UE Instrumentation for geophysics

ECTS
3 credits

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

Semester
Printemps

> **Teaching language(s):** English

> **Open to exchange students:** Yes

> **Code d'export Apogée:** PAX8GEAB

Presentation

Description

This module proposes the practical application of the knowledge acquired in the module "Geophysical observation of the Earth" in the disciplines of seismology and space geodesy by GNSS (Global Navigation Satellite Systems). The aim is to master the entire GNSS measurement chain: handling the receiver, deploying the GNSS station with precise centring of the antenna receiving the GNSS signal, downloading and formatting the acquired data. The analysis of these data with an open source software will allow to reach a positioning accuracy of a few mm. The target of the measurements will be a landslide in the Trièves region. We will quantify its rate of displacement by combining the measurements taken with observations from previous years.

For seismology, we will deploy a classic seismological station completed by new generation instruments of the 'nodes' type and possibly fibre optics, DAS technique. We will address the issues of site selection according to ambient noise conditions, precise sensor installation, GPS data dating and remote data recovery. The target of the measurements will be the same landslide in the Trièves region. We will study seismological approaches to characterise both the seismic properties of this landslide and their temporal evolution.

Prerequisite: having followed the module "Geophysical observation of the Earth" in S1

Course parts

UE Instrumentation for geophysics - TD	Tutorials (TD)	6h
UE Instrumentation for geophysics - CM/TD	Lectures (CM) & Teaching Unit (UE)	9h
UE Instrumentation for geophysics - terrain	Terrain	6h

Useful info

Campus

> Grenoble - University campus