

# BayCEER Kolloquium

Lectures in Ecology and  
Environmental Research



UNIVERSITÄT  
BAYREUTH

## Winter 2023/24

Donnerstag/Thursday

**07.12.2023**

**12:15 in H6, GEO**



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## Release, biomethylation and biovolatilisation of trace elements in soils

Antimony (Sb) and arsenic (As) are two toxic trace elements commonly found in soils. While As has been extensively studied, relatively little is known about Sb despite it being a toxic and potentially carcinogenic metalloid. Both elements are redox-sensitive and their biogeochemical cycles are strongly influenced by (micro-)organisms. This leads to the formation of different chemical species of varying mobility and toxicity. To understand their environmental fate, one must therefore rely on complex extraction and speciation analysis techniques.

The two intertwined biological mechanisms biomethylation and biovolatilisation are impacted by land use and climate change, but the underlying mechanisms are still not fully understood. In this talk, I will introduce these two elements as well as key concepts and drivers of release, biomethylation, and biovolatilisation. I will then focus on the release of Sb from soil to soil solution, and subsequent biovolatilisation and plant uptake. Another highlight will be set on the release and biotransformation of As under the influence of climate.

