Four Research Positions in Seismology

Department of Earth Sciences, ETH Zurich

The Chair of Seismology and Geodynamics (seg.ethz.ch) at the department of Earth Science (ERDW) of ETH Zurich, and the Chair of Seismology that directs the Swiss Seismological Service at ETH Zurich (SED, www.seismo.ethz.ch) are offering up to four postdoc or senior researcher positions in different areas of seismology. We are looking for excellent scientists that will join ongoing interdisciplinary teams and research efforts, focused on enhancing the understanding of natural and induced earthquakes, as well as marsquakes. The positions are centred in the following domains:

Computational Earthquake Physics: With funding from the ERC Synergy project FEAR "Fault Activation and Earthquake Rupture" (Partners ETH (Giardini/Wiemer), INGV Rome (Cocco), RTWH Aachen (Amann)), we are conducting earthquake nucleation experiments at deca-meter scale at the Bedretto Underground Laboratory for Geoscience and Geoenergies (www.bedrettolab.ethz.ch). As part of a highly interdisciplinary team of Earth scientists you will be involved in designing and modelling experiments on earthquake nucleation, propagation and termination. We are looking for candidates that can advance the state-of-the-art in computational earthquake physics, exploiting unique experimental data at different scales (Contact: Prof. D. Giardini).
APPLY HERE: https://www.jobs.ethz.ch/job/view/JOPG_ethz_mRC1QTX31mqjPQehph

Observational Seismology: The FEAR project and Bedretto Lab in general offer also unique opportunities to observe and analyse countless pico-earthquakes induced during stimulation or mine-by experiments under controlled and repeatable conditions. Using borehole-based multi-parameter arrays of sensors, we aim to observe and model fluid-rock interactions, effects of tunnelling and other triggering mechanism and interpret them in a multidisciplinary context. You will be involved in the design, installation as well as in the execution of injection experiments and the analysis of the seismic data collected. We are interested in candidates with expertise in earthquake location and source parameter determination, using traditional and machine-learning based approaches (Contact: Prof. S. Wiemer).
APPLY HERE: https://www.jobs.ethz.ch/job/view/JOPG_ethz_NOmK9iHrO2ULXLKo0C

Statistical Seismology: We are leading a large international and multidisciplinary EC GEOTHERMICA project on de-risking enhanced geothermal energy projects (DEEP). You will join a team of observational seismologists, reservoir engineers and software developers in the quest to develop and test innovative seismic monitoring systems and data-driven, real time risk assessment and risk mitigation approaches. We are looking for candidates with experience in the analysis and forecasting of induced seismicity using statistical, hybrid and physics-based approaches. Uncertainty quantification, ensemble modelling and real-time performance evaluation are required skills. The project will be conducted in close collaboration with industry partners and in partnership with the US Department of Energy geothermal test site FORGE in Utah (Contact: Prof. S. Wiemer).
APPLY HERE: https://www.jobs.ethz.ch/job/view/JOPG_ethz_h4YNqogXHhHjxwg7cR

Planetary Seismology: As part of the ongoing NASA-ESA Mission Insight (www.insight.ethz.ch) a single seismometer is installed on Mars, delivering unique data on the seismicity and structure of Mars. InSight is a large collaborative effort with many partners from Europe and the US, and strong international collaboration is expected in all scientific investigations. You will bring expertise in seismic waveform simulation and interpretation, detection and characterization of marsquakes and determination of the elastic and anelastic structure of crust, mantle and core. You will a become a

member of a multi-disciplinary team operating the MarsQuake Service and working on the analysis of seismic data (Contact: Prof. D. Giardini).
APPLY HERE: https://www.jobs.ethz.ch/job/view/JOPG_ethz_aU5GCjxk6xsC76GFmF

The positions are initially funded for three years, with the possibility of extension, part time employment can be considered if justified. The candidates will work in a highly collaborative environment with close links to academic and industry partners and will have the opportunity to participate in student supervision, teaching and proposal writing. Our aim is to create cross-fertilization within diverse and interdisciplinary teams that sparks insight and innovation

Applications to more than one position is possible but needs to be well justified. The working language at the department is English. At the Department of Earth Sciences, we are committed to promoting flexible and family-friendly working models, and a healthy work-life balance is important to us. ETH Zurich supports a policy for diversity and inclusion and we especially encourage qualified female candidates to apply.

Interested candidates should have:

1. A PhD in Geophysics, Geology, Physics, Engineering, Astronomy, Statistics or equivalent, relevant for the specific position(s) to which you are applying
2. A proven record of excellence and innovation in a relevant domain of seismological research, and the interest to work in a highly collaborative and team-oriented environment.
3. Proficiency in written and spoken English, experience in project management, supervision etc, is considered a plus.

We look forward to receiving your online application by Nov. 30, 2020, including the following documents:

- Cover letter that describes your motivation, research interest and research experience, relevant for the position(s) for which you are applying
- Full CV, including list of publications
- Contact details of at least two referees

You may apply to more than one position. Please note that we exclusively accept applications submitted through our online application portal. A first round of online interviews will take place in December. Applications via email or postal services will not be considered. Questions regarding the positions should be directed to the names responsible for each position, domenico.giardini@erdw.ethz.ch or stefan.wiemer@sed.ethz.ch (no applications).