

MOPS 02 PETRIOLO

I. General Settings

A. Project

Title: MOPS 02 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. SMtf](#)

[C. SF](#)

[D. ALS](#)

[E. Bedrock](#)

A. RI

Name: RI

Notes:

Unit Weight: 18 kN/m³

Initial Damping: 2

Varied: True

Shear Modulus Reduction Damping Ratio

Type: Shear Modulus
Reduction

Type: Damping Ratio

Name: RI mogliano

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

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. SMtf

Name: SMtf

Notes:

Unit Weight: 20 kN/m³

Initial Damping: 2

Varied: True

Shear Modulus Reduction Damping Ratio

Type: Shear Modulus Reduction

Type: Damping Ratio

Name: SM tf

Name: SM tf Petriolo

Strain (%)	G/Gmax
1.00e-5	0.990
1.57e-3	1.149
2.56e-3	1.309
3.43e-3	1.468
4.24e-3	1.627
5.02e-3	1.787
6.92e-3	2.185
7.14e-3	2.232
7.29e-3	2.265
8.81e-3	2.584
1.72e-2	4.177
2.83e-2	5.771
7.04e-2	8.959
4.51e-1	13.740
1.56e+0	15.333

Strain (%)	Damping (%)
1.00e-5	0.990
1.57e-3	1.149
2.56e-3	1.309
3.43e-3	1.468
4.24e-3	1.627
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7.14e-3	2.232
7.29e-3	2.265
8.81e-3	2.584
1.72e-2	4.177
2.83e-2	5.771
7.04e-2	8.959
4.51e-1	13.740
1.56e+0	15.333

C. SF

Name: SF

Notes:

Unit Weight: 21 kN/m³

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

D. ALS

Name: ALS

Notes:

Unit Weight: 22 kN/m³

Initial Damping: 5

Varied: True

Shear Modulus Reduction Damping Ratio

Type: Shear Modulus Reduction

Name: ALS

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

Type: Damping Ratio

Name: ALS mogliano

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

E. Bedrock

Unit weight: 22 kN/m³

Damping: 1

III. Soil Layers

Depth (m)	Thickness (m)	Soil Type	Average Vs (m/s)
0	3	RI	110
3	17	SMtf	396
20	8	SE	491
28	20	ALS	621
48	---	Bedrock	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