Post-doctoral Research Position

Stochastic modelling of geothermal heterogeneous reservoirs. Application to the south of Ile de France region (France).

The Climate and Environment Sciences Laboratory (LSCE) and the French Geological Survey (BRGM) invites applications for a Fluid Mechanics post-doctoral position to conduct theoretical and numerical researches on the stochastic modelling of heat and flow transfers in heterogeneous geological reservoirs.

This project is part of a collaborative program called UPGEO (UPscaling and heat simulations for improving the efficiency of deep GEOthermal energy). (http://hebergement.universite-paris-saclay.fr/upgeo) headed by the laboratory Geops of Paris Saclay University and different research institutes. The overall objective of UPGEO is to optimize the geothermal production of deep aquifers of south Ile de France on the basis of (1) precise knowledge of the reservoir heterogeneity in terms of sedimentary geometries, porosity/permeability, reservoir connectivity and (2) reliable numerical simulations of flows and temperature evolution in the underground 30 years or even 100 years after production.

The aim of the post-doctoral proposition is to assess the role of the sediment reservoir heterogeneities of the carbonate Jurassic Formation and Triassic sandstones on the performance of geothermal doublets. This issue will be investigated in a stochastic framework through theoretical and numerical studies. One of the key concepts underlying the issue is the doublet connectivity and the main question is how to include a connectivity indicator in a doublet performance measure ? Different types of reservoirs will be considered (sillicoclastic and carbonated) and most of the work will be concentrated on existing doublets in the south of Ile de France.

The candidate is expected to have a PhD in the field of Fluid Mechanics (Porous Media), Hydrogeology or Petroleum Engineering, and good theoretical and numerical skills. Some experience in reservoir modelling would be a plus.

This fellowship is available for a duration of 18 months and is funded by the French National Research Agency. The work will take place at the LSCE located at Gif-sur-Yvette (91) near Paris. Applicants should send a letter of intent and resume via E-mail.

Person to contact :

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