Faculté ENAC, Institut d'ingénierie Civile
Geo-Energy Laboratory
Gaznat chair on Geo-Energy

Lausanne, February 11th, 2026

PhD Opportunities in geomechanics at EPFL

The Geo-Energy Lab at EPFL, led by Prof. Lecampion, has opportunities to pursue a fully funded PhD within the EPFL doctoral program. Our research addresses problems in the mechanics of fluid-saturated geomaterials, in particular the growth of fluid-driven discontinuities in the form of fractures and faults. Examples of applications span the fields of geo-energy (Geothermal energy, CO_2 geological storage), environmental engineering hydrology (radioactive waste management), geotechnical engineering (landslides, rock falls), seismology (fluid induced seismicity) and volcanology (diking events).

This doctoral research aims to strengthen the connection between observations and theoretical models of fluid-induced ruptures across laboratory and field scales. A central objective will be to jointly analyze the seismic and quasi-static (aseismic) signals associated with rupture processes. At the laboratory scale, the goal will be to integrate distributed fiber-optic strain sensing into a true-triaxial experimental setup designed for decimeter-scale fluid-driven fracture propagation. This addition will complement an existing high-resolution acoustic imaging system, enabling acquisition of unprecedented multimodal datasets. In parallel, inverse-problem modeling will be developed to interpret these measurements within the framework of the mechanics of fluid-driven fracture. The methodologies and models established in the laboratory will also be evaluated at field scale through external collaborations using existing datasets.

This research requires interests in the theory & numerical modeling of hydromechanical fracture problem as well as the geophysical response of geomaterials to fracture.

Qualifications & Profile:

- Passion for the mechanics of geomaterials, geophysics, fracture (both slow and fast), computational mechanics, experimental techniques, fluid and solid mechanics.
- Strong background in continuum physics & mechanics, or/and engineering, geophysics and earth science.
- Excellent problem-solving skills and ability to work independently and collaboratively.
- Excellent spoken and written English.
- A team-player, self-motivated, creative, and enthusiastic about team projects; excellent communication skills.
- See http://phd.epfl.ch/prospective for details of the EPFL doctoral program.

We offer:

- A unique opportunity to work on cutting-edge projects in the field of geo-energy, geophysics & rock mechanics
- 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 candidate(s) **must** apply to the EPFL doctoral program in mechanics (EDME) or in civil & environmental engineering (EDCE). Acceptance to the EPFL doctoral program is mandatory. A strong

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academic track record & statement of objectives are necessary. However, candidates are encouraged to *first* contact Prof. Lecampion, by providing:

- A cover letter indicating the candidate's motivation for the position, including alignment of his/her research interests with the lab's expertise and interests
- A curriculum vitae (2 pages max.)

To be sent to Prof. Lecampion directly (anne-francoise.suter@epfl.ch in cc) with PhD 2026 + your name in the title.

Anticipated Start Date: Summer - Fall 2026 (tbd)

Duration: 4 years, contingent upon fulfilling the requirements of the EPFL doctoral program.

Activity Rate: 100%

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