

ANNOUNCEMENT FOR PROVISION OF THE WORKPLACE

VAC-2021-57 – Sensor data assimilation in the assessment of embankment dams

Number of vacancies: 1

Category: Research Engineer (RENG 5)

Location: CIMNE Barcelona

Yearly salary (gross): 21.277,10 €

Working hours: 40 hours/weekly

Contract type: Temporary

Duration: 6 months

Functions to be developed:

This contract will be done within the framework of the ProTechTion project (GA 764636), funded by European Commission.

A monitoring program provides measurements of different parameters including pore water pressure in different locations of a tailing dam. These data are obtained in near-real time from a wireless sensor network and have to be used to assess the integrity of the dam. The information obtained from the raw data is often insufficient for decision making and has to be complemented by the knowledge provided by a model. The objective of the project is to design computational tools that assimilate in real time the data obtained into a computational model. This will allow enhancing the quality of the information at hand and make educated decisions on the control and maintenance of the dam. The computational strategy to be devised is based on the use of reduced order models and different tools for model updating.

Obligations of candidates

- Be highly committed with quality research, training and management. The successful candidate is expected to become a future leader on the development and application of advanced computational methods for industry
- Participate on the dissemination and outreach activities
- Contribute to the writing of articles in high impact international journals

Required skills:

Prerequisites

- To have a strong undergraduate and MSc degree (or equivalent) in Engineering, Mathematics, Physics or a related field and a good level of English
- To have an enthusiastic attitude to conduct research, being hard-worker and critic
- To demonstrate knowledge of programming languages, in particular Matlab and Python
- To have experience with Finite Element analysis and particularly with the FEniCS project.
- To have previous experience in the use and programming of reduced order models for coupled and transient problems.

Eligibility: Applicants shall, at the time of recruitment by CIMNE have not been awarded a doctoral degree.

Qualification system:

The requisites and merits will be evaluated with a maximum note of 100 points. Such maximal note will be obtained summing up the following points:

- **Publication and career track:** 20%
- **Previous research and academic experience in the field of the position:** 50%
- **Programming skills:** 20%
- **Language skills:** 5%
- **Communication/Teaching skills:** 5%

Candidates must complete the "Application Form" form on our website, indicating the reference of the vacancy and attaching the required documents.

The deadline for registration to the offer ends on July 29th, 2021 at 12 noon.

The preselected candidates may be requested to send the documentation required in the "Requirements" and "Merits" sections, duly scanned, and may be called to go through selection tests (which might be of eliminatory nature) and / or personal interviews.