



# GALLERIA PARAMASSI

## NUOVO SISTEMA

# GALLERIA PARAMASSI

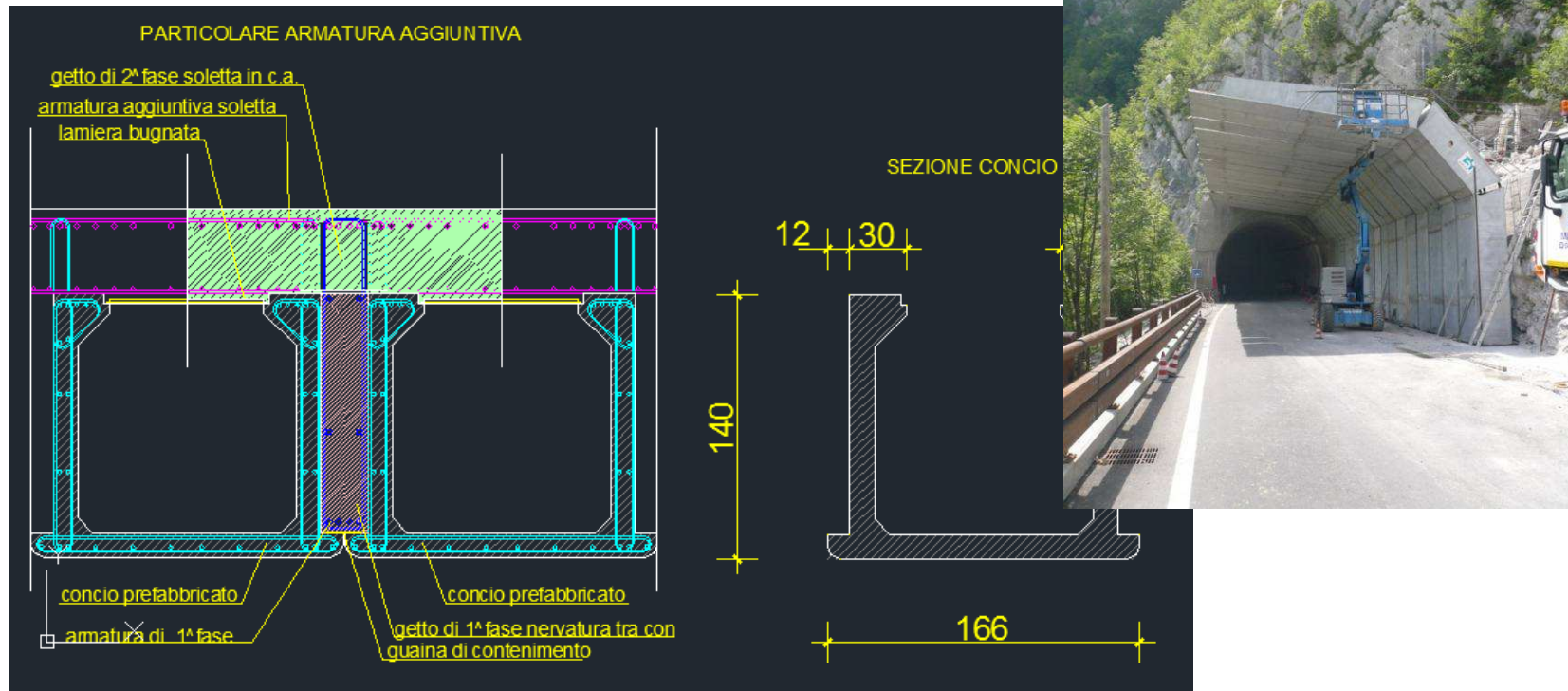
**OPERA** DI DIFESA PASSIVA,  
idonea ad arrestare o deviare **sciami** di massi in caduta





# GALLERIA PARAMASSI

struttura prefabbricata a mensola

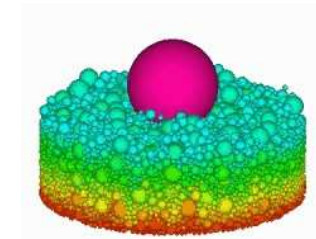
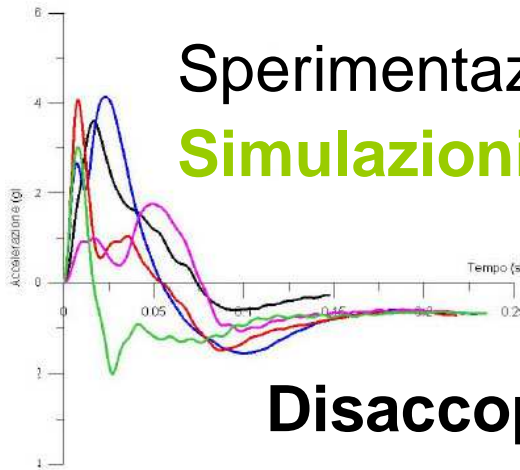


# GALLERIA PARAMASSI

## sperimentazioni

Sperimentazione in **vera grandezza (test scala 1:1)**

**Simulazioni numeriche** con elementi distinti



**Disaccoppiamento del fenomeno di impatto**



**INTERAZIONE**

**TRA BLOCCO E  
PACCHETTO**



**TRASMISSIONE**

**MATERIALE  
PACCHETTO**

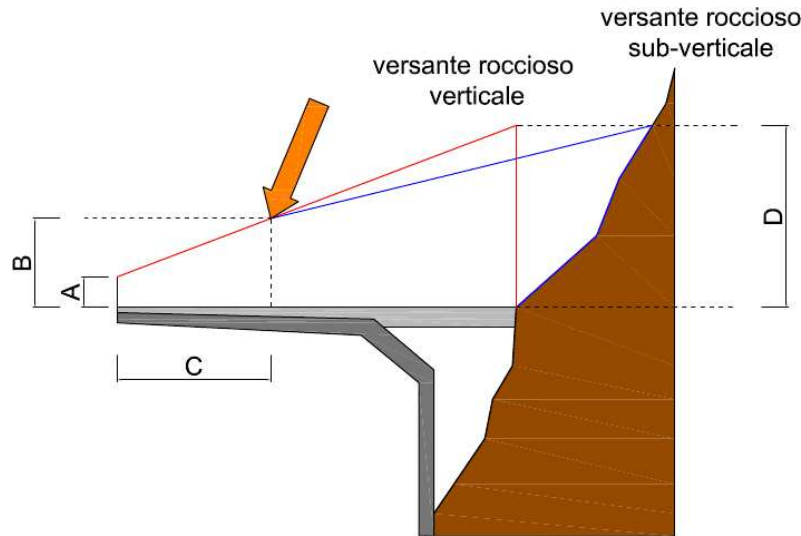


**RISPOSTA**

**SOLLECITAZIONI  
STRUTTURA**

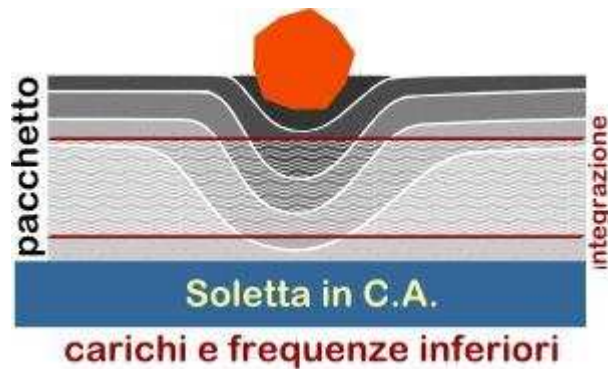
# GALLERIA PARAMASSI

## dimensionamento- software



### Software input

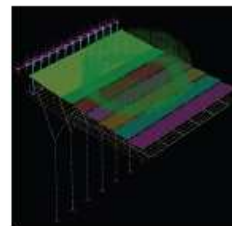
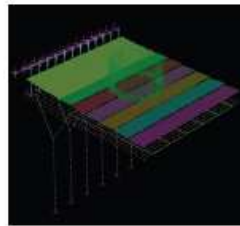
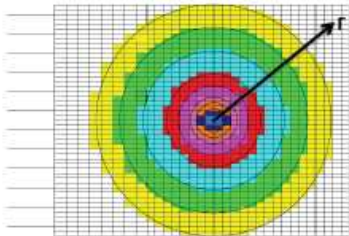
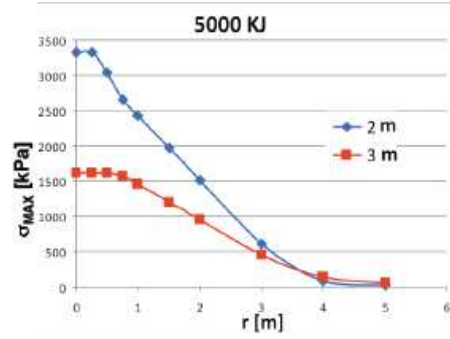
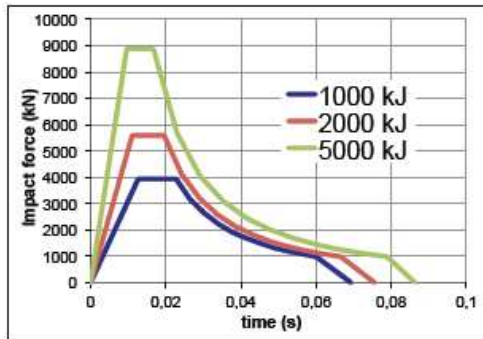
- Dimensioni **blocco**
- **Velocità** impatto
- Tipologia **pacchetto** (materiale)
- Spessore **pacchetto**



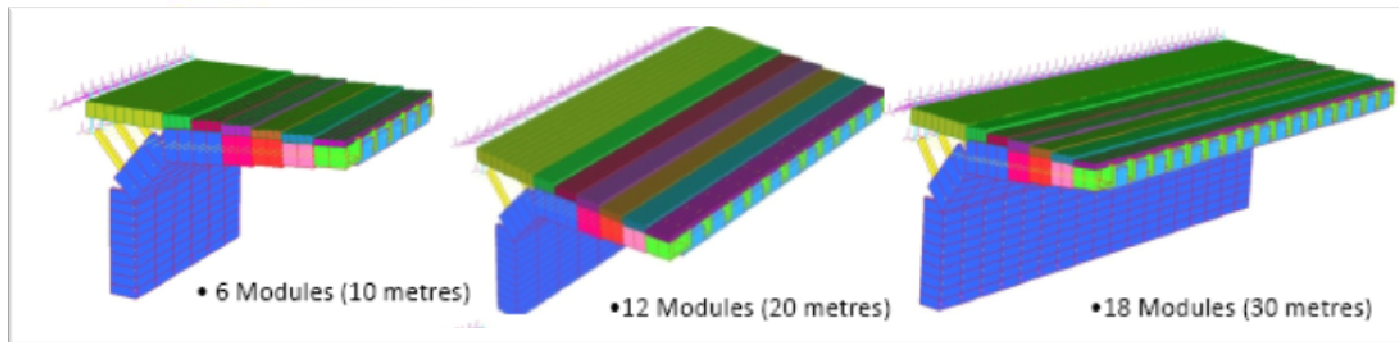
Descrizione analitica dell'onda d'urto nel pacchetto ammortizzante.

# GALLERIA PARAMASSI

## Software output - carichi soletta



- Simulazioni **FEM 3D**
- Risposta **soletta collaborante**
- **Sollecitazioni 3D** sulla struttura

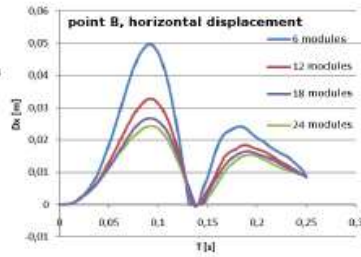
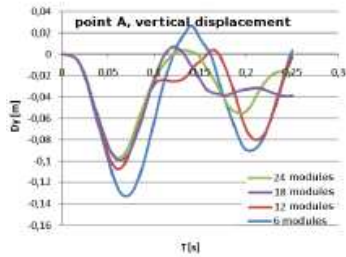
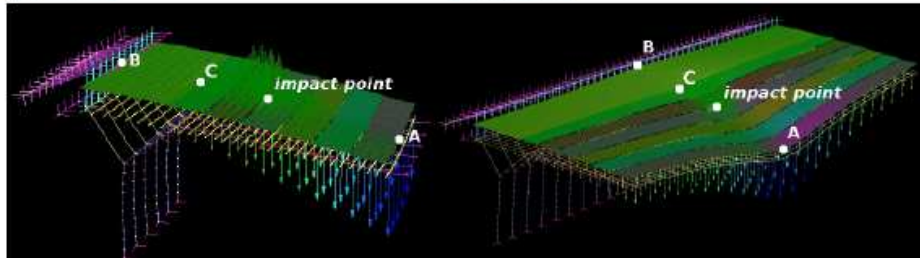


# GALLERIA PARAMASSI

## Dimensionamento - FEM

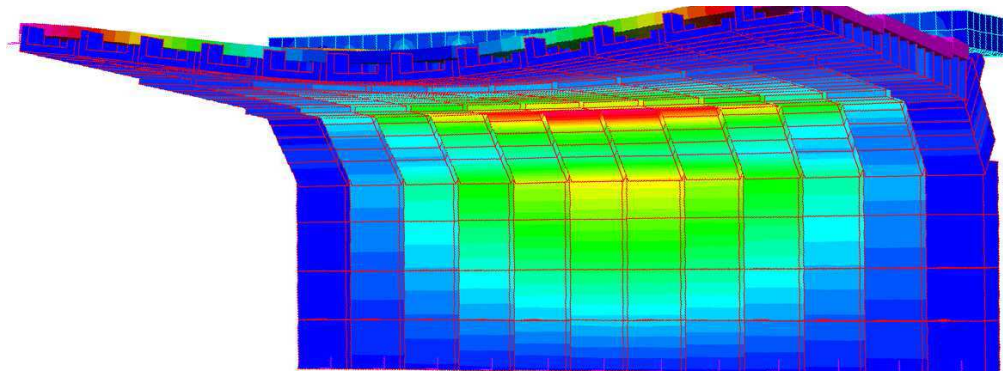
6 modules

24 modules

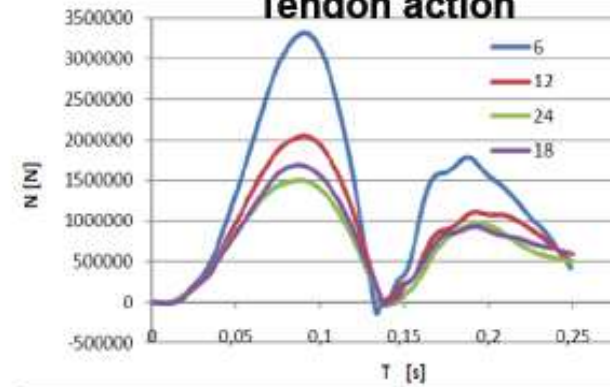


Comparison 18 - 24 modules

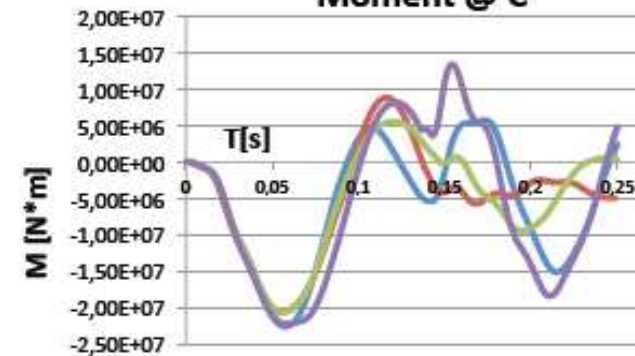
E	1000 kJ	2000 kJ	5000 kJ
$U_y$	-1,8 %	-1,9 %	-0,06 %
$U_x$	-6,1 %	-7,7 %	-10,5 %



Tendon action

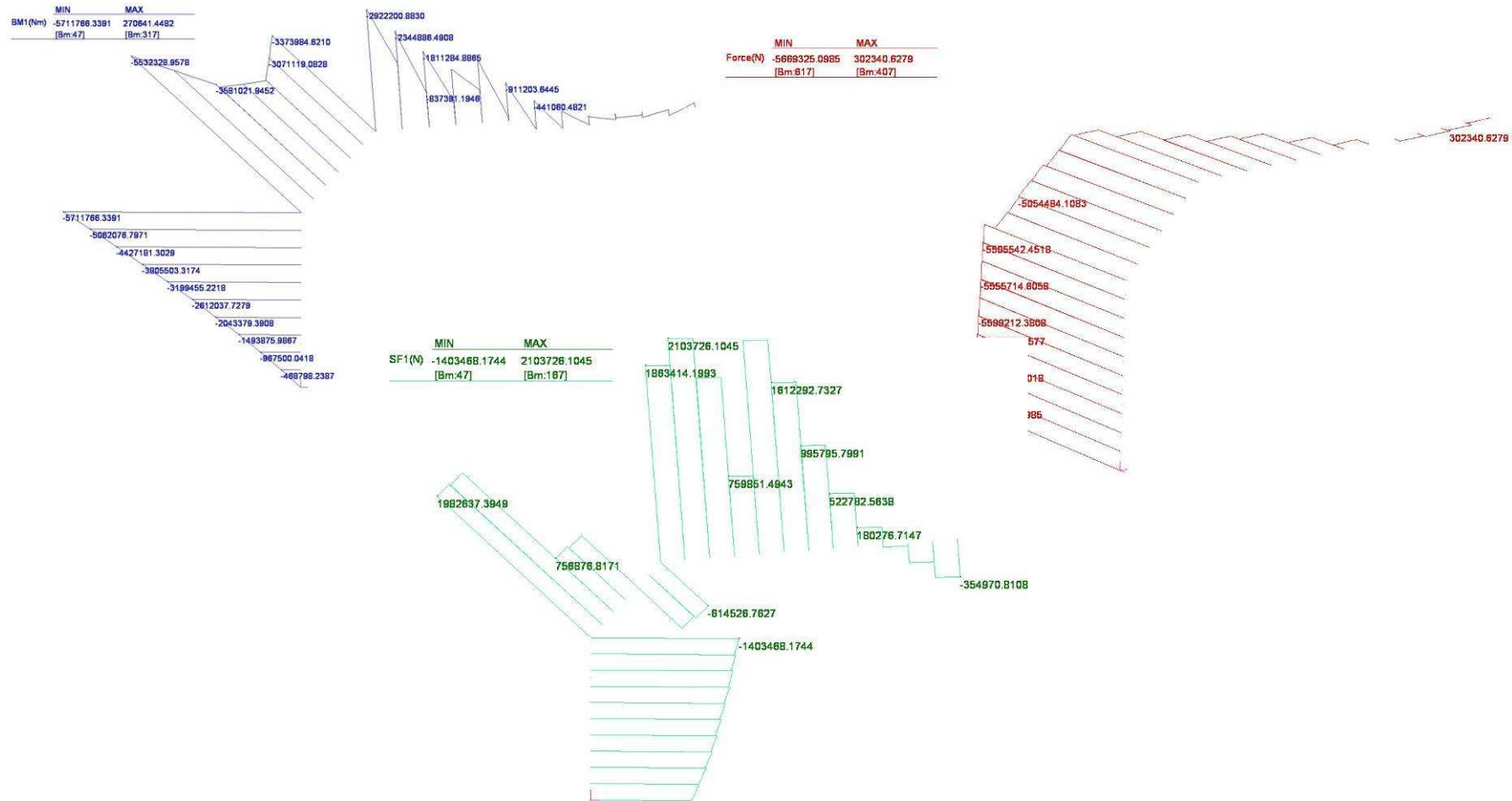


Moment @ C



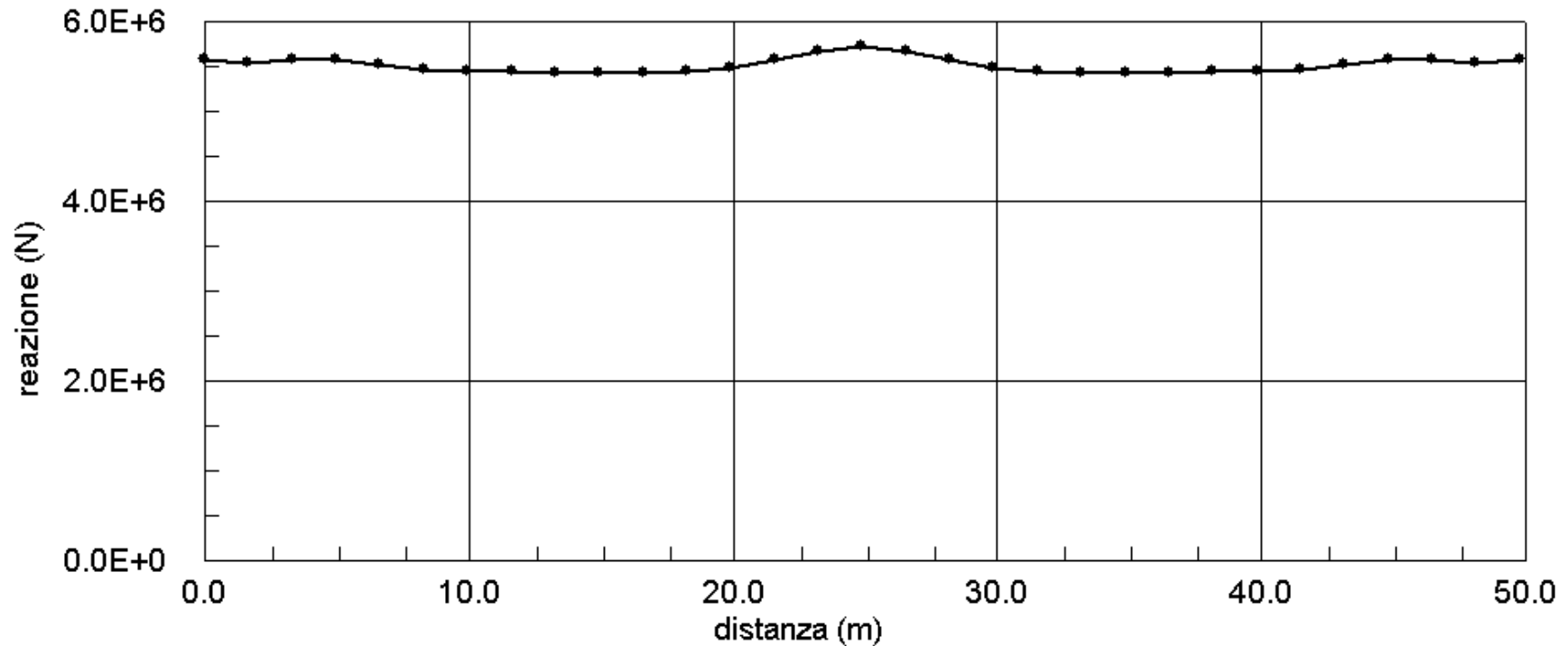
# GALLERIA PARAMASSI

## VERIFICHE SLE SLU SLV



# GALLERIA PARAMASSI

## FONDAZIONI

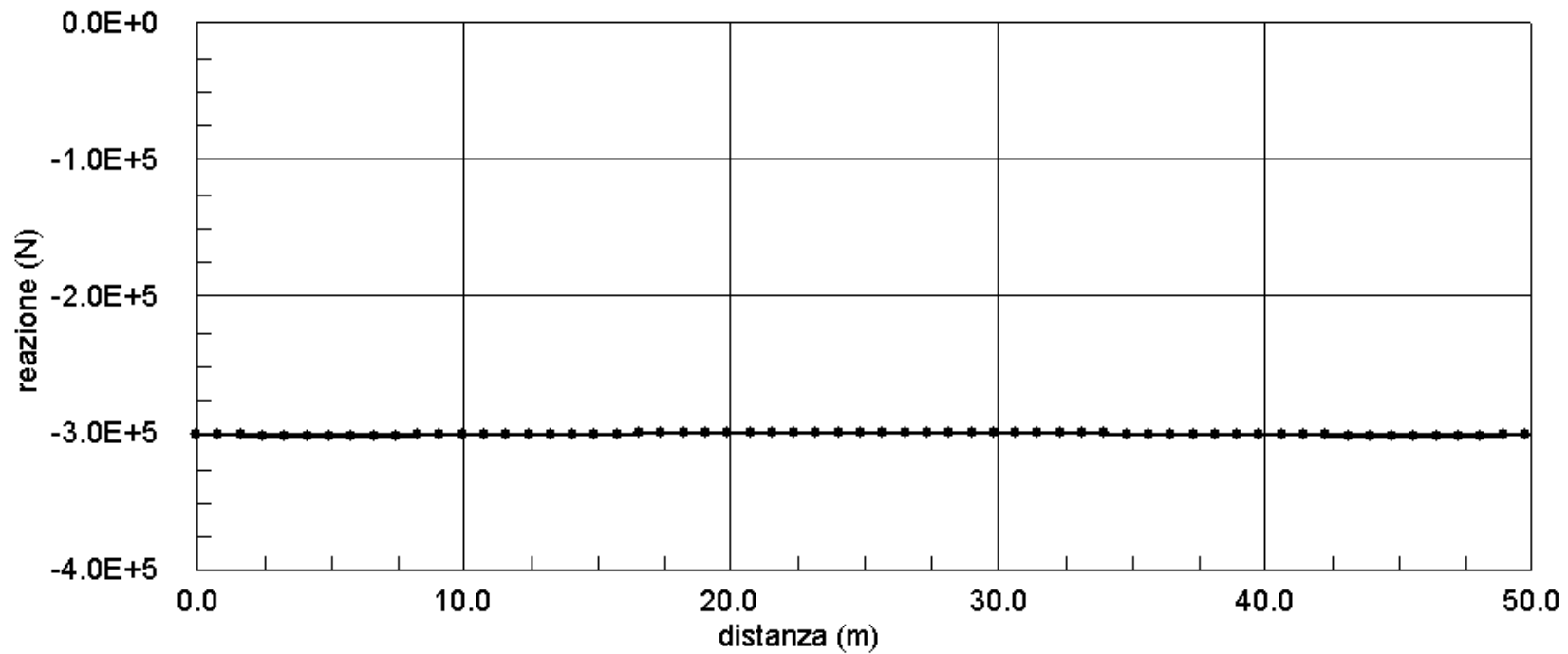


**SLU - SFORZO VERTICALE SU FONDAZIONI**

max=2.2 MPa

# GALLERIA PARAMASSI

## ANCORAGGI



**SLU - SFORZO VERTICALE SU ANCORAGGI**

max=875 kN

# GALLERIA PARAMASSI

## NUOVO APPROCCIO – VANTAGGI

- Opera più **efficiente**
- Struttura **leggera**
- Migliore inserimento **ambientale**
- Facilità di **cantierizzazione**
- Riduzione **tempi** di realizzazione
- Aumento della **sicurezza**

GRAZIE DELL'ATTENZIONE



[info@rockfalldefence.com](mailto:info@rockfalldefence.com)

[www.rockfalldefence.com](http://www.rockfalldefence.com)

+39.0461.60.55.28