Ph.D. Position in Geochemistry and Hydrogeochemical modelling (F/M)

We are looking for a creative, qualified and motivated Ph.D. candidate at the Laboratory of Hydrology and Geochemistry of Strasbourg (University and CNRS, France) in strong collaboration with the BRGM (Orléans, France) and the CRPG-CNRS (Nancy - France).

The project entitled « Time constants and modeling of the hydrological transfers and alteration processes in the deep critical zone (Granitic Vosges Mountains – France) » will pursue recent efforts made by the proposing team to constrain the water pathways and the associated water-rock interactions in the deep critical zone, and to constrain their place in the spatial and temporal evolution of the continental surface evolution. The thesis research will deal with the study of Critical zone observatories in the Vosges Mountains (the Strengbach and the Ringelbach CZO), but could extend to other sites for better understanding the processes variability at a more regional scale or following some environmental gradients.

The main targets of the PhD are:
1- A better understanding of the mechanisms and key processes controlling the water pathways and the water rock interactions in the deep critical zone.
2- Assessing how important the deep alteration processes are as compared with the surficial ones.
3- Ascertaining the variability through space and time of all the processes at the scale of a river catchment basin.

Work to be performed by the PhD at University of Strasbourg may include:
- Use of isotope analysis methods (water dating methods, cosmonuclides, U-series nuclides).
- Application of mineralogical analyses for the study of alteration mineralogical phases.
- Application of hydrogeochemical modeling approaches
- Application of "in situ" analyzes by ion probe and/or laser ablation for the determination of the geochemical and isotopic composition of minerals.
- Working collaboratively within a multidisciplinary team and with external partners.
- Preparing peer-reviewed scientific publications and presentation for scientific conferences.

Candidate Profile
We are seeking a student with a master degree or an engineering degree in Earth Sciences, Environmental Sciences, Physics or Chemistry, with a strong background in Surface Earth Sciences, geochemistry, hydrology and/or computational methods. The candidate should be motivated by Laboratory and Field works, and also by modeling research work. The candidate should be independent in his/her work and should have a rigorous approach of scientific issues. This Ph.D. position requires also mobility because part of the work will be carried out at Laboratoire d’Hydrologie et de Géochimie de Strasbourg (LHyGeS) in the framework of the Agreement Memorandum between LHyGeS (Strasbourg, France), BRGM (Orléans, France) and CRPG (Nancy, France).

The position is for three years. We offer salary and social benefits according to French public sector regulations. Please submit your application, including letter of motivation, CV, list of publications, copies of certificates and the names and contact information of two potential referees to François Chabaux (fchabaux@unistra.fr; p.negrel@brgm.fr)
Review of applications will begin June 5th, 2019 and will continue until the position is filled and not later than July 8th. Prefer starting period will be October-November 2019.

Additional information: The Laboratory of Hydrology and Geochemistry in Strasbourg, (LHyGeS, UMR 7517 CNRS; http://lhyges.unistra.fr) focuses on flow and transport in continental hydrological systems. Research activities associate experimental and isotopic bio-geochemistry with hydrology to constrain and model the water-rock interactions operating in the critical zone at different space and time scales. Research at University of Strasbourg covers all areas of science and encourages interdisciplinary and international collaborations. Located in the heart of Europe in a tri-national region of dynamic economic activity, Strasbourg is a very pleasant place to live in.