FREIE UNIVERSITÄT BERLIN

Women in Water Research Seminar Series No. 3
Institute of Geological Sciences – Hydrogeology

Particle transport processes and water quality changes in karst aquifers

M. Sc. Yanina Müller

Water quality changes in karst springs are often rapid, strong and influenced by a number of factors. To better understand these changes, Germany's second largest karst spring (Blautopf) on the Swabian Alp was extensively monitored for 2.5 years. This talk gives insights into the processes that influence water quality changes, both in regard of possible sources of contaminants and also (contaminant) transport processes inside the karst and cave system.
A paired-catchment approach was transferred to the subsurface, showing that water samples from different locations in the cave system allow to identify impacts of land use in the catchment area. A focus lies further on the transport of sediment particles, which can serve as vectors for organic pollutants and microorganisms. For an in-situ investigation, a sediment tracer test was performed inside the cave system, underlining a faster transport of particles in comparison to solute tracers. This observation is important for a better understanding and management of karst springs.

M. Sc. Yanina Müller is a PhD student at Institute of Applied Geoscience at Karlsruhe Institute of Technology (KIT) in Germany. Her PhD project focuses on the transport of particles and fecal bacteria in karst aquifers, for which she conducted extensive field work at Germany's second largest karst spring (Blautopf) on the Swabian Alp as well as inside it's attached cave system. Studying at the University of Tübingen, Oulu (Finland) and University of Duisburg-Essen, she has a background in geoecology and water science, with a focus on analytical chemistry.

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