

## POSTDOCTORAL RESEARCHER - UNIVERSITY OF STRASBOURG, FRANCE

The Seismology team at University of Strasbourg (France) is seeking a postdoctoral researcher to investigate the initiation of large earthquakes using near-fault geodetic observations. This project aims to extract the physics of earthquake nucleation using a new approach to the modeling of fault slip evolution over time.

Although it is well established that some events are preceded by foreshocks, it is still unclear whether these foreshocks belong to a cascade of random failures leading to the mainshock or if they are markers of aseismic slip during the nucleation process (e.g., Bouchon et al., 2011; Ellsworth and Bulut, 2018). The postdoc in this position will assess these competing models by discriminating seismic and aseismic processes during the initiation of recent large earthquakes. This will rely on a unified probabilistic approach combining geodesy and seismology to infer the evolution of slip and stress evolution before large earthquakes.

A PhD in geophysics and experience in the analysis of geodetic measurements are required. Some programming skills in languages such as C, C++ and python are also highly desired. The successful candidate will be expected to perform data processing, analysis and modeling using high-performance computing and publish scientific results in top refereed journals. Funding is guaranteed for 2 year, with a possibility of continuation (funding secured through an ERC Starting Grant).

The University of Strasbourg Earth's Science department (EOST) covers a large domain of Earth Sciences, and offers excellent research conditions. With a large proportion of international students and mixing cultural diversity, Strasbourg is one of the top French city for international students (<http://www.en.unistra.fr>).

Application documents: please send a cover letter explaining your motivation for the position, a CV, a list of publications and the names of three references (for letters of recommendation) to [zacharie.duputel@unistra.fr](mailto:zacharie.duputel@unistra.fr). Review of materials will begin immediately.

### References:

- Bouchon, M., Karabulut, H., Aktar, M., Ozalaybey, S., Schmittbuhl, J., Bouin, M.P., 2011. Extended Nucleation of the 1999 Mw 7.6 Izmit Earthquake. *Science* 331, 877–880. doi:10.1126/science.1197341
- Ellsworth, W.L., Bulut, F., 2018. Nucleation of the 1999 Izmit earthquake by a triggered cascade of foreshocks. *Nature Geosci.* 11, 531–. doi:10.1038/s41561-018-0145-1