

PhD Position Thermal processes in urban aquifers

The Chair of Engineering Geology at ETH Zurich invites applications for a PhD position in the area of thermal processes in urban soil, rock and groundwater. The successful candidate must have an MSc in earth sciences, environmental engineering, or a related field.

This position is part of a collaborative project with the Karlsruhe Institute of Technology, Germany, on subsurface urban heat islands. We are funded by the Swiss National Science foundation (SNF) and the German Research Foundation (DFG). The duration of the position is approximately 3 years and can be filled by the successful candidate in the beginning of 2013.

The goal of this research project is to improve our understanding of thermal transport processes, heat flux and storage beneath cities. Urban environments commonly represent areas with their own microclimates and increased temperatures. Little is known about this “urban heat island” phenomenon in the subsurface. The governing processes and long-term consequences for elevated temperatures remain enigmatic. By studying cities such as Zurich, we will explore the long term evolution of subsurface urban heat islands at multiple scales. Coupled flow and heat transport models will be used for this. In generic and site-specific simulations we will identify the role of different (sub)surface heat sources, their spatial and temporal influence. The work will also involve considerable data mining and benefit from continued field measurements, as well as temperature monitoring at selected locations.

The ideal candidate should have knowledge and experience in quantitative hydrogeological or geophysical methods. She/he should be a team player, have good communication skills and take on responsibility in an international and interdisciplinary research team. The Engineering Geology group consists of approximately 20 scientists involved in a leading research and teaching program in engineering geology, geothermics and hydrogeology. Detailed information about the Chair of Engineering Geology is available on the web: www.engineering-geology.ethz.ch. For further information regarding the advertised position please contact Dr. Peter Bayer, Department of Earth Sciences, ETH Zurich (e-mail: bayer@erdw.ethz.ch).

Complete applications should be sent by regular mail or e-mail to Dr. Peter Bayer, Engineering Geology, ETH Zürich, Sonneggstrasse 5, 8092 Zurich, Switzerland, and must include the following, ideally in one pdf-file: 1) A short cover letter where you outline your motivation; 2) Curriculum vitae which describes your complete personal details and career history; 3) Complete course grades and transcripts; 4) Contact details of two referees or written reference letters. We will start with the invitation of potential candidates in December 2012 and plan to fill the position in January. However, later applications may also be considered until this position is filled.