Post-doctoral fellowship on surface water and groundwater interaction.

Applications are invited for postdoctoral researchers within the project “Caractérisation des échanges Rhône-nappe et des effets d’autoépuration des berges" funded by the French Water Agency Rhône Mediterranée Corse.

The island of Barthelasse, the largest river island in Europe, hosts 2 pumping areas that supply drinking water to nearly 180000 inhabitants in various agglomerations on the left bank of the Rhone near Avignon, France. Due to its location, the aquifer is very vulnerable to the river. The Rhône Ventoux water management operator, which is in charge of the management of this aquifer in collaboration with the Rhône Mediterranee Corse Water Agency, is concerned about the risk of pollution of the groundwater by the river Rhône or its backwaters. As part of this project, the HYDRO research group of the UMR EMMAH (University of Avignon) will conduct a study on the transfer modalities between the river Rhône and the groundwater water by means of natural tracing. Several points of observation of the water table as well as the Rhone are already equipped with sensors for the monitoring of water depth, temperature and electrical conductivity. This long-term monitoring will be supplemented by in situ short time experiments for isotopic monitoring using a laser spectrometer (18O, 2H) or by taking samples (13C, 3H). The objective is to determine the distribution of the solutes transit times from the river Rhone to the aquifer for different observation points and in different hydrological conditions of the Rhone and pumping exploitation.

From the experimental point of view, the role of the candidate will be to organize the physicochemical and isotopic database, to control sensors and retrieve data, and to organize field campaigns. From the acquired data, the work will then consist of implementing 1D and 2D-3D analytical transfer models aimed at identifying mixing proportions and establishing the distribution of transfer times between the river Rhône and the aquifer. The results will be published in international scientific journals.

Deadline for applications : 01/09/2018 (position to be filled on 01/10/2018)

For further informations, please contact :

Marc LEBLANC : marc.leblanc@univ-avignon.fr

Vincent MARC : vincent.marc@univ-avignon.fr

Benefits

Working at EMMAH - Université d'Avignon

The work will be carried out in the Hydro group of UMR EMMAH, Agrosciences, University of Avignon. The candidate will be recruited by the University of Avignon. The project includes the Rhône Ventoux operator, the Suez company and UMR CEREGE (Marseille) with whom exchanges will be regularly organized.

Duration and salary

The contract will start as soon as possible from 01/10/2018. This is a full-time position over a period of 18 months. The salary will be between 2000 and 2259 euros net monthly according to the candidate's experience

Eligibility

- hold a doctorate in hydrogeology. A specialty in surface water-groundwater interactions will be an advantage

- Practical experience in measurement (field and laboratory) and modeling of mass transfers/signal processing

- a good knowledge in hydrochemistry and isotope geochemistry will be appreciated.

Selection process

Applications must be submitted by **01/09/2018**. The application file to be sent in pdf must include:

- a letter of motivation (2 pages max)

- a copy of the phD report

- CV with publication list

- 1 to 3 referent names (with email)

Please send your documents, as a single PDF file, by 1 september 2018 via email to:

Marc LEBLANC (marc.leblanc@univ-avignon.fr) and Vincent MARC (vincent.marc@univ-avignon.fr)

Duties and main responsibilities

The candidate must be autonomous, organized, able to work in a team and force of proposal in terms of concepts, ideas and models. She/he will be at the center of the device and will be in charge of the management of the team, especially for the field aspects. She/he will have to prepare the restitution with the partners, take charge of the writing of the intermediate reports and disseminate the results in high level scientific journals. In addition, she/he will be in charge of all or part of the analytical tasks.