



PhD Student and Postdoc Positions in Rock Physics

The Institute of Earth Sciences at the University of Lausanne, Lausanne, Switzerland, has two open positions in the field of rock physics in a project funded by the Swiss National Science Foundation. These positions will be filled as one PhD student and one postdoc, or as two PhD students, depending on the received applications. A PhD position will be funded for up to 4 years. A postdoc position will be funded for 3 years, with the possibility to extend this period to a total of 5 years if additional funding is obtained.

Our objective is to investigate the energy loss of seismic waves caused by fluid flow in the pores and cracks of a rock. The importance of understanding seismic wave attenuation caused by this physical mechanism lies on the strong necessity of remotely characterizing fluid-saturated rocks in subsurface using geophysical methods. Knowledge of pore and crack characteristics and their interconnectivity is of great significance, for example, for the production of geothermal energy and the geological sequestration of CO₂.

The two successful candidates will investigate seismic wave attenuation due to squirt flow in rock pores and cracks using laboratory, computational and analytical methodologies. Synthetic and natural rock samples will be considered, with a range from idealized to complex pore geometries. The postdoc will be expected to largely focus on experimental work and on the development of corresponding methodologies.

Our institute is well equipped and scenically located on the shores of the Lake Geneva, a region of outstanding natural beauty that offers a vibrant cosmopolitan atmosphere and a high quality of life. The research project involves close collaborations with the École Normale Supérieure (ENS), Paris, France and with the University of Pau and Pays de l'Adour (UPPA), Pau, France.

A successful candidate for a PhD position must have the equivalent of an MSc degree in rock physics, rock mechanics, geophysics, or a closely related field. A successful candidate for a postdoc position must have a PhD in rock physics, rock mechanics, geophysics, or engineering, in addition to significant experience in laboratory experiments.

To apply, please send a cover letter clarifying your overall motivation for entering a PhD program or doing a postdoc, your curriculum vitae with names and e-mail addresses of two referees, transcripts of MSc and BSc courses for candidates for a PhD position, and MSc and PhD certificates for the candidates for a postdoc position, to Dr. Beatriz Quintal, beatriz.quintal@unil.ch. The successful candidates could start in March 2023 or a few months later. Applications will be accepted until the positions are filled.