

Announcement for post-doc position for 2016 (12 months)

Numerical modeling of suffusion sensibility: application to the “Romaine 3” dam

Locations : Hydro-Québec & Laval University, Montréal, Canada (*circa* 6 months) and GeM Laboratory, University of Nantes, Saint-Nazaire, France (*circa* 6 months)

Position description: This post-doc scholarship is now open within the RI-AdaptClim project, geotechnics. This project is funded by the region Pays de la Loire as part of an “International Strategy” call. The project is organized in such a way that the work will take place in Canada first and in France next. The position’s salary will be based on the contract grid of the University of Nantes with gross income estimated around 40,000 € per year and variations according to the experience.

Objective and Scientific Strategy: This project is designed to start a new research collaboration between the NSERC/Hydro-Québec Industrial Research Chair in Life Cycle Optimization for Embankment Dams and the GeM Laboratory (University of Nantes). The main objective is to assess the suffusion sensibility of the embankment dam Romaine 3, which is under construction [www.hydroquebec.com/romaine/]. The scientific strategy comprise the coupling between two methods: (1) an energy approach developed to characterize the sensibility to suffusion and (2) a geostatistical analysis designed to obtain the spatial repartition of local hydraulic conductivities within a dam. Those two approaches will be incorporated into a finite element code to locate zones of more intensive internal erosion. Publications in international peer-reviewed journals and conferences are expected within the RI-AdaptClim project

Prerequisites:

- PhD in geomechanics, civil engineering or environmental engineering
- Proficiency in English and French communications, both written and spoken English
- Good skills in programming, preferably in FORTRAN and/or C++, matlab or python
- Ability to work in a team and motivation to publish internationally
- Applicants with one or several of the following research experiences are preferred: mixture theory, geostatistical analysis, finite elements, computational methods, embankment dam, dam monitoring.

Applications: Applicants interested in the positions may contact Pr. Didier Marot and Dr. Rachel Gelet through emails (see below). The application should include a CV and a cover letter. In the cover letter, applicant may include a short research statement explaining how they understand the issues related to the project.

Closing date: **February 15, 2016**

Scientific contacts

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