

# MOPS 06 PETRIOLO

## I. General Settings

### A. Project

**Title:** MOPS 06 PETRIOLO

**Notes:**

**File prefix:**

**Units System:** Metric

### B. Type of Analysis

**Analysis Method:** Equivalent Linear (EQL)

**Approach:** Time Series

**Properties Varied:** False

### C. Layer Discretization

**Maximum frequency:** 20 Hz

**Wavelength fraction:** 0.2

### D. Equivalent Linear Parameters

**Effective strain ratio:** 0.65 Hz

**Error tolerance:** 2

**Maximum number of iterations:** 10

## II. Soil Types

### A. RI

### B. SF

### C. ALS

### D. Bedrock

### A. RI

**Name:** RI

**Notes:**

**Unit Weight:** 18 kN/m<sup>3</sup>

**Initial Damping:** 2

**Varied:** True

### Shear Modulus Reduction Damping Ratio

**Type:** Shear Modulus  
Reduction

**Name:** RI mogliano

Strain (%)	G/Gmax
1.00e-4	0.996
5.00e-4	0.981
1.00e-3	0.962
2.00e-3	0.927
5.00e-3	0.841
1.00e-2	0.736
2.00e-2	0.605
3.00e-2	0.526
4.00e-2	0.472
5.00e-2	0.432
7.50e-2	0.361
1.00e-1	0.313
2.00e-1	0.198
5.00e-1	0.091
7.50e-1	0.062
1.00e+0	0.048

**Type:** Damping Ratio

**Name:** RI mogliano

Strain (%)	Damping (%)
1.00e-4	0.949
5.00e-4	1.239
1.00e-3	1.498
2.00e-3	1.905
5.00e-3	2.805
1.00e-2	3.894
2.00e-2	5.454
3.00e-2	6.605
4.00e-2	7.523
5.00e-2	8.282
7.50e-2	9.737
1.00e-1	10.793
2.00e-1	13.229
5.00e-1	15.758
7.50e-1	16.555
1.00e+0	17.009

### B. SF

**Name:** SF

**Notes:**

**Unit Weight:** 21 kN/m<sup>3</sup>

**Initial Damping:** 1  
**Varied:** True

**Shear Modulus Reduction** **Damping Ratio**  
**Type:** Shear Modulus Reduction **Type:** Damping Ratio  
**Name:** SF mogliano **Name:** SF mogliano

Strain (%)	G/Gmax
1.00e-4	1.000
3.16e-4	0.990
1.00e-3	0.980
3.16e-3	0.970
1.00e-2	0.960
3.16e-2	0.950
1.00e-1	0.925
3.16e-1	0.922
1.00e+0	0.920
1.14e+0	0.900

Strain (%)	Damping (%)
1.00e-5	1.600
3.35e-3	1.772
4.88e-3	1.943
6.13e-3	2.115
7.23e-3	2.286
8.25e-3	2.458
1.06e-2	2.887
1.09e-2	2.937
1.11e-2	2.973
1.28e-2	3.316
2.20e-2	5.032
3.33e-2	6.748
7.25e-2	10.180
3.73e-1	15.329
1.14e+0	17.045

### C. ALS

**Name:** ALS  
**Notes:**  
**Unit Weight:** 22 kN/m<sup>3</sup>  
**Initial Damping:** 1  
**Varied:** True

**Shear Modulus Reduction** **Damping Ratio**  
**Type:** Shear Modulus Reduction **Type:** Damping Ratio  
**Name:** ALS **Name:** ALS mogliano

Strain (%)	G/Gmax
1.00e-5	1.000
3.35e-3	0.990
4.88e-3	0.980
6.13e-3	0.970
7.23e-3	0.960
8.25e-3	0.950
1.06e-2	0.925
1.09e-2	0.922
1.11e-2	0.920
1.28e-2	0.900
2.20e-2	0.800
3.33e-2	0.700
7.25e-2	0.500
3.73e-1	0.200
1.14e+0	0.100

Strain (%)	Damping (%)
1.00e-5	1.600
3.35e-3	1.772
4.88e-3	1.943
6.13e-3	2.115
7.23e-3	2.286
8.25e-3	2.458
1.06e-2	2.887
1.09e-2	2.937
1.11e-2	2.973
1.28e-2	3.316
2.20e-2	5.032
3.33e-2	6.748
7.25e-2	10.180
3.73e-1	15.329
1.14e+0	17.045

### D. Bedrock

**Unit weight:** 22 kN/m<sup>3</sup>  
**Damping:** 1

## III. Soil Layers

Depth (m)	Thickness (m)	Soil Type	Average Vs (m/s)
0	4.7	<a href="#">RI</a>	110
4.7	2	<a href="#">SF</a>	491
6.7	40	<a href="#">ALS</a>	621
46.7	---	<a href="#">Bedrock</a>	800

#### IV. Motion(s)

Input Location: Bedrock

Name	Description	Type	PGA (g)	PGV (cm/s)	Scale Factor
Input_MOGLIANO_475yrs\3A.MZ11..HNE.D. 20161030.064018.C.ACC.ASC		Outcrop (2A)	0.17	15.43	1.00
Input_MOGLIANO_475yrs\BO.SMN0A..HNE.D. 20001006.043017.C.ACC.ASC		Outcrop (2A)	0.23	20.96	1.00
Input_MOGLIANO_475yrs\I1.A6391..HNE.D. 19990506.230051.C.ACC.ASC		Outcrop (2A)	0.16	11.00	1.00
Input_MOGLIANO_475yrs\IT.CLO..HGN.D. 20161026.191806.C.ACC.ASC		Outcrop (2A)	0.19	12.81	1.00
Input_MOGLIANO_475yrs\IT.MMO..HGN.D. 20161026.191806.C.ACC.ASC		Outcrop (2A)	0.17	13.50	1.00
Input_MOGLIANO_475yrs\IT.MMO..HGN.D. 20161030.064018.C.ACC.ASC		Outcrop (2A)	0.19	11.41	1.00
Input_MOGLIANO_475yrs\IV.T1212..HNE.D. 20161026.171036.C.ACC.ASC		Outcrop (2A)	0.18	12.26	1.00