

Innovative approaches for understanding groundwater flow systems

The management of groundwater resources receives increasing attention due to the growing importance of groundwater for human, industrial and agricultural water supply, as well as for its role in geothermal energy production. Despite being such a valuable resource, groundwater is suffering from overexploitation and contamination. It may further on its own represent a potential source of contamination through e.g. geogenic contamination or anthropogenic activities. The characterization of groundwater flow and its behaviour at different spatial-temporal scales, under natural or anthropogenic driven conditions, requires a deep understanding of complex hydraulic, thermal, geochemical and microbiological processes.

This session will welcome contributions on advanced and new techniques developed for characterising groundwater flow systems, heat transport, water quality and pollutant fate. Of interest for the session are approaches using hydraulic, temperature, isotope or natural environmental tracer data and numerical modelling for a better understanding of local to regional groundwater flow systems, geochemical patterns, groundwater mixing and ages, or the contamination processes of organic and inorganic pollutants. The session is supported by the RGFC-IAH (Regional Groundwater Flow Commission of the International Association of Hydrogeologists) and the EU H2020 ENeRAG (Excellency Network Building for Comprehensive Research and Assessment of Geofluids) project.