UE Near surface geophysics

ECTS
6 credits

Component
UFR PhITEM (physique, ingénierie, terre, environnement, mécanique)

Semester
Automne

- **Teaching language(s):** French
- **Open to exchange students:** Yes
- **Code d'export Apogée:** PAX9RIAE

Presentation

Description

Near Surface Geophysics is open to Georisks, Geophysics and MEEES paths. The course starts with a brief reminder of the basics in Geophysical imaging (Seismic refraction, electrical soundings) and evolves towards more advanced methods: i) inversion-based methods such as tomography techniques (electric, seismic) and surface wave investigations, and ii) methods based on more advanced signal processing such as Ground Penetrating Radar and advanced Seismic reflection techniques. A specific GPS course is also included.

The course is a bit data oriented with training using different geophysical softwares (electrical and seismic tomography, Surface wave inversion, Seismic Unix).

A fieldwork is included (generally on a landslide) and data acquired in the field are then post-processed and analyzed to produce a report.

Course parts

CMTD	Lectures (CM) & Teaching Unit (UE)	12h
TD	Tutorials (TD)	6h
TP	Practical work (TP)	21h
TERRAIN	Terrain	9h

Recommended prerequisites

General signal processing knowledge as well as basics of geophysical imaging in 1D (electrical soundings, seismic refraction) are a plus. Having followed the exploration geophysics course in semester 8 (first year master)

Period : Semester 9

Skills

Critical analysis of geophysical methods popular for natural hazards and environement. Data processing and interpretation.

Bibliography

S. Stein and W. Wusession, An introduction to seismology, earthquakes and eath structures

Useful info

Place

- Grenoble

Campus

- Grenoble - Saint-Martin d'Hères