

Kirsten Küsel, Friedrich Schiller University Jena, Germany

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Life in the dark: Patterns and Functions of Groundwater Microbiomes

The terrestrial deep biosphere hosts the majority of the earth's microbial biomass. Whereas life in deep saline waters is suggested to be sustained mainly by H₂ and CO₂, microbes in shallow groundwaters still receive input from recently fixed organic carbon. Within the research center AquaDiva, we aim to understand the links between the surface and subsurface biogeosphere, especially how organisms inhabiting the subsurface reflect and influence their environment, and affect water and matter transiting the subsurface. To achieve this, we have constructed a novel infrastructure, the Hainich Critical Zone Exploratory (CZE), which provides an excellent platform for studying the formation of groundwater microbiomes and following changes in microbial community structures and their functions in space and time.