Institut de Génie Civil
Institute of Civil Engineering
Laboratoire de Géo-Energie
Geo-Energy Laboratory

Lausanne, March 3, 2020

Post-doctoral scholar opportunity at EPFL - Acoustic imaging of fluid driven crack growth in geo-materials

A post-doctoral position is available at EPFL's Geo-Energy Lab located within the school of Architecture, Civil and Environmental Engineering. The position involves in-depth analysis of experimental investigations of fluid driven fracture growth in geo-materials in both opening and shear modes using an unique large true-triaxial apparatus equipped with an extensive array of piezo-electric transducers. The acoustic measurement system allows to perform a 4D seismic survey in the ultrasonic range during fracture propagation (using a total of 64 sensors). 16 additional sensors work in continous listening mode to monitor acoustic emission events (micro-earthquakes) during rupture growth. Current research interests are related to the effects of damage around mode I hydraulic fractures, rock anisotropy on fracture growth and propagation of fluid activated shear cracks along pre-existing faults (and notably the transition between aseismic and seismic slip). Our ambition is to develop improved imaging of fracture growth in order to challenge theoretical predictions. Ideal candidates will have a strong background in two or more of the following disciplines: mechanics, geophysics (seismic, seismology), signal processing, inverse problems and experimental methods. The position is initially available for one year, with possibility for renewal based on performance. Starting date is negociable. EPFL offers excellent working conditions and opportunities for professional development.

Applicants should send their resume (including the contact of two references) and a brief research statement to Prof. Brice Lecampion (brice.lecampion@epfl.ch).

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