

Station Description Sheet **TST_018**

1. General Information
2. Geographical Information / Geomorphology
3. Geological Information
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1. GENERAL INFORMATION



Photo 1: Outside view of the hosting building



Photo 2: The TST_018 sensor

Station Code: TST_018

Network: Euroseis

Instrumentation: Check the up-to-date EUROSEISTEST stations history file at <http://euroseisdb.civil.auth.gr/stations>

Power supply: AC

Housing: in a 18.4m deep borehole at the center of the valley

2. GEOGRAPHICAL INFORMATION / GEOMORPHOLOGY



Figure 1: Location map of TST_018 station

Location: in the Mygdonian basin

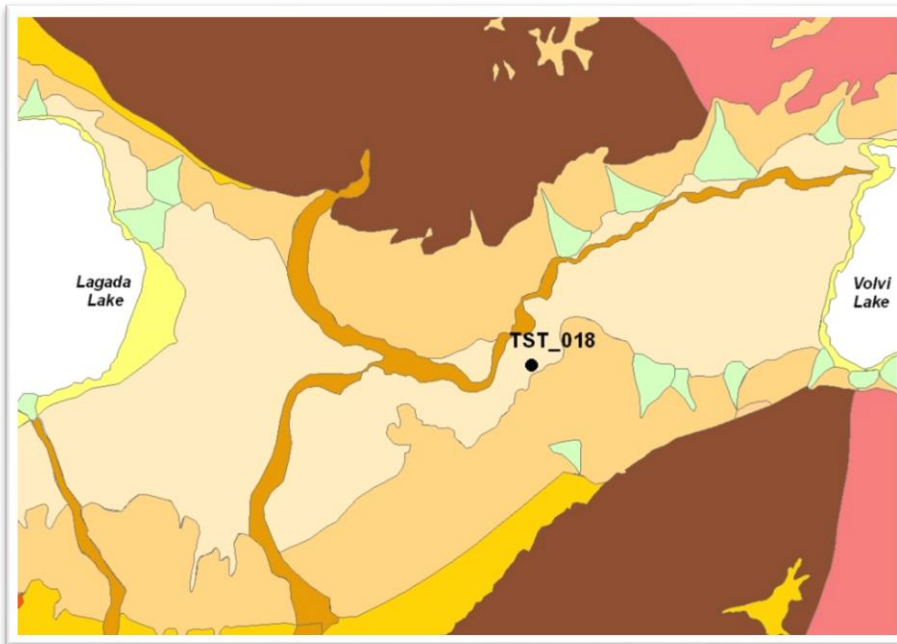
Elevation (from sea level): -18.4 m

Station coordinates: 23.2906⁰E / 40.6638⁰N

Projection system: WGS84

Site morphology: Valley center

3. GEOLOGICAL INFORMATION



Legend

- Holocene**
 - Lacustrine sediments
 - River deposits/torrent beds
 - Valley deposits
- Pleistocene**
 - Lacustrine sediments
 - Terrestrial (river and flood) red beds
- Quaternary**
 - Alluvial fans
- Alpine formations**
 - Two-mica and biotite granite
 - Two-mica gneiss

Figure 2: Geological map of the central Mygdonian basin

Surface geology (from geological map): on Holocene valley deposits

Reference for geological map: Geological map of Greece - Scale 1:50000, Map Sheets of "Thermi" and "Zagliverion", (IGME, 1978)

Boreholes (with core description) in the proximity of the station: not known.

4. GEOTECHNICAL SITE CHARACTERIZATION

Geotechnical site characterization data for station TST_018 include:

1. Sampling borehole (EUROSEISTEST Project Reports, 1993-1995).
2. Normal Penetration test (EUROSEISTEST Project Reports, 1993-1995).
3. Cone penetration test (EUROSEISRISK project reports, 2002 – 2005).
4. Laboratory tests (G-γ-D curves, etc.) (EUROSEISTEST Project Reports, 1993-1995).

Data are available in ascii format in:

http://euroseisdb.civil.auth.gr/uploads/station/geotechnical/19/Site_characterization_geotechnical_TST_018.txt

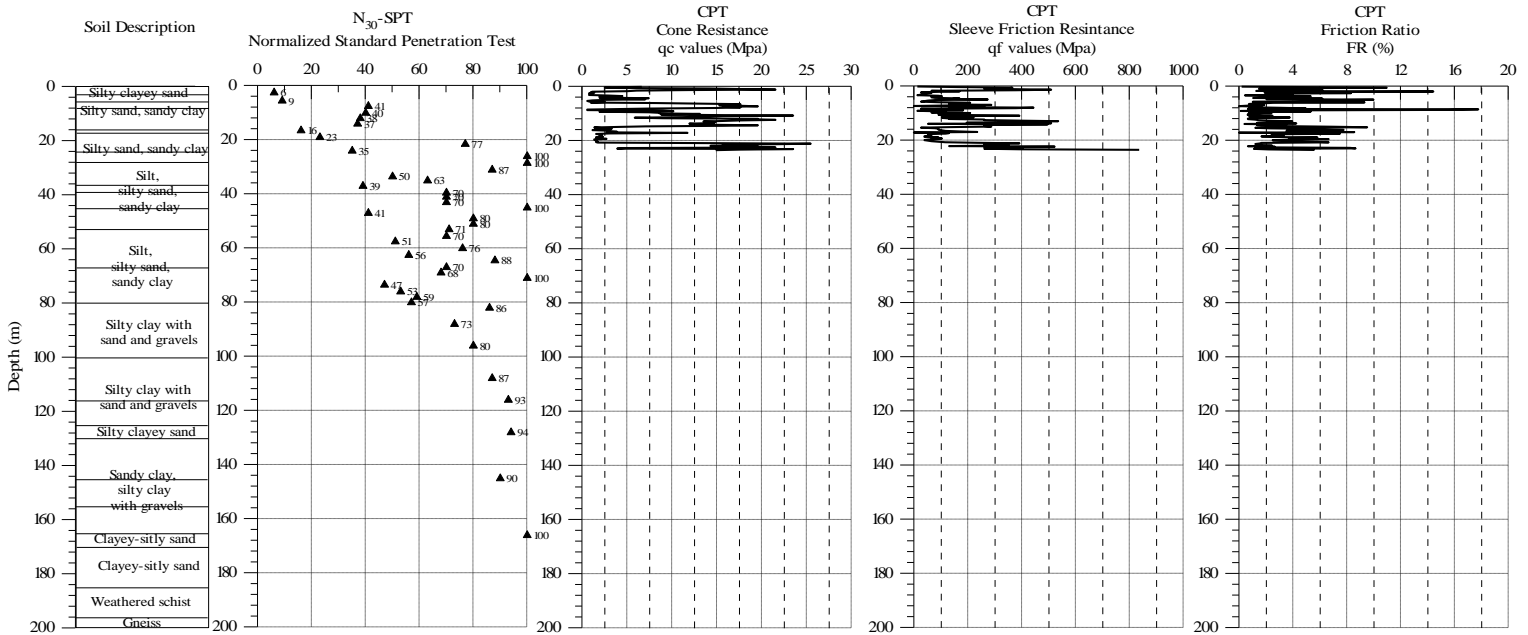


Figure 3: Geotechnical data at station TST_018

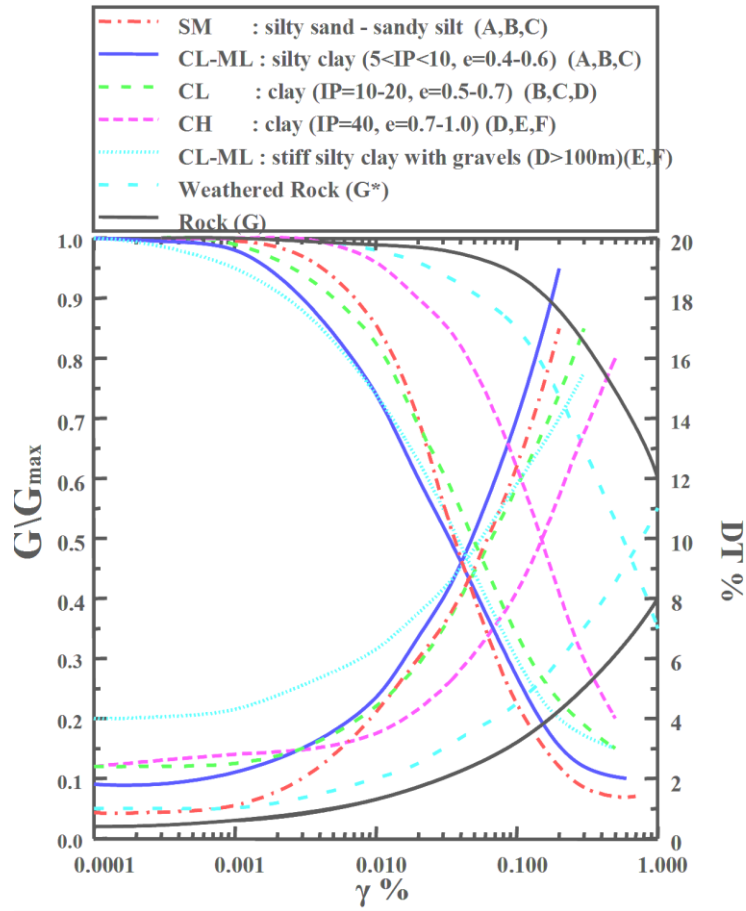


Figure 4: Mean G/G_0 - γ - D curves from resonant column and cyclic triaxial tests for all geotechnical formations occur at station TST_018. The curves describe the shear modulus degradation with the shear strain and the respective internal damping increase.

5. GEOPHYSICAL SITE CHARACTERIZATION

Geophysical site characterization data for station TST_018 include:

1. Shear wave velocity values (V_s) / determined by Surface Wave Inversion method (Raptakis et al., 2000).
2. Compression wave velocity values (V_p) / determined by Surface Wave Inversion method (Raptakis et al., 2000).
3. Quality factor (Q_s) / determined by Surface Wave Attenuation Analysis (Raptakis et al., 2000).

Data are available in ascii format in:

http://euroseisdb.civil.auth.gr/uploads/station/geophysical/19/Site_characterization_geophysical_TST_018.txt

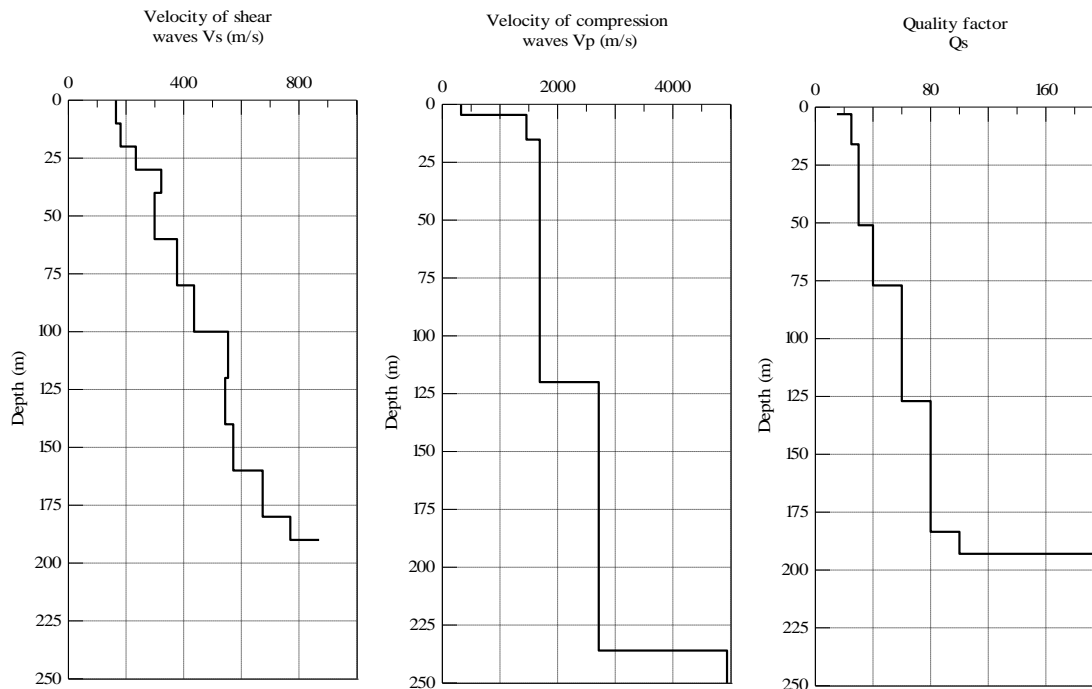


Figure 5: Shear and compression wave velocity and Quality factor values at station TST_018.

6. SITE RESPONSE

The reader is referred to site response information available at the surface (station TST):

http://euroseisdb.civil.auth.gr/uploads/station/response/18/Site_response_TST.txt

7. REFERENCES

- EUROSEISTEST Project Reports, 1993–1995. (*Available in PDF upon request*)
 EUROSEISRISK Project Reports, 2002–2005. (*Available in PDF upon request*)
 IGME, 1978. Geological map of Greece - Scale 1:50.000. Map Sheets of "Thermi" and "Zagliverion".
 Raptakis D, Theodulidis N, Pitilakis K., 1998. Data Analysis of the EURO-SEISTEST Strong Motion Array in Volvi (Greece): Standard and Horizontal-to-Vertical Spectral Ratio Techniques. *Earthquake Spectra*, Vol. 14(1), pp. 203-223.
 Raptakis D., F.J. Chávez-García, K. Makra and K. Pitilakis, 2000. Site effects at Euroseistest Part I. Determination of the valley structure and confrontation of observations with 1D analysis, *Soil Dynamics and Earthquake Engineering*, Vol. 19, pp. 1-22.