**Group of Crustal Deformation
and Fluid Flow**

PhD and PostDoc Positions in seismology of geothermal systems using dense nodal networks.

The Group of Crustal Deformation and Fluid Flow at the University of Geneva, link is seeking to fill up two positions in seismology for a project lasting 4 years investigating the Larderello-Travale geothermal field, Italy. We are looking for one PhD student (4 years) and one PostDoc (2+2 years) with experience with passive seismic methods. Senior PostDocs are also invited to apply. The candidates, supported by the Swiss National Science foundation, funding scheme SINERGIA, will work in the framework of the project **MIGRATE** - A **M**ultidisciplinary and **I**nte**GR**ated **A**pproach for geo**T**hermal **E**xploration. MIGRATE combines seismological, machine learning and geological methods to investigate the upper crust in high-enthalpy geothermal systems. The two candidates will closely collaborate with 4 more fellows hired at the HES –SO (Department of Business Informatics, University of Applied Sciences, Western Switzerland) and at the IGG – CNR Florence (National Institute of Geosciences and Georesources, National Research Center, Italy), working on Machine Learning and Geological tools, respectively. The PhD student will develop a velocity model of the Larderello-Travale geothermal field at the regional and local scale using traveltime earthquake tomography and investigate the regional crustal stress field with moment tensor inversion. Ideally, the PhD student will have previous experience with seismicity detection and localization, moment tensor solutions and/or local earthquake tomography.

The PostDoc/Senior PostDoc will ideally be familiar with ambient noise seismic methods for the Investigation and understanding of geothermal and volcanic systems, and (as a bonus) have experience working with dense nodal networks. His/Her role will be to collaborate with the machine learning team of HES-SO and develop end-to-end unsupervised inversions of ambient noise data acquired with large-N nodal networks. In particular, the candidate will develop ambient noise tomography with surface waves and participate in methodological developments regarding the extraction of body waves from noise. For both positions, the project will require fieldwork and participation in the activities of our field-oriented team. A good understanding of geological systems to gather site-specific geological/geophysical prior information is an advantage. The researcher will have the opportunity to teach in the framework of the MSc and BSc programs of the Department of Earth Sciences (https://www.unige.ch/sciences/terre/en/) and will be encouraged to attend national and international conferences and publish in high-impact journals. The selection of the candidates will start on the 15th of July 2021 and will continue until suitable profiles are found.

The required skills for these positions are:
- For the PhD Position: MSc (for the PhD position) and PhD (for the PostDoc) in seismology/Geophysic or physics.
- Experience in seismic data processing and tomography methods.
- For the PostDoc position: knowledge and/or experience working with ambient noise data.
- Strong programming skills (Python, Matlab, C, Fortran or similar, familiarity with the unix environment).
- Fluency in English.

The following skills are desired:
- Experience with clusters
- Experience in the geothermal sector or in the study of volcanic systems.
- Previous fieldwork experience.
- Driving license.
- Fluency in Italian, French and/or German is an asset.

Expected starting date: Fall 2022 or upon agreement, at the very latest February 2023.
To apply please send an email to Prof. Lupi (Matteo.Lupi@unige.ch) and to Dr. Savard (Genevieve.Savard@unige.ch) with the subject: MIGRATE: PhD application or MIGRATE: PostDoc Application, if you are applying for a PhD or a PostDoc position, respectively.

Applications must include:
• Cover letter explaining the reasons for applying and a research statement describing the main Research interests and vision (max. 3 pages).
• Full Curriculum Vitae, including previous employment and university training, the date and title of the doctoral thesis (including proof of awarded title), publications, conference presentations/invited lectures, classes taught, and any student research supervised if applicable.
• Links to the PDFs of the most significant publications (max 3).
• Names and contact information of up to 3 referees that can be contacted.

Additional info:
Geneva is an international city, surrounded by a spectacular natural setting, located at the core of Europe. The University of Geneva is an equal opportunity educator and employer committed to Excellence through diversity. For more information, please contact Matteo Lupi and Genevieve Savard.