

Advanced Earthquake Seismology

Lecturers	Prof. G. Festa (gaetano.festa@unina.it)
Credits	2 CFU
Planned hours	12
Planned schedule	First year - To be arranged in discussion with students
Prerequisites	
Description	This course offers an in-depth exploration of earthquake seismology, focusing on state-of-the-art techniques for earthquake characterization from both observational and modeling perspectives. Students will gain proficiency with modern observational tools, such as DAS technology and seismic arrays, as well as advanced methods for analyzing data related to microseismicity and the characterization of large-scale seismic events. Syllabus • New instrumentation for earthquake monitoring ◦ Seismic Arrays ◦ DAS technology ◦ Geodetic measurements • Earthquake source ◦ Introduction to earthquake source ◦ Earthquake dynamics ◦ Point source vs finite source approximation • Microseismicity analysis ◦ Event detection and catalogue enhancement based on Machine Learning and Template Matching ◦ Source parameter estimation • Finite source models ◦ Full-waveform inverse techniques ◦ Back-projection