Title: Scientific software developer / PhD in geomechanics at Universitat Politècnica de Catalunya

Abstract: A position for a scientific software developer / PhD in geomechanics is open at Universitat Politècnica de Catalunya (UPC). The doctoral project will focus on CO_2 storage in depleted reservoirs. The thermo-hydro-mechanical response of reservoir rocks will be investigated considering a two-phase flow of supercritical CO_2 and water. The research will be conducted jointly with DRACSYS, a spinoff company of the research group of Mechanics of Materials (MECMAT-UPC). The new developments will be implemented in the group's own FE code.

Candidate requirements:

- Master's degree in the field of Civil Engineering, Geotechnical Engineering, Geological Engineering or similar.
- Applicants must comply with the eligibility conditions of the PhD programme in Geotechnical Engineering at UPC.
- Previous experience in numerical modelling (PLAXIS, FLAC or similar).
- Previous experience in programming (FORTRAN or similar).
- Competent English level (B2).

Key responsibilities:

- Conducting research related to CO_2 storage in depleted reservoirs.
- Development of the thermo-hydro-mechanical model considering two-phase flow of supercritical CO_2 and water model in fractured rock masses.
- Implementation and validation of the model in the in-house FE code DRAC.
- Carrying out application cases with the model.
- Publications at peer-reviewed conferences or journals.
- Attending team discussions related to the ongoing projects.

Location: Barcelona

Gross salary per year: 22.000 €

Start date: immediately; no later than October 2023.

Please send CV to lucia.barandiaran@upc.edu.