

Understanding the induced seismicity via laboratory experiments: How does an earthquake sound like?

Semih Turkaya works as a postdoctoral researcher in Ecole Normale Supérieure de Lyon since December 2016. His research topic is to quantify the uncertainties of earthquake locations in seismic catalogs of the Pyrenees region.

He likes working on microseismic emissions during fluid flow into the porous medium which can be seen in nature as volcano explosions, magma flow, geysers. Microseismic emissions generated by human activity is known as induced seismicity.

He is working on analog and numerical modelling of microseismic emissions since 2013 in University of Strasbourg in collaboration with PoreLab, University of Oslo. The microseismic events are induced via air injection in an experimental setup composed of a transparent Hele-Shaw cell filled with a fine porous medium. These emissions are recorded via 4 accelerometers placed on different points on the glass plates of the cell. Simultaneously, the deformation of the porous medium is optically monitored with a high speed camera.

He has around 10 publications in journal of physics and geophysics. He also works on waves on thin plates, source localisation of acoustic waves and lab scale microseismicity. He developed a new energy based signal localisation method which is published in Review of Scientific Instruments in 2016.

In his undergraduate period, he studied Civil Engineering in METU in Turkey(2006-2010). Then, continued his studies with Erasmus Mundus Masters of Earthquake Engineering and Engineering Seismology Programme in UJF Grenoble and IUSS Pavia (Rose School) until 2013. As a researcher, he likes playing with waves propagating in different types of materials, investigating mechanics of granular media and fluids.