



UFZ-Seminar



Research Unit

Water Resources and Environment



26 October 2020, 10 a.m.

Room E01, Theodor-Lieser-Straße 4, Halle/Saale

Andreas Hartmann

Hydrological Modeling and Water Resources, University of Freiburg, Germany

will give a talk on:

Large-scale quantification of water availability and contamination risk in karst regions

Many regions across the world are dependent on drinking water from karst aquifers. Globally, around a quarter of the world population completely or partially depends on karst water resources. Karst develops due to the dissolution of carbonate rock and creates pronounced surface and subsurface heterogeneity in their hydrological flow and transport behaviour. Consequently, water resources management faces significant challenges in karst regions especially at times of environmental change. My lecture will provide an overview of the peculiarities of karst hydrology with focus on approaches to assess the large-scale impact of environmental change on karst water resources and karst water quality. Using a large-scale simulation model that simulates recharge into karst aquifers across different climatic regions I will demonstrate that, presently and in the future, disproportionately large amounts of drinking water are available in karst regions compared to non-karstic areas. In a second step, I will address the widespread contamination risk of karst water resources that can go along with inadequate application of degradable pollutants. Finally, I will propose some possible directions for future advances in in large-scale modelling in karst regions and beyond.