



## POST DOC POSITION IN ROCK PHYSICS

- Recruitment grade: young researcher (i.e. with PhD)
- Location: Pau, France
- Duration: 12 months, expected start in February-March 2023, possible 1y renewal.
- Deadline: 31/12/22.
- Gross Salary Range: approx. 2800 €/month before taxes.

### **CONTEXT AND AIMS**

The position is designed as an active part of a larger project, THERMapp, aimed at better understanding and monitoring rocks for geothermal energy applications. The underlying strategy is finding, from the laboratory and across scales, the physical dependences relevant for - and models linking geophysical properties retrieved to - geothermal reservoir properties.

### **TASKS AND PROPOSED METHODOLOGY**

Within that framework, the sought post-doc project is mostly experimental-based.

The candidate will be tasked with developing a simple and versatile measuring platform to study rocks physical properties, encompassing strains, ultrasonic P- & S-wave velocity, plus ideally electrodes to track saturation patterns. The dependence to temperature, saturation, then stresses will be sought. The platform will be used first for research purposes, but also for teaching practical classes.

A stepwise development will be pursued of (i) set-up a platform investigating elasticity and seismic waves propagations in rocks as a function of temperature and saturation, which will run and retrieve data in parallel to the other tasks; and then (ii) linking elasticity to other physical properties, such as hydraulic and/or electrical, as a function of temperature/fluids; or (iii) seismic properties from centimetre to decimetre scale.

The successful applicant should have demonstrated skills in coding Python/Arduino codes plus use and understanding of dedicated sensors wiring applied to rock physics/geophysics issues. Skills toward development of dedicated numerical models are a plus.

## **REQUIREMENTS**

**Diploma required:** PhD in rock physics, granular physics or geophysics.

### **Required skills:**

- Strong command of Matlab or Python programming tools.
- Demonstrated knowledge of – or strong motivation toward - setting up laboratory measuring devices, and use of developing softwares such as Python and/or Arduino.
- Demonstrated knowledge on processing of retrieved seismic waves.
- Willingness to communicate, both through writing and orally, on both specialized and more general topics. A 64h/year teaching task is compulsory to the position.
- Strong command of English and French.

### **Desirable skills:**

- Willingness to adapt experimental investigation to verify existing models and theories.
- Experience on investigation of different physical properties.
- Strong background in numerical models applicable to waves, rock and/or granular media physics.

## **SUPERVISION AND CONTACT**

For additional information and proposal, please contact: [lucas.pimienta@univ-pau.fr](mailto:lucas.pimienta@univ-pau.fr)

## **FUNDING**

This post doc position is funded, within the THERMapp junior chair designed to start in December 2020, by the project E2S-UPPA (Energy Environment Solutions) whom core scientific domain focuses on Environment and Energy to meet challenges related to the energy transition, geo-resources, aquatic habitats and the environmental effects of natural and anthropogenic changes (<https://e2s-uppa.eu/en/index.html>).

## **SALARY**

The salary of the successful candidate will be based on level chart for teaching and research personnel in the salary system of French universities. Accounting for 2023 employment regulations, the gross annual salary should be around 49 400 €/year, including allowance for 64 hours teaching per year.

*In simple, gross, calculations salary amounts to approx. 2.2-2.3 k€/month after taxes.*

## **APPLICATIONS AND DEADLINE**

Please submit your application by email to [lucas.pimienta@univ-pau.fr](mailto:lucas.pimienta@univ-pau.fr)

Please attach the following documents as a single pdf file: CV, letter of motivation.

A pre-selection will be made and the selected candidates will be contacted for an interview on basis of small presentation of their research plus answering questions.

The official deadline for submitting the application is 31<sup>th</sup> December 2022.