

# Seminar

When: 04. November 2022; 12:30 h

Where (Online): <https://bbb.hrz.tu-freiberg.de/b/jen-01s-r9p>

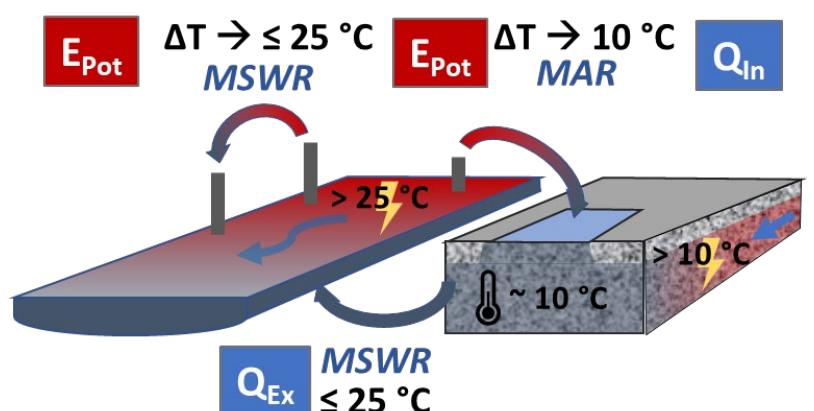
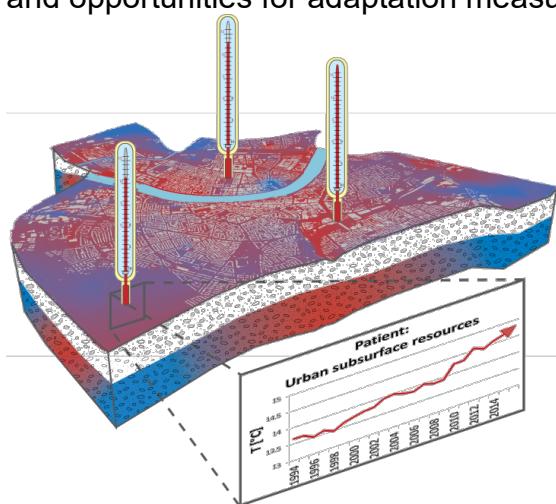
**Keynote Speaker:** PD Dr. Jannis Epting (Leiter Angewandte und Umweltgeologie, Forschungsgruppe Hydrogeologie, Universität Basel)

## Title: Thermal management of groundwater resources - climate change, thermal potentials and opportunities

A quantitative assessment of climate change impacts on groundwater resources requires a distinction between hydraulic and thermal impacts of natural and artificial groundwater recharge processes. Accordingly, different locations within an aquifer or individual drinking water wells are exposed differently to the different components of groundwater recharge. Seasonal shifts in natural groundwater recharge and adaptation strategies related to artificial infiltration of surface water may therefore be an important factor for the thermal development of groundwater resources in the future.

In urban areas, increased thermal use of the subsurface, including infrastructure development and adaptation strategies (e.g., more frequent thermal use of aquifers for "cooling" purposes or increased managed groundwater recharge during summer months), associated with global warming will inevitably increase groundwater temperatures. Likewise, anthropogenic adaptation strategies could have a greater impact than climate change itself.

In scope of the presentation strategies for the thermal management of urban and rural groundwater resources in northwestern Switzerland are presented by discussing climate change, thermal potentials, and opportunities for adaptation measures.



Left: Urban groundwater temperatures in Basel, Switzerland.

Right: Concepts for Managed Aquifer Recharge (MAR) and Managed Surface Water Recharge (MSWR).

