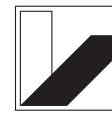


BayCEER Kolloquium

Lectures in Ecology and
Environmental Research

WS 2019/20



UNIVERSITÄT
BAYREUTH

Donnerstag/Thursday

12.12.2019

12:00 in H6, GEO

Dr. Kerstin Hockmann

Environmental Geochemistry, BayCEER,
University of Bayreuth

Iron, sulfur and a pinch of antimony - new perspectives on secondary mineral pathways and metalloid mobility

Antimony is a highly toxic environmental contaminant that plays an important and growing role in our daily lives. It is used as a flame-retardant in electronics and plastics as well as in liquid metal batteries for renewable energy sources. The vast and growing usage has led to a legacy of antimony contamination in many areas worldwide.

The mobility of antimony in the environment is strongly affected by sorption and co-precipitation interactions with iron(III) oxide minerals. The interaction between reduced iron and sulfur species with iron(III) oxides induces a series of reductive dissolution and mineralogical transformation reactions, which may have profound consequences for the mobility of associated antimony like in wetland soils. Moreover, antimony itself may influence or steer iron mineralization pathways.

This presentation will demonstrate the importance of iron(III) oxide transformations in the environment, their impact on the geochemistry and mobility of antimony and the significance of antimony on iron(III) transformations.