | 1234.32 | 3851.32 | 3296.00 | 12.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1138.73 | 2999.05 | 4221.22 | 3686.00 | 8.84e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1137.50 | 1239.02 | 5150.49 | 3676.82 | 0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1127.18 | 943.14 | 4221.22 | 3686.00 | 3.94e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1125.64 | 1026.76 | 3698.40 | 3686.93 | 24.63 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1123.75 | 1056.77 | 5229.32 | 3676.94 | 0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1115.47 | 1842.89 | 3481.28 | 3686.00 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.98 | 1.842e+04 | 5175.61 | 3713.42 | 82.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.86 | 1672.24 | 3851.32 | 3296.00 | 18.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1097.46 | 1276.70 | 4221.22 | 3686.00 | 5.72e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1096.07 | 1026.76 | 3698.40 | 3686.93 | 27.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1072.77 | 2292.16 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1071.62 | 3126.64 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1069.75 | 5522.07 | 3851.25 | 3686.52 | 32.51 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.10 | 2059.28 | 3851.17 | 4076.00 | 23.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.01 | 2054.62 | 3851.32 | 3296.00 | 23.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1065.60 | 1864.03 | 4221.22 | 3686.00 | 9.48e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1064.00 | 3.704e+05 | 2950.68 | 3690.88 | 232.44 | 0.0 | 2471.04 | 3827.31 | 1.522 | 0.182 | 0.053 |
| 1057.45 | 1519.34 | 4221.22 | 3686.00 | 7.28e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1056.27 | 1026.76 | 3698.40 | 3686.93 | 29.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1020.75 | 1842.89 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.07 | 1584.13 | 3851.17 | 4076.00 | 28.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.00 | 1578.97 | 3851.32 | 3296.00 | 27.99 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1008.71 | 990.30 | 4221.22 | 3686.00 | 8.56e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1007.78 | 1026.76 | 3698.40 | 3686.93 | 31.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 993.19 | 1772.71 | 3481.28 | 3686.00 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 991.90 | 2924.63 | 3851.25 | 3686.82 | 34.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 989.05 | 1025.97 | 4221.22 | 3686.00 | 9.95e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 986.00 | 3.407e+05 | 2938.41 | 3693.07 | 232.44 | 0.0 | 2160.49 | 3685.87 | 1.530 | 0.301 | 0.003 |
| 961.39 | 1355.24 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.86 | 1090.81 | 3851.17 | 4076.00 | 31.11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.81 | 1085.53 | 3851.32 | 3296.00 | 31.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 956.58 | 4975.61 | 4221.21 | 3660.70 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 953.10 | 509.94 | 4221.22 | 3686.00 | 9.51e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 952.46 | 1026.76 | 3698.40 | 3686.93 | 33.29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 951.13 | 1.009e+04 | 4221.22 | 3679.57 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 935.47 | 8808.93 | 4221.22 | 3695.09 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 912.24 | 1276.17 | 3481.28 | 3686.00 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 911.58 | 1929.45 | 3851.25 | 3687.25 | 35.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 908.00 | 3.865e+05 | 2922.61 | 3696.26 | 232.44 | 0.0 | 2538.39 | 3664.51 | 1.462 | 0.137 | 0.013 |
| 896.98 | 1042.50 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 895.69 | 1544.29 | 3851.25 | 3687.35 | 33.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 892.43 | 1026.76 | 3698.40 | 3686.93 | 34.21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 887.26 | 278.87 | 4221.22 | 3686.00 | 9.99e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 849.94 | 2149.89 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 840.79 | 150.71 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 839.04 | 4458.34 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.47 | 301.43 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.00 | 3.560e+05 | 2928.97 | 3695.44 | 232.44 | 0.0 | 2610.37 | 3664.49 | 1.449 | 0.113 | 0.013 |
| 821.62 | 3653.08 | 4221.22 | 3685.58 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 807.73 | 4259.95 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 800.84 | 301.43 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 780.00 | 1.464e+06 | 2778.47 | 3680.55 | 232.44 | 0.0 | 2751.82 | 3709.29 | 1.442 | 0.010 | 0.012 |
| 760.02 | 1856.89 | 4221.22 | 3685.88 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 755.69 | 255.42 | 4221.22 | 3685.94 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 743.35 | 1001.59 | 5308.15 | 3676.82 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 741.79 | 2093.31 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 737.22 | 2353.28 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 735.21 | 975.72 | 4992.82 | 3676.82 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 733.98 | 711.12 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.92 | 2074.77 | 4992.82 | 3676.82 | 7.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.84 | 1469.14 | 5308.15 | 3676.82 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.95 | 2316.26 | 5308.15 | 3676.82 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.44 | 1608.08 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 726.20 | 2430.68 | 4992.82 | 3676.82 | 14.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 723.87 | 1833.87 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 716.26 | 1819.39 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 715.52 | 2745.29 | 4992.82 | 3676.82 | 20.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 711.37 | 6603.06 | 2274.63 | 4411.46 | 46.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 705.78 | 865.63 | 5308.15 | 3676.82 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.90 | 1.447e+04 | 2274.57 | 4410.60 | 54.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.39 | 483.99 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.66 | 1816.49 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.42 | 720.77 | 4992.82 | 3676.82 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.00 | 5.429e+05 | 2795.67 | 3605.19 | 232.44 | 0.0 | 2743.07 | 3638.77 | 1.424 | 0.019 | 0.014 |
| 700.49 | 1014.00 | 2784.68 | 2344.92 | 7.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 697.84 | 2095.38 | 5072.50 | 3676.82 | 18.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 695.60 | 1108.59 | 5308.15 | 3676.82 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.51 | 2057.83 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.04 | 2310.45 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 689.06 | 1145.31 | 2784.68 | 2344.92 | 13.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 688.82 | 1255.19 | 5308.15 | 3676.82 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 687.96 | 4850.52 | 1831.00 | 5069.17 | 6.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 686.48 | 1.471e+04 | 2273.73 | 4389.35 | 62.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 684.41 | 1919.30 | 4992.82 | 3676.82 | 12.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 678.97 | 2117.14 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 677.68 | 1491.32 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 673.51 | 4422.37 | 1829.52 | 5069.17 | 12.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 670.89 | 1181.11 | 2784.68 | 2344.92 | 20.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 669.62 | 427.16 | 4992.82 | 3676.82 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 668.20 | 489.54 | 5308.15 | 3676.82 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 664.92 | 1509.28 | 5308.15 | 3676.82 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.52 | 1019.91 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.05 | 2152.87 | 4992.82 | 3676.82 | 17.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.75 | 916.22 | 4992.82 | 3676.82 | 5.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.44 | 1628.35 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 661.78 | 264.38 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.37 | 554.52 | 5308.15 | 3676.82 | 9.34e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.00 | 102.15 | 4992.82 | 3676.82 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 656.76 | 1235.47 | 5308.15 | 3676.82 | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 655.93 | 141.77 | 5308.15 | 3676.82 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 652.58 | 68.79 | 5308.15 | 3676.82 | 9.15e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.67 | 214.75 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.53 | 204.29 | 4992.82 | 3676.82 | 5.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 649.81 | 1133.76 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 648.19 | 630.33 | 5308.15 | 3676.82 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 643.00 | 3324.21 | 2274.98 | 4413.42 | 46.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 642.61 | 1158.68 | 5011.54 | 3676.82 | 20.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 639.18 | 214.75 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.54 | 204.29 | 4992.82 | 3676.82 | 9.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.24 | 1376.71 | 5308.15 | 3676.82 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 631.48 | 751.65 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 630.06 | 7207.70 | 2274.98 | 4413.42 | 52.51 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 628.00 | 1718.04 | 4395.95 | 3898.35 | 181.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.37 | 2756.80 | 2198.29 | 5065.00 | 20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.22 | 68.79 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 624.00 | 5.299e+05 | 2813.85 | 3598.29 | 232.44 | 0.0 | 2769.97 | 3638.78 | 1.419 | 0.016 | 0.017 |
| 619.32 | 214.75 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.78 | 248.18 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.46 | 1196.08 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 616.20 | 1033.37 | 2274.98 | 4413.42 | 51.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 613.78 | 1333.08 | 4992.82 | 3676.82 | 21.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.98 | 516.08 | 2784.68 | 2344.92 | 5.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.57 | 1230.58 | 4992.82 | 3676.82 | 14.44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.00 | 21.20 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 608.63 | 849.78 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 606.33 | 1097.85 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 603.81 | 68.79 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.50 | 42.40 | 2784.68 | 2344.92 | 5.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.35 | 204.29 | 4992.82 | 3676.82 | 13.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 601.87 | 1314.73 | 4992.82 | 3676.82 | 19.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 599.56 | 862.34 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 598.33 | 969.40 | 5308.15 | 3676.83 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 596.18 | 2277.57 | 1831.00 | 5069.17 | 5.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 595.61 | 817.85 | 5308.15 | 3676.82 | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.43 | 214.75 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.21 | 7593.48 | 2274.98 | 4413.42 | 58.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.00 | 125.55 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 588.13 | 570.73 | 2784.68 | 2344.92 | 11.44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 583.87 | 251.09 | 1831.00 | 5069.17 | 4.59 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.60 | 1033.37 | 2274.98 | 4413.42 | 56.96 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.39 | 769.13 | 5308.15 | 3676.83 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.21 | 6201.74 | 2280.31 | 4502.99 | 63.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.53 | 42.40 | 2784.68 | 2344.92 | 11.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.15 | 660.73 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.89 | 68.79 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.20 | 1709.69 | 1856.31 | 5069.17 | 14.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 571.15 | 782.09 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 568.81 | 867.58 | 4992.82 | 3676.82 | 17.65 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.53 | 533.35 | 2784.68 | 2344.92 | 22.36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.28 | 2186.12 | 1831.00 | 5069.17 | 9.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 566.46 | 491.89 | 5308.15 | 3676.83 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.28 | 167.18 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.00 | 204.29 | 4992.82 | 3676.82 | 16.64 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 557.85 | 251.09 | 1831.00 | 5069.17 | 8.49 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 551.77 | 582.90 | 2784.68 | 2344.92 | 16.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.69 | 451.43 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.00 | 5.236e+05 | 2827.40 | 3603.86 | 232.44 | 0.0 | 2687.50 | 3638.81 | 1.452 | 0.051 | 0.014 |
| 545.56 | 42.40 | 2784.68 | 2344.92 | 15.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 543.08 | 68.79 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 542.57 | 619.13 | 2206.02 | 3920.36 | 64.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.69 | 473.38 | 2180.10 | 2856.00 | 32.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 541.17 | 756.61 | 4992.82 | 3676.82 | 22.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 538.06 | 4252.63 | 2274.15 | 4404.69 | 61.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 536.17 | 1120.02 | 3925.27 | 4126.52 | 175.79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 533.06 | 476.07 | 5308.15 | 3676.82 | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 532.32 | 1030.21 | 2274.98 | 4413.42 | 60.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 524.02 | 1148.18 | 1828.94 | 5069.17 | 12.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 521.04 | 438.87 | 5308.15 | 3676.82 | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 520.18 | 566.50 | 4992.82 | 3676.82 | 19.66 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 518.92 | 251.09 | 1831.00 | 5069.17 | 11.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 517.18 | 204.29 | 4992.82 | 3676.82 | 18.54 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 509.02 | 275.00 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 506.15 | 66.44 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 504.39 | 330.33 | 2784.68 | 2344.92 | 19.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 500.00 | 42.40 | 2784.68 | 2344.92 | 19.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 473.00 | 1.385e+04 | 2271.65 | 4515.62 | 65.33 | 0.0 | 2206.91 | 4525.00 | 1.263 | 0.005 | 0.009 |
| 468.00 | 4.924e+05 | 2856.16 | 3615.63 | 232.44 | 0.0 | 2794.30 | 3827.00 | 1.537 | 0.024 | 0.081 |
| 459.41 | 211.22 | 2784.68 | 2344.92 | 23.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 449.21 | 145.37 | 2784.68 | 2344.92 | 22.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 446.94 | 42.40 | 2784.68 | 2344.92 | 21.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 414.00 | 3927.52 | 4677.55 | 3647.94 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 392.50 | 1068.99 | 1695.02 | 5069.18 | 1.33 | 0.0 | 1697.67 | 5069.18 | 0.463 | 0.021 | 1.6061e-05 |
| 390.00 | 4.483e+05 | 2857.31 | 3622.35 | 232.44 | 0.0 | 2528.81 | 3654.36 | 1.495 | 0.124 | 0.013 |
| 378.40 | 6039.26 | 2191.00 | 5069.17 | 24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 323.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 312.00 | 4.298e+05 | 2879.83 | 3597.49 | 232.44 | 0.0 | 2446.08 | 3674.23 | 1.505 | 0.165 | 0.030 |
| 283.80 | 6039.26 | 2191.00 | 5069.17 | 24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 273.00 | 334.07 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 234.00 | 4.249e+05 | 2877.82 | 3582.57 | 232.44 | 0.0 | 2410.52 | 3666.47 | 1.517 | 0.179 | 0.033 |
| 223.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 189.20 | 6039.26 | 2191.00 | 5069.17 | 24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 156.00 | 4.503e+05 | 2869.01 | 3596.89 | 232.44 | 0.0 | 2679.22 | 3544.37 | 1.490 | 0.071 | 0.021 |
| 94.60 | 6039.26 | 2191.00 | 5069.17 | 24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 78.00 | 4.736e+05 | 2870.52 | 3603.03 | 232.44 | 0.0 | 2674.31 | 3549.62 | 1.496 | 0.073 | 0.021 |
| Risulta | 1.104e+07 | | | | | | | | | |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| | Hz | sec | g | daN | | daN | | daN | | | |
| 1 | 2.260 | 0.443 | 0.136 | 3.597e+05 | 3.3 | 0.33 | 2.99e-06 | 1.94 | 1.76e-05 | 0.0 | 0.0 |
| 2 | 2.786 | 0.359 | 0.136 | 1.792e+04 | 0.2 | 1.485e+06 | 13.5 | 2.90 | 2.63e-05 | 0.0 | 0.0 |
| 3 | 3.157 | 0.317 | 0.136 | 1.145e+06 | 10.4 | 1.645e+05 | 1.5 | 0.08 | 0.0 | 0.0 | 0.0 |
| 4 | 3.480 | 0.287 | 0.136 | 1.169e+05 | 1.1 | 2.297e+06 | 20.8 | 114.26 | 1.03e-03 | 0.0 | 0.0 |
| 5 | 4.066 | 0.246 | 0.136 | 688.97 | 6.24e-03 | 1.308e+06 | 11.9 | 6.31 | 5.71e-05 | 0.0 | 0.0 |
| 6 | 4.219 | 0.237 | 0.136 | 2.184e+06 | 19.8 | 2.233e+04 | 0.2 | 229.19 | 2.08e-03 | 0.0 | 0.0 |
| 7 | 4.370 | 0.229 | 0.136 | 4.171e+06 | 37.8 | 6.400e+04 | 0.6 | 202.90 | 1.84e-03 | 0.0 | 0.0 |
| 8 | 4.480 | 0.223 | 0.136 | 6.253e+04 | 0.6 | 8.258e+05 | 7.5 | 29.74 | 2.69e-04 | 0.0 | 0.0 |
| 9 | 4.928 | 0.203 | 0.136 | 6825.04 | 6.18e-02 | 3.433e+04 | 0.3 | 138.56 | 1.26e-03 | 0.0 | 0.0 |
| 10 | 5.037 | 0.199 | 0.136 | 2.864e+05 | 2.6 | 8.744e+05 | 7.9 | 61.03 | 5.53e-04 | 0.0 | 0.0 |
| 11 | 5.221 | 0.192 | 0.136 | 1.124e+05 | 1.0 | 2.776e+05 | 2.5 | 2.54 | 2.30e-05 | 0.0 | 0.0 |
| 12 | 5.376 | 0.186 | 0.136 | 5220.00 | 4.73e-02 | 1.244e+05 | 1.1 | 3.95 | 3.58e-05 | 0.0 | 0.0 |
| 13 | 5.412 | 0.185 | 0.136 | 1513.64 | 1.37e-02 | 5.967e+04 | 0.5 | 89.73 | 8.13e-04 | 0.0 | 0.0 |
| 14 | 5.725 | 0.175 | 0.137 | 1506.09 | 1.36e-02 | 2.922e+04 | 0.3 | 988.56 | 8.95e-03 | 0.0 | 0.0 |
| 15 | 5.765 | 0.173 | 0.138 | 124.72 | 1.13e-03 | 2.882e+04 | 0.3 | 380.83 | 3.45e-03 | 0.0 | 0.0 |
| 16 | 5.933 | 0.169 | 0.140 | 8.841e+04 | 0.8 | 5.239e+04 | 0.5 | 214.71 | 1.94e-03 | 0.0 | 0.0 |
| 17 | 5.995 | 0.167 | 0.140 | 9093.78 | 8.24e-02 | 7.570e+04 | 0.7 | 374.75 | 3.39e-03 | 0.0 | 0.0 |
| 18 | 6.085 | 0.164 | 0.141 | 2008.65 | 1.82e-02 | 9.100e+04 | 0.8 | 1350.47 | 1.22e-02 | 0.0 | 0.0 |
| 19 | 6.169 | 0.162 | 0.142 | 6772.66 | 6.13e-02 | 3.934e+05 | 3.6 | 200.42 | 1.82e-03 | 0.0 | 0.0 |
| 20 | 6.333 | 0.158 | 0.143 | 1.896e+05 | 1.7 | 1.189e+05 | 1.1 | 1507.47 | 1.37e-02 | 0.0 | 0.0 |
| 21 | 6.555 | 0.153 | 0.145 | 5.888e+04 | 0.5 | 1.019e+04 | 9.23e-02 | 1247.00 | 1.13e-02 | 0.0 | 0.0 |
| 22 | 6.693 | 0.149 | 0.147 | 214.05 | 1.94e-03 | 2219.51 | 2.01e-02 | 2.13 | 1.93e-05 | 0.0 | 0.0 |
| 23 | 6.808 | 0.147 | 0.147 | 1.393e+04 | 0.1 | 4.263e+04 | 0.4 | 100.79 | 9.13e-04 | 0.0 | 0.0 |
| 24 | 6.877 | 0.145 | 0.148 | 4538.88 | 4.11e-02 | 1444.30 | 1.31e-02 | 44.72 | 4.05e-04 | 0.0 | 0.0 |
| 25 | 6.973 | 0.143 | 0.149 | 5078.95 | 4.60e-02 | 5.947e+04 | 0.5 | 935.09 | 8.47e-03 | 0.0 | 0.0 |
| 26 | 7.030 | 0.142 | 0.149 | 1734.57 | 1.57e-02 | 2.582e+04 | 0.2 | 441.88 | 4.00e-03 | 0.0 | 0.0 |
| 27 | 7.046 | 0.142 | 0.149 | 1.161e+04 | 0.1 | 3.478e+04 | 0.3 | 353.33 | 3.20e-03 | 0.0 | 0.0 |
| 28 | 7.138 | 0.140 | 0.150 | 9.007e+04 | 0.8 | 2.709e+04 | 0.2 | 282.93 | 2.56e-03 | 0.0 | 0.0 |
| 29 | 7.252 | 0.138 | 0.151 | 6.514e+04 | 0.6 | 188.74 | 1.71e-03 | 21.77 | 1.97e-04 | 0.0 | 0.0 |
| 30 | 7.318 | 0.137 | 0.151 | 3.393e+04 | 0.3 | 2679.72 | 2.43e-02 | 812.75 | 7.36e-03 | 0.0 | 0.0 |
| 31 | 7.481 | 0.134 | 0.152 | 9854.10 | 8.93e-02 | 1.155e+04 | 0.1 | 2311.85 | 2.09e-02 | 0.0 | 0.0 |
| 32 | 7.592 | 0.132 | 0.153 | 1.240e+05 | 1.1 | 6486.70 | 5.88e-02 | 271.92 | 2.46e-03 | 0.0 | 0.0 |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|----------------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| 33 | 7.662 | 0.131 | 0.153 | 1.46 | 1.32e-05 | 6.511e+04 | 0.6 | 233.48 | 2.11e-03 | 0.0 | 0.0 |
| 34 | 7.715 | 0.130 | 0.154 | 3.054e+04 | 0.3 | 5.813e+04 | 0.5 | 2507.42 | 2.27e-02 | 0.0 | 0.0 |
| 35 | 7.719 | 0.130 | 0.154 | 1831.41 | 1.66e-02 | 4.186e+04 | 0.4 | 1381.96 | 1.25e-02 | 0.0 | 0.0 |
| 36 | 7.866 | 0.127 | 0.155 | 2.901e+04 | 0.3 | 3.080e+04 | 0.3 | 230.82 | 2.09e-03 | 0.0 | 0.0 |
| 37 | 7.900 | 0.127 | 0.155 | 690.96 | 6.26e-03 | 2.289e+04 | 0.2 | 1026.23 | 9.30e-03 | 0.0 | 0.0 |
| 38 | 8.002 | 0.125 | 0.155 | 728.70 | 6.60e-03 | 1.579e+05 | 1.4 | 62.80 | 5.69e-04 | 0.0 | 0.0 |
| 39 | 8.067 | 0.124 | 0.156 | 77.68 | 7.04e-04 | 1.518e+04 | 0.1 | 54.93 | 4.98e-04 | 0.0 | 0.0 |
| 40 | 8.090 | 0.124 | 0.156 | 1350.51 | 1.22e-02 | 67.16 | 6.08e-04 | 5116.59 | 4.63e-02 | 0.0 | 0.0 |
| 41 | 8.169 | 0.122 | 0.156 | 1.816e+04 | 0.2 | 3365.78 | 3.05e-02 | 2218.49 | 2.01e-02 | 0.0 | 0.0 |
| 42 | 8.247 | 0.121 | 0.157 | 1479.37 | 1.34e-02 | 4881.58 | 4.42e-02 | 23.39 | 2.12e-04 | 0.0 | 0.0 |
| 43 | 8.274 | 0.121 | 0.157 | 3619.20 | 3.28e-02 | 3203.28 | 2.90e-02 | 0.23 | 2.04e-06 | 0.0 | 0.0 |
| 44 | 8.390 | 0.119 | 0.157 | 1556.11 | 1.41e-02 | 2.406e+04 | 0.2 | 443.20 | 4.01e-03 | 0.0 | 0.0 |
| 45 | 8.436 | 0.119 | 0.158 | 1.961e+04 | 0.2 | 3.773e+04 | 0.3 | 480.61 | 4.35e-03 | 0.0 | 0.0 |
| 46 | 8.475 | 0.118 | 0.158 | 404.30 | 3.66e-03 | 3.045e+04 | 0.3 | 924.19 | 8.37e-03 | 0.0 | 0.0 |
| 47 | 8.574 | 0.117 | 0.158 | 2.914e+04 | 0.3 | 1043.35 | 9.45e-03 | 1924.28 | 1.74e-02 | 0.0 | 0.0 |
| 48 | 8.624 | 0.116 | 0.159 | 7.011e+04 | 0.6 | 2581.24 | 2.34e-02 | 86.96 | 7.88e-04 | 0.0 | 0.0 |
| 49 | 8.677 | 0.115 | 0.159 | 7548.31 | 6.84e-02 | 3.067e+04 | 0.3 | 4157.33 | 3.77e-02 | 0.0 | 0.0 |
| 50 | 8.745 | 0.114 | 0.159 | 1.941e+04 | 0.2 | 2117.58 | 1.92e-02 | 245.37 | 2.22e-03 | 0.0 | 0.0 |
| 51 | 8.763 | 0.114 | 0.159 | 227.23 | 2.06e-03 | 1599.79 | 1.45e-02 | 45.31 | 4.10e-04 | 0.0 | 0.0 |
| 52 | 8.769 | 0.114 | 0.159 | 1.040e+04 | 9.42e-02 | 7335.72 | 6.64e-02 | 332.10 | 3.01e-03 | 0.0 | 0.0 |
| 53 | 8.873 | 0.113 | 0.160 | 376.02 | 3.41e-03 | 1.333e+05 | 1.2 | 4471.19 | 4.05e-02 | 0.0 | 0.0 |
| 54 | 8.891 | 0.112 | 0.160 | 689.29 | 6.24e-03 | 3397.30 | 3.08e-02 | 6.74 | 6.10e-05 | 0.0 | 0.0 |
| 55 | 8.985 | 0.111 | 0.160 | 232.37 | 2.10e-03 | 2522.24 | 2.28e-02 | 5.48 | 4.96e-05 | 0.0 | 0.0 |
| 56 | 9.038 | 0.111 | 0.161 | 103.39 | 9.36e-04 | 262.20 | 2.38e-03 | 54.48 | 4.93e-04 | 0.0 | 0.0 |
| 57 | 9.133 | 0.109 | 0.161 | 7802.90 | 7.07e-02 | 7136.86 | 6.46e-02 | 308.21 | 2.79e-03 | 0.0 | 0.0 |
| 58 | 9.151 | 0.109 | 0.161 | 145.19 | 1.32e-03 | 5152.94 | 4.67e-02 | 24.47 | 2.22e-04 | 0.0 | 0.0 |
| 59 | 9.183 | 0.109 | 0.161 | 1893.35 | 1.72e-02 | 1159.80 | 1.05e-02 | 1793.35 | 1.62e-02 | 0.0 | 0.0 |
| 60 | 9.193 | 0.109 | 0.161 | 2.600e+04 | 0.2 | 257.90 | 2.34e-03 | 493.77 | 4.47e-03 | 0.0 | 0.0 |
| 61 | 9.206 | 0.109 | 0.161 | 407.04 | 3.69e-03 | 2758.05 | 2.50e-02 | 447.96 | 4.06e-03 | 0.0 | 0.0 |
| 62 | 9.253 | 0.108 | 0.161 | 4045.12 | 3.66e-02 | 924.64 | 8.38e-03 | 515.33 | 4.67e-03 | 0.0 | 0.0 |
| 63 | 9.277 | 0.108 | 0.162 | 4847.07 | 4.39e-02 | 1707.13 | 1.55e-02 | 1076.96 | 9.76e-03 | 0.0 | 0.0 |
| 64 | 9.315 | 0.107 | 0.162 | 1.856e+04 | 0.2 | 1.674e+04 | 0.2 | 1543.47 | 1.40e-02 | 0.0 | 0.0 |
| 65 | 9.351 | 0.107 | 0.162 | 115.57 | 1.05e-03 | 3.144e+04 | 0.3 | 204.14 | 1.85e-03 | 0.0 | 0.0 |
| 66 | 9.379 | 0.107 | 0.162 | 2.32 | 2.10e-05 | 2.041e+04 | 0.2 | 2.81 | 2.55e-05 | 0.0 | 0.0 |
| Risulta | | | | 9.498e+06 | | 9.320e+06 | | 4.517e+04 | | | |
| In percentuale | | | | 86.03 | | 84.42 | | 0.41 | | | |

| CDC | Tipo | Sigla Id | Note |
|-----|------|---|---|
| 8 | Edk | CDC=Ed (dinamico SLU) alfa=90.00 (ecc. -) | |
| | | | verifica esistenti: fattore FC 1.200 |
| | | | categoria suolo: E |
| | | | fattore di sito S = 1.600 |
| | | | ordinata spettro (tratto Tb-Tc) = 0.136 g |
| | | | angolo di ingresso:90.00 |
| | | | eccentricità aggiuntiva: negativa |
| | | | periodo proprio T1: 0.219 sec. |
| | | | fattore di struttura q: 3.600 |
| | | | fattore per spost. mu d: 7.365 |
| | | | classe di duttilità CD: B |
| | | | numero di modi considerati: 66 |
| | | | combinaz. modale: CQC |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| cm | daN | cm | cm | cm | cm | cm | cm | | | |
| 2398.43 | 225.38 | 3851.25 | 3685.79 | -10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2387.29 | 348.62 | 3851.25 | 3685.79 | -13.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2372.45 | 406.44 | 3851.25 | 3685.79 | -16.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2353.36 | 467.17 | 3851.25 | 3685.79 | -19.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2329.16 | 532.48 | 3851.25 | 3685.79 | -23.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2298.35 | 606.14 | 3851.25 | 3685.79 | -26.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2258.02 | 793.11 | 3851.25 | 3685.79 | -29.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2150.00 | 1125.96 | 3851.25 | 3685.79 | -32.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2060.00 | 4.769e+04 | 2472.99 | 3685.70 | -165.99 | 0.0 | 2383.06 | 3690.52 | 1.390 | 0.053 | 0.003 |
| 1960.00 | 6603.35 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1943.95 | 6.727e+04 | 2783.57 | 3568.68 | -145.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.75 | 3285.75 | 3771.88 | 5155.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.53 | 2156.92 | 4346.64 | 5155.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1940.66 | 1.133e+04 | 1016.86 | 3636.74 | -14.24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1931.38 | 2.097e+04 | 1050.89 | 3688.24 | -15.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1867.50 | 1.130e+04 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.395 | 0.0 | 0.0 |
| 1775.00 | 9277.13 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.281 | 0.0 | 0.0 |
| 1770.00 | 5768.41 | 2378.28 | 3690.32 | -165.99 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1720.00 | 2.411e+05 | 2601.62 | 3775.89 | -200.99 | 0.0 | 882.57 | 3946.91 | 1.143 | 0.593 | 0.096 |
| 1682.50 | 7250.34 | 3851.25 | 3685.79 | -34.27 | 0.0 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1642.00 | 3.027e+05 | 2604.36 | 3813.16 | -200.99 | 0.0 | 915.04 | 3946.89 | 1.143 | 0.544 | 0.075 |
| 1590.00 | 7250.34 | 3851.25 | 3685.79 | -34.27 | 0.0 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1564.00 | 2.586e+05 | 2648.19 | 3789.92 | -200.99 | 0.0 | 825.89 | 3863.21 | 1.137 | 0.709 | 0.042 |
| 1497.50 | 9210.54 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1486.00 | 2.206e+05 | 2646.92 | 3774.60 | -200.99 | 0.0 | 804.35 | 3862.73 | 1.138 | 0.768 | 0.050 |
| 1408.00 | 2.244e+05 | 2601.55 | 3776.23 | -200.99 | 0.0 | 799.48 | 3862.71 | 1.138 | 0.764 | 0.049 |
| 1405.00 | 1.155e+04 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1330.00 | 2.364e+05 | 2591.48 | 3794.52 | -200.99 | 0.0 | 885.91 | 3944.67 | 1.144 | 0.588 | 0.085 |
| 1312.50 | 9818.02 | 3851.44 | 3685.13 | -36.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1266.00 | 2.110e+05 | 2605.27 | 3816.06 | -200.99 | 0.0 | 885.91 | 3944.67 | 1.144 | 0.592 | 0.072 |
| 1220.00 | 1.084e+06 | 2761.39 | 3699.32 | -200.99 | 0.0 | 2496.34 | 3776.54 | 1.573 | 0.098 | 0.032 |
| 1206.25 | 1116.37 | 4756.32 | 3676.71 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1196.67 | 571.81 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.37 | 1969.29 | 3598.51 | 3809.61 | -18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.30 | 625.16 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1192.50 | 778.59 | 4834.79 | 3856.00 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.13 | 1432.32 | 3851.17 | 4076.00 | -7.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.06 | 1433.97 | 3851.32 | 3296.00 | -7.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1185.83 | 721.53 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1183.60 | 1934.92 | 3481.28 | 3686.00 | -0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1182.74 | 1589.19 | 4221.22 | 3686.00 | -2.30e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.55 | 1970.74 | 3851.17 | 4076.00 | -15.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.48 | 1971.37 | 3851.32 | 3296.00 | -15.68 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1178.75 | 398.66 | 4913.37 | 3975.64 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.59 | 2016.46 | 4221.22 | 3686.00 | -4.57e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.33 | 467.42 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1167.74 | 2869.58 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.72 | 1471.38 | 3589.09 | 3799.68 | -18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.59 | 428.10 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.99 | 3412.22 | 4048.29 | 3922.39 | -68.79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.93 | 2822.59 | 3851.32 | 3296.00 | -23.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.25 | 954.85 | 3851.17 | 4076.00 | -6.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.12 | 953.08 | 3851.32 | 3296.00 | -6.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1158.73 | 2692.29 | 4221.22 | 3686.00 | -6.76e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.67 | 326.88 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.25 | 1120.86 | 5072.15 | 3436.99 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1150.00 | 513.38 | 3698.40 | 3686.93 | -18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1147.20 | 1355.24 | 3481.28 | 3686.00 | -9.32e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1146.39 | 3712.91 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1145.49 | 728.01 | 4221.22 | 3686.00 | -2.01e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1144.00 | 6987.90 | 3851.25 | 3686.25 | -30.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1143.85 | 1026.76 | 3698.40 | 3686.93 | -21.63 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1142.00 | 4.023e+05 | 2746.29 | 3711.48 | -212.54 | 0.0 | 2316.65 | 3827.93 | 1.560 | 0.165 | 0.047 |
| 1141.09 | 1236.70 | 3851.17 | 4076.00 | -12.89 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1140.97 | 1234.32 | 3851.32 | 3296.00 | -12.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1138.73 | 2999.05 | 4221.22 | 3686.00 | -8.84e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1137.50 | 1239.02 | 5150.49 | 3676.82 | -0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1127.18 | 943.14 | 4221.22 | 3686.00 | -3.94e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1125.64 | 1026.76 | 3698.40 | 3686.93 | -24.63 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1123.75 | 1056.77 | 5229.32 | 3676.94 | -0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1115.47 | 1842.89 | 3481.28 | 3686.00 | -0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.98 | 1.842e+04 | 5175.61 | 3713.42 | -82.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.86 | 1672.24 | 3851.32 | 3296.00 | -18.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1097.46 | 1276.70 | 4221.22 | 3686.00 | -5.72e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1096.07 | 1026.76 | 3698.40 | 3686.93 | -27.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1072.77 | 2292.16 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1071.62 | 3126.64 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1069.75 | 5522.07 | 3851.25 | 3686.52 | -32.51 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.10 | 2059.28 | 3851.17 | 4076.00 | -23.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.01 | 2054.62 | 3851.32 | 3296.00 | -23.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1065.60 | 1864.03 | 4221.22 | 3686.00 | -9.48e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1064.00 | 3.704e+05 | 2950.68 | 3690.88 | -232.44 | 0.0 | 2471.04 | 3827.31 | 1.522 | 0.182 | 0.053 |
| 1057.45 | 1519.34 | 4221.22 | 3686.00 | -7.28e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1056.27 | 1026.76 | 3698.40 | 3686.93 | -29.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1020.75 | 1842.89 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.07 | 1584.13 | 3851.17 | 4076.00 | -28.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.00 | 1578.97 | 3851.32 | 3296.00 | -27.99 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1008.71 | 990.30 | 4221.22 | 3686.00 | -8.56e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1007.78 | 1026.76 | 3698.40 | 3686.93 | -31.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 993.19 | 1772.71 | 3481.28 | 3686.00 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 991.90 | 2924.63 | 3851.25 | 3686.82 | -34.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 989.05 | 1025.97 | 4221.22 | 3686.00 | -9.95e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 986.00 | 3.407e+05 | 2938.41 | 3693.07 | -232.44 | 0.0 | 2160.49 | 3685.87 | 1.530 | 0.301 | 0.003 |
| 961.39 | 1355.24 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.86 | 1090.81 | 3851.17 | 4076.00 | -31.11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.81 | 1085.53 | 3851.32 | 3296.00 | -31.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 956.58 | 4975.61 | 4221.21 | 3660.70 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 953.10 | 509.94 | 4221.22 | 3686.00 | -9.51e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 952.46 | 1026.76 | 3698.40 | 3686.93 | -33.29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 951.13 | 1.009e+04 | 4221.22 | 3679.57 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 935.47 | 8808.93 | 4221.22 | 3695.09 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 912.24 | 1276.17 | 3481.28 | 3686.00 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 911.58 | 1929.45 | 3851.25 | 3687.25 | -35.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 908.00 | 3.865e+05 | 2922.61 | 3696.26 | -232.44 | 0.0 | 2538.39 | 3664.51 | 1.462 | 0.137 | 0.013 |
| 896.98 | 1042.50 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 895.69 | 1544.29 | 3851.25 | 3687.35 | -33.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 892.43 | 1026.76 | 3698.40 | 3686.93 | -34.21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 887.26 | 278.87 | 4221.22 | 3686.00 | -9.99e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 849.94 | 2149.89 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 840.79 | 150.71 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 839.04 | 4458.34 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.47 | 301.43 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.00 | 3.560e+05 | 2928.97 | 3695.44 | -232.44 | 0.0 | 2610.37 | 3664.49 | 1.449 | 0.113 | 0.013 |
| 821.62 | 3653.08 | 4221.22 | 3685.58 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 807.73 | 4259.95 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 800.84 | 301.43 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 780.00 | 1.464e+06 | 2778.47 | 3680.55 | -232.44 | 0.0 | 2751.82 | 3709.29 | 1.442 | 0.010 | 0.012 |
| 760.02 | 1856.89 | 4221.22 | 3685.88 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 755.69 | 255.42 | 4221.22 | 3685.94 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 743.35 | 1001.59 | 5308.15 | 3676.82 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 741.79 | 2093.31 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 737.22 | 2353.28 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 735.21 | 975.72 | 4992.82 | 3676.82 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 733.98 | 711.12 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.92 | 2074.77 | 4992.82 | 3676.82 | -7.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.84 | 1469.14 | 5308.15 | 3676.82 | -0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.95 | 2316.26 | 5308.15 | 3676.82 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.44 | 1608.08 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 726.20 | 2430.68 | 4992.82 | 3676.82 | -14.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 723.87 | 1833.87 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 716.26 | 1819.39 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 715.52 | 2745.29 | 4992.82 | 3676.82 | -20.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 711.37 | 6603.06 | 2274.63 | 4411.46 | -46.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 705.78 | 865.63 | 5308.15 | 3676.82 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.90 | 1.447e+04 | 2274.57 | 4410.60 | -54.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.39 | 483.99 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.66 | 1816.49 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.42 | 720.77 | 4992.82 | 3676.82 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.00 | 5.429e+05 | 2795.67 | 3605.19 | -232.44 | 0.0 | 2743.07 | 3638.77 | 1.424 | 0.019 | 0.014 |
| 700.49 | 1014.00 | 2784.68 | 2344.92 | -7.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 697.84 | 2095.38 | 5072.50 | 3676.82 | -18.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 695.60 | 1108.59 | 5308.15 | 3676.82 | -0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.51 | 2057.83 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.04 | 2310.45 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 689.06 | 1145.31 | 2784.68 | 2344.92 | -13.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 688.82 | 1255.19 | 5308.15 | 3676.82 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 687.96 | 4850.52 | 1831.00 | 5069.17 | -6.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 686.48 | 1.471e+04 | 2273.73 | 4389.35 | -62.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 684.41 | 1919.30 | 4992.82 | 3676.82 | -12.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 678.97 | 2117.14 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 677.68 | 1491.32 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 673.51 | 4422.37 | 1829.52 | 5069.17 | -12.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 670.89 | 1181.11 | 2784.68 | 2344.92 | -20.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 669.62 | 427.16 | 4992.82 | 3676.82 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 668.20 | 489.54 | 5308.15 | 3676.82 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 664.92 | 1509.28 | 5308.15 | 3676.82 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 663.52 | 1019.91 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.05 | 2152.87 | 4992.82 | 3676.82 | -17.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.75 | 916.22 | 4992.82 | 3676.82 | -5.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.44 | 1628.35 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 661.78 | 264.38 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.37 | 554.52 | 5308.15 | 3676.82 | -9.34e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.00 | 102.15 | 4992.82 | 3676.82 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 656.76 | 1235.47 | 5308.15 | 3676.82 | -0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 655.93 | 141.77 | 5308.15 | 3676.82 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 652.58 | 68.79 | 5308.15 | 3676.82 | -9.15e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.67 | 214.75 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.53 | 204.29 | 4992.82 | 3676.82 | -5.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 649.81 | 1133.76 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 648.19 | 630.33 | 5308.15 | 3676.82 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 643.00 | 3324.21 | 2274.98 | 4413.42 | -46.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 642.61 | 1158.68 | 5011.54 | 3676.82 | -20.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 639.18 | 214.75 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.54 | 204.29 | 4992.82 | 3676.82 | -9.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.24 | 1376.71 | 5308.15 | 3676.82 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 631.48 | 751.65 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 630.06 | 7207.70 | 2274.98 | 4413.42 | -52.51 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 628.00 | 1718.04 | 4395.95 | 3898.35 | -181.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.37 | 2756.80 | 2198.29 | 5065.00 | -20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.22 | 68.79 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 624.00 | 5.299e+05 | 2813.85 | 3598.29 | -232.44 | 0.0 | 2769.97 | 3638.78 | 1.419 | 0.016 | 0.017 |
| 619.32 | 214.75 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.78 | 248.18 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.46 | 1196.08 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 616.20 | 1033.37 | 2274.98 | 4413.42 | -51.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 613.78 | 1333.08 | 4992.82 | 3676.82 | -21.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.98 | 516.08 | 2784.68 | 2344.92 | -5.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.57 | 1230.58 | 4992.82 | 3676.82 | -14.44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.00 | 21.20 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 608.63 | 849.78 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 606.33 | 1097.85 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 603.81 | 68.79 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.50 | 42.40 | 2784.68 | 2344.92 | -5.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.35 | 204.29 | 4992.82 | 3676.82 | -13.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 601.87 | 1314.73 | 4992.82 | 3676.82 | -19.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 599.56 | 862.34 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 598.33 | 969.40 | 5308.15 | 3676.83 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 596.18 | 2277.57 | 1831.00 | 5069.17 | -5.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 595.61 | 817.85 | 5308.15 | 3676.82 | -0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.43 | 214.75 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.21 | 7593.48 | 2274.98 | 4413.42 | -58.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.00 | 125.55 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 588.13 | 570.73 | 2784.68 | 2344.92 | -11.44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 583.87 | 251.09 | 1831.00 | 5069.17 | -4.59 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.60 | 1033.37 | 2274.98 | 4413.42 | -56.96 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.39 | 769.13 | 5308.15 | 3676.83 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.21 | 6201.74 | 2280.31 | 4502.99 | -63.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.53 | 42.40 | 2784.68 | 2344.92 | -11.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.15 | 660.73 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.89 | 68.79 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.20 | 1709.69 | 1856.31 | 5069.17 | -14.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 571.15 | 782.09 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 568.81 | 867.58 | 4992.82 | 3676.82 | -17.65 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.53 | 533.35 | 2784.68 | 2344.92 | -22.36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.28 | 2186.12 | 1831.00 | 5069.17 | -9.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 566.46 | 491.89 | 5308.15 | 3676.83 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.28 | 167.18 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.00 | 204.29 | 4992.82 | 3676.82 | -16.64 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 557.85 | 251.09 | 1831.00 | 5069.17 | -8.49 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 551.77 | 582.90 | 2784.68 | 2344.92 | -16.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.69 | 451.43 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.00 | 5.236e+05 | 2827.40 | 3603.86 | -232.44 | 0.0 | 2687.50 | 3638.81 | 1.452 | 0.051 | 0.014 |
| 545.56 | 42.40 | 2784.68 | 2344.92 | -15.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 543.08 | 68.79 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 542.57 | 619.13 | 2206.02 | 3920.36 | -64.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.69 | 473.38 | 2180.10 | 2856.00 | -32.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.17 | 756.61 | 4992.82 | 3676.82 | -22.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 538.06 | 4252.63 | 2274.15 | 4404.69 | -61.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 536.17 | 1120.02 | 3925.27 | 4126.52 | -175.79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 533.06 | 476.07 | 5308.15 | 3676.82 | -0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 532.32 | 1030.21 | 2274.98 | 4413.42 | -60.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 524.02 | 1148.18 | 1828.94 | 5069.17 | -12.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 521.04 | 438.87 | 5308.15 | 3676.82 | -0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 520.18 | 566.50 | 4992.82 | 3676.82 | -19.66 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 518.92 | 251.09 | 1831.00 | 5069.17 | -11.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 517.18 | 204.29 | 4992.82 | 3676.82 | -18.54 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 509.02 | 275.00 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 506.15 | 66.44 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 504.39 | 330.33 | 2784.68 | 2344.92 | -19.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 500.00 | 42.40 | 2784.68 | 2344.92 | -19.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 473.00 | 1.385e+04 | 2271.65 | 4515.62 | -65.33 | 0.0 | 2206.91 | 4525.00 | 1.263 | 0.005 | 0.009 |
| 468.00 | 4.924e+05 | 2856.16 | 3615.63 | -232.44 | 0.0 | 2794.30 | 3827.00 | 1.537 | 0.024 | 0.081 |
| 459.41 | 211.22 | 2784.68 | 2344.92 | -23.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 449.21 | 145.37 | 2784.68 | 2344.92 | -22.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 446.94 | 42.40 | 2784.68 | 2344.92 | -21.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 414.00 | 3927.52 | 4677.55 | 3647.94 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 392.50 | 1068.99 | 1695.02 | 5069.18 | -1.33 | 0.0 | 1697.67 | 5069.18 | 0.463 | 0.021 | 1.6061e-05 |
| 390.00 | 4.483e+05 | 2857.31 | 3622.35 | -232.44 | 0.0 | 2528.81 | 3654.36 | 1.495 | 0.124 | 0.013 |
| 378.40 | 6039.26 | 2191.00 | 5069.17 | -24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 323.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 312.00 | 4.298e+05 | 2879.83 | 3597.49 | -232.44 | 0.0 | 2446.08 | 3674.23 | 1.505 | 0.165 | 0.030 |
| 283.80 | 6039.26 | 2191.00 | 5069.17 | -24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 273.00 | 334.07 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 234.00 | 4.249e+05 | 2877.82 | 3582.57 | -232.44 | 0.0 | 2410.52 | 3666.47 | 1.517 | 0.179 | 0.033 |
| 223.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 189.20 | 6039.26 | 2191.00 | 5069.17 | -24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 156.00 | 4.503e+05 | 2869.01 | 3596.89 | -232.44 | 0.0 | 2679.22 | 3544.37 | 1.490 | 0.071 | 0.021 |
| 94.60 | 6039.26 | 2191.00 | 5069.17 | -24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 78.00 | 4.736e+05 | 2870.52 | 3603.03 | -232.44 | 0.0 | 2674.31 | 3549.62 | 1.496 | 0.073 | 0.021 |
| Risulta | 1.104e+07 | | | | | | | | | |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| | Hz | sec | g | daN | | daN | | daN | | | |
| 1 | 2.262 | 0.442 | 0.136 | 3.611e+05 | 3.3 | 6.01 | 5.45e-05 | 1.99 | 1.80e-05 | 0.0 | 0.0 |
| 2 | 2.752 | 0.363 | 0.136 | 1.850e+04 | 0.2 | 1.301e+06 | 11.8 | 1.23 | 1.12e-05 | 0.0 | 0.0 |
| 3 | 3.155 | 0.317 | 0.136 | 1.111e+06 | 10.1 | 1.778e+05 | 1.6 | 3.68e-03 | 0.0 | 0.0 | 0.0 |
| 4 | 3.421 | 0.292 | 0.136 | 1.466e+05 | 1.3 | 1.569e+06 | 14.2 | 95.16 | 8.62e-04 | 0.0 | 0.0 |
| 5 | 4.153 | 0.241 | 0.136 | 7.151e+05 | 6.5 | 1.448e+05 | 1.3 | 125.59 | 1.14e-03 | 0.0 | 0.0 |
| 6 | 4.223 | 0.237 | 0.136 | 1700.06 | 1.54e-02 | 1.155e+06 | 10.5 | 38.47 | 3.48e-04 | 0.0 | 0.0 |
| 7 | 4.317 | 0.232 | 0.136 | 4.398e+06 | 39.8 | 4.292e+05 | 3.9 | 250.85 | 2.27e-03 | 0.0 | 0.0 |
| 8 | 4.395 | 0.228 | 0.136 | 1.076e+06 | 9.7 | 3.737e+05 | 3.4 | 77.76 | 7.04e-04 | 0.0 | 0.0 |
| 9 | 4.567 | 0.219 | 0.136 | 2.050e+05 | 1.9 | 2.121e+06 | 19.2 | 18.37 | 1.66e-04 | 0.0 | 0.0 |
| 10 | 4.818 | 0.208 | 0.136 | 1.709e+05 | 1.5 | 6.566e+04 | 0.6 | 52.46 | 4.75e-04 | 0.0 | 0.0 |
| 11 | 5.142 | 0.194 | 0.136 | 2.266e+05 | 2.1 | 7529.31 | 6.82e-02 | 6.68 | 6.05e-05 | 0.0 | 0.0 |
| 12 | 5.554 | 0.180 | 0.136 | 2.652e+04 | 0.2 | 2.546e+05 | 2.3 | 2.26 | 2.04e-05 | 0.0 | 0.0 |
| 13 | 5.678 | 0.176 | 0.137 | 257.23 | 2.33e-03 | 1.211e+05 | 1.1 | 59.72 | 5.41e-04 | 0.0 | 0.0 |
| 14 | 5.801 | 0.172 | 0.138 | 2.79 | 2.53e-05 | 1164.83 | 1.06e-02 | 1041.88 | 9.44e-03 | 0.0 | 0.0 |
| 15 | 5.813 | 0.172 | 0.138 | 4331.29 | 3.92e-02 | 1257.24 | 1.14e-02 | 1605.43 | 1.45e-02 | 0.0 | 0.0 |
| 16 | 5.904 | 0.169 | 0.139 | 1.162e+05 | 1.1 | 6440.42 | 5.83e-02 | 5.34 | 4.84e-05 | 0.0 | 0.0 |
| 17 | 6.040 | 0.166 | 0.141 | 631.04 | 5.72e-03 | 4576.21 | 4.15e-02 | 409.88 | 3.71e-03 | 0.0 | 0.0 |
| 18 | 6.197 | 0.161 | 0.142 | 1400.32 | 1.27e-02 | 5129.58 | 4.65e-02 | 623.89 | 5.65e-03 | 0.0 | 0.0 |
| 19 | 6.262 | 0.160 | 0.143 | 1.388e+05 | 1.3 | 4.787e+04 | 0.4 | 323.68 | 2.93e-03 | 0.0 | 0.0 |
| 20 | 6.387 | 0.157 | 0.144 | 8.014e+04 | 0.7 | 3.559e+05 | 3.2 | 1639.27 | 1.48e-02 | 0.0 | 0.0 |
| 21 | 6.529 | 0.153 | 0.145 | 2.37 | 2.15e-05 | 1.971e+04 | 0.2 | 53.94 | 4.89e-04 | 0.0 | 0.0 |
| 22 | 6.658 | 0.150 | 0.146 | 5716.17 | 5.18e-02 | 1.231e+04 | 0.1 | 268.89 | 2.44e-03 | 0.0 | 0.0 |
| 23 | 6.824 | 0.147 | 0.148 | 122.71 | 1.11e-03 | 944.19 | 8.55e-03 | 0.85 | 7.73e-06 | 0.0 | 0.0 |
| 24 | 6.871 | 0.146 | 0.148 | 515.34 | 4.67e-03 | 2.270e+04 | 0.2 | 4.21 | 3.81e-05 | 0.0 | 0.0 |
| 25 | 6.978 | 0.143 | 0.149 | 1.318e+04 | 0.1 | 4564.19 | 4.13e-02 | 21.51 | 1.95e-04 | 0.0 | 0.0 |
| 26 | 7.017 | 0.143 | 0.149 | 1.659e+04 | 0.2 | 1335.41 | 1.21e-02 | 1759.73 | 1.59e-02 | 0.0 | 0.0 |
| 27 | 7.054 | 0.142 | 0.149 | 2585.43 | 2.34e-02 | 15.22 | 1.38e-04 | 2188.69 | 1.98e-02 | 0.0 | 0.0 |
| 28 | 7.121 | 0.140 | 0.150 | 1.540e+05 | 1.4 | 3.073e+04 | 0.3 | 88.47 | 8.01e-04 | 0.0 | 0.0 |
| 29 | 7.268 | 0.138 | 0.151 | 5981.31 | 5.42e-02 | 1396.63 | 1.27e-02 | 1028.96 | 9.32e-03 | 0.0 | 0.0 |
| 30 | 7.316 | 0.137 | 0.151 | 95.86 | 8.68e-04 | 2.168e+05 | 2.0 | 10.64 | 9.64e-05 | 0.0 | 0.0 |
| 31 | 7.390 | 0.135 | 0.152 | 433.48 | 3.93e-03 | 3.047e+05 | 2.8 | 964.92 | 8.74e-03 | 0.0 | 0.0 |
| 32 | 7.504 | 0.133 | 0.152 | 1.469e+05 | 1.3 | 3939.21 | 3.57e-02 | 66.73 | 6.04e-04 | 0.0 | 0.0 |
| 33 | 7.626 | 0.131 | 0.153 | 5723.65 | 5.18e-02 | 1663.27 | 1.51e-02 | 13.91 | 1.26e-04 | 0.0 | 0.0 |
| 34 | 7.693 | 0.130 | 0.154 | 4.282e+04 | 0.4 | 7343.22 | 6.65e-02 | 4009.47 | 3.63e-02 | 0.0 | 0.0 |
| 35 | 7.777 | 0.129 | 0.154 | 1848.84 | 1.67e-02 | 3.028e+04 | 0.3 | 63.79 | 5.78e-04 | 0.0 | 0.0 |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|----------------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| 36 | 7.795 | 0.128 | 0.154 | 4.652e+04 | 0.4 | 4.168e+04 | 0.4 | 548.00 | 4.96e-03 | 0.0 | 0.0 |
| 37 | 7.894 | 0.127 | 0.155 | 8131.37 | 7.37e-02 | 6094.13 | 5.52e-02 | 153.25 | 1.39e-03 | 0.0 | 0.0 |
| 38 | 7.934 | 0.126 | 0.155 | 0.02 | 0.0 | 9.700e+04 | 0.9 | 1885.49 | 1.71e-02 | 0.0 | 0.0 |
| 39 | 8.123 | 0.123 | 0.156 | 7997.92 | 7.24e-02 | 7630.93 | 6.91e-02 | 2845.36 | 2.58e-02 | 0.0 | 0.0 |
| 40 | 8.153 | 0.123 | 0.156 | 24.52 | 2.22e-04 | 1.014e+04 | 9.18e-02 | 753.70 | 6.83e-03 | 0.0 | 0.0 |
| 41 | 8.189 | 0.122 | 0.156 | 605.01 | 5.48e-03 | 5.785e+04 | 0.5 | 1789.67 | 1.62e-02 | 0.0 | 0.0 |
| 42 | 8.255 | 0.121 | 0.157 | 3504.80 | 3.17e-02 | 2.542e+04 | 0.2 | 287.53 | 2.60e-03 | 0.0 | 0.0 |
| 43 | 8.304 | 0.120 | 0.157 | 7964.87 | 7.21e-02 | 6.485e+04 | 0.6 | 1207.52 | 1.09e-02 | 0.0 | 0.0 |
| 44 | 8.362 | 0.120 | 0.157 | 1.752e+04 | 0.2 | 2.184e+04 | 0.2 | 172.21 | 1.56e-03 | 0.0 | 0.0 |
| 45 | 8.430 | 0.119 | 0.158 | 2.932e+04 | 0.3 | 4462.22 | 4.04e-02 | 2107.18 | 1.91e-02 | 0.0 | 0.0 |
| 46 | 8.478 | 0.118 | 0.158 | 245.67 | 2.23e-03 | 5.710e+04 | 0.5 | 57.80 | 5.24e-04 | 0.0 | 0.0 |
| 47 | 8.514 | 0.117 | 0.158 | 1.883e+04 | 0.2 | 1718.04 | 1.56e-02 | 604.64 | 5.48e-03 | 0.0 | 0.0 |
| 48 | 8.627 | 0.116 | 0.159 | 840.74 | 7.62e-03 | 1078.39 | 9.77e-03 | 1118.67 | 1.01e-02 | 0.0 | 0.0 |
| 49 | 8.643 | 0.116 | 0.159 | 4.181e+04 | 0.4 | 2.532e+04 | 0.2 | 190.13 | 1.72e-03 | 0.0 | 0.0 |
| 50 | 8.693 | 0.115 | 0.159 | 1.938e+04 | 0.2 | 450.94 | 4.08e-03 | 1193.80 | 1.08e-02 | 0.0 | 0.0 |
| 51 | 8.762 | 0.114 | 0.159 | 808.26 | 7.32e-03 | 48.81 | 4.42e-04 | 10.63 | 9.63e-05 | 0.0 | 0.0 |
| 52 | 8.772 | 0.114 | 0.159 | 849.50 | 7.69e-03 | 610.56 | 5.53e-03 | 86.03 | 7.79e-04 | 0.0 | 0.0 |
| 53 | 8.818 | 0.113 | 0.160 | 7080.93 | 6.41e-02 | 16.17 | 1.46e-04 | 61.82 | 5.60e-04 | 0.0 | 0.0 |
| 54 | 8.831 | 0.113 | 0.160 | 2795.34 | 2.53e-02 | 6289.50 | 5.70e-02 | 360.58 | 3.27e-03 | 0.0 | 0.0 |
| 55 | 8.849 | 0.113 | 0.160 | 132.43 | 1.20e-03 | 228.29 | 2.07e-03 | 650.55 | 5.89e-03 | 0.0 | 0.0 |
| 56 | 8.929 | 0.112 | 0.160 | 1.052e+04 | 9.53e-02 | 4781.10 | 4.33e-02 | 1615.62 | 1.46e-02 | 0.0 | 0.0 |
| 57 | 9.011 | 0.111 | 0.160 | 1.201e+04 | 0.1 | 6138.70 | 5.56e-02 | 969.93 | 8.79e-03 | 0.0 | 0.0 |
| 58 | 9.035 | 0.111 | 0.161 | 6572.42 | 5.95e-02 | 2547.35 | 2.31e-02 | 57.09 | 5.17e-04 | 0.0 | 0.0 |
| 59 | 9.056 | 0.110 | 0.161 | 1.275e+04 | 0.1 | 2.644e+04 | 0.2 | 1577.55 | 1.43e-02 | 0.0 | 0.0 |
| 60 | 9.124 | 0.110 | 0.161 | 5043.65 | 4.57e-02 | 1.024e+04 | 9.27e-02 | 712.79 | 6.46e-03 | 0.0 | 0.0 |
| 61 | 9.137 | 0.109 | 0.161 | 1.24 | 1.12e-05 | 5194.05 | 4.70e-02 | 453.83 | 4.11e-03 | 0.0 | 0.0 |
| 62 | 9.142 | 0.109 | 0.161 | 131.30 | 1.19e-03 | 171.37 | 1.55e-03 | 218.48 | 1.98e-03 | 0.0 | 0.0 |
| 63 | 9.180 | 0.109 | 0.161 | 5374.50 | 4.87e-02 | 3094.58 | 2.80e-02 | 4340.04 | 3.93e-02 | 0.0 | 0.0 |
| 64 | 9.199 | 0.109 | 0.161 | 5.50 | 4.98e-05 | 4.047e+04 | 0.4 | 1499.24 | 1.36e-02 | 0.0 | 0.0 |
| 65 | 9.211 | 0.109 | 0.161 | 1975.35 | 1.79e-02 | 3386.25 | 3.07e-02 | 452.73 | 4.10e-03 | 0.0 | 0.0 |
| 66 | 9.239 | 0.108 | 0.161 | 3140.67 | 2.84e-02 | 1963.10 | 1.78e-02 | 911.78 | 8.26e-03 | 0.0 | 0.0 |
| Risulta | | | | 9.468e+06 | | 9.336e+06 | | 4.582e+04 | | | |
| In percentuale | | | | 85.76 | | 84.57 | | 0.42 | | | |

| CDC | Tipo | Sigla Id | Note |
|-----|------|---|---|
| 9 | Edk | CDC=Ed (dinamico SLD) alfa=0.0 (ecc. +) | |
| | | | verifica esistenti: fattore FC 1.200 |
| | | | categoria suolo: E |
| | | | fattore di sito S = 1.600 |
| | | | ordinata spettro (tratto Tb-Tc) = 0.248 g |
| | | | angolo di ingresso:0.0 |
| | | | eccentricità aggiuntiva: positiva |
| | | | periodo proprio T1: 0.227 sec. |
| | | | numero di modi considerati: 66 |
| | | | combinaz. modale: CQC |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| cm | daN | cm | cm | cm | cm | cm | cm | | | |
| 2398.43 | 225.38 | 3851.25 | 3685.79 | 0.0 | -10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2387.29 | 348.62 | 3851.25 | 3685.79 | 0.0 | -13.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2372.45 | 406.44 | 3851.25 | 3685.79 | 0.0 | -16.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2353.36 | 467.17 | 3851.25 | 3685.79 | 0.0 | -19.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2329.16 | 532.48 | 3851.25 | 3685.79 | 0.0 | -23.12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2298.35 | 606.14 | 3851.25 | 3685.79 | 0.0 | -26.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2258.02 | 793.11 | 3851.25 | 3685.79 | 0.0 | -29.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2150.00 | 1125.96 | 3851.25 | 3685.79 | 0.0 | -32.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2060.00 | 4.769e+04 | 2472.99 | 3685.70 | 0.0 | -130.77 | 2383.06 | 3690.52 | 1.390 | 0.053 | 0.003 |
| 1960.00 | 6603.35 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1943.95 | 6.727e+04 | 2783.57 | 3568.68 | 0.0 | -147.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.75 | 3285.75 | 3771.88 | 5155.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.53 | 2156.92 | 4346.64 | 5155.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1940.66 | 1.133e+04 | 1016.86 | 3636.74 | 0.0 | -147.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1931.38 | 2.097e+04 | 1050.89 | 3688.24 | 0.0 | -74.37 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1867.50 | 1.130e+04 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.395 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1775.00 | 9277.13 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.281 | 0.0 | 0.0 |
| 1770.00 | 5768.41 | 2378.28 | 3690.32 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1720.00 | 2.411e+05 | 2601.62 | 3775.89 | 0.0 | -178.50 | 882.57 | 3946.91 | 1.143 | 0.593 | 0.096 |
| 1682.50 | 7250.34 | 3851.25 | 3685.79 | 0.0 | -34.27 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1642.00 | 3.027e+05 | 2604.36 | 3813.16 | 0.0 | -178.50 | 915.04 | 3946.89 | 1.143 | 0.544 | 0.075 |
| 1590.00 | 7250.34 | 3851.25 | 3685.79 | 0.0 | -34.27 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1564.00 | 2.586e+05 | 2648.19 | 3789.92 | 0.0 | -178.50 | 825.89 | 3863.21 | 1.137 | 0.709 | 0.042 |
| 1497.50 | 9210.54 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1486.00 | 2.206e+05 | 2646.92 | 3774.60 | 0.0 | -178.50 | 804.35 | 3862.73 | 1.138 | 0.768 | 0.050 |
| 1408.00 | 2.244e+05 | 2601.55 | 3776.23 | 0.0 | -178.50 | 799.48 | 3862.71 | 1.138 | 0.764 | 0.049 |
| 1405.00 | 1.155e+04 | 3851.25 | 3685.79 | 0.0 | -36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1330.00 | 2.364e+05 | 2591.48 | 3794.52 | 0.0 | -178.50 | 885.91 | 3944.67 | 1.144 | 0.588 | 0.085 |
| 1312.50 | 9818.02 | 3851.44 | 3685.13 | 0.0 | -36.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1266.00 | 2.110e+05 | 2605.27 | 3816.06 | 0.0 | -178.50 | 885.91 | 3944.67 | 1.144 | 0.592 | 0.072 |
| 1220.00 | 1.084e+06 | 2761.39 | 3699.32 | 0.0 | -178.50 | 2496.34 | 3776.54 | 1.573 | 0.098 | 0.032 |
| 1206.25 | 1116.37 | 4756.32 | 3676.71 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1196.67 | 571.81 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.37 | 1969.29 | 3598.51 | 3809.61 | 0.0 | -23.61 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.30 | 625.16 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1192.50 | 778.59 | 4834.79 | 3856.00 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.13 | 1432.32 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.06 | 1433.97 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1185.83 | 721.53 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1183.60 | 1934.92 | 3481.28 | 3686.00 | 0.0 | -16.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1182.74 | 1589.19 | 4221.22 | 3686.00 | 0.0 | -7.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.55 | 1970.74 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.48 | 1971.37 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1178.75 | 398.66 | 4913.37 | 3975.64 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.59 | 2016.46 | 4221.22 | 3686.00 | 0.0 | -14.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.33 | 467.42 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1167.74 | 2869.58 | 3481.28 | 3686.00 | 0.0 | -24.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.72 | 1471.38 | 3589.09 | 3799.68 | 0.0 | -22.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.59 | 428.10 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.99 | 3412.22 | 4048.29 | 3922.39 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.93 | 2822.59 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.25 | 954.85 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.12 | 953.08 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1158.73 | 2692.29 | 4221.22 | 3686.00 | 0.0 | -21.12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.67 | 326.88 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.25 | 1120.86 | 5072.15 | 3436.99 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1150.00 | 513.38 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1147.20 | 1355.24 | 3481.28 | 3686.00 | 0.0 | -13.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1146.39 | 3712.91 | 3481.28 | 3686.00 | 0.0 | -31.64 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1145.49 | 728.01 | 4221.22 | 3686.00 | 0.0 | -6.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1144.00 | 6987.90 | 3851.25 | 3686.25 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1143.85 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1142.00 | 4.023e+05 | 2746.29 | 3711.48 | 0.0 | -178.50 | 2316.65 | 3827.93 | 1.560 | 0.165 | 0.047 |
| 1141.09 | 1236.70 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1140.97 | 1234.32 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1138.73 | 2999.05 | 4221.22 | 3686.00 | 0.0 | -27.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1137.50 | 1239.02 | 5150.49 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1127.18 | 943.14 | 4221.22 | 3686.00 | 0.0 | -12.31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1125.64 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1123.75 | 1056.77 | 5229.32 | 3676.94 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1115.47 | 1842.89 | 3481.28 | 3686.00 | 0.0 | -19.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.98 | 1.842e+04 | 5175.61 | 3713.42 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.86 | 1672.24 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1097.46 | 1276.70 | 4221.22 | 3686.00 | 0.0 | -17.87 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1096.07 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1072.77 | 2292.16 | 3481.28 | 3686.00 | 0.0 | -24.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1071.62 | 3126.64 | 3481.28 | 3686.00 | 0.0 | -33.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1069.75 | 5522.07 | 3851.25 | 3686.52 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.10 | 2059.28 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.01 | 2054.62 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1065.60 | 1864.03 | 4221.22 | 3686.00 | 0.0 | -29.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1064.00 | 3.704e+05 | 2950.68 | 3690.88 | 0.0 | -178.50 | 2471.04 | 3827.31 | 1.522 | 0.182 | 0.053 |
| 1057.45 | 1519.34 | 4221.22 | 3686.00 | 0.0 | -22.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1056.27 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1020.75 | 1842.89 | 3481.28 | 3686.00 | 0.0 | -28.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.07 | 1584.13 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.00 | 1578.97 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1008.71 | 990.30 | 4221.22 | 3686.00 | 0.0 | -26.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1007.78 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 993.19 | 1772.71 | 3481.28 | 3686.00 | 0.0 | -35.36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 991.90 | 2924.63 | 3851.25 | 3686.82 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 989.05 | 1025.97 | 4221.22 | 3686.00 | 0.0 | -31.11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 986.00 | 3.407e+05 | 2938.41 | 3693.07 | 0.0 | -178.50 | 2160.49 | 3685.87 | 1.530 | 0.301 | 0.003 |
| 961.39 | 1355.24 | 3481.28 | 3686.00 | 0.0 | -31.72 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.86 | 1090.81 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.81 | 1085.53 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 956.58 | 4975.61 | 4221.21 | 3660.70 | 0.0 | -64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 953.10 | 509.94 | 4221.22 | 3686.00 | 0.0 | -29.72 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 952.46 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 951.13 | 1.009e+04 | 4221.22 | 3679.57 | 0.0 | -71.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 935.47 | 8808.93 | 4221.22 | 3695.09 | 0.0 | -79.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 912.24 | 1276.17 | 3481.28 | 3686.00 | 0.0 | -36.34 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 911.58 | 1929.45 | 3851.25 | 3687.25 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 908.00 | 3.865e+05 | 2922.61 | 3696.26 | 0.0 | -178.50 | 2538.39 | 3664.51 | 1.462 | 0.137 | 0.013 |
| 896.98 | 1042.50 | 3481.28 | 3686.00 | 0.0 | -33.67 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 895.69 | 1544.29 | 3851.25 | 3687.35 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 892.43 | 1026.76 | 3698.40 | 3686.93 | 0.0 | -39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 887.26 | 278.87 | 4221.22 | 3686.00 | 0.0 | -31.21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 849.94 | 2149.89 | 4221.22 | 3686.00 | 0.0 | -64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 840.79 | 150.71 | 4221.22 | 3686.00 | 0.0 | -64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 839.04 | 4458.34 | 4221.22 | 3686.00 | 0.0 | -70.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.47 | 301.43 | 4221.22 | 3686.00 | 0.0 | -69.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.00 | 3.560e+05 | 2928.97 | 3695.44 | 0.0 | -178.50 | 2610.37 | 3664.49 | 1.449 | 0.113 | 0.013 |
| 821.62 | 3653.08 | 4221.22 | 3685.58 | 0.0 | -81.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 807.73 | 4259.95 | 4221.22 | 3686.00 | 0.0 | -75.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 800.84 | 301.43 | 4221.22 | 3686.00 | 0.0 | -74.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 780.00 | 1.464e+06 | 2778.47 | 3680.55 | 0.0 | -178.50 | 2751.82 | 3709.29 | 1.442 | 0.010 | 0.012 |
| 760.02 | 1856.89 | 4221.22 | 3685.88 | 0.0 | -79.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 755.69 | 255.42 | 4221.22 | 3685.94 | 0.0 | -78.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 743.35 | 1001.59 | 5308.15 | 3676.82 | 0.0 | -62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 741.79 | 2093.31 | 5308.15 | 3676.82 | 0.0 | -67.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 737.22 | 2353.28 | 5308.15 | 3676.82 | 0.0 | -72.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 735.21 | 975.72 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 733.98 | 711.12 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.92 | 2074.77 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.84 | 1469.14 | 5308.15 | 3676.82 | 0.0 | -6.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.95 | 2316.26 | 5308.15 | 3676.82 | 0.0 | -77.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.44 | 1608.08 | 5308.15 | 3676.82 | 0.0 | -12.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 726.20 | 2430.68 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 723.87 | 1833.87 | 5308.15 | 3676.82 | 0.0 | -19.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 716.26 | 1819.39 | 5308.15 | 3676.82 | 0.0 | -25.58 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 715.52 | 2745.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 711.37 | 6603.06 | 2274.63 | 4411.46 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 705.78 | 865.63 | 5308.15 | 3676.82 | 0.0 | -62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.90 | 1.447e+04 | 2274.57 | 4410.60 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.39 | 483.99 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.66 | 1816.49 | 5308.15 | 3676.82 | 0.0 | -66.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.42 | 720.77 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.00 | 5.429e+05 | 2795.67 | 3605.19 | 0.0 | -178.50 | 2743.07 | 3638.77 | 1.424 | 0.019 | 0.014 |
| 700.49 | 1014.00 | 2784.68 | 2344.92 | 0.0 | -0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 697.84 | 2095.38 | 5072.50 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 695.60 | 1108.59 | 5308.15 | 3676.82 | 0.0 | -5.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.51 | 2057.83 | 5308.15 | 3676.82 | 0.0 | -70.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.04 | 2310.45 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 689.06 | 1145.31 | 2784.68 | 2344.92 | 0.0 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 688.82 | 1255.19 | 5308.15 | 3676.82 | 0.0 | -10.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 687.96 | 4850.52 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 686.48 | 1.471e+04 | 2273.73 | 4389.35 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 684.41 | 1919.30 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 678.97 | 2117.14 | 5308.15 | 3676.82 | 0.0 | -74.45 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 677.68 | 1491.32 | 5308.15 | 3676.82 | 0.0 | -16.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 673.51 | 4422.37 | 1829.52 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 670.89 | 1181.11 | 2784.68 | 2344.92 | 0.0 | -0.24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 669.62 | 427.16 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 668.20 | 489.54 | 5308.15 | 3676.82 | 0.0 | -62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 664.92 | 1509.28 | 5308.15 | 3676.82 | 0.0 | -77.74 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.52 | 1019.91 | 5308.15 | 3676.82 | 0.0 | -65.73 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.05 | 2152.87 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.75 | 916.22 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.44 | 1628.35 | 5308.15 | 3676.82 | 0.0 | -21.31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 661.78 | 264.38 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.37 | 554.52 | 5308.15 | 3676.82 | 0.0 | -4.52 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 658.00 | 102.15 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 656.76 | 1235.47 | 5308.15 | 3676.82 | 0.0 | -26.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 655.93 | 141.77 | 5308.15 | 3676.82 | 0.0 | -62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 652.58 | 68.79 | 5308.15 | 3676.82 | 0.0 | -4.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.67 | 214.75 | 5308.15 | 3676.82 | 0.0 | -65.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.53 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 649.81 | 1133.76 | 5308.15 | 3676.82 | 0.0 | -69.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 648.19 | 630.33 | 5308.15 | 3676.82 | 0.0 | -8.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 643.00 | 3324.21 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 642.61 | 1158.68 | 5011.54 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 639.18 | 214.75 | 5308.15 | 3676.82 | 0.0 | -68.42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.54 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.24 | 1376.71 | 5308.15 | 3676.82 | 0.0 | -75.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 631.48 | 751.65 | 5308.15 | 3676.82 | 0.0 | -13.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 630.06 | 7207.70 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 628.00 | 1718.04 | 4395.95 | 3898.35 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.37 | 2756.80 | 2198.29 | 5065.00 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.22 | 68.79 | 5308.15 | 3676.82 | 0.0 | -12.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 624.00 | 5.299e+05 | 2813.85 | 3598.29 | 0.0 | -178.50 | 2769.97 | 3638.78 | 1.419 | 0.016 | 0.017 |
| 619.32 | 214.75 | 5308.15 | 3676.82 | 0.0 | -71.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.78 | 248.18 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.46 | 1196.08 | 5308.15 | 3676.82 | 0.0 | -23.66 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 616.20 | 1033.37 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 613.78 | 1333.08 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.98 | 516.08 | 2784.68 | 2344.92 | 0.0 | -0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.57 | 1230.58 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.00 | 21.20 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 608.63 | 849.78 | 5308.15 | 3676.82 | 0.0 | -17.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 606.33 | 1097.85 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 603.81 | 68.79 | 5308.15 | 3676.82 | 0.0 | -16.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.50 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.35 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 601.87 | 1314.73 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 599.56 | 862.34 | 5308.15 | 3676.82 | 0.0 | -74.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 598.33 | 969.40 | 5308.15 | 3676.83 | 0.0 | -78.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 596.18 | 2277.57 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 595.61 | 817.85 | 5308.15 | 3676.82 | 0.0 | -27.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.43 | 214.75 | 5308.15 | 3676.82 | 0.0 | -73.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.21 | 7593.48 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.00 | 125.55 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 588.13 | 570.73 | 2784.68 | 2344.92 | 0.0 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 583.87 | 251.09 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.60 | 1033.37 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.39 | 769.13 | 5308.15 | 3676.83 | 0.0 | -76.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.21 | 6201.74 | 2280.31 | 4502.99 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.53 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.15 | 660.73 | 5308.15 | 3676.82 | 0.0 | -20.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.89 | 68.79 | 5308.15 | 3676.82 | 0.0 | -20.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.20 | 1709.69 | 1856.31 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 571.15 | 782.09 | 5308.15 | 3676.82 | 0.0 | -25.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 568.81 | 867.58 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.53 | 533.35 | 2784.68 | 2344.92 | 0.0 | -0.26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.28 | 2186.12 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 566.46 | 491.89 | 5308.15 | 3676.83 | 0.0 | -75.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.28 | 167.18 | 5308.15 | 3676.82 | 0.0 | -74.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.00 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 557.85 | 251.09 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 551.77 | 582.90 | 2784.68 | 2344.92 | 0.0 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.69 | 451.43 | 5308.15 | 3676.82 | 0.0 | -23.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.00 | 5.236e+05 | 2827.40 | 3603.86 | 0.0 | -178.50 | 2687.50 | 3638.81 | 1.452 | 0.051 | 0.014 |
| 545.56 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 543.08 | 68.79 | 5308.15 | 3676.82 | 0.0 | -23.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 542.57 | 619.13 | 2206.02 | 3920.36 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.69 | 473.38 | 2180.10 | 2856.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.17 | 756.61 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 538.06 | 4252.63 | 2274.15 | 4404.69 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 536.17 | 1120.02 | 3925.27 | 4126.52 | 0.0 | -134.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 533.06 | 476.07 | 5308.15 | 3676.82 | 0.0 | -28.61 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 532.32 | 1030.21 | 2274.98 | 4413.42 | 0.0 | -130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 524.02 | 1148.18 | 1828.94 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 521.04 | 438.87 | 5308.15 | 3676.82 | 0.0 | -27.37 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 520.18 | 566.50 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 518.92 | 251.09 | 1831.00 | 5069.17 | 0.0 | -47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 517.18 | 204.29 | 4992.82 | 3676.82 | 0.0 | -89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 509.02 | 275.00 | 5308.15 | 3676.82 | 0.0 | -26.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 506.15 | 66.44 | 5308.15 | 3676.82 | 0.0 | -25.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 504.39 | 330.33 | 2784.68 | 2344.92 | 0.0 | -0.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 500.00 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 473.00 | 1.385e+04 | 2271.65 | 4515.62 | 0.0 | -130.77 | 2206.91 | 4525.00 | 1.263 | 0.005 | 0.009 |
| 468.00 | 4.924e+05 | 2856.16 | 3615.63 | 0.0 | -178.50 | 2794.30 | 3827.00 | 1.537 | 0.024 | 0.081 |
| 459.41 | 211.22 | 2784.68 | 2344.92 | 0.0 | -0.27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 449.21 | 145.37 | 2784.68 | 2344.92 | 0.0 | -0.26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 446.94 | 42.40 | 2784.68 | 2344.92 | 0.0 | -0.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 414.00 | 3927.52 | 4677.55 | 3647.94 | 0.0 | -68.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 392.50 | 1068.99 | 1695.02 | 5069.18 | 0.0 | -47.77 | 1697.67 | 5069.18 | 0.463 | 0.021 | 1.6061e-05 |
| 390.00 | 4.483e+05 | 2857.31 | 3622.35 | 0.0 | -178.50 | 2528.81 | 3654.36 | 1.495 | 0.124 | 0.013 |
| 378.40 | 6039.26 | 2191.00 | 5069.17 | 0.0 | -47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 323.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | -5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 312.00 | 4.298e+05 | 2879.83 | 3597.49 | 0.0 | -178.50 | 2446.08 | 3674.23 | 1.505 | 0.165 | 0.030 |
| 283.80 | 6039.26 | 2191.00 | 5069.17 | 0.0 | -47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 273.00 | 334.07 | 661.27 | 4281.50 | 0.0 | -5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 234.00 | 4.249e+05 | 2877.82 | 3582.57 | 0.0 | -178.50 | 2410.52 | 3666.47 | 1.517 | 0.179 | 0.033 |
| 223.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | -5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 189.20 | 6039.26 | 2191.00 | 5069.17 | 0.0 | -47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 156.00 | 4.503e+05 | 2869.01 | 3596.89 | 0.0 | -178.50 | 2679.22 | 3544.37 | 1.490 | 0.071 | 0.021 |
| 94.60 | 6039.26 | 2191.00 | 5069.17 | 0.0 | -47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 78.00 | 4.736e+05 | 2870.52 | 3603.03 | 0.0 | -178.50 | 2674.31 | 3549.62 | 1.496 | 0.073 | 0.021 |
| Risulta | 1.104e+07 | | | | | | | | | |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| | Hz | sec | g | daN | | daN | | daN | | | |
| 1 | 2.259 | 0.443 | 0.248 | 3.554e+05 | 3.2 | 1.79 | 1.62e-05 | 2.01 | 1.82e-05 | 0.0 | 0.0 |
| 2 | 2.770 | 0.361 | 0.248 | 2.119e+04 | 0.2 | 1.358e+06 | 12.3 | 1.87 | 1.69e-05 | 0.0 | 0.0 |
| 3 | 3.146 | 0.318 | 0.248 | 1.096e+06 | 9.9 | 1.632e+05 | 1.5 | 0.04 | 0.0 | 0.0 | 0.0 |
| 4 | 3.459 | 0.289 | 0.248 | 1.212e+05 | 1.1 | 1.853e+06 | 16.8 | 105.18 | 9.53e-04 | 0.0 | 0.0 |
| 5 | 4.144 | 0.241 | 0.248 | 6559.77 | 5.94e-02 | 1.354e+06 | 12.3 | 30.04 | 2.72e-04 | 0.0 | 0.0 |
| 6 | 4.190 | 0.239 | 0.248 | 3.971e+05 | 3.6 | 4.681e+04 | 0.4 | 2.13 | 1.93e-05 | 0.0 | 0.0 |
| 7 | 4.412 | 0.227 | 0.248 | 6.451e+06 | 58.4 | 6.011e+04 | 0.5 | 511.68 | 4.63e-03 | 0.0 | 0.0 |
| 8 | 4.513 | 0.222 | 0.248 | 1.519e+04 | 0.1 | 1.759e+06 | 15.9 | 1.47 | 1.33e-05 | 0.0 | 0.0 |
| 9 | 4.767 | 0.210 | 0.248 | 14.56 | 1.32e-04 | 1.627e+05 | 1.5 | 3.16 | 2.86e-05 | 0.0 | 0.0 |
| 10 | 4.939 | 0.202 | 0.248 | 8256.64 | 7.48e-02 | 4.440e+05 | 4.0 | 9.88 | 8.95e-05 | 0.0 | 0.0 |
| 11 | 5.141 | 0.195 | 0.248 | 665.05 | 6.02e-03 | 5.952e+04 | 0.5 | 3.59 | 3.26e-05 | 0.0 | 0.0 |
| 12 | 5.271 | 0.190 | 0.248 | 346.84 | 3.14e-03 | 7.221e+04 | 0.7 | 150.45 | 1.36e-03 | 0.0 | 0.0 |
| 13 | 5.632 | 0.178 | 0.248 | 2933.28 | 2.66e-02 | 3.052e+05 | 2.8 | 152.21 | 1.38e-03 | 0.0 | 0.0 |
| 14 | 5.731 | 0.175 | 0.248 | 2744.19 | 2.49e-02 | 52.47 | 4.75e-04 | 610.41 | 5.53e-03 | 0.0 | 0.0 |
| 15 | 5.814 | 0.172 | 0.248 | 1248.86 | 1.13e-02 | 1.835e+04 | 0.2 | 452.61 | 4.10e-03 | 0.0 | 0.0 |
| 16 | 5.891 | 0.170 | 0.248 | 1267.45 | 1.15e-02 | 6320.32 | 5.72e-02 | 1351.30 | 1.22e-02 | 0.0 | 0.0 |
| 17 | 5.928 | 0.169 | 0.248 | 1.022e+05 | 0.9 | 1.306e+04 | 0.1 | 24.16 | 2.19e-04 | 0.0 | 0.0 |
| 18 | 6.147 | 0.163 | 0.248 | 3202.37 | 2.90e-02 | 1.018e+04 | 9.22e-02 | 986.77 | 8.94e-03 | 0.0 | 0.0 |
| 19 | 6.206 | 0.161 | 0.246 | 1.142e+05 | 1.0 | 1.521e+05 | 1.4 | 365.23 | 3.31e-03 | 0.0 | 0.0 |
| 20 | 6.310 | 0.158 | 0.244 | 1.205e+05 | 1.1 | 3.477e+05 | 3.1 | 1920.09 | 1.74e-02 | 0.0 | 0.0 |
| 21 | 6.399 | 0.156 | 0.242 | 1.243e+04 | 0.1 | 1.976e+04 | 0.2 | 101.48 | 9.19e-04 | 0.0 | 0.0 |
| 22 | 6.450 | 0.155 | 0.241 | 2952.53 | 2.67e-02 | 2.917e+04 | 0.3 | 37.25 | 3.37e-04 | 0.0 | 0.0 |
| 23 | 6.624 | 0.151 | 0.237 | 240.86 | 2.18e-03 | 114.59 | 1.04e-03 | 146.23 | 1.32e-03 | 0.0 | 0.0 |
| 24 | 6.749 | 0.148 | 0.234 | 3409.24 | 3.09e-02 | 4185.73 | 3.79e-02 | 16.06 | 1.45e-04 | 0.0 | 0.0 |
| 25 | 6.865 | 0.146 | 0.232 | 2827.79 | 2.56e-02 | 6.343e+04 | 0.6 | 7.51 | 6.80e-05 | 0.0 | 0.0 |
| 26 | 7.000 | 0.143 | 0.229 | 1.614e+05 | 1.5 | 129.32 | 1.17e-03 | 527.17 | 4.78e-03 | 0.0 | 0.0 |
| 27 | 7.027 | 0.142 | 0.229 | 1.113e+04 | 0.1 | 3.414e+04 | 0.3 | 1374.39 | 1.24e-02 | 0.0 | 0.0 |
| 28 | 7.135 | 0.140 | 0.227 | 6909.68 | 6.26e-02 | 2.019e+05 | 1.8 | 657.07 | 5.95e-03 | 0.0 | 0.0 |
| 29 | 7.307 | 0.137 | 0.224 | 4.461e+04 | 0.4 | 2.656e+04 | 0.2 | 574.64 | 5.21e-03 | 0.0 | 0.0 |
| 30 | 7.373 | 0.136 | 0.223 | 2.840e+04 | 0.3 | 0.92 | 8.31e-06 | 231.42 | 2.10e-03 | 0.0 | 0.0 |
| 31 | 7.386 | 0.135 | 0.222 | 5.193e+04 | 0.5 | 7.209e+04 | 0.7 | 1018.02 | 9.22e-03 | 0.0 | 0.0 |
| 32 | 7.469 | 0.134 | 0.221 | 4115.35 | 3.73e-02 | 1.201e+04 | 0.1 | 2731.39 | 2.47e-02 | 0.0 | 0.0 |
| 33 | 7.589 | 0.132 | 0.219 | 1.179e+04 | 0.1 | 5.503e+04 | 0.5 | 553.36 | 5.01e-03 | 0.0 | 0.0 |
| 34 | 7.667 | 0.130 | 0.218 | 1.741e+04 | 0.2 | 2.245e+04 | 0.2 | 1997.82 | 1.81e-02 | 0.0 | 0.0 |
| 35 | 7.868 | 0.127 | 0.215 | 4.111e+04 | 0.4 | 1.598e+04 | 0.1 | 5.22 | 4.73e-05 | 0.0 | 0.0 |
| 36 | 7.873 | 0.127 | 0.215 | 2382.73 | 2.16e-02 | 3.587e+04 | 0.3 | 765.59 | 6.93e-03 | 0.0 | 0.0 |
| 37 | 7.924 | 0.126 | 0.214 | 5.997e+04 | 0.5 | 1.291e+04 | 0.1 | 102.08 | 9.25e-04 | 0.0 | 0.0 |
| 38 | 7.969 | 0.125 | 0.213 | 1.077e+04 | 9.75e-02 | 5.518e+04 | 0.5 | 90.63 | 8.21e-04 | 0.0 | 0.0 |
| 39 | 8.114 | 0.123 | 0.211 | 1303.04 | 1.18e-02 | 1.757e+04 | 0.2 | 2205.66 | 2.00e-02 | 0.0 | 0.0 |
| 40 | 8.152 | 0.123 | 0.211 | 432.59 | 3.92e-03 | 5.327e+04 | 0.5 | 1011.10 | 9.16e-03 | 0.0 | 0.0 |
| 41 | 8.181 | 0.122 | 0.210 | 350.85 | 3.18e-03 | 2045.30 | 1.85e-02 | 2287.98 | 2.07e-02 | 0.0 | 0.0 |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|----------------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| 42 | 8.277 | 0.121 | 0.209 | 1.046e+04 | 9.47e-02 | 5774.40 | 5.23e-02 | 15.68 | 1.42e-04 | 0.0 | 0.0 |
| 43 | 8.283 | 0.121 | 0.209 | 1082.75 | 9.81e-03 | 3619.35 | 3.28e-02 | 3187.86 | 2.89e-02 | 0.0 | 0.0 |
| 44 | 8.335 | 0.120 | 0.208 | 2.17 | 1.96e-05 | 8806.02 | 7.98e-02 | 26.13 | 2.37e-04 | 0.0 | 0.0 |
| 45 | 8.367 | 0.120 | 0.208 | 2345.84 | 2.12e-02 | 3.913e+04 | 0.4 | 121.00 | 1.10e-03 | 0.0 | 0.0 |
| 46 | 8.416 | 0.119 | 0.207 | 64.31 | 5.83e-04 | 6.990e+04 | 0.6 | 2770.18 | 2.51e-02 | 0.0 | 0.0 |
| 47 | 8.454 | 0.118 | 0.207 | 3263.67 | 2.96e-02 | 6015.81 | 5.45e-02 | 38.53 | 3.49e-04 | 0.0 | 0.0 |
| 48 | 8.492 | 0.118 | 0.206 | 74.84 | 6.78e-04 | 8875.87 | 8.04e-02 | 80.37 | 7.28e-04 | 0.0 | 0.0 |
| 49 | 8.588 | 0.116 | 0.205 | 2.620e+04 | 0.2 | 5.295e+04 | 0.5 | 1540.70 | 1.40e-02 | 0.0 | 0.0 |
| 50 | 8.612 | 0.116 | 0.205 | 1.143e+04 | 0.1 | 4862.26 | 4.40e-02 | 107.66 | 9.75e-04 | 0.0 | 0.0 |
| 51 | 8.678 | 0.115 | 0.204 | 1303.27 | 1.18e-02 | 7.900e+04 | 0.7 | 1498.58 | 1.36e-02 | 0.0 | 0.0 |
| 52 | 8.747 | 0.114 | 0.203 | 870.08 | 7.88e-03 | 1.379e+04 | 0.1 | 2125.41 | 1.93e-02 | 0.0 | 0.0 |
| 53 | 8.772 | 0.114 | 0.203 | 2979.05 | 2.70e-02 | 7394.46 | 6.70e-02 | 150.61 | 1.36e-03 | 0.0 | 0.0 |
| 54 | 8.817 | 0.113 | 0.202 | 1.531e+04 | 0.1 | 4465.04 | 4.04e-02 | 464.55 | 4.21e-03 | 0.0 | 0.0 |
| 55 | 8.929 | 0.112 | 0.201 | 2607.29 | 2.36e-02 | 2.604e+04 | 0.2 | 568.07 | 5.15e-03 | 0.0 | 0.0 |
| 56 | 8.960 | 0.112 | 0.201 | 7076.89 | 6.41e-02 | 1.928e+04 | 0.2 | 492.45 | 4.46e-03 | 0.0 | 0.0 |
| 57 | 8.976 | 0.111 | 0.200 | 6305.36 | 5.71e-02 | 1.448e+04 | 0.1 | 717.62 | 6.50e-03 | 0.0 | 0.0 |
| 58 | 8.997 | 0.111 | 0.200 | 1.616e+04 | 0.1 | 813.42 | 7.37e-03 | 294.84 | 2.67e-03 | 0.0 | 0.0 |
| 59 | 9.057 | 0.110 | 0.199 | 5053.55 | 4.58e-02 | 2.575e+04 | 0.2 | 747.41 | 6.77e-03 | 0.0 | 0.0 |
| 60 | 9.120 | 0.110 | 0.199 | 3.106e+04 | 0.3 | 4663.84 | 4.22e-02 | 427.47 | 3.87e-03 | 0.0 | 0.0 |
| 61 | 9.154 | 0.109 | 0.198 | 4666.47 | 4.23e-02 | 1.042e+04 | 9.44e-02 | 567.18 | 5.14e-03 | 0.0 | 0.0 |
| 62 | 9.175 | 0.109 | 0.198 | 737.88 | 6.68e-03 | 6208.37 | 5.62e-02 | 539.52 | 4.89e-03 | 0.0 | 0.0 |
| 63 | 9.209 | 0.109 | 0.198 | 5740.19 | 5.20e-02 | 1.009e+04 | 9.14e-02 | 45.85 | 4.15e-04 | 0.0 | 0.0 |
| 64 | 9.232 | 0.108 | 0.197 | 1.321e+04 | 0.1 | 1280.93 | 1.16e-02 | 4.85 | 4.39e-05 | 0.0 | 0.0 |
| 65 | 9.265 | 0.108 | 0.197 | 1.399e+04 | 0.1 | 4.108e+04 | 0.4 | 46.63 | 4.22e-04 | 0.0 | 0.0 |
| 66 | 9.280 | 0.108 | 0.197 | 1251.92 | 1.13e-02 | 1.818e+04 | 0.2 | 455.16 | 4.12e-03 | 0.0 | 0.0 |
| Risulta | | | | 9.480e+06 | | 9.402e+06 | | 4.016e+04 | | | |
| In percentuale | | | | 85.87 | | 85.17 | | 0.36 | | | |

| CDC | Tipo | Sigla Id | Note |
|-----|------|---|---|
| 10 | Edk | CDC=Ed (dinamico SLD) alfa=0.0 (ecc. -) | |
| | | | verifica esistenti: fattore FC 1.200 |
| | | | categoria suolo: E |
| | | | fattore di sito S = 1.600 |
| | | | ordinata spettro (tratto Tb-Tc) = 0.248 g |
| | | | angolo di ingresso:0.0 |
| | | | eccentricità aggiuntiva: negativa |
| | | | periodo proprio T1: 0.247 sec. |
| | | | numero di modi considerati: 66 |
| | | | combinaz. modale: CQC |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| cm | daN | cm | cm | cm | cm | cm | cm | | | |
| 2398.43 | 225.38 | 3851.25 | 3685.79 | 0.0 | 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2387.29 | 348.62 | 3851.25 | 3685.79 | 0.0 | 13.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2372.45 | 406.44 | 3851.25 | 3685.79 | 0.0 | 16.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2353.36 | 467.17 | 3851.25 | 3685.79 | 0.0 | 19.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2329.16 | 532.48 | 3851.25 | 3685.79 | 0.0 | 23.12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2298.35 | 606.14 | 3851.25 | 3685.79 | 0.0 | 26.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2258.02 | 793.11 | 3851.25 | 3685.79 | 0.0 | 29.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2150.00 | 1125.96 | 3851.25 | 3685.79 | 0.0 | 32.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2060.00 | 4.769e+04 | 2472.99 | 3685.70 | 0.0 | 130.77 | 2383.06 | 3690.52 | 1.390 | 0.053 | 0.003 |
| 1960.00 | 6603.35 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1943.95 | 6.727e+04 | 2783.57 | 3568.68 | 0.0 | 147.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.75 | 3285.75 | 3771.88 | 5155.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.53 | 2156.92 | 4346.64 | 5155.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1940.66 | 1.133e+04 | 1016.86 | 3636.74 | 0.0 | 147.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1931.38 | 2.097e+04 | 1050.89 | 3688.24 | 0.0 | 74.37 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1867.50 | 1.130e+04 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.395 | 0.0 | 0.0 |
| 1775.00 | 9277.13 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.281 | 0.0 | 0.0 |
| 1770.00 | 5768.41 | 2378.28 | 3690.32 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1720.00 | 2.411e+05 | 2601.62 | 3775.89 | 0.0 | 178.50 | 882.57 | 3946.91 | 1.143 | 0.593 | 0.096 |
| 1682.50 | 7250.34 | 3851.25 | 3685.79 | 0.0 | 34.27 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1642.00 | 3.027e+05 | 2604.36 | 3813.16 | 0.0 | 178.50 | 915.04 | 3946.89 | 1.143 | 0.544 | 0.075 |
| 1590.00 | 7250.34 | 3851.25 | 3685.79 | 0.0 | 34.27 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1564.00 | 2.586e+05 | 2648.19 | 3789.92 | 0.0 | 178.50 | 825.89 | 3863.21 | 1.137 | 0.709 | 0.042 |
| 1497.50 | 9210.54 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1486.00 | 2.206e+05 | 2646.92 | 3774.60 | 0.0 | 178.50 | 804.35 | 3862.73 | 1.138 | 0.768 | 0.050 |
| 1408.00 | 2.244e+05 | 2601.55 | 3776.23 | 0.0 | 178.50 | 799.48 | 3862.71 | 1.138 | 0.764 | 0.049 |
| 1405.00 | 1.155e+04 | 3851.25 | 3685.79 | 0.0 | 36.25 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1330.00 | 2.364e+05 | 2591.48 | 3794.52 | 0.0 | 178.50 | 885.91 | 3944.67 | 1.144 | 0.588 | 0.085 |
| 1312.50 | 9818.02 | 3851.44 | 3685.13 | 0.0 | 36.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1266.00 | 2.110e+05 | 2605.27 | 3816.06 | 0.0 | 178.50 | 885.91 | 3944.67 | 1.144 | 0.592 | 0.072 |
| 1220.00 | 1.084e+06 | 2761.39 | 3699.32 | 0.0 | 178.50 | 2496.34 | 3776.54 | 1.573 | 0.098 | 0.032 |
| 1206.25 | 1116.37 | 4756.32 | 3676.71 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1196.67 | 571.81 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.37 | 1969.29 | 3598.51 | 3809.61 | 0.0 | 23.61 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.30 | 625.16 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1192.50 | 778.59 | 4834.79 | 3856.00 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.13 | 1432.32 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.06 | 1433.97 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1185.83 | 721.53 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1183.60 | 1934.92 | 3481.28 | 3686.00 | 0.0 | 16.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1182.74 | 1589.19 | 4221.22 | 3686.00 | 0.0 | 7.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.55 | 1970.74 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.48 | 1971.37 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1178.75 | 398.66 | 4913.37 | 3975.64 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.59 | 2016.46 | 4221.22 | 3686.00 | 0.0 | 14.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.33 | 467.42 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1167.74 | 2869.58 | 3481.28 | 3686.00 | 0.0 | 24.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.72 | 1471.38 | 3589.09 | 3799.68 | 0.0 | 22.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.59 | 428.10 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.99 | 3412.22 | 4048.29 | 3922.39 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.93 | 2822.59 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.25 | 954.85 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.12 | 953.08 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1158.73 | 2692.29 | 4221.22 | 3686.00 | 0.0 | 21.12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.67 | 326.88 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.25 | 1120.86 | 5072.15 | 3436.99 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1150.00 | 513.38 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1147.20 | 1355.24 | 3481.28 | 3686.00 | 0.0 | 13.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1146.39 | 3712.91 | 3481.28 | 3686.00 | 0.0 | 31.64 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1145.49 | 728.01 | 4221.22 | 3686.00 | 0.0 | 6.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1144.00 | 6987.90 | 3851.25 | 3686.25 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1143.85 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1142.00 | 4.023e+05 | 2746.29 | 3711.48 | 0.0 | 178.50 | 2316.65 | 3827.93 | 1.560 | 0.165 | 0.047 |
| 1141.09 | 1236.70 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1140.97 | 1234.32 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1138.73 | 2999.05 | 4221.22 | 3686.00 | 0.0 | 27.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1137.50 | 1239.02 | 5150.49 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1127.18 | 943.14 | 4221.22 | 3686.00 | 0.0 | 12.31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1125.64 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1123.75 | 1056.77 | 5229.32 | 3676.94 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1115.47 | 1842.89 | 3481.28 | 3686.00 | 0.0 | 19.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.98 | 1.842e+04 | 5175.61 | 3713.42 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.86 | 1672.24 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1097.46 | 1276.70 | 4221.22 | 3686.00 | 0.0 | 17.87 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1096.07 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1072.77 | 2292.16 | 3481.28 | 3686.00 | 0.0 | 24.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1071.62 | 3126.64 | 3481.28 | 3686.00 | 0.0 | 33.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1069.75 | 5522.07 | 3851.25 | 3686.52 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.10 | 2059.28 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.01 | 2054.62 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1065.60 | 1864.03 | 4221.22 | 3686.00 | 0.0 | 29.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1064.00 | 3.704e+05 | 2950.68 | 3690.88 | 0.0 | 178.50 | 2471.04 | 3827.31 | 1.522 | 0.182 | 0.053 |
| 1057.45 | 1519.34 | 4221.22 | 3686.00 | 0.0 | 22.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1056.27 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1020.75 | 1842.89 | 3481.28 | 3686.00 | 0.0 | 28.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.07 | 1584.13 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.00 | 1578.97 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1008.71 | 990.30 | 4221.22 | 3686.00 | 0.0 | 26.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1007.78 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 993.19 | 1772.71 | 3481.28 | 3686.00 | 0.0 | 35.36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 991.90 | 2924.63 | 3851.25 | 3686.82 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 989.05 | 1025.97 | 4221.22 | 3686.00 | 0.0 | 31.11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 986.00 | 3.407e+05 | 2938.41 | 3693.07 | 0.0 | 178.50 | 2160.49 | 3685.87 | 1.530 | 0.301 | 0.003 |
| 961.39 | 1355.24 | 3481.28 | 3686.00 | 0.0 | 31.72 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.86 | 1090.81 | 3851.17 | 4076.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 958.81 | 1085.53 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 956.58 | 4975.61 | 4221.21 | 3660.70 | 0.0 | 64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 953.10 | 509.94 | 4221.22 | 3686.00 | 0.0 | 29.72 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 952.46 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 951.13 | 1.009e+04 | 4221.22 | 3679.57 | 0.0 | 71.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 935.47 | 8808.93 | 4221.22 | 3695.09 | 0.0 | 79.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 912.24 | 1276.17 | 3481.28 | 3686.00 | 0.0 | 36.34 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 911.58 | 1929.45 | 3851.25 | 3687.25 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 908.00 | 3.865e+05 | 2922.61 | 3696.26 | 0.0 | 178.50 | 2538.39 | 3664.51 | 1.462 | 0.137 | 0.013 |
| 896.98 | 1042.50 | 3481.28 | 3686.00 | 0.0 | 33.67 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 895.69 | 1544.29 | 3851.25 | 3687.35 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 892.43 | 1026.76 | 3698.40 | 3686.93 | 0.0 | 39.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 887.26 | 278.87 | 4221.22 | 3686.00 | 0.0 | 31.21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 849.94 | 2149.89 | 4221.22 | 3686.00 | 0.0 | 64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 840.79 | 150.71 | 4221.22 | 3686.00 | 0.0 | 64.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 839.04 | 4458.34 | 4221.22 | 3686.00 | 0.0 | 70.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.47 | 301.43 | 4221.22 | 3686.00 | 0.0 | 69.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.00 | 3.560e+05 | 2928.97 | 3695.44 | 0.0 | 178.50 | 2610.37 | 3664.49 | 1.449 | 0.113 | 0.013 |
| 821.62 | 3653.08 | 4221.22 | 3685.58 | 0.0 | 81.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 807.73 | 4259.95 | 4221.22 | 3686.00 | 0.0 | 75.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 800.84 | 301.43 | 4221.22 | 3686.00 | 0.0 | 74.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 780.00 | 1.464e+06 | 2778.47 | 3680.55 | 0.0 | 178.50 | 2751.82 | 3709.29 | 1.442 | 0.010 | 0.012 |
| 760.02 | 1856.89 | 4221.22 | 3685.88 | 0.0 | 79.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 755.69 | 255.42 | 4221.22 | 3685.94 | 0.0 | 78.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 743.35 | 1001.59 | 5308.15 | 3676.82 | 0.0 | 62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 741.79 | 2093.31 | 5308.15 | 3676.82 | 0.0 | 67.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 737.22 | 2353.28 | 5308.15 | 3676.82 | 0.0 | 72.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 735.21 | 975.72 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 733.98 | 711.12 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.92 | 2074.77 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.84 | 1469.14 | 5308.15 | 3676.82 | 0.0 | 6.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.95 | 2316.26 | 5308.15 | 3676.82 | 0.0 | 77.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.44 | 1608.08 | 5308.15 | 3676.82 | 0.0 | 12.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 726.20 | 2430.68 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 723.87 | 1833.87 | 5308.15 | 3676.82 | 0.0 | 19.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 716.26 | 1819.39 | 5308.15 | 3676.82 | 0.0 | 25.58 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 715.52 | 2745.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 711.37 | 6603.06 | 2274.63 | 4411.46 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 705.78 | 865.63 | 5308.15 | 3676.82 | 0.0 | 62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.90 | 1.447e+04 | 2274.57 | 4410.60 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.39 | 483.99 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.66 | 1816.49 | 5308.15 | 3676.82 | 0.0 | 66.48 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.42 | 720.77 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.00 | 5.429e+05 | 2795.67 | 3605.19 | 0.0 | 178.50 | 2743.07 | 3638.77 | 1.424 | 0.019 | 0.014 |
| 700.49 | 1014.00 | 2784.68 | 2344.92 | 0.0 | 0.08 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 697.84 | 2095.38 | 5072.50 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 695.60 | 1108.59 | 5308.15 | 3676.82 | 0.0 | 5.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.51 | 2057.83 | 5308.15 | 3676.82 | 0.0 | 70.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.04 | 2310.45 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 689.06 | 1145.31 | 2784.68 | 2344.92 | 0.0 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 688.82 | 1255.19 | 5308.15 | 3676.82 | 0.0 | 10.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 687.96 | 4850.52 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 686.48 | 1.471e+04 | 2273.73 | 4389.35 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 684.41 | 1919.30 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 678.97 | 2117.14 | 5308.15 | 3676.82 | 0.0 | 74.45 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 677.68 | 1491.32 | 5308.15 | 3676.82 | 0.0 | 16.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 673.51 | 4422.37 | 1829.52 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 670.89 | 1181.11 | 2784.68 | 2344.92 | 0.0 | 0.24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 669.62 | 427.16 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 668.20 | 489.54 | 5308.15 | 3676.82 | 0.0 | 62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 664.92 | 1509.28 | 5308.15 | 3676.82 | 0.0 | 77.74 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.52 | 1019.91 | 5308.15 | 3676.82 | 0.0 | 65.73 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.05 | 2152.87 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.75 | 916.22 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.44 | 1628.35 | 5308.15 | 3676.82 | 0.0 | 21.31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 661.78 | 264.38 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.37 | 554.52 | 5308.15 | 3676.82 | 0.0 | 4.52 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.00 | 102.15 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 656.76 | 1235.47 | 5308.15 | 3676.82 | 0.0 | 26.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 655.93 | 141.77 | 5308.15 | 3676.82 | 0.0 | 62.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 652.58 | 68.79 | 5308.15 | 3676.82 | 0.0 | 4.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.67 | 214.75 | 5308.15 | 3676.82 | 0.0 | 65.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.53 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 649.81 | 1133.76 | 5308.15 | 3676.82 | 0.0 | 69.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 648.19 | 630.33 | 5308.15 | 3676.82 | 0.0 | 8.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 643.00 | 3324.21 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 642.61 | 1158.68 | 5011.54 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 639.18 | 214.75 | 5308.15 | 3676.82 | 0.0 | 68.42 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.54 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.24 | 1376.71 | 5308.15 | 3676.82 | 0.0 | 75.90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 631.48 | 751.65 | 5308.15 | 3676.82 | 0.0 | 13.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 630.06 | 7207.70 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 628.00 | 1718.04 | 4395.95 | 3898.35 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.37 | 2756.80 | 2198.29 | 5065.00 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.22 | 68.79 | 5308.15 | 3676.82 | 0.0 | 12.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 624.00 | 5.299e+05 | 2813.85 | 3598.29 | 0.0 | 178.50 | 2769.97 | 3638.78 | 1.419 | 0.016 | 0.017 |
| 619.32 | 214.75 | 5308.15 | 3676.82 | 0.0 | 71.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.78 | 248.18 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.46 | 1196.08 | 5308.15 | 3676.82 | 0.0 | 23.66 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 616.20 | 1033.37 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 613.78 | 1333.08 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.98 | 516.08 | 2784.68 | 2344.92 | 0.0 | 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.57 | 1230.58 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.00 | 21.20 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 608.63 | 849.78 | 5308.15 | 3676.82 | 0.0 | 17.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 606.33 | 1097.85 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 603.81 | 68.79 | 5308.15 | 3676.82 | 0.0 | 16.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.50 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.35 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 601.87 | 1314.73 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 599.56 | 862.34 | 5308.15 | 3676.82 | 0.0 | 74.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 598.33 | 969.40 | 5308.15 | 3676.83 | 0.0 | 78.20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 596.18 | 2277.57 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 595.61 | 817.85 | 5308.15 | 3676.82 | 0.0 | 27.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.43 | 214.75 | 5308.15 | 3676.82 | 0.0 | 73.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.21 | 7593.48 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.00 | 125.55 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 588.13 | 570.73 | 2784.68 | 2344.92 | 0.0 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 583.87 | 251.09 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.60 | 1033.37 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.39 | 769.13 | 5308.15 | 3676.83 | 0.0 | 76.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.21 | 6201.74 | 2280.31 | 4502.99 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.53 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.15 | 660.73 | 5308.15 | 3676.82 | 0.0 | 20.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.89 | 68.79 | 5308.15 | 3676.82 | 0.0 | 20.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.20 | 1709.69 | 1856.31 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 571.15 | 782.09 | 5308.15 | 3676.82 | 0.0 | 25.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 568.81 | 867.58 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.53 | 533.35 | 2784.68 | 2344.92 | 0.0 | 0.26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.28 | 2186.12 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 566.46 | 491.89 | 5308.15 | 3676.83 | 0.0 | 75.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.28 | 167.18 | 5308.15 | 3676.82 | 0.0 | 74.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.00 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 557.85 | 251.09 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 551.77 | 582.90 | 2784.68 | 2344.92 | 0.0 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.69 | 451.43 | 5308.15 | 3676.82 | 0.0 | 23.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.00 | 5.236e+05 | 2827.40 | 3603.86 | 0.0 | 178.50 | 2687.50 | 3638.81 | 1.452 | 0.051 | 0.014 |
| 545.56 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 543.08 | 68.79 | 5308.15 | 3676.82 | 0.0 | 23.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 542.57 | 619.13 | 2206.02 | 3920.36 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.69 | 473.38 | 2180.10 | 2856.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.17 | 756.61 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 538.06 | 4252.63 | 2274.15 | 4404.69 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 536.17 | 1120.02 | 3925.27 | 4126.52 | 0.0 | 134.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 533.06 | 476.07 | 5308.15 | 3676.82 | 0.0 | 28.61 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 532.32 | 1030.21 | 2274.98 | 4413.42 | 0.0 | 130.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 524.02 | 1148.18 | 1828.94 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 521.04 | 438.87 | 5308.15 | 3676.82 | 0.0 | 27.37 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 520.18 | 566.50 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 518.92 | 251.09 | 1831.00 | 5069.17 | 0.0 | 47.77 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 517.18 | 204.29 | 4992.82 | 3676.82 | 0.0 | 89.53 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 509.02 | 275.00 | 5308.15 | 3676.82 | 0.0 | 26.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 506.15 | 66.44 | 5308.15 | 3676.82 | 0.0 | 25.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 504.39 | 330.33 | 2784.68 | 2344.92 | 0.0 | 0.23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 500.00 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 473.00 | 1.385e+04 | 2271.65 | 4515.62 | 0.0 | 130.77 | 2206.91 | 4525.00 | 1.263 | 0.005 | 0.009 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 468.00 | 4.924e+05 | 2856.16 | 3615.63 | 0.0 | 178.50 | 2794.30 | 3827.00 | 1.537 | 0.024 | 0.081 |
| 459.41 | 211.22 | 2784.68 | 2344.92 | 0.0 | 0.27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 449.21 | 145.37 | 2784.68 | 2344.92 | 0.0 | 0.26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 446.94 | 42.40 | 2784.68 | 2344.92 | 0.0 | 0.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 414.00 | 3927.52 | 4677.55 | 3647.94 | 0.0 | 68.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 392.50 | 1068.99 | 1695.02 | 5069.18 | 0.0 | 47.77 | 1697.67 | 5069.18 | 0.463 | 0.021 | 1.6061e-05 |
| 390.00 | 4.483e+05 | 2857.31 | 3622.35 | 0.0 | 178.50 | 2528.81 | 3654.36 | 1.495 | 0.124 | 0.013 |
| 378.40 | 6039.26 | 2191.00 | 5069.17 | 0.0 | 47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 323.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 312.00 | 4.298e+05 | 2879.83 | 3597.49 | 0.0 | 178.50 | 2446.08 | 3674.23 | 1.505 | 0.165 | 0.030 |
| 283.80 | 6039.26 | 2191.00 | 5069.17 | 0.0 | 47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 273.00 | 334.07 | 661.27 | 4281.50 | 0.0 | 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 234.00 | 4.249e+05 | 2877.82 | 3582.57 | 0.0 | 178.50 | 2410.52 | 3666.47 | 1.517 | 0.179 | 0.033 |
| 223.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 5.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 189.20 | 6039.26 | 2191.00 | 5069.17 | 0.0 | 47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 156.00 | 4.503e+05 | 2869.01 | 3596.89 | 0.0 | 178.50 | 2679.22 | 3544.37 | 1.490 | 0.071 | 0.021 |
| 94.60 | 6039.26 | 2191.00 | 5069.17 | 0.0 | 47.77 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 78.00 | 4.736e+05 | 2870.52 | 3603.03 | 0.0 | 178.50 | 2674.31 | 3549.62 | 1.496 | 0.073 | 0.021 |
| Risulta | 1.104e+07 | | | | | | | | | |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| | Hz | sec | g | daN | | daN | | daN | | | |
| 1 | 2.261 | 0.442 | 0.248 | 3.687e+05 | 3.3 | 3.08 | 2.79e-05 | 1.91 | 1.73e-05 | 0.0 | 0.0 |
| 2 | 2.773 | 0.361 | 0.248 | 1.702e+04 | 0.2 | 1.371e+06 | 12.4 | 1.98 | 1.80e-05 | 0.0 | 0.0 |
| 3 | 3.163 | 0.316 | 0.248 | 1.244e+06 | 11.3 | 1.612e+05 | 1.5 | 0.21 | 1.89e-06 | 0.0 | 0.0 |
| 4 | 3.459 | 0.289 | 0.248 | 1.501e+05 | 1.4 | 1.840e+06 | 16.7 | 110.68 | 1.00e-03 | 0.0 | 0.0 |
| 5 | 4.041 | 0.247 | 0.248 | 3.602e+06 | 32.6 | 7614.72 | 6.90e-02 | 302.28 | 2.74e-03 | 0.0 | 0.0 |
| 6 | 4.144 | 0.241 | 0.248 | 4248.89 | 3.85e-02 | 1.353e+06 | 12.3 | 19.91 | 1.80e-04 | 0.0 | 0.0 |
| 7 | 4.353 | 0.230 | 0.248 | 2.000e+06 | 18.1 | 4.242e+05 | 3.8 | 57.52 | 5.21e-04 | 0.0 | 0.0 |
| 8 | 4.533 | 0.221 | 0.248 | 2.283e+05 | 2.1 | 1.371e+06 | 12.4 | 24.93 | 2.26e-04 | 0.0 | 0.0 |
| 9 | 4.782 | 0.209 | 0.248 | 7.593e+04 | 0.7 | 1.250e+05 | 1.1 | 13.19 | 1.20e-04 | 0.0 | 0.0 |
| 10 | 4.995 | 0.200 | 0.248 | 1.876e+05 | 1.7 | 6.655e+05 | 6.0 | 32.15 | 2.91e-04 | 0.0 | 0.0 |
| 11 | 5.257 | 0.190 | 0.248 | 2.144e+05 | 1.9 | 6.069e+04 | 0.5 | 181.03 | 1.64e-03 | 0.0 | 0.0 |
| 12 | 5.293 | 0.189 | 0.248 | 3.534e+05 | 3.2 | 8243.01 | 7.47e-02 | 9.51 | 8.62e-05 | 0.0 | 0.0 |
| 13 | 5.637 | 0.177 | 0.248 | 2567.73 | 2.33e-02 | 2.995e+05 | 2.7 | 158.97 | 1.44e-03 | 0.0 | 0.0 |
| 14 | 5.734 | 0.174 | 0.248 | 2857.96 | 2.59e-02 | 626.25 | 5.67e-03 | 797.31 | 7.22e-03 | 0.0 | 0.0 |
| 15 | 5.777 | 0.173 | 0.248 | 7666.34 | 6.94e-02 | 3312.55 | 3.00e-02 | 269.47 | 2.44e-03 | 0.0 | 0.0 |
| 16 | 5.874 | 0.170 | 0.248 | 8296.48 | 7.51e-02 | 1.314e+04 | 0.1 | 769.61 | 6.97e-03 | 0.0 | 0.0 |
| 17 | 5.993 | 0.167 | 0.248 | 6.483e+04 | 0.6 | 3535.90 | 3.20e-02 | 164.37 | 1.49e-03 | 0.0 | 0.0 |
| 18 | 6.156 | 0.162 | 0.247 | 1248.81 | 1.13e-02 | 9254.26 | 8.38e-02 | 1418.62 | 1.28e-02 | 0.0 | 0.0 |
| 19 | 6.261 | 0.160 | 0.245 | 2.489e+04 | 0.2 | 3.185e+05 | 2.9 | 0.29 | 2.62e-06 | 0.0 | 0.0 |
| 20 | 6.410 | 0.156 | 0.241 | 2.188e+05 | 2.0 | 1.789e+05 | 1.6 | 1861.60 | 1.69e-02 | 0.0 | 0.0 |
| 21 | 6.603 | 0.151 | 0.237 | 687.87 | 6.23e-03 | 5625.49 | 5.10e-02 | 15.18 | 1.38e-04 | 0.0 | 0.0 |
| 22 | 6.782 | 0.147 | 0.234 | 4216.23 | 3.82e-02 | 2.840e+04 | 0.3 | 525.67 | 4.76e-03 | 0.0 | 0.0 |
| 23 | 6.824 | 0.147 | 0.233 | 1.438e+04 | 0.1 | 4.177e+04 | 0.4 | 1.93 | 1.75e-05 | 0.0 | 0.0 |
| 24 | 6.893 | 0.145 | 0.231 | 1419.44 | 1.29e-02 | 2597.53 | 2.35e-02 | 711.99 | 6.45e-03 | 0.0 | 0.0 |
| 25 | 6.992 | 0.143 | 0.229 | 66.13 | 5.99e-04 | 1.476e+04 | 0.1 | 2042.41 | 1.85e-02 | 0.0 | 0.0 |
| 26 | 7.101 | 0.141 | 0.227 | 2.458e+04 | 0.2 | 103.13 | 9.34e-04 | 0.33 | 3.01e-06 | 0.0 | 0.0 |
| 27 | 7.123 | 0.140 | 0.227 | 1082.76 | 9.81e-03 | 2.085e+05 | 1.9 | 694.55 | 6.29e-03 | 0.0 | 0.0 |
| 28 | 7.292 | 0.137 | 0.224 | 1.463e+05 | 1.3 | 5.868e+04 | 0.5 | 283.69 | 2.57e-03 | 0.0 | 0.0 |
| 29 | 7.383 | 0.135 | 0.223 | 1.038e+04 | 9.40e-02 | 1.925e+04 | 0.2 | 30.41 | 2.75e-04 | 0.0 | 0.0 |
| 30 | 7.458 | 0.134 | 0.221 | 3.492e+04 | 0.3 | 2.335e+04 | 0.2 | 2620.97 | 2.37e-02 | 0.0 | 0.0 |
| 31 | 7.523 | 0.133 | 0.220 | 2911.41 | 2.64e-02 | 44.65 | 4.04e-04 | 1641.42 | 1.49e-02 | 0.0 | 0.0 |
| 32 | 7.536 | 0.133 | 0.220 | 4.775e+04 | 0.4 | 29.48 | 2.67e-04 | 491.58 | 4.45e-03 | 0.0 | 0.0 |
| 33 | 7.662 | 0.131 | 0.218 | 1.362e+04 | 0.1 | 6.715e+04 | 0.6 | 513.98 | 4.66e-03 | 0.0 | 0.0 |
| 34 | 7.701 | 0.130 | 0.217 | 5.190e+04 | 0.5 | 4.848e+04 | 0.4 | 344.92 | 3.12e-03 | 0.0 | 0.0 |
| 35 | 7.828 | 0.128 | 0.215 | 1.939e+04 | 0.2 | 6005.59 | 5.44e-02 | 562.29 | 5.09e-03 | 0.0 | 0.0 |
| 36 | 7.867 | 0.127 | 0.215 | 1607.62 | 1.46e-02 | 1.008e+04 | 9.13e-02 | 1993.36 | 1.81e-02 | 0.0 | 0.0 |
| 37 | 7.886 | 0.127 | 0.215 | 1.186e+04 | 0.1 | 5201.80 | 4.71e-02 | 153.47 | 1.39e-03 | 0.0 | 0.0 |
| 38 | 7.962 | 0.126 | 0.213 | 6.285e+04 | 0.6 | 1.176e+05 | 1.1 | 1904.19 | 1.72e-02 | 0.0 | 0.0 |
| 39 | 7.986 | 0.125 | 0.213 | 4.125e+04 | 0.4 | 2076.03 | 1.88e-02 | 641.10 | 5.81e-03 | 0.0 | 0.0 |
| 40 | 8.087 | 0.124 | 0.212 | 3.074e+04 | 0.3 | 6120.43 | 5.54e-02 | 778.75 | 7.05e-03 | 0.0 | 0.0 |
| 41 | 8.154 | 0.123 | 0.211 | 2.407e+04 | 0.2 | 63.19 | 5.72e-04 | 2816.03 | 2.55e-02 | 0.0 | 0.0 |
| 42 | 8.188 | 0.122 | 0.210 | 2168.34 | 1.96e-02 | 764.71 | 6.93e-03 | 667.10 | 6.04e-03 | 0.0 | 0.0 |
| 43 | 8.246 | 0.121 | 0.209 | 1.87 | 1.70e-05 | 5192.51 | 4.70e-02 | 868.46 | 7.87e-03 | 0.0 | 0.0 |
| 44 | 8.295 | 0.121 | 0.209 | 2111.54 | 1.91e-02 | 347.65 | 3.15e-03 | 97.73 | 8.85e-04 | 0.0 | 0.0 |
| 45 | 8.363 | 0.120 | 0.208 | 2.008e+04 | 0.2 | 2.013e+05 | 1.8 | 13.64 | 1.24e-04 | 0.0 | 0.0 |
| 46 | 8.380 | 0.119 | 0.208 | 1.107e+04 | 0.1 | 1.859e+04 | 0.2 | 967.37 | 8.76e-03 | 0.0 | 0.0 |
| 47 | 8.447 | 0.118 | 0.207 | 127.26 | 1.15e-03 | 3023.35 | 2.74e-02 | 334.38 | 3.03e-03 | 0.0 | 0.0 |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|----------------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| 48 | 8.556 | 0.117 | 0.205 | 2367.12 | 2.14e-02 | 7262.67 | 6.58e-02 | 3281.21 | 2.97e-02 | 0.0 | 0.0 |
| 49 | 8.664 | 0.115 | 0.204 | 7205.82 | 6.53e-02 | 1.654e+04 | 0.1 | 64.93 | 5.88e-04 | 0.0 | 0.0 |
| 50 | 8.700 | 0.115 | 0.204 | 5651.79 | 5.12e-02 | 8883.70 | 8.05e-02 | 380.97 | 3.45e-03 | 0.0 | 0.0 |
| 51 | 8.723 | 0.115 | 0.203 | 1.595e+04 | 0.1 | 1.129e+05 | 1.0 | 5004.52 | 4.53e-02 | 0.0 | 0.0 |
| 52 | 8.859 | 0.113 | 0.202 | 1407.29 | 1.27e-02 | 1202.72 | 1.09e-02 | 183.07 | 1.66e-03 | 0.0 | 0.0 |
| 53 | 8.878 | 0.113 | 0.201 | 5376.34 | 4.87e-02 | 4487.66 | 4.06e-02 | 94.76 | 8.58e-04 | 0.0 | 0.0 |
| 54 | 8.954 | 0.112 | 0.201 | 1600.86 | 1.45e-02 | 1910.44 | 1.73e-02 | 0.11 | 0.0 | 0.0 | 0.0 |
| 55 | 9.010 | 0.111 | 0.200 | 9059.92 | 8.21e-02 | 5487.36 | 4.97e-02 | 127.92 | 1.16e-03 | 0.0 | 0.0 |
| 56 | 9.037 | 0.111 | 0.200 | 1.091e+04 | 9.88e-02 | 2004.40 | 1.82e-02 | 849.08 | 7.69e-03 | 0.0 | 0.0 |
| 57 | 9.059 | 0.110 | 0.199 | 25.44 | 2.30e-04 | 3.614e+04 | 0.3 | 989.75 | 8.97e-03 | 0.0 | 0.0 |
| 58 | 9.075 | 0.110 | 0.199 | 2.61 | 2.36e-05 | 1.339e+04 | 0.1 | 2004.08 | 1.82e-02 | 0.0 | 0.0 |
| 59 | 9.108 | 0.110 | 0.199 | 5738.36 | 5.20e-02 | 2820.49 | 2.55e-02 | 1583.58 | 1.43e-02 | 0.0 | 0.0 |
| 60 | 9.149 | 0.109 | 0.198 | 1465.09 | 1.33e-02 | 1.362e+04 | 0.1 | 177.42 | 1.61e-03 | 0.0 | 0.0 |
| 61 | 9.176 | 0.109 | 0.198 | 7298.03 | 6.61e-02 | 11.93 | 1.08e-04 | 1044.76 | 9.46e-03 | 0.0 | 0.0 |
| 62 | 9.183 | 0.109 | 0.198 | 14.06 | 1.27e-04 | 1.413e+04 | 0.1 | 560.46 | 5.08e-03 | 0.0 | 0.0 |
| 63 | 9.215 | 0.109 | 0.198 | 1321.73 | 1.20e-02 | 153.37 | 1.39e-03 | 60.60 | 5.49e-04 | 0.0 | 0.0 |
| 64 | 9.226 | 0.108 | 0.198 | 552.21 | 5.00e-03 | 210.18 | 1.90e-03 | 140.86 | 1.28e-03 | 0.0 | 0.0 |
| 65 | 9.289 | 0.108 | 0.197 | 4557.89 | 4.13e-02 | 2.766e+04 | 0.3 | 293.07 | 2.65e-03 | 0.0 | 0.0 |
| 66 | 9.302 | 0.107 | 0.197 | 288.86 | 2.62e-03 | 237.89 | 2.15e-03 | 1521.46 | 1.38e-02 | 0.0 | 0.0 |
| Risulta | | | | 9.439e+06 | | 9.378e+06 | | 4.628e+04 | | | |
| In percentuale | | | | 85.50 | | 84.95 | | 0.42 | | | |

| CDC | Tipo | Sigla Id | Note |
|-----|------|---|---|
| 11 | Edk | CDC=Ed (dinamico SLD) alfa=90.00 (ecc. +) | |
| | | | verifica esistenti: fattore FC 1.200 |
| | | | categoria suolo: E |
| | | | fattore di sito S = 1.600 |
| | | | ordinata spettro (tratto Tb-Tc) = 0.248 g |
| | | | angolo di ingresso:90.00 |
| | | | eccentricità aggiuntiva: positiva |
| | | | periodo proprio T1: 0.287 sec. |
| | | | numero di modi considerati: 66 |
| | | | combinaz. modale: CQC |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| cm | daN | cm | cm | cm | cm | cm | cm | | | |
| 2398.43 | 225.38 | 3851.25 | 3685.79 | 10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2387.29 | 348.62 | 3851.25 | 3685.79 | 13.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2372.45 | 406.44 | 3851.25 | 3685.79 | 16.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2353.36 | 467.17 | 3851.25 | 3685.79 | 19.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2329.16 | 532.48 | 3851.25 | 3685.79 | 23.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2298.35 | 606.14 | 3851.25 | 3685.79 | 26.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2258.02 | 793.11 | 3851.25 | 3685.79 | 29.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2150.00 | 1125.96 | 3851.25 | 3685.79 | 32.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2060.00 | 4.769e+04 | 2472.99 | 3685.70 | 165.99 | 0.0 | 2383.06 | 3690.52 | 1.390 | 0.053 | 0.003 |
| 1960.00 | 6603.35 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1943.95 | 6.727e+04 | 2783.57 | 3568.68 | 145.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.75 | 3285.75 | 3771.88 | 5155.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.53 | 2156.92 | 4346.64 | 5155.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1940.66 | 1.133e+04 | 1016.86 | 3636.74 | 14.24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1931.38 | 2.097e+04 | 1050.89 | 3688.24 | 15.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1867.50 | 1.130e+04 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.395 | 0.0 | 0.0 |
| 1775.00 | 9277.13 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.281 | 0.0 | 0.0 |
| 1770.00 | 5768.41 | 2378.28 | 3690.32 | 165.99 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1720.00 | 2.411e+05 | 2601.62 | 3775.89 | 200.99 | 0.0 | 882.57 | 3946.91 | 1.143 | 0.593 | 0.096 |
| 1682.50 | 7250.34 | 3851.25 | 3685.79 | 34.27 | 0.0 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1642.00 | 3.027e+05 | 2604.36 | 3813.16 | 200.99 | 0.0 | 915.04 | 3946.89 | 1.143 | 0.544 | 0.075 |
| 1590.00 | 7250.34 | 3851.25 | 3685.79 | 34.27 | 0.0 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1564.00 | 2.586e+05 | 2648.19 | 3789.92 | 200.99 | 0.0 | 825.89 | 3863.21 | 1.137 | 0.709 | 0.042 |
| 1497.50 | 9210.54 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1486.00 | 2.206e+05 | 2646.92 | 3774.60 | 200.99 | 0.0 | 804.35 | 3862.73 | 1.138 | 0.768 | 0.050 |
| 1408.00 | 2.244e+05 | 2601.55 | 3776.23 | 200.99 | 0.0 | 799.48 | 3862.71 | 1.138 | 0.764 | 0.049 |
| 1405.00 | 1.155e+04 | 3851.25 | 3685.79 | 36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1330.00 | 2.364e+05 | 2591.48 | 3794.52 | 200.99 | 0.0 | 885.91 | 3944.67 | 1.144 | 0.588 | 0.085 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1312.50 | 9818.02 | 3851.44 | 3685.13 | 36.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1266.00 | 2.110e+05 | 2605.27 | 3816.06 | 200.99 | 0.0 | 885.91 | 3944.67 | 1.144 | 0.592 | 0.072 |
| 1220.00 | 1.084e+06 | 2761.39 | 3699.32 | 200.99 | 0.0 | 2496.34 | 3776.54 | 1.573 | 0.098 | 0.032 |
| 1206.25 | 1116.37 | 4756.32 | 3676.71 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1196.67 | 571.81 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.37 | 1969.29 | 3598.51 | 3809.61 | 18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.30 | 625.16 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1192.50 | 778.59 | 4834.79 | 3856.00 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.13 | 1432.32 | 3851.17 | 4076.00 | 7.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.06 | 1433.97 | 3851.32 | 3296.00 | 7.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1185.83 | 721.53 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1183.60 | 1934.92 | 3481.28 | 3686.00 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1182.74 | 1589.19 | 4221.22 | 3686.00 | 2.30e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.55 | 1970.74 | 3851.17 | 4076.00 | 15.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.48 | 1971.37 | 3851.32 | 3296.00 | 15.68 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1178.75 | 398.66 | 4913.37 | 3975.64 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.59 | 2016.46 | 4221.22 | 3686.00 | 4.57e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.33 | 467.42 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1167.74 | 2869.58 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.72 | 1471.38 | 3589.09 | 3799.68 | 18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.59 | 428.10 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.99 | 3412.22 | 4048.29 | 3922.39 | 68.79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.93 | 2822.59 | 3851.32 | 3296.00 | 23.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.25 | 954.85 | 3851.17 | 4076.00 | 6.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.12 | 953.08 | 3851.32 | 3296.00 | 6.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1158.73 | 2692.29 | 4221.22 | 3686.00 | 6.76e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.67 | 326.88 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.25 | 1120.86 | 5072.15 | 3436.99 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1150.00 | 513.38 | 3698.40 | 3686.93 | 18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1147.20 | 1355.24 | 3481.28 | 3686.00 | 9.32e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1146.39 | 3712.91 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1145.49 | 728.01 | 4221.22 | 3686.00 | 2.01e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1144.00 | 6987.90 | 3851.25 | 3686.25 | 30.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1143.85 | 1026.76 | 3698.40 | 3686.93 | 21.63 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1142.00 | 4.023e+05 | 2746.29 | 3711.48 | 212.54 | 0.0 | 2316.65 | 3827.93 | 1.560 | 0.165 | 0.047 |
| 1141.09 | 1236.70 | 3851.17 | 4076.00 | 12.89 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1140.97 | 1234.32 | 3851.32 | 3296.00 | 12.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1138.73 | 2999.05 | 4221.22 | 3686.00 | 8.84e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1137.50 | 1239.02 | 5150.49 | 3676.82 | 0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1127.18 | 943.14 | 4221.22 | 3686.00 | 3.94e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1125.64 | 1026.76 | 3698.40 | 3686.93 | 24.63 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1123.75 | 1056.77 | 5229.32 | 3676.94 | 0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1115.47 | 1842.89 | 3481.28 | 3686.00 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.98 | 1.842e+04 | 5175.61 | 3713.42 | 82.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.86 | 1672.24 | 3851.32 | 3296.00 | 18.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1097.46 | 1276.70 | 4221.22 | 3686.00 | 5.72e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1096.07 | 1026.76 | 3698.40 | 3686.93 | 27.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1072.77 | 2292.16 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1071.62 | 3126.64 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1069.75 | 5522.07 | 3851.25 | 3686.52 | 32.51 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.10 | 2059.28 | 3851.17 | 4076.00 | 23.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.01 | 2054.62 | 3851.32 | 3296.00 | 23.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1065.60 | 1864.03 | 4221.22 | 3686.00 | 9.48e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1064.00 | 3.704e+05 | 2950.68 | 3690.88 | 232.44 | 0.0 | 2471.04 | 3827.31 | 1.522 | 0.182 | 0.053 |
| 1057.45 | 1519.34 | 4221.22 | 3686.00 | 7.28e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1056.27 | 1026.76 | 3698.40 | 3686.93 | 29.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1020.75 | 1842.89 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.07 | 1584.13 | 3851.17 | 4076.00 | 28.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.00 | 1578.97 | 3851.32 | 3296.00 | 27.99 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1008.71 | 990.30 | 4221.22 | 3686.00 | 8.56e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1007.78 | 1026.76 | 3698.40 | 3686.93 | 31.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 993.19 | 1772.71 | 3481.28 | 3686.00 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 991.90 | 2924.63 | 3851.25 | 3686.82 | 34.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 989.05 | 1025.97 | 4221.22 | 3686.00 | 9.95e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 986.00 | 3.407e+05 | 2938.41 | 3693.07 | 232.44 | 0.0 | 2160.49 | 3685.87 | 1.530 | 0.301 | 0.003 |
| 961.39 | 1355.24 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.86 | 1090.81 | 3851.17 | 4076.00 | 31.11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.81 | 1085.53 | 3851.32 | 3296.00 | 31.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 956.58 | 4975.61 | 4221.21 | 3660.70 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 953.10 | 509.94 | 4221.22 | 3686.00 | 9.51e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 952.46 | 1026.76 | 3698.40 | 3686.93 | 33.29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 951.13 | 1.009e+04 | 4221.22 | 3679.57 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 935.47 | 8808.93 | 4221.22 | 3695.09 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 912.24 | 1276.17 | 3481.28 | 3686.00 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 911.58 | 1929.45 | 3851.25 | 3687.25 | 35.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 908.00 | 3.865e+05 | 2922.61 | 3696.26 | 232.44 | 0.0 | 2538.39 | 3664.51 | 1.462 | 0.137 | 0.013 |
| 896.98 | 1042.50 | 3481.28 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 895.69 | 1544.29 | 3851.25 | 3687.35 | 33.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 892.43 | 1026.76 | 3698.40 | 3686.93 | 34.21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 887.26 | 278.87 | 4221.22 | 3686.00 | 9.99e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 849.94 | 2149.89 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 840.79 | 150.71 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 839.04 | 4458.34 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.47 | 301.43 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.00 | 3.560e+05 | 2928.97 | 3695.44 | 232.44 | 0.0 | 2610.37 | 3664.49 | 1.449 | 0.113 | 0.013 |
| 821.62 | 3653.08 | 4221.22 | 3685.58 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 807.73 | 4259.95 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 800.84 | 301.43 | 4221.22 | 3686.00 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 780.00 | 1.464e+06 | 2778.47 | 3680.55 | 232.44 | 0.0 | 2751.82 | 3709.29 | 1.442 | 0.010 | 0.012 |
| 760.02 | 1856.89 | 4221.22 | 3685.88 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 755.69 | 255.42 | 4221.22 | 3685.94 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 743.35 | 1001.59 | 5308.15 | 3676.82 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 741.79 | 2093.31 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 737.22 | 2353.28 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 735.21 | 975.72 | 4992.82 | 3676.82 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 733.98 | 711.12 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.92 | 2074.77 | 4992.82 | 3676.82 | 7.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.84 | 1469.14 | 5308.15 | 3676.82 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.95 | 2316.26 | 5308.15 | 3676.82 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.44 | 1608.08 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 726.20 | 2430.68 | 4992.82 | 3676.82 | 14.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 723.87 | 1833.87 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 716.26 | 1819.39 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 715.52 | 2745.29 | 4992.82 | 3676.82 | 20.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 711.37 | 6603.06 | 2274.63 | 4411.46 | 46.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 705.78 | 865.63 | 5308.15 | 3676.82 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.90 | 1.447e+04 | 2274.57 | 4410.60 | 54.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.39 | 483.99 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.66 | 1816.49 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.42 | 720.77 | 4992.82 | 3676.82 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.00 | 5.429e+05 | 2795.67 | 3605.19 | 232.44 | 0.0 | 2743.07 | 3638.77 | 1.424 | 0.019 | 0.014 |
| 700.49 | 1014.00 | 2784.68 | 2344.92 | 7.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 697.84 | 2095.38 | 5072.50 | 3676.82 | 18.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 695.60 | 1108.59 | 5308.15 | 3676.82 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.51 | 2057.83 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.04 | 2310.45 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 689.06 | 1145.31 | 2784.68 | 2344.92 | 13.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 688.82 | 1255.19 | 5308.15 | 3676.82 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 687.96 | 4850.52 | 1831.00 | 5069.17 | 6.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 686.48 | 1.471e+04 | 2273.73 | 4389.35 | 62.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 684.41 | 1919.30 | 4992.82 | 3676.82 | 12.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 678.97 | 2117.14 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 677.68 | 1491.32 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 673.51 | 4422.37 | 1829.52 | 5069.17 | 12.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 670.89 | 1181.11 | 2784.68 | 2344.92 | 20.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 669.62 | 427.16 | 4992.82 | 3676.82 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 668.20 | 489.54 | 5308.15 | 3676.82 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 664.92 | 1509.28 | 5308.15 | 3676.82 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.52 | 1019.91 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.05 | 2152.87 | 4992.82 | 3676.82 | 17.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.75 | 916.22 | 4992.82 | 3676.82 | 5.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.44 | 1628.35 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 661.78 | 264.38 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.37 | 554.52 | 5308.15 | 3676.82 | 9.34e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.00 | 102.15 | 4992.82 | 3676.82 | 0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 656.76 | 1235.47 | 5308.15 | 3676.82 | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 655.93 | 141.77 | 5308.15 | 3676.82 | 0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 652.58 | 68.79 | 5308.15 | 3676.82 | 9.15e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.67 | 214.75 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.53 | 204.29 | 4992.82 | 3676.82 | 5.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 649.81 | 1133.76 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 648.19 | 630.33 | 5308.15 | 3676.82 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 643.00 | 3324.21 | 2274.98 | 4413.42 | 46.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 642.61 | 1158.68 | 5011.54 | 3676.82 | 20.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 639.18 | 214.75 | 5308.15 | 3676.82 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.54 | 204.29 | 4992.82 | 3676.82 | 9.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 632.24 | 1376.71 | 5308.15 | 3676.82 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 631.48 | 751.65 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 630.06 | 7207.70 | 2274.98 | 4413.42 | 52.51 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 628.00 | 1718.04 | 4395.95 | 3898.35 | 181.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.37 | 2756.80 | 2198.29 | 5065.00 | 20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.22 | 68.79 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 624.00 | 5.299e+05 | 2813.85 | 3598.29 | 232.44 | 0.0 | 2769.97 | 3638.78 | 1.419 | 0.016 | 0.017 |
| 619.32 | 214.75 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.78 | 248.18 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.46 | 1196.08 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 616.20 | 1033.37 | 2274.98 | 4413.42 | 51.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 613.78 | 1333.08 | 4992.82 | 3676.82 | 21.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.98 | 516.08 | 2784.68 | 2344.92 | 5.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.57 | 1230.58 | 4992.82 | 3676.82 | 14.44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.00 | 21.20 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 608.63 | 849.78 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 606.33 | 1097.85 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 603.81 | 68.79 | 5308.15 | 3676.82 | 0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.50 | 42.40 | 2784.68 | 2344.92 | 5.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.35 | 204.29 | 4992.82 | 3676.82 | 13.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 601.87 | 1314.73 | 4992.82 | 3676.82 | 19.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 599.56 | 862.34 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 598.33 | 969.40 | 5308.15 | 3676.83 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 596.18 | 2277.57 | 1831.00 | 5069.17 | 5.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 595.61 | 817.85 | 5308.15 | 3676.82 | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.43 | 214.75 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.21 | 7593.48 | 2274.98 | 4413.42 | 58.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.00 | 125.55 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 588.13 | 570.73 | 2784.68 | 2344.92 | 11.44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 583.87 | 251.09 | 1831.00 | 5069.17 | 4.59 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.60 | 1033.37 | 2274.98 | 4413.42 | 56.96 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.39 | 769.13 | 5308.15 | 3676.83 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.21 | 6201.74 | 2280.31 | 4502.99 | 63.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.53 | 42.40 | 2784.68 | 2344.92 | 11.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.15 | 660.73 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.89 | 68.79 | 5308.15 | 3676.82 | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.20 | 1709.69 | 1856.31 | 5069.17 | 14.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 571.15 | 782.09 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 568.81 | 867.58 | 4992.82 | 3676.82 | 17.65 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.53 | 533.35 | 2784.68 | 2344.92 | 22.36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.28 | 2186.12 | 1831.00 | 5069.17 | 9.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 566.46 | 491.89 | 5308.15 | 3676.83 | 0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.28 | 167.18 | 5308.15 | 3676.82 | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.00 | 204.29 | 4992.82 | 3676.82 | 16.64 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 557.85 | 251.09 | 1831.00 | 5069.17 | 8.49 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 551.77 | 582.90 | 2784.68 | 2344.92 | 16.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.69 | 451.43 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.00 | 5.236e+05 | 2827.40 | 3603.86 | 232.44 | 0.0 | 2687.50 | 3638.81 | 1.452 | 0.051 | 0.014 |
| 545.56 | 42.40 | 2784.68 | 2344.92 | 15.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 543.08 | 68.79 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 542.57 | 619.13 | 2206.02 | 3920.36 | 64.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.69 | 473.38 | 2180.10 | 2856.00 | 32.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.17 | 756.61 | 4992.82 | 3676.82 | 22.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 538.06 | 4252.63 | 2274.15 | 4404.69 | 61.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 536.17 | 1120.02 | 3925.27 | 4126.52 | 175.79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 533.06 | 476.07 | 5308.15 | 3676.82 | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 532.32 | 1030.21 | 2274.98 | 4413.42 | 60.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 524.02 | 1148.18 | 1828.94 | 5069.17 | 12.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 521.04 | 438.87 | 5308.15 | 3676.82 | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 520.18 | 566.50 | 4992.82 | 3676.82 | 19.66 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 518.92 | 251.09 | 1831.00 | 5069.17 | 11.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 517.18 | 204.29 | 4992.82 | 3676.82 | 18.54 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 509.02 | 275.00 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 506.15 | 66.44 | 5308.15 | 3676.82 | 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 504.39 | 330.33 | 2784.68 | 2344.92 | 19.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 500.00 | 42.40 | 2784.68 | 2344.92 | 19.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 473.00 | 1.385e+04 | 2271.65 | 4515.62 | 65.33 | 0.0 | 2206.91 | 4525.00 | 1.263 | 0.005 | 0.009 |
| 468.00 | 4.924e+05 | 2856.16 | 3615.63 | 232.44 | 0.0 | 2794.30 | 3827.00 | 1.537 | 0.024 | 0.081 |
| 459.41 | 211.22 | 2784.68 | 2344.92 | 23.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 449.21 | 145.37 | 2784.68 | 2344.92 | 22.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 446.94 | 42.40 | 2784.68 | 2344.92 | 21.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 414.00 | 3927.52 | 4677.55 | 3647.94 | 0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 392.50 | 1068.99 | 1695.02 | 5069.18 | 1.33 | 0.0 | 1697.67 | 5069.18 | 0.463 | 0.021 | 1.6061e-05 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 390.00 | 4.483e+05 | 2857.31 | 3622.35 | 232.44 | 0.0 | 2528.81 | 3654.36 | 1.495 | 0.124 | 0.013 |
| 378.40 | 6039.26 | 2191.00 | 5069.17 | 24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 323.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 312.00 | 4.298e+05 | 2879.83 | 3597.49 | 232.44 | 0.0 | 2446.08 | 3674.23 | 1.505 | 0.165 | 0.030 |
| 283.80 | 6039.26 | 2191.00 | 5069.17 | 24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 273.00 | 334.07 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 234.00 | 4.249e+05 | 2877.82 | 3582.57 | 232.44 | 0.0 | 2410.52 | 3666.47 | 1.517 | 0.179 | 0.033 |
| 223.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 189.20 | 6039.26 | 2191.00 | 5069.17 | 24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 156.00 | 4.503e+05 | 2869.01 | 3596.89 | 232.44 | 0.0 | 2679.22 | 3544.37 | 1.490 | 0.071 | 0.021 |
| 94.60 | 6039.26 | 2191.00 | 5069.17 | 24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 78.00 | 4.736e+05 | 2870.52 | 3603.03 | 232.44 | 0.0 | 2674.31 | 3549.62 | 1.496 | 0.073 | 0.021 |
| Risulta | 1.104e+07 | | | | | | | | | |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | Z % | Energia | Energia x v |
|------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| | Hz | sec | g | daN | | daN | | daN | | | |
| 1 | 2.260 | 0.443 | 0.248 | 3.597e+05 | 3.3 | 0.33 | 2.99e-06 | 1.94 | 1.76e-05 | 0.0 | 0.0 |
| 2 | 2.786 | 0.359 | 0.248 | 1.792e+04 | 0.2 | 1.485e+06 | 13.5 | 2.90 | 2.63e-05 | 0.0 | 0.0 |
| 3 | 3.157 | 0.317 | 0.248 | 1.145e+06 | 10.4 | 1.645e+05 | 1.5 | 0.08 | 0.0 | 0.0 | 0.0 |
| 4 | 3.480 | 0.287 | 0.248 | 1.169e+05 | 1.1 | 2.297e+06 | 20.8 | 114.26 | 1.03e-03 | 0.0 | 0.0 |
| 5 | 4.066 | 0.246 | 0.248 | 688.97 | 6.24e-03 | 1.308e+06 | 11.9 | 6.31 | 5.71e-05 | 0.0 | 0.0 |
| 6 | 4.219 | 0.237 | 0.248 | 2.184e+06 | 19.8 | 2.233e+04 | 0.2 | 229.19 | 2.08e-03 | 0.0 | 0.0 |
| 7 | 4.370 | 0.229 | 0.248 | 4.171e+06 | 37.8 | 6.400e+04 | 0.6 | 202.90 | 1.84e-03 | 0.0 | 0.0 |
| 8 | 4.480 | 0.223 | 0.248 | 6.253e+04 | 0.6 | 8.258e+05 | 7.5 | 29.74 | 2.69e-04 | 0.0 | 0.0 |
| 9 | 4.928 | 0.203 | 0.248 | 6825.04 | 6.18e-02 | 3.433e+04 | 0.3 | 138.56 | 1.26e-03 | 0.0 | 0.0 |
| 10 | 5.037 | 0.199 | 0.248 | 2.864e+05 | 2.6 | 8.744e+05 | 7.9 | 61.03 | 5.53e-04 | 0.0 | 0.0 |
| 11 | 5.221 | 0.192 | 0.248 | 1.124e+05 | 1.0 | 2.776e+05 | 2.5 | 2.54 | 2.30e-05 | 0.0 | 0.0 |
| 12 | 5.376 | 0.186 | 0.248 | 5220.00 | 4.73e-02 | 1.244e+05 | 1.1 | 3.95 | 3.58e-05 | 0.0 | 0.0 |
| 13 | 5.412 | 0.185 | 0.248 | 1513.64 | 1.37e-02 | 5.967e+04 | 0.5 | 89.73 | 8.13e-04 | 0.0 | 0.0 |
| 14 | 5.725 | 0.175 | 0.248 | 1506.09 | 1.36e-02 | 2.922e+04 | 0.3 | 988.56 | 8.95e-03 | 0.0 | 0.0 |
| 15 | 5.765 | 0.173 | 0.248 | 124.72 | 1.13e-03 | 2.882e+04 | 0.3 | 380.83 | 3.45e-03 | 0.0 | 0.0 |
| 16 | 5.933 | 0.169 | 0.248 | 8.841e+04 | 0.8 | 5.239e+04 | 0.5 | 214.71 | 1.94e-03 | 0.0 | 0.0 |
| 17 | 5.995 | 0.167 | 0.248 | 9093.78 | 8.24e-02 | 7.570e+04 | 0.7 | 374.75 | 3.39e-03 | 0.0 | 0.0 |
| 18 | 6.085 | 0.164 | 0.248 | 2008.65 | 1.82e-02 | 9.100e+04 | 0.8 | 1350.47 | 1.22e-02 | 0.0 | 0.0 |
| 19 | 6.169 | 0.162 | 0.247 | 6772.66 | 6.13e-02 | 3.934e+05 | 3.6 | 200.42 | 1.82e-03 | 0.0 | 0.0 |
| 20 | 6.333 | 0.158 | 0.243 | 1.896e+05 | 1.7 | 1.189e+05 | 1.1 | 1507.47 | 1.37e-02 | 0.0 | 0.0 |
| 21 | 6.555 | 0.153 | 0.238 | 5.888e+04 | 0.5 | 1.019e+04 | 9.23e-02 | 1247.00 | 1.13e-02 | 0.0 | 0.0 |
| 22 | 6.693 | 0.149 | 0.235 | 214.05 | 1.94e-03 | 2219.51 | 2.01e-02 | 2.13 | 1.93e-05 | 0.0 | 0.0 |
| 23 | 6.808 | 0.147 | 0.233 | 1.393e+04 | 0.1 | 4.263e+04 | 0.4 | 100.79 | 9.13e-04 | 0.0 | 0.0 |
| 24 | 6.877 | 0.145 | 0.232 | 4538.88 | 4.11e-02 | 1444.30 | 1.31e-02 | 44.72 | 4.05e-04 | 0.0 | 0.0 |
| 25 | 6.973 | 0.143 | 0.230 | 5078.95 | 4.60e-02 | 5.947e+04 | 0.5 | 935.09 | 8.47e-03 | 0.0 | 0.0 |
| 26 | 7.030 | 0.142 | 0.229 | 1734.57 | 1.57e-02 | 2.582e+04 | 0.2 | 441.88 | 4.00e-03 | 0.0 | 0.0 |
| 27 | 7.046 | 0.142 | 0.228 | 1.161e+04 | 0.1 | 3.478e+04 | 0.3 | 353.33 | 3.20e-03 | 0.0 | 0.0 |
| 28 | 7.138 | 0.140 | 0.227 | 9.007e+04 | 0.8 | 2.709e+04 | 0.2 | 282.93 | 2.56e-03 | 0.0 | 0.0 |
| 29 | 7.252 | 0.138 | 0.225 | 6.514e+04 | 0.6 | 188.74 | 1.71e-03 | 21.77 | 1.97e-04 | 0.0 | 0.0 |
| 30 | 7.318 | 0.137 | 0.224 | 3.393e+04 | 0.3 | 2679.72 | 2.43e-02 | 812.75 | 7.36e-03 | 0.0 | 0.0 |
| 31 | 7.481 | 0.134 | 0.221 | 9854.10 | 8.93e-02 | 1.155e+04 | 0.1 | 2311.85 | 2.09e-02 | 0.0 | 0.0 |
| 32 | 7.592 | 0.132 | 0.219 | 1.240e+05 | 1.1 | 6486.70 | 5.88e-02 | 271.92 | 2.46e-03 | 0.0 | 0.0 |
| 33 | 7.662 | 0.131 | 0.218 | 1.46 | 1.32e-05 | 6.511e+04 | 0.6 | 233.48 | 2.11e-03 | 0.0 | 0.0 |
| 34 | 7.715 | 0.130 | 0.217 | 3.054e+04 | 0.3 | 5.813e+04 | 0.5 | 2507.42 | 2.27e-02 | 0.0 | 0.0 |
| 35 | 7.719 | 0.130 | 0.217 | 1831.41 | 1.66e-02 | 4.186e+04 | 0.4 | 1381.96 | 1.25e-02 | 0.0 | 0.0 |
| 36 | 7.866 | 0.127 | 0.215 | 2.901e+04 | 0.3 | 3.080e+04 | 0.3 | 230.82 | 2.09e-03 | 0.0 | 0.0 |
| 37 | 7.900 | 0.127 | 0.214 | 690.96 | 6.26e-03 | 2.289e+04 | 0.2 | 1026.23 | 9.30e-03 | 0.0 | 0.0 |
| 38 | 8.002 | 0.125 | 0.213 | 728.70 | 6.60e-03 | 1.579e+05 | 1.4 | 62.80 | 5.69e-04 | 0.0 | 0.0 |
| 39 | 8.067 | 0.124 | 0.212 | 77.68 | 7.04e-04 | 1.518e+04 | 0.1 | 54.93 | 4.98e-04 | 0.0 | 0.0 |
| 40 | 8.090 | 0.124 | 0.212 | 1350.51 | 1.22e-02 | 67.16 | 6.08e-04 | 5116.59 | 4.63e-02 | 0.0 | 0.0 |
| 41 | 8.169 | 0.122 | 0.210 | 1.816e+04 | 0.2 | 3365.78 | 3.05e-02 | 2218.49 | 2.01e-02 | 0.0 | 0.0 |
| 42 | 8.247 | 0.121 | 0.209 | 1479.37 | 1.34e-02 | 4881.58 | 4.42e-02 | 23.39 | 2.12e-04 | 0.0 | 0.0 |
| 43 | 8.274 | 0.121 | 0.209 | 3619.20 | 3.28e-02 | 3203.28 | 2.90e-02 | 0.23 | 2.04e-06 | 0.0 | 0.0 |
| 44 | 8.390 | 0.119 | 0.208 | 1556.11 | 1.41e-02 | 2.406e+04 | 0.2 | 443.20 | 4.01e-03 | 0.0 | 0.0 |
| 45 | 8.436 | 0.119 | 0.207 | 1.961e+04 | 0.2 | 3.773e+04 | 0.3 | 480.61 | 4.35e-03 | 0.0 | 0.0 |
| 46 | 8.475 | 0.118 | 0.206 | 404.30 | 3.66e-03 | 3.045e+04 | 0.3 | 924.19 | 8.37e-03 | 0.0 | 0.0 |
| 47 | 8.574 | 0.117 | 0.205 | 2.914e+04 | 0.3 | 1043.35 | 9.45e-03 | 1924.28 | 1.74e-02 | 0.0 | 0.0 |
| 48 | 8.624 | 0.116 | 0.205 | 7.011e+04 | 0.6 | 2581.24 | 2.34e-02 | 86.96 | 7.88e-04 | 0.0 | 0.0 |
| 49 | 8.677 | 0.115 | 0.204 | 7548.31 | 6.84e-02 | 3.067e+04 | 0.3 | 4157.33 | 3.77e-02 | 0.0 | 0.0 |
| 50 | 8.745 | 0.114 | 0.203 | 1.941e+04 | 0.2 | 2117.58 | 1.92e-02 | 245.37 | 2.22e-03 | 0.0 | 0.0 |
| 51 | 8.763 | 0.114 | 0.203 | 227.23 | 2.06e-03 | 1599.79 | 1.45e-02 | 45.31 | 4.10e-04 | 0.0 | 0.0 |
| 52 | 8.769 | 0.114 | 0.203 | 1.040e+04 | 9.42e-02 | 7335.72 | 6.64e-02 | 332.10 | 3.01e-03 | 0.0 | 0.0 |
| 53 | 8.873 | 0.113 | 0.202 | 376.02 | 3.41e-03 | 1.333e+05 | 1.2 | 4471.19 | 4.05e-02 | 0.0 | 0.0 |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|------------------------|-----------|---------|----------------|--------------------|----------|--------------------|----------|-------------------|----------|---------|-------------|
| 54 | 8.891 | 0.112 | 0.201 | 689.29 | 6.24e-03 | 3397.30 | 3.08e-02 | 6.74 | 6.10e-05 | 0.0 | 0.0 |
| 55 | 8.985 | 0.111 | 0.200 | 232.37 | 2.10e-03 | 2522.24 | 2.28e-02 | 5.48 | 4.96e-05 | 0.0 | 0.0 |
| 56 | 9.038 | 0.111 | 0.200 | 103.39 | 9.36e-04 | 262.20 | 2.38e-03 | 54.48 | 4.93e-04 | 0.0 | 0.0 |
| 57 | 9.133 | 0.109 | 0.199 | 7802.90 | 7.07e-02 | 7136.86 | 6.46e-02 | 308.21 | 2.79e-03 | 0.0 | 0.0 |
| 58 | 9.151 | 0.109 | 0.198 | 145.19 | 1.32e-03 | 5152.94 | 4.67e-02 | 24.47 | 2.22e-04 | 0.0 | 0.0 |
| 59 | 9.183 | 0.109 | 0.198 | 1893.35 | 1.72e-02 | 1159.80 | 1.05e-02 | 1793.35 | 1.62e-02 | 0.0 | 0.0 |
| 60 | 9.193 | 0.109 | 0.198 | 2.600e+04 | 0.2 | 257.90 | 2.34e-03 | 493.77 | 4.47e-03 | 0.0 | 0.0 |
| 61 | 9.206 | 0.109 | 0.198 | 407.04 | 3.69e-03 | 2758.05 | 2.50e-02 | 447.96 | 4.06e-03 | 0.0 | 0.0 |
| 62 | 9.253 | 0.108 | 0.197 | 4045.12 | 3.66e-02 | 924.64 | 8.38e-03 | 515.33 | 4.67e-03 | 0.0 | 0.0 |
| 63 | 9.277 | 0.108 | 0.197 | 4847.07 | 4.39e-02 | 1707.13 | 1.55e-02 | 1076.96 | 9.76e-03 | 0.0 | 0.0 |
| 64 | 9.315 | 0.107 | 0.197 | 1.856e+04 | 0.2 | 1.674e+04 | 0.2 | 1543.47 | 1.40e-02 | 0.0 | 0.0 |
| 65 | 9.351 | 0.107 | 0.196 | 115.57 | 1.05e-03 | 3.144e+04 | 0.3 | 204.14 | 1.85e-03 | 0.0 | 0.0 |
| 66 | 9.379 | 0.107 | 0.196 | 2.32 | 2.10e-05 | 2.041e+04 | 0.2 | 2.81 | 2.55e-05 | 0.0 | 0.0 |
| Risulta In percentuale | | | | 9.498e+06 86.03 | | 9.320e+06 84.42 | | 4.517e+04 0.41 | | | |

| CDC | Tipo | Sigla Id | Note |
|-----|------|---|---|
| 12 | Edk | CDC=Ed (dinamico SLD) alfa=90.00 (ecc. -) | |
| | | | verifica esistenti: fattore FC 1.200 |
| | | | categoria suolo: E |
| | | | fattore di sito S = 1.600 |
| | | | ordinata spettro (tratto Tb-Tc) = 0.248 g |
| | | | angolo di ingresso:90.00 |
| | | | eccentricità aggiuntiva: negativa |
| | | | periodo proprio T1: 0.219 sec. |
| | | | numero di modi considerati: 66 |
| | | | combinaz. modale: CQC |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| cm | daN | cm | cm | cm | cm | cm | cm | | | |
| 2398.43 | 225.38 | 3851.25 | 3685.79 | -10.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2387.29 | 348.62 | 3851.25 | 3685.79 | -13.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2372.45 | 406.44 | 3851.25 | 3685.79 | -16.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2353.36 | 467.17 | 3851.25 | 3685.79 | -19.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2329.16 | 532.48 | 3851.25 | 3685.79 | -23.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2298.35 | 606.14 | 3851.25 | 3685.79 | -26.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2258.02 | 793.11 | 3851.25 | 3685.79 | -29.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2150.00 | 1125.96 | 3851.25 | 3685.79 | -32.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2060.00 | 4.769e+04 | 2472.99 | 3685.70 | -165.99 | 0.0 | 2383.06 | 3690.52 | 1.390 | 0.053 | 0.003 |
| 1960.00 | 6603.35 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1943.95 | 6.727e+04 | 2783.57 | 3568.68 | -145.75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.75 | 3285.75 | 3771.88 | 5155.97 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1943.53 | 2156.92 | 4346.64 | 5155.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1940.66 | 1.133e+04 | 1016.86 | 3636.74 | -14.24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1931.38 | 2.097e+04 | 1050.89 | 3688.24 | -15.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1867.50 | 1.130e+04 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.395 | 0.0 | 0.0 |
| 1775.00 | 9277.13 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.281 | 0.0 | 0.0 |
| 1770.00 | 5768.41 | 2378.28 | 3690.32 | -165.99 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1720.00 | 2.411e+05 | 2601.62 | 3775.89 | -200.99 | 0.0 | 882.57 | 3946.91 | 1.143 | 0.593 | 0.096 |
| 1682.50 | 7250.34 | 3851.25 | 3685.79 | -34.27 | 0.0 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1642.00 | 3.027e+05 | 2604.36 | 3813.16 | -200.99 | 0.0 | 915.04 | 3946.89 | 1.143 | 0.544 | 0.075 |
| 1590.00 | 7250.34 | 3851.25 | 3685.79 | -34.27 | 0.0 | 3851.25 | 3685.79 | 1.355 | 0.0 | 0.0 |
| 1564.00 | 2.586e+05 | 2648.19 | 3789.92 | -200.99 | 0.0 | 825.89 | 3863.21 | 1.137 | 0.709 | 0.042 |
| 1497.50 | 9210.54 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1486.00 | 2.206e+05 | 2646.92 | 3774.60 | -200.99 | 0.0 | 804.35 | 3862.73 | 1.138 | 0.768 | 0.050 |
| 1408.00 | 2.244e+05 | 2601.55 | 3776.23 | -200.99 | 0.0 | 799.48 | 3862.71 | 1.138 | 0.764 | 0.049 |
| 1405.00 | 1.155e+04 | 3851.25 | 3685.79 | -36.25 | 0.0 | 3851.25 | 3685.79 | 1.450 | 0.0 | 0.0 |
| 1330.00 | 2.364e+05 | 2591.48 | 3794.52 | -200.99 | 0.0 | 885.91 | 3944.67 | 1.144 | 0.588 | 0.085 |
| 1312.50 | 9818.02 | 3851.44 | 3685.13 | -36.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1266.00 | 2.110e+05 | 2605.27 | 3816.06 | -200.99 | 0.0 | 885.91 | 3944.67 | 1.144 | 0.592 | 0.072 |
| 1220.00 | 1.084e+06 | 2761.39 | 3699.32 | -200.99 | 0.0 | 2496.34 | 3776.54 | 1.573 | 0.098 | 0.032 |
| 1206.25 | 1116.37 | 4756.32 | 3676.71 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1196.67 | 571.81 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1193.37 | 1969.29 | 3598.51 | 3809.61 | -18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 1193.30 | 625.16 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1192.50 | 778.59 | 4834.79 | 3856.00 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.13 | 1432.32 | 3851.17 | 4076.00 | -7.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1190.06 | 1433.97 | 3851.32 | 3296.00 | -7.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1185.83 | 721.53 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1183.60 | 1934.92 | 3481.28 | 3686.00 | -0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1182.74 | 1589.19 | 4221.22 | 3686.00 | -2.30e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.55 | 1970.74 | 3851.17 | 4076.00 | -15.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1180.48 | 1971.37 | 3851.32 | 3296.00 | -15.68 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1178.75 | 398.66 | 4913.37 | 3975.64 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.59 | 2016.46 | 4221.22 | 3686.00 | -4.57e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1173.33 | 467.42 | 3481.28 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1167.74 | 2869.58 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.72 | 1471.38 | 3589.09 | 3799.68 | -18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1166.59 | 428.10 | 3851.32 | 3296.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.99 | 3412.22 | 4048.29 | 3922.39 | -68.79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1164.93 | 2822.59 | 3851.32 | 3296.00 | -23.22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.25 | 954.85 | 3851.17 | 4076.00 | -6.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1160.12 | 953.08 | 3851.32 | 3296.00 | -6.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1158.73 | 2692.29 | 4221.22 | 3686.00 | -6.76e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.67 | 326.88 | 4221.22 | 3686.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1151.25 | 1120.86 | 5072.15 | 3436.99 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1150.00 | 513.38 | 3698.40 | 3686.93 | -18.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1147.20 | 1355.24 | 3481.28 | 3686.00 | -9.32e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1146.39 | 3712.91 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1145.49 | 728.01 | 4221.22 | 3686.00 | -2.01e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1144.00 | 6987.90 | 3851.25 | 3686.25 | -30.41 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1143.85 | 1026.76 | 3698.40 | 3686.93 | -21.63 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1142.00 | 4.023e+05 | 2746.29 | 3711.48 | -212.54 | 0.0 | 2316.65 | 3827.93 | 1.560 | 0.165 | 0.047 |
| 1141.09 | 1236.70 | 3851.17 | 4076.00 | -12.89 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1140.97 | 1234.32 | 3851.32 | 3296.00 | -12.88 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1138.73 | 2999.05 | 4221.22 | 3686.00 | -8.84e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1137.50 | 1239.02 | 5150.49 | 3676.82 | -0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1127.18 | 943.14 | 4221.22 | 3686.00 | -3.94e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1125.64 | 1026.76 | 3698.40 | 3686.93 | -24.63 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1123.75 | 1056.77 | 5229.32 | 3676.94 | -0.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1115.47 | 1842.89 | 3481.28 | 3686.00 | -0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.98 | 1.842e+04 | 5175.61 | 3713.42 | -82.30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1109.86 | 1672.24 | 3851.32 | 3296.00 | -18.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1097.46 | 1276.70 | 4221.22 | 3686.00 | -5.72e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1096.07 | 1026.76 | 3698.40 | 3686.93 | -27.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1072.77 | 2292.16 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1071.62 | 3126.64 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1069.75 | 5522.07 | 3851.25 | 3686.52 | -32.51 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.10 | 2059.28 | 3851.17 | 4076.00 | -23.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1068.01 | 2054.62 | 3851.32 | 3296.00 | -23.80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1065.60 | 1864.03 | 4221.22 | 3686.00 | -9.48e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1064.00 | 3.704e+05 | 2950.68 | 3690.88 | -232.44 | 0.0 | 2471.04 | 3827.31 | 1.522 | 0.182 | 0.053 |
| 1057.45 | 1519.34 | 4221.22 | 3686.00 | -7.28e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1056.27 | 1026.76 | 3698.40 | 3686.93 | -29.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1020.75 | 1842.89 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.07 | 1584.13 | 3851.17 | 4076.00 | -28.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1017.00 | 1578.97 | 3851.32 | 3296.00 | -27.99 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1008.71 | 990.30 | 4221.22 | 3686.00 | -8.56e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1007.78 | 1026.76 | 3698.40 | 3686.93 | -31.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 993.19 | 1772.71 | 3481.28 | 3686.00 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 991.90 | 2924.63 | 3851.25 | 3686.82 | -34.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 989.05 | 1025.97 | 4221.22 | 3686.00 | -9.95e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 986.00 | 3.407e+05 | 2938.41 | 3693.07 | -232.44 | 0.0 | 2160.49 | 3685.87 | 1.530 | 0.301 | 0.003 |
| 961.39 | 1355.24 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.86 | 1090.81 | 3851.17 | 4076.00 | -31.11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 958.81 | 1085.53 | 3851.32 | 3296.00 | -31.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 956.58 | 4975.61 | 4221.21 | 3660.70 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 953.10 | 509.94 | 4221.22 | 3686.00 | -9.51e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 952.46 | 1026.76 | 3698.40 | 3686.93 | -33.29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 951.13 | 1.009e+04 | 4221.22 | 3679.57 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 935.47 | 8808.93 | 4221.22 | 3695.09 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 912.24 | 1276.17 | 3481.28 | 3686.00 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 911.58 | 1929.45 | 3851.25 | 3687.25 | -35.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 908.00 | 3.865e+05 | 2922.61 | 3696.26 | -232.44 | 0.0 | 2538.39 | 3664.51 | 1.462 | 0.137 | 0.013 |
| 896.98 | 1042.50 | 3481.28 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 895.69 | 1544.29 | 3851.25 | 3687.35 | -33.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 892.43 | 1026.76 | 3698.40 | 3686.93 | -34.21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 887.26 | 278.87 | 4221.22 | 3686.00 | -9.99e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 849.94 | 2149.89 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 840.79 | 150.71 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 839.04 | 4458.34 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.47 | 301.43 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 830.00 | 3.560e+05 | 2928.97 | 3695.44 | -232.44 | 0.0 | 2610.37 | 3664.49 | 1.449 | 0.113 | 0.013 |
| 821.62 | 3653.08 | 4221.22 | 3685.58 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 807.73 | 4259.95 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 800.84 | 301.43 | 4221.22 | 3686.00 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 780.00 | 1.464e+06 | 2778.47 | 3680.55 | -232.44 | 0.0 | 2751.82 | 3709.29 | 1.442 | 0.010 | 0.012 |
| 760.02 | 1856.89 | 4221.22 | 3685.88 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 755.69 | 255.42 | 4221.22 | 3685.94 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 743.35 | 1001.59 | 5308.15 | 3676.82 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 741.79 | 2093.31 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 737.22 | 2353.28 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 735.21 | 975.72 | 4992.82 | 3676.82 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 733.98 | 711.12 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.92 | 2074.77 | 4992.82 | 3676.82 | -7.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 732.84 | 1469.14 | 5308.15 | 3676.82 | -0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.95 | 2316.26 | 5308.15 | 3676.82 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 729.44 | 1608.08 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 726.20 | 2430.68 | 4992.82 | 3676.82 | -14.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 723.87 | 1833.87 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 716.26 | 1819.39 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 715.52 | 2745.29 | 4992.82 | 3676.82 | -20.70 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 711.37 | 6603.06 | 2274.63 | 4411.46 | -46.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 705.78 | 865.63 | 5308.15 | 3676.82 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.90 | 1.447e+04 | 2274.57 | 4410.60 | -54.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 704.39 | 483.99 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.66 | 1816.49 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.42 | 720.77 | 4992.82 | 3676.82 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 702.00 | 5.429e+05 | 2795.67 | 3605.19 | -232.44 | 0.0 | 2743.07 | 3638.77 | 1.424 | 0.019 | 0.014 |
| 700.49 | 1014.00 | 2784.68 | 2344.92 | -7.07 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 697.84 | 2095.38 | 5072.50 | 3676.82 | -18.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 695.60 | 1108.59 | 5308.15 | 3676.82 | -0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.51 | 2057.83 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 693.04 | 2310.45 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 689.06 | 1145.31 | 2784.68 | 2344.92 | -13.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 688.82 | 1255.19 | 5308.15 | 3676.82 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 687.96 | 4850.52 | 1831.00 | 5069.17 | -6.55 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 686.48 | 1.471e+04 | 2273.73 | 4389.35 | -62.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 684.41 | 1919.30 | 4992.82 | 3676.82 | -12.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 678.97 | 2117.14 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 677.68 | 1491.32 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 673.51 | 4422.37 | 1829.52 | 5069.17 | -12.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 670.89 | 1181.11 | 2784.68 | 2344.92 | -20.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 669.62 | 427.16 | 4992.82 | 3676.82 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 668.20 | 489.54 | 5308.15 | 3676.82 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 664.92 | 1509.28 | 5308.15 | 3676.82 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.52 | 1019.91 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 663.05 | 2152.87 | 4992.82 | 3676.82 | -17.57 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.75 | 916.22 | 4992.82 | 3676.82 | -5.40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 662.44 | 1628.35 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 661.78 | 264.38 | 5308.15 | 3676.82 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.37 | 554.52 | 5308.15 | 3676.82 | -9.34e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 658.00 | 102.15 | 4992.82 | 3676.82 | -0.19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 656.76 | 1235.47 | 5308.15 | 3676.82 | -0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 655.93 | 141.77 | 5308.15 | 3676.82 | -0.13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 652.58 | 68.79 | 5308.15 | 3676.82 | -9.15e-03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.67 | 214.75 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 651.53 | 204.29 | 4992.82 | 3676.82 | -5.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 649.81 | 1133.76 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 648.19 | 630.33 | 5308.15 | 3676.82 | -0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 643.00 | 3324.21 | 2274.98 | 4413.42 | -46.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 642.61 | 1158.68 | 5011.54 | 3676.82 | -20.91 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 639.18 | 214.75 | 5308.15 | 3676.82 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.54 | 204.29 | 4992.82 | 3676.82 | -9.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 632.24 | 1376.71 | 5308.15 | 3676.82 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 631.48 | 751.65 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 630.06 | 7207.70 | 2274.98 | 4413.42 | -52.51 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 628.00 | 1718.04 | 4395.95 | 3898.35 | -181.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.37 | 2756.80 | 2198.29 | 5065.00 | -20.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 626.22 | 68.79 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|--------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 624.00 | 5.299e+05 | 2813.85 | 3598.29 | -232.44 | 0.0 | 2769.97 | 3638.78 | 1.419 | 0.016 | 0.017 |
| 619.32 | 214.75 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.78 | 248.18 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 618.46 | 1196.08 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 616.20 | 1033.37 | 2274.98 | 4413.42 | -51.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 613.78 | 1333.08 | 4992.82 | 3676.82 | -21.93 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.98 | 516.08 | 2784.68 | 2344.92 | -5.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.57 | 1230.58 | 4992.82 | 3676.82 | -14.44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 610.00 | 21.20 | 2784.68 | 2344.92 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 608.63 | 849.78 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 606.33 | 1097.85 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 603.81 | 68.79 | 5308.15 | 3676.82 | -0.03 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.50 | 42.40 | 2784.68 | 2344.92 | -5.69 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 602.35 | 204.29 | 4992.82 | 3676.82 | -13.62 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 601.87 | 1314.73 | 4992.82 | 3676.82 | -19.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 599.56 | 862.34 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 598.33 | 969.40 | 5308.15 | 3676.83 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 596.18 | 2277.57 | 1831.00 | 5069.17 | -5.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 595.61 | 817.85 | 5308.15 | 3676.82 | -0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.43 | 214.75 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.21 | 7593.48 | 2274.98 | 4413.42 | -58.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 593.00 | 125.55 | 1831.00 | 5069.17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 588.13 | 570.73 | 2784.68 | 2344.92 | -11.44 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 583.87 | 251.09 | 1831.00 | 5069.17 | -4.59 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.60 | 1033.37 | 2274.98 | 4413.42 | -56.96 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.39 | 769.13 | 5308.15 | 3676.83 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 582.21 | 6201.74 | 2280.31 | 4502.99 | -63.85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.53 | 42.40 | 2784.68 | 2344.92 | -11.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 580.15 | 660.73 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.89 | 68.79 | 5308.15 | 3676.82 | -0.04 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 575.20 | 1709.69 | 1856.31 | 5069.17 | -14.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 571.15 | 782.09 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 568.81 | 867.58 | 4992.82 | 3676.82 | -17.65 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.53 | 533.35 | 2784.68 | 2344.92 | -22.36 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 567.28 | 2186.12 | 1831.00 | 5069.17 | -9.43 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 566.46 | 491.89 | 5308.15 | 3676.83 | -0.16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.28 | 167.18 | 5308.15 | 3676.82 | -0.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 563.00 | 204.29 | 4992.82 | 3676.82 | -16.64 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 557.85 | 251.09 | 1831.00 | 5069.17 | -8.49 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 551.77 | 582.90 | 2784.68 | 2344.92 | -16.18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.69 | 451.43 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 546.00 | 5.236e+05 | 2827.40 | 3603.86 | -232.44 | 0.0 | 2687.50 | 3638.81 | 1.452 | 0.051 | 0.014 |
| 545.56 | 42.40 | 2784.68 | 2344.92 | -15.56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 543.08 | 68.79 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 542.57 | 619.13 | 2206.02 | 3920.36 | -64.15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.69 | 473.38 | 2180.10 | 2856.00 | -32.84 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 541.17 | 756.61 | 4992.82 | 3676.82 | -22.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 538.06 | 4252.63 | 2274.15 | 4404.69 | -61.71 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 536.17 | 1120.02 | 3925.27 | 4126.52 | -175.79 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 533.06 | 476.07 | 5308.15 | 3676.82 | -0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 532.32 | 1030.21 | 2274.98 | 4413.42 | -60.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 524.02 | 1148.18 | 1828.94 | 5069.17 | -12.32 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 521.04 | 438.87 | 5308.15 | 3676.82 | -0.06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 520.18 | 566.50 | 4992.82 | 3676.82 | -19.66 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 518.92 | 251.09 | 1831.00 | 5069.17 | -11.09 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 517.18 | 204.29 | 4992.82 | 3676.82 | -18.54 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 509.02 | 275.00 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 506.15 | 66.44 | 5308.15 | 3676.82 | -0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 504.39 | 330.33 | 2784.68 | 2344.92 | -19.81 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 500.00 | 42.40 | 2784.68 | 2344.92 | -19.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 473.00 | 1.385e+04 | 2271.65 | 4515.62 | -65.33 | 0.0 | 2206.91 | 4525.00 | 1.263 | 0.005 | 0.009 |
| 468.00 | 4.924e+05 | 2856.16 | 3615.63 | -232.44 | 0.0 | 2794.30 | 3827.00 | 1.537 | 0.024 | 0.081 |
| 459.41 | 211.22 | 2784.68 | 2344.92 | -23.47 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 449.21 | 145.37 | 2784.68 | 2344.92 | -22.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 446.94 | 42.40 | 2784.68 | 2344.92 | -21.25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 414.00 | 3927.52 | 4677.55 | 3647.94 | -0.14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 392.50 | 1068.99 | 1695.02 | 5069.18 | -1.33 | 0.0 | 1697.67 | 5069.18 | 0.463 | 0.021 | 1.6061e-05 |
| 390.00 | 4.483e+05 | 2857.31 | 3622.35 | -232.44 | 0.0 | 2528.81 | 3654.36 | 1.495 | 0.124 | 0.013 |
| 378.40 | 6039.26 | 2191.00 | 5069.17 | -24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 323.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 312.00 | 4.298e+05 | 2879.83 | 3597.49 | -232.44 | 0.0 | 2446.08 | 3674.23 | 1.505 | 0.165 | 0.030 |
| 283.80 | 6039.26 | 2191.00 | 5069.17 | -24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 273.00 | 334.07 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Quota | M Sismica x g | Pos. GX | Pos. GY | E agg. X-X | E agg. Y-Y | Pos. KX | Pos. KY | rapp. r/Ls | rapp. ex/rx | rapp. ey/ry |
|---------|---------------|---------|---------|------------|------------|---------|---------|------------|-------------|-------------|
| 234.00 | 4.249e+05 | 2877.82 | 3582.57 | -232.44 | 0.0 | 2410.52 | 3666.47 | 1.517 | 0.179 | 0.033 |
| 223.00 | 1108.39 | 661.27 | 4281.50 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 189.20 | 6039.26 | 2191.00 | 5069.17 | -24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 156.00 | 4.503e+05 | 2869.01 | 3596.89 | -232.44 | 0.0 | 2679.22 | 3544.37 | 1.490 | 0.071 | 0.021 |
| 94.60 | 6039.26 | 2191.00 | 5069.17 | -24.00 | 0.0 | 2191.00 | 5069.17 | 1.528 | 0.0 | 0.0 |
| 78.00 | 4.736e+05 | 2870.52 | 3603.03 | -232.44 | 0.0 | 2674.31 | 3549.62 | 1.496 | 0.073 | 0.021 |
| Risulta | 1.104e+07 | | | | | | | | | |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| | Hz | sec | g | daN | | daN | | daN | | | |
| 1 | 2.262 | 0.442 | 0.248 | 3.611e+05 | 3.3 | 6.01 | 5.45e-05 | 1.99 | 1.80e-05 | 0.0 | 0.0 |
| 2 | 2.752 | 0.363 | 0.248 | 1.850e+04 | 0.2 | 1.301e+06 | 11.8 | 1.23 | 1.12e-05 | 0.0 | 0.0 |
| 3 | 3.155 | 0.317 | 0.248 | 1.111e+06 | 10.1 | 1.778e+05 | 1.6 | 3.68e-03 | 0.0 | 0.0 | 0.0 |
| 4 | 3.421 | 0.292 | 0.248 | 1.466e+05 | 1.3 | 1.569e+06 | 14.2 | 95.16 | 8.62e-04 | 0.0 | 0.0 |
| 5 | 4.153 | 0.241 | 0.248 | 7.151e+05 | 6.5 | 1.448e+05 | 1.3 | 125.59 | 1.14e-03 | 0.0 | 0.0 |
| 6 | 4.223 | 0.237 | 0.248 | 1700.06 | 1.54e-02 | 1.155e+06 | 10.5 | 38.47 | 3.48e-04 | 0.0 | 0.0 |
| 7 | 4.317 | 0.232 | 0.248 | 4.398e+06 | 39.8 | 4.292e+05 | 3.9 | 250.85 | 2.27e-03 | 0.0 | 0.0 |
| 8 | 4.395 | 0.228 | 0.248 | 1.076e+06 | 9.7 | 3.737e+05 | 3.4 | 77.76 | 7.04e-04 | 0.0 | 0.0 |
| 9 | 4.567 | 0.219 | 0.248 | 2.050e+05 | 1.9 | 2.121e+06 | 19.2 | 18.37 | 1.66e-04 | 0.0 | 0.0 |
| 10 | 4.818 | 0.208 | 0.248 | 1.709e+05 | 1.5 | 6.566e+04 | 0.6 | 52.46 | 4.75e-04 | 0.0 | 0.0 |
| 11 | 5.142 | 0.194 | 0.248 | 2.266e+05 | 2.1 | 7529.31 | 6.82e-02 | 6.68 | 6.05e-05 | 0.0 | 0.0 |
| 12 | 5.554 | 0.180 | 0.248 | 2.652e+04 | 0.2 | 2.546e+05 | 2.3 | 2.26 | 2.04e-05 | 0.0 | 0.0 |
| 13 | 5.678 | 0.176 | 0.248 | 257.23 | 2.33e-03 | 1.211e+05 | 1.1 | 59.72 | 5.41e-04 | 0.0 | 0.0 |
| 14 | 5.801 | 0.172 | 0.248 | 2.79 | 2.53e-05 | 1164.83 | 1.06e-02 | 1041.88 | 9.44e-03 | 0.0 | 0.0 |
| 15 | 5.813 | 0.172 | 0.248 | 4331.29 | 3.92e-02 | 1257.24 | 1.14e-02 | 1605.43 | 1.45e-02 | 0.0 | 0.0 |
| 16 | 5.904 | 0.169 | 0.248 | 1.162e+05 | 1.1 | 6440.42 | 5.83e-02 | 5.34 | 4.84e-05 | 0.0 | 0.0 |
| 17 | 6.040 | 0.166 | 0.248 | 631.04 | 5.72e-03 | 4576.21 | 4.15e-02 | 409.88 | 3.71e-03 | 0.0 | 0.0 |
| 18 | 6.197 | 0.161 | 0.246 | 1400.32 | 1.27e-02 | 5129.58 | 4.65e-02 | 623.89 | 5.65e-03 | 0.0 | 0.0 |
| 19 | 6.262 | 0.160 | 0.245 | 1.388e+05 | 1.3 | 4.787e+04 | 0.4 | 323.68 | 2.93e-03 | 0.0 | 0.0 |
| 20 | 6.387 | 0.157 | 0.242 | 8.014e+04 | 0.7 | 3.559e+05 | 3.2 | 1639.27 | 1.48e-02 | 0.0 | 0.0 |
| 21 | 6.529 | 0.153 | 0.239 | 2.37 | 2.15e-05 | 1.971e+04 | 0.2 | 53.94 | 4.89e-04 | 0.0 | 0.0 |
| 22 | 6.658 | 0.150 | 0.236 | 5716.17 | 5.18e-02 | 1.231e+04 | 0.1 | 268.89 | 2.44e-03 | 0.0 | 0.0 |
| 23 | 6.824 | 0.147 | 0.233 | 122.71 | 1.11e-03 | 944.19 | 8.55e-03 | 0.85 | 7.73e-06 | 0.0 | 0.0 |
| 24 | 6.871 | 0.146 | 0.232 | 515.34 | 4.67e-03 | 2.270e+04 | 0.2 | 4.21 | 3.81e-05 | 0.0 | 0.0 |
| 25 | 6.978 | 0.143 | 0.230 | 1.318e+04 | 0.1 | 4564.19 | 4.13e-02 | 21.51 | 1.95e-04 | 0.0 | 0.0 |
| 26 | 7.017 | 0.143 | 0.229 | 1.659e+04 | 0.2 | 1335.41 | 1.21e-02 | 1759.73 | 1.59e-02 | 0.0 | 0.0 |
| 27 | 7.054 | 0.142 | 0.228 | 2585.43 | 2.34e-02 | 15.22 | 1.38e-04 | 2188.69 | 1.98e-02 | 0.0 | 0.0 |
| 28 | 7.121 | 0.140 | 0.227 | 1.540e+05 | 1.4 | 3.073e+04 | 0.3 | 88.47 | 8.01e-04 | 0.0 | 0.0 |
| 29 | 7.268 | 0.138 | 0.224 | 5981.31 | 5.42e-02 | 1396.63 | 1.27e-02 | 1028.96 | 9.32e-03 | 0.0 | 0.0 |
| 30 | 7.316 | 0.137 | 0.224 | 95.86 | 8.68e-04 | 2.168e+05 | 2.0 | 10.64 | 9.64e-05 | 0.0 | 0.0 |
| 31 | 7.390 | 0.135 | 0.222 | 433.48 | 3.93e-03 | 3.047e+05 | 2.8 | 964.92 | 8.74e-03 | 0.0 | 0.0 |
| 32 | 7.504 | 0.133 | 0.220 | 1.469e+05 | 1.3 | 3939.21 | 3.57e-02 | 66.73 | 6.04e-04 | 0.0 | 0.0 |
| 33 | 7.626 | 0.131 | 0.219 | 5723.65 | 5.18e-02 | 1663.27 | 1.51e-02 | 13.91 | 1.26e-04 | 0.0 | 0.0 |
| 34 | 7.693 | 0.130 | 0.217 | 4.282e+04 | 0.4 | 7343.22 | 6.65e-02 | 4009.47 | 3.63e-02 | 0.0 | 0.0 |
| 35 | 7.777 | 0.129 | 0.216 | 1848.84 | 1.67e-02 | 3.028e+04 | 0.3 | 63.79 | 5.78e-04 | 0.0 | 0.0 |
| 36 | 7.795 | 0.128 | 0.216 | 4.652e+04 | 0.4 | 4.168e+04 | 0.4 | 548.00 | 4.96e-03 | 0.0 | 0.0 |
| 37 | 7.894 | 0.127 | 0.214 | 8131.37 | 7.37e-02 | 6094.13 | 5.52e-02 | 153.25 | 1.39e-03 | 0.0 | 0.0 |
| 38 | 7.934 | 0.126 | 0.214 | 0.02 | 0.0 | 9.700e+04 | 0.9 | 1885.49 | 1.71e-02 | 0.0 | 0.0 |
| 39 | 8.123 | 0.123 | 0.211 | 7997.92 | 7.24e-02 | 7630.93 | 6.91e-02 | 2845.36 | 2.58e-02 | 0.0 | 0.0 |
| 40 | 8.153 | 0.123 | 0.211 | 24.52 | 2.22e-04 | 1.014e+04 | 9.18e-02 | 753.70 | 6.83e-03 | 0.0 | 0.0 |
| 41 | 8.189 | 0.122 | 0.210 | 605.01 | 5.48e-03 | 5.785e+04 | 0.5 | 1789.67 | 1.62e-02 | 0.0 | 0.0 |
| 42 | 8.255 | 0.121 | 0.209 | 3504.80 | 3.17e-02 | 2.542e+04 | 0.2 | 287.53 | 2.60e-03 | 0.0 | 0.0 |
| 43 | 8.304 | 0.120 | 0.209 | 7964.87 | 7.21e-02 | 6.485e+04 | 0.6 | 1207.52 | 1.09e-02 | 0.0 | 0.0 |
| 44 | 8.362 | 0.120 | 0.208 | 1.752e+04 | 0.2 | 2.184e+04 | 0.2 | 172.21 | 1.56e-03 | 0.0 | 0.0 |
| 45 | 8.430 | 0.119 | 0.207 | 2.932e+04 | 0.3 | 4462.22 | 4.04e-02 | 2107.18 | 1.91e-02 | 0.0 | 0.0 |
| 46 | 8.478 | 0.118 | 0.206 | 245.67 | 2.23e-03 | 5.710e+04 | 0.5 | 57.80 | 5.24e-04 | 0.0 | 0.0 |
| 47 | 8.514 | 0.117 | 0.206 | 1.883e+04 | 0.2 | 1718.04 | 1.56e-02 | 604.64 | 5.48e-03 | 0.0 | 0.0 |
| 48 | 8.627 | 0.116 | 0.204 | 840.74 | 7.62e-03 | 1078.39 | 9.77e-03 | 1118.67 | 1.01e-02 | 0.0 | 0.0 |
| 49 | 8.643 | 0.116 | 0.204 | 4.181e+04 | 0.4 | 2.532e+04 | 0.2 | 190.13 | 1.72e-03 | 0.0 | 0.0 |
| 50 | 8.693 | 0.115 | 0.204 | 1.938e+04 | 0.2 | 450.94 | 4.08e-03 | 1193.80 | 1.08e-02 | 0.0 | 0.0 |
| 51 | 8.762 | 0.114 | 0.203 | 808.26 | 7.32e-03 | 48.81 | 4.42e-04 | 10.63 | 9.63e-05 | 0.0 | 0.0 |
| 52 | 8.772 | 0.114 | 0.203 | 849.50 | 7.69e-03 | 610.56 | 5.53e-03 | 86.03 | 7.79e-04 | 0.0 | 0.0 |
| 53 | 8.818 | 0.113 | 0.202 | 7080.93 | 6.41e-02 | 16.17 | 1.46e-04 | 61.82 | 5.60e-04 | 0.0 | 0.0 |
| 54 | 8.831 | 0.113 | 0.202 | 2795.34 | 2.53e-02 | 6289.50 | 5.70e-02 | 360.58 | 3.27e-03 | 0.0 | 0.0 |
| 55 | 8.849 | 0.113 | 0.202 | 132.43 | 1.20e-03 | 228.29 | 2.07e-03 | 650.55 | 5.89e-03 | 0.0 | 0.0 |
| 56 | 8.929 | 0.112 | 0.201 | 1.052e+04 | 9.53e-02 | 4781.10 | 4.33e-02 | 1615.62 | 1.46e-02 | 0.0 | 0.0 |
| 57 | 9.011 | 0.111 | 0.200 | 1.201e+04 | 0.1 | 6138.70 | 5.56e-02 | 969.93 | 8.79e-03 | 0.0 | 0.0 |
| 58 | 9.035 | 0.111 | 0.200 | 6572.42 | 5.95e-02 | 2547.35 | 2.31e-02 | 57.09 | 5.17e-04 | 0.0 | 0.0 |
| 59 | 9.056 | 0.110 | 0.199 | 1.275e+04 | 0.1 | 2.644e+04 | 0.2 | 1577.55 | 1.43e-02 | 0.0 | 0.0 |

| Modo | Frequenza | Periodo | Acc. Spettrale | M efficace X x g | % | M efficace Y x g | % | M efficace Z x g | % | Energia | Energia x v |
|----------------|-----------|---------|----------------|------------------|----------|------------------|----------|------------------|----------|---------|-------------|
| 60 | 9.124 | 0.110 | 0.199 | 5043.65 | 4.57e-02 | 1.024e+04 | 9.27e-02 | 712.79 | 6.46e-03 | 0.0 | 0.0 |
| 61 | 9.137 | 0.109 | 0.199 | 1.24 | 1.12e-05 | 5194.05 | 4.70e-02 | 453.83 | 4.11e-03 | 0.0 | 0.0 |
| 62 | 9.142 | 0.109 | 0.198 | 131.30 | 1.19e-03 | 171.37 | 1.55e-03 | 218.48 | 1.98e-03 | 0.0 | 0.0 |
| 63 | 9.180 | 0.109 | 0.198 | 5374.50 | 4.87e-02 | 3094.58 | 2.80e-02 | 4340.04 | 3.93e-02 | 0.0 | 0.0 |
| 64 | 9.199 | 0.109 | 0.198 | 5.50 | 4.98e-05 | 4.047e+04 | 0.4 | 1499.24 | 1.36e-02 | 0.0 | 0.0 |
| 65 | 9.211 | 0.109 | 0.198 | 1975.35 | 1.79e-02 | 3386.25 | 3.07e-02 | 452.73 | 4.10e-03 | 0.0 | 0.0 |
| 66 | 9.239 | 0.108 | 0.197 | 3140.67 | 2.84e-02 | 1963.10 | 1.78e-02 | 911.78 | 8.26e-03 | 0.0 | 0.0 |
| Risulta | | | | 9.468e+06 | | 9.336e+06 | | 4.582e+04 | | | |
| In percentuale | | | | 85.76 | | 84.57 | | 0.42 | | | |

| Cmb | Pilas. | 1000 etaT/h | etaT | inter. h | Pilas. | 1000 etaT/h | etaT | inter. h | Pilas. | 1000 etaT/h | etaT | inter. h |
|-----|--------|-------------|----------|----------|--------|-------------|------|----------|--------|-------------|----------|----------|
| | | | cm | cm | | | cm | cm | | | cm | cm |
| 47 | 240 | 0.19 | 0.06 | 290.0 | 243 | 0.15 | 0.04 | 290.0 | 246 | 0.32 | 0.09 | 290.0 |
| | 249 | 0.35 | 0.10 | 290.0 | 257 | 0.24 | 0.07 | 290.0 | 260 | 0.38 | 0.11 | 290.0 |
| | 263 | 0.53 | 0.15 | 290.0 | 266 | 0.22 | 0.06 | 290.0 | 269 | 0.18 | 0.05 | 290.0 |
| | 272 | 0.05 | 0.01 | 290.0 | 279 | 0.37 | 0.11 | 290.0 | 356 | 0.31 | 0.09 | 290.0 |
| | 1014 | 1.12 | 0.33 | 290.0 | 1019 | 0.93 | 0.27 | 290.0 | 1022 | 0.87 | 0.25 | 290.0 |
| | 1081 | 0.13 | 0.04 | 290.0 | 1084 | 0.59 | 0.17 | 290.0 | 1085 | 0.18 | 9.23e-03 | 50.0 |
| | 1087 | 0.17 | 8.60e-03 | 50.0 | 1089 | 0.21 | 0.02 | 78.0 | 1091 | 0.18 | 0.01 | 78.0 |
| | 1093 | 0.20 | 0.02 | 78.0 | 1094 | 0.17 | 0.01 | 78.0 | 1097 | 0.20 | 0.02 | 78.0 |
| ... | | | | | | | | | | | | |
| 78 | 1151 | 0.19 | 0.01 | 78.0 | 1152 | 0.24 | 0.02 | 78.0 | 1150 | 0.05 | 4.17e-03 | 78.0 |
| Cmb | | 1000 etaT/h | | | | | | | | | | |
| | | 2.41 | | | | | | | | | | |

RISULTATI NODALI

LEGENDA RISULTATI NODALI

Il controllo dei risultati delle analisi condotte, per quanto concerne i nodi strutturali, è possibile in relazione alle tabelle sottoportate.

Una prima tabella riporta infatti per ogni nodo e per ogni combinazione (o caso di carico) gli spostamenti nodali.

Una seconda tabella riporta per ogni nodo a cui sia associato un vincolo rigido e/o elastico o una fondazione speciale e per ogni combinazione (o caso di carico) i valori delle azioni esercitate dalla struttura sui vincoli (reazioni vincolari cambiate di segno).

Una terza tabella, infine riassume per ogni nodo le sei combinazioni in cui si attingono i valori minimi e massimi della reazione Fz, della reazione Mx e della reazione My.

| Nodo | Cmb | Traslazione X | Traslazione Y | Traslazione Z | Rotazione X | Rotazione Y | Rotazione Z |
|-------|-----|---------------|---------------|---------------|-------------|-------------|-------------|
| | | cm | cm | cm | | | |
| 1 | 1 | -0.03 | 0.02 | -0.05 | 0.0 | -1.12e-04 | 4.94e-05 |
| 1 | 2 | -0.03 | 0.02 | -0.05 | 0.0 | -1.14e-04 | 4.99e-05 |
| 1 | 3 | -0.03 | 0.02 | -0.05 | 0.0 | -1.25e-04 | 5.37e-05 |
| 1 | 4 | -0.03 | 0.02 | -0.05 | 0.0 | -1.26e-04 | 5.42e-05 |
| 1 | 5 | -0.02 | 0.01 | -0.03 | 0.0 | -7.94e-05 | 3.55e-05 |
| 1 | 6 | -0.02 | 0.02 | -0.03 | 0.0 | -8.08e-05 | 3.61e-05 |
| 1 | 7 | -0.03 | 0.02 | -0.04 | 0.0 | -9.19e-05 | 3.98e-05 |
| 1 | 8 | -0.03 | 0.02 | -0.04 | 0.0 | -9.32e-05 | 4.03e-05 |
| ... | | | | | | | |
| 10959 | 92 | 0.03 | -0.04 | -0.17 | -4.41e-05 | -8.94e-05 | -8.42e-05 |
| Nodo | | Traslazione X | Traslazione Y | Traslazione Z | Rotazione X | Rotazione Y | Rotazione Z |
| | | -1.79 | -2.11 | -0.66 | -3.40e-03 | -0.06 | -3.46e-03 |
| | | 1.84 | 2.10 | 0.04 | 3.44e-03 | 0.06 | 3.46e-03 |

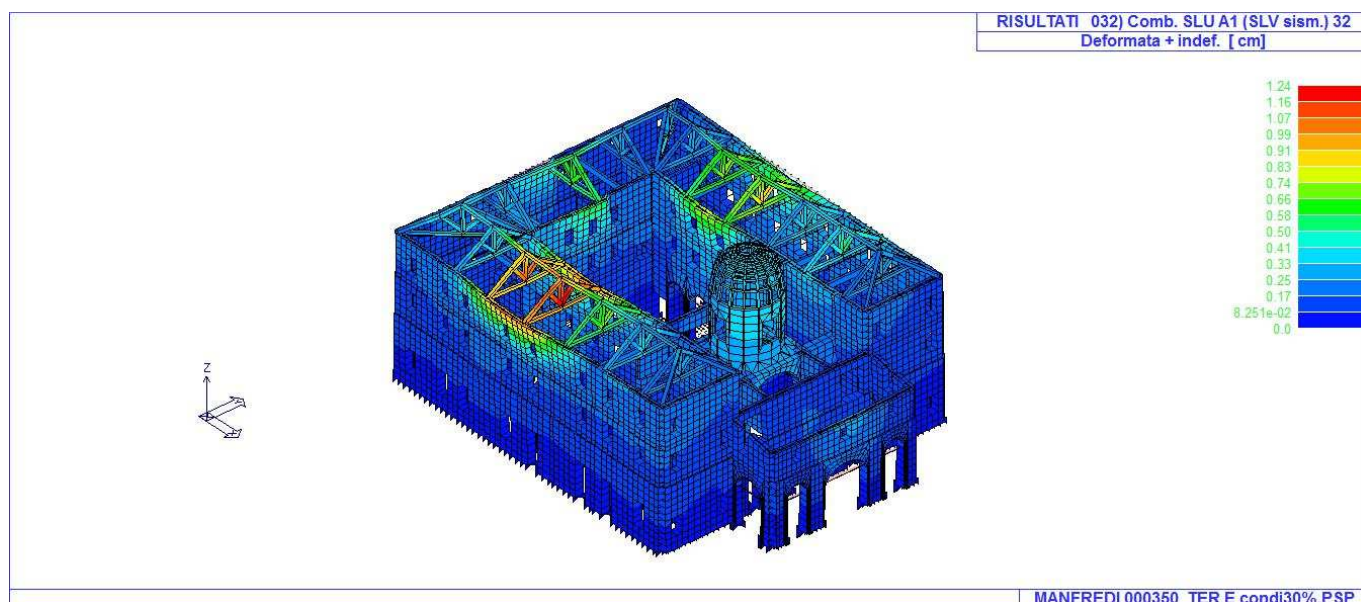


Fig. 1

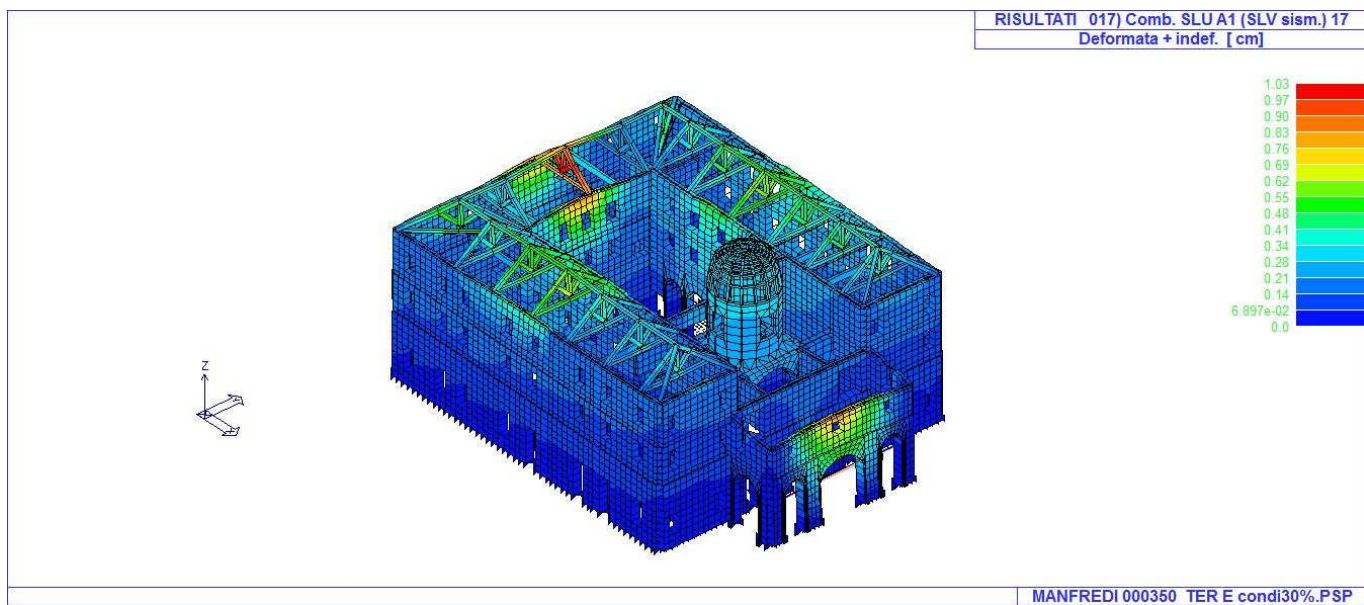


Fig. 2

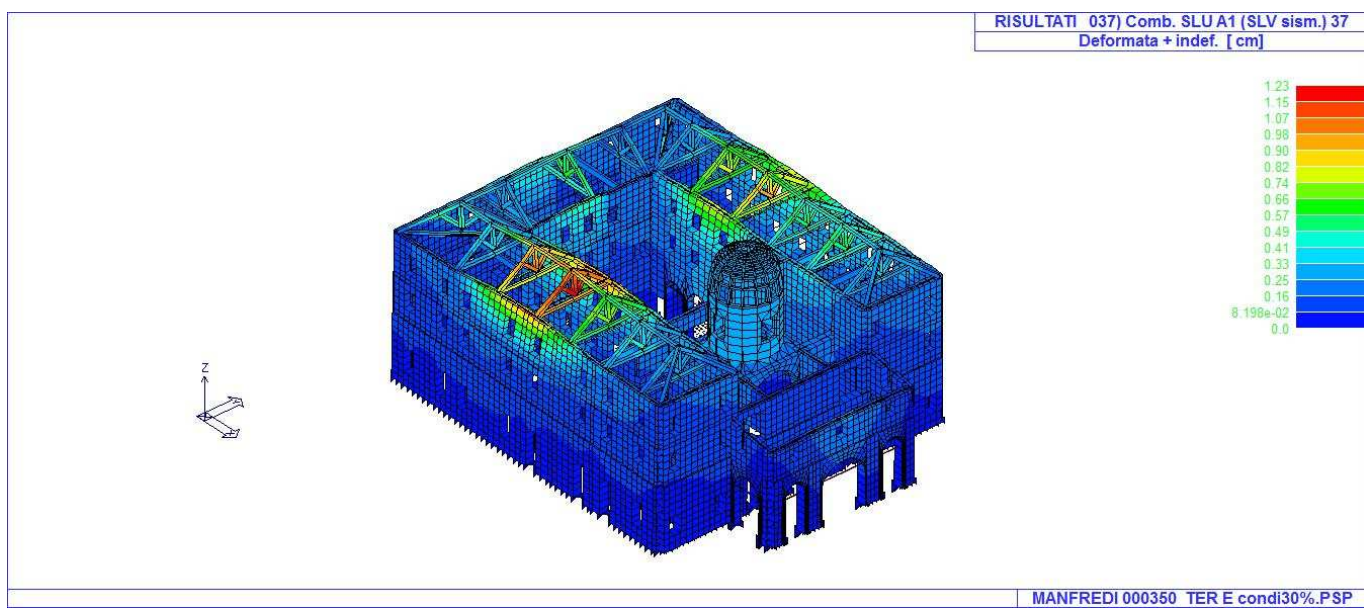


Fig. 3

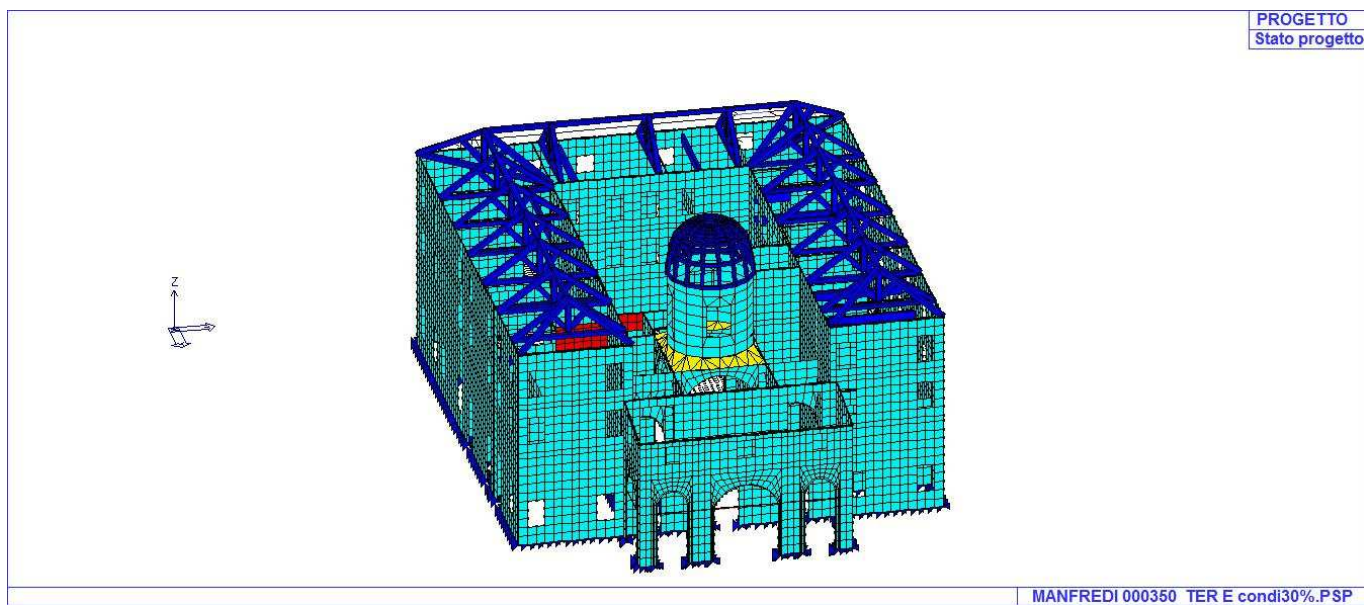


Fig. 4

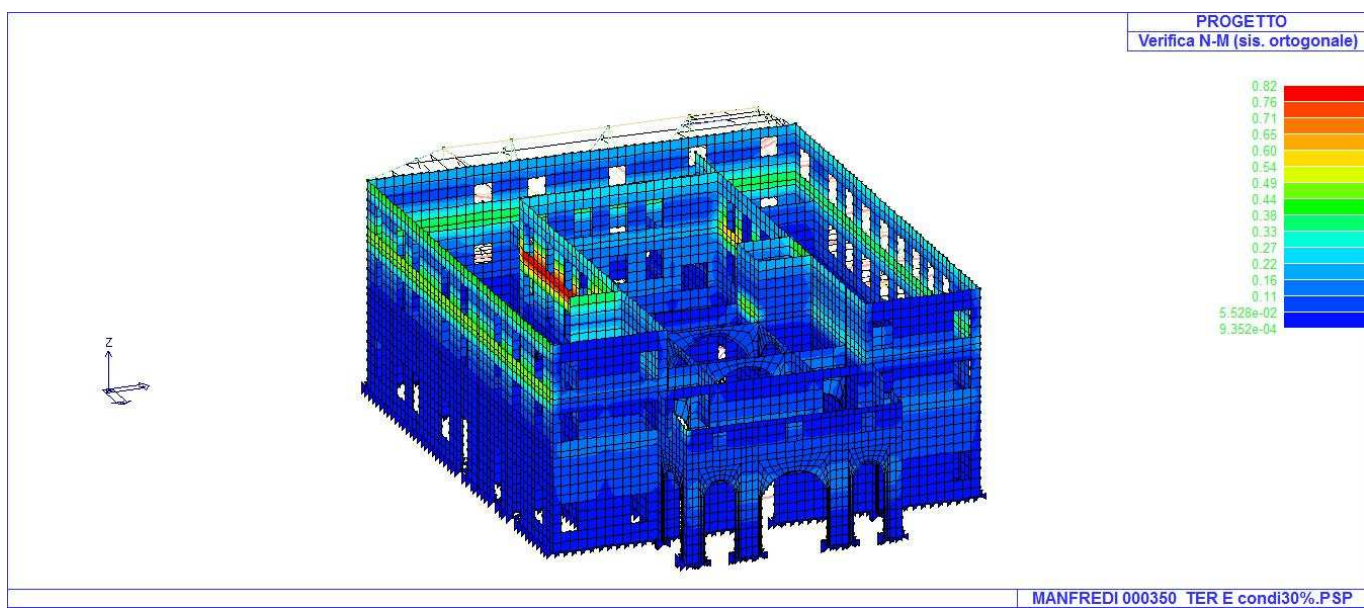


Fig. 5

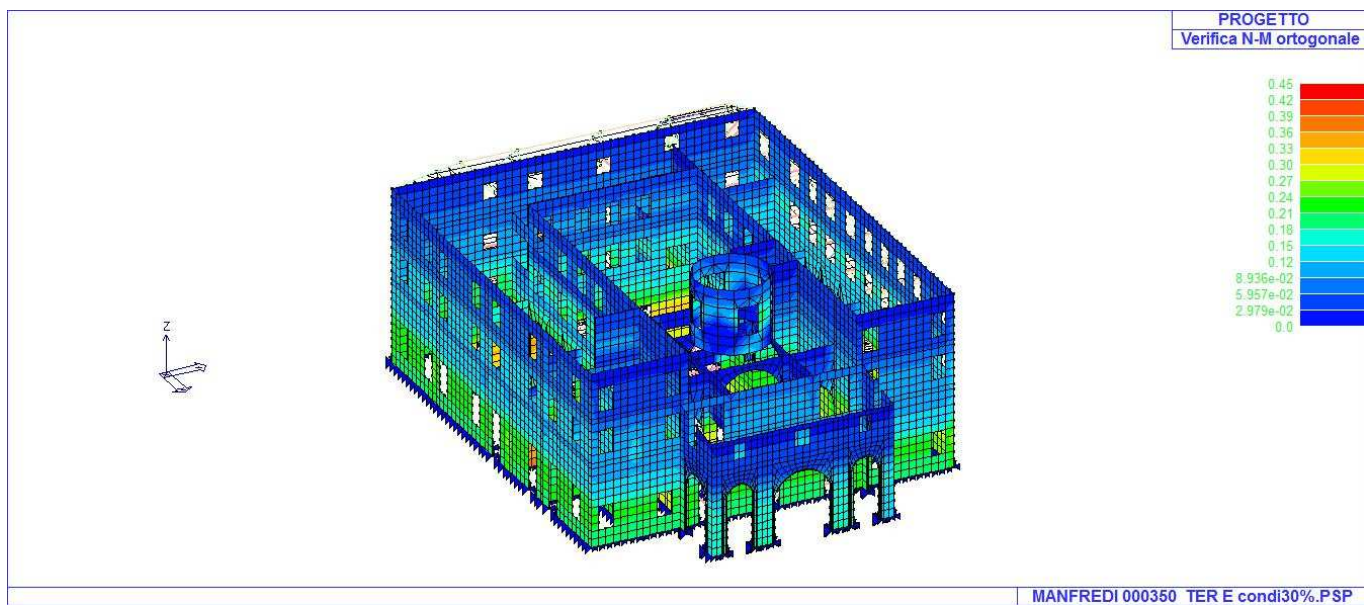


Fig. 6

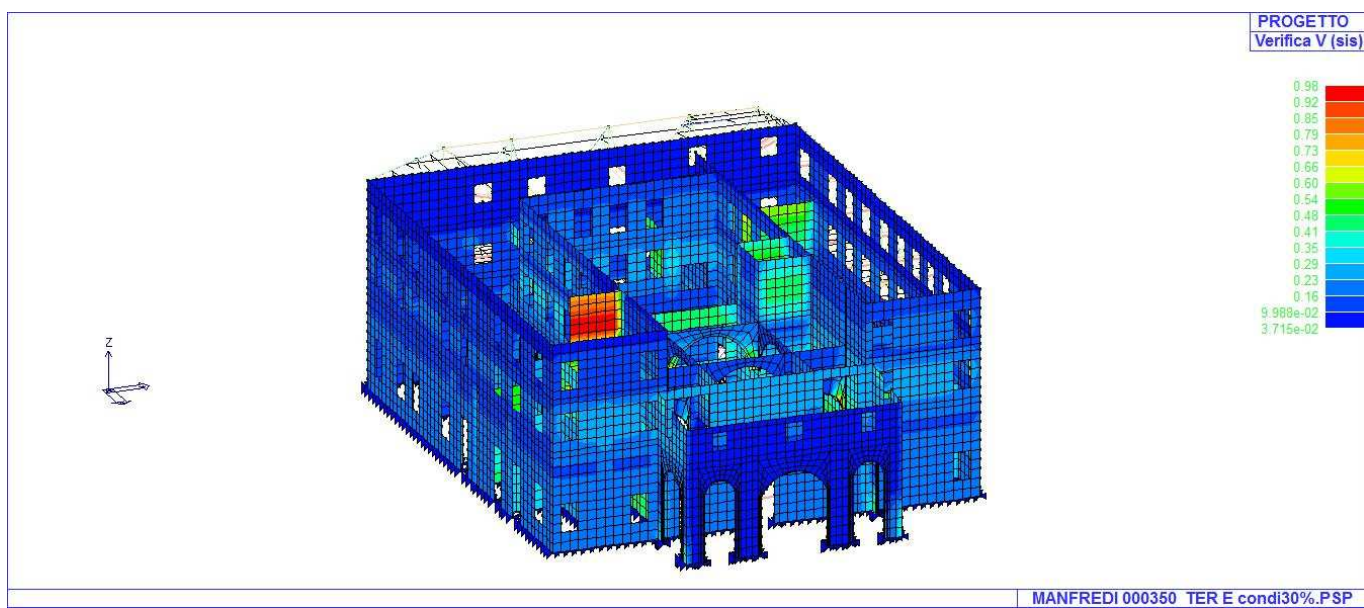


Fig. 7

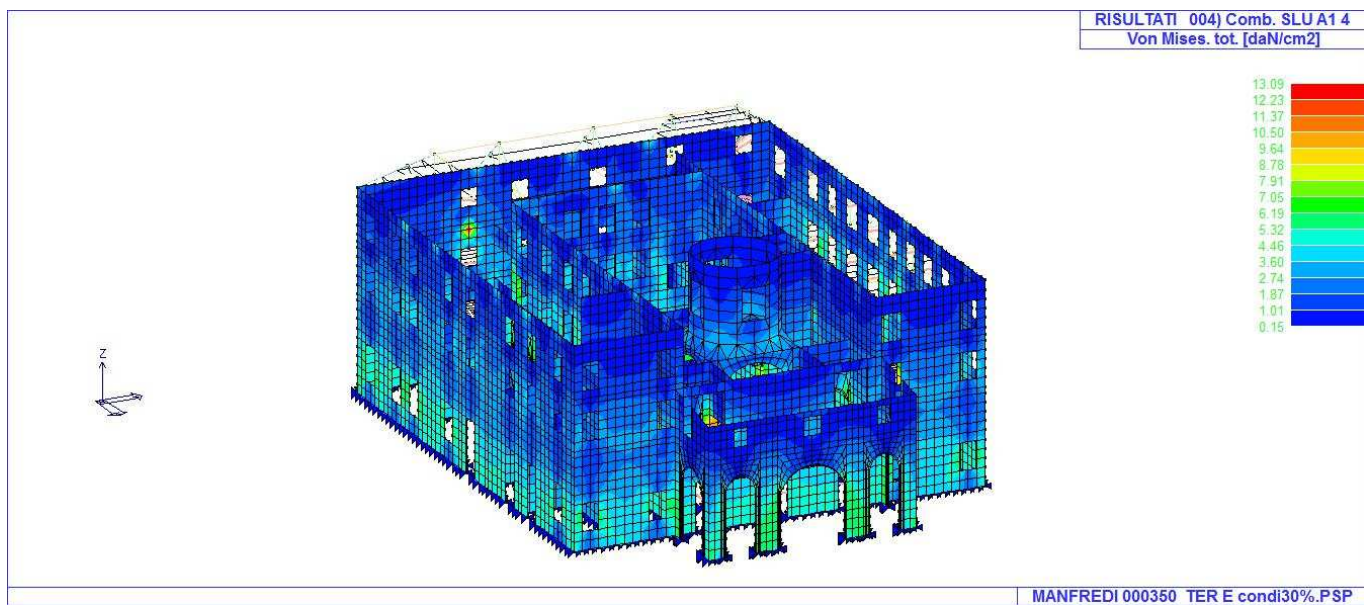


Fig. 8

