

Markus Krüger

Position: PhD Student
Project: B05
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Research Interests

- Nitrogen cycling
- Microbial Ecology
- Next Generation Sequencing, Isotope labeling

Current Project

PhD thesis, working title: “Form the forest canopy to the aquifer: The role of microbial processes in the origin and fate of nitrate in the earth’s critical zone”

Nitrogen is one of the most essential elements of all life on earth. However, sources and fate of nitrogenous compounds like nitrate, connected with microbial nitrogen transformation processes and the corresponding microbial communities are rarely examined inside the Critical Zone (CZ). Regarding that, the PhD project follows the vertical transport of microorganisms involved in nitrogen conversion, along with the nitrogen compounds themselves, from the tree canopy down to the soil and into the aquifers. To achieve this issue, next generation sequencing of prokaryotes involved in nitrogen-cycling combined with ¹⁵N-isotope based approaches to assess nitrogen transformation processes are used. Further single cell genomics will be included to elucidate the potential role of novel players in nitrogen cycling.

Curriculum Vitae

04/2018 – now	PhD student at the Aquatic Geomicrobiology, supervised by Prof. Kirsten Küsel, Institute of Biodiversity
10/2015 – 12/2017	M.Sc. in Biology, Martin-Luther-University Halle-Wittenberg, Thesis: “Predation between the predatory bacterium <i>Bdellovibrio bacteriovorus</i> and bacterivore protists”, at Helmholtz-Centre for Environmental Research (UFZ), Department of Environmental Microbiology
10/2011 – 09/2015	B.Sc. in Biology, Martin-Luther-University Halle-Wittenberg
07/2014 – 12/2014	Student assistant at UFZ Halle, Department Soil Ecology