

Lausanne, September 1st, 2024

Post-doctoral Position in Rock Physics / Rock Mechanics / Geomechanics

The Geo-Energy Lab at EPFL, led by Prof. Lecampion, is seeking a highly motivated Postdoctoral Researcher with expertise in rock physics and rock mechanics. This position is designed to strengthen the connection between observational data and theory, with an emphasis on practical applications in the field of geo-energy (Geothermal, CCS).

The successful candidate will primarily focus on two key objectives: (i) advancing the setup and analysis of the lab's centimeter-scale fluid-driven rupture experiments, and (ii) strengthening the connection between observations (such as AE statistics, post-test CT scans, etc.) and the theoretical models developed within the lab. Proficiency in modern experimental techniques in rock mechanics, particularly acoustic methods for monitoring ruptures in geomaterials, is essential. In addition to actively contributing to ongoing projects (notably related to thermal energy storage), the candidate is also expected to develop new research initiatives in the field of rock failure induced by pore fluids.

Key responsibilities:

- Develop, perform & analyze laboratory scale fracture thermal energy storage experiments in the context of an international Geothermica project (DEMO-FTES).
- Develop and conduct advanced fluid-driven ruptures (fault slip, hydraulic fractures, etc.) experiments in rocks & analog materials.
- Analyze existing and novel laboratory data sets to link micro-scales observations of the fracture process with macroscopic observations (AE statistics, others) and hydro-mechanical theoretical models.
- Develop and help to maintain our decimeter scale polyaxial apparatus for hydraulic stimulation
- Participate in project reporting to funding agencies
- Mentor PhD and Master students

Qualifications & Profile:

- PhD in Geomechanics, rock physics, geophysics, or a related field.
- Strong background in mechanics & related experimental techniques. Experience with acoustic emission or other acoustic monitoring techniques would definitely be a plus.
- Excellent problem-solving skills and ability to work independently and collaboratively.
- Experienced in cross-disciplinary research and team projects is a plus.
- Track record in peer-reviewed publications and participation to international conferences.
- Excellent spoken and written English.
- A team-player, self-motivated, creative and enthusiastic about team projects; excellent communication skills.

We offer:

- A unique opportunity to work on cutting-edge projects in the field of geo-energy applied to the energy transition
- The possibility of being involved in teaching activities
- A dynamic, multidisciplinary, international and collaborative working environment based at EPFL Lausanne campus.

EPFL is an international and world-class engineering institution that hosts state-of-the-art experimental and computational facilities, a rich and vibrant scientific and entrepreneurial community. Women are strongly encouraged to apply.

The application package should include:

- A cover letter indicating the candidate's motivation for the position including alignment of his/her research interests with the lab expertise and interests
- A curriculum vitae (2 pages max.)
- A list of scientific contributions (publications, talks, posters, data sets, software)
- A list of 3 reference names (email & address)

Contract Start Date: As soon as possible

Duration: 1 year, renewable up to 4 years maximum

Activity Rate: 100%

The application should be sent to Prof. Lecampion directly (anne-francoise.suter@epfl.ch in cc) with Post-Doc Experimental GEL 2024 in the title.

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