Position Offered: UNIVERSITY GRADUATE

Project: GeotermIA

Technological and scientific fields: Artificial Intelligence, Digital Twins, Climate change

Location: Barcelona, Cataluña, IDAEA, www.idaea.csic.es

Research Group/PI: PM3 Lab, Groundwater and Hydrogeochemistry, Juan J. Hidalgo & Silvia De Simone, https://pm3lab.csic.es

PROJECT SUMMARY

GeotermIA is a project led by IDAEA-CSIC aimed to develop a tool for real time management and optimization of deep geothermal resources using artificial intelligence (AI) that can be used to build digital twins of geothermal facilities. You will work on the development of neural network algorithms applied to geothermal applications. Specifically, you will develop a database of geothermal data to train the AI models and adapt machine learning algorithms to the necessities of geothermal energy production. PM3 Lab (pm3lab.csic.es) belongs to the Groundwater and Hydrogeochemistry group of IDAEA-CSIC. Researchers at PM3 Lab study the hydraulic, chemical, thermal and mechanical processes that take place in porous media from pore to regional scale. The group employs mathematical and numerical approaches as well as laboratory and field scale experiments and sampling methods.

PROFESSIONAL PROFILE

Minimum requirements:

- Advanced Degree or master in physics, mathematics, civil engineering, engineering sciences, or a related discipline.

Merits to be considered:

- Professional-working proficiency level of English.
- Interest in collaborative multi-disciplinary research.
- Skills in programming and scientific software are a plus.

WHAT IS OFFERED

GeotermIA offers a strong training program (270 CTS), which includes the opportunity to enrol in the master in Artificial Intelligence of the University of Barcelona and in a PhD program in the Universitat Politècnica de Catalunya after the master completion. You will gain skills in numerical modelling of thermo-hydro-mechanical processes, programming in python, as well as oral and written communication. Research short stays at the Technical University of Madrid and the University of Rennes are planned.

Contract conditions:

Indefinite contract for a University Graduate associated with the Momentum Project of 4 years' duration according to Spanish science law. Gross annual salary (37.000 € - 41.000 €).

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

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