



Call for abstracts:

(submission deadline April 1, 2017, <https://goldschmidt.info/2017>)

Session 13e

“Metal and Metalloid Contaminant Dynamics in Environmental Systems – Novel Insights from Stable Isotope and Spectroscopic Approaches”

Metal and metalloid contaminants (e.g., Cr, Ni, Cu, Zn, As, Se, Ag, Cd, Sn, Sb, Hg, Tl, Pb, U) are introduced by natural and anthropogenic sources and processes into the environment. Tracing the source and understanding the behavior of these potentially toxic elements under different biogeochemical conditions is crucial to prevent human health hazards and ecosystem imbalances. High-precision stable isotope analyses (e.g., MC-ICP-MS, TIMS) provide information on the history of anthropophile elements by identifying different source materials and by tracing past transformation processes. Stable isotope signatures generated by mass-dependent and mass-independent fractionation, radiogenic variations between different source materials, or the use of enriched stable isotope tracers in experimental studies represent novel tools to trace contaminant dynamics in the environment. The application of spectroscopic techniques (e.g., XAS, NMR, FTIR) allows direct elucidation of the molecular scale mechanisms of biotic, abiotic, and coupled biogeochemical transformations of metal and metalloid contaminants, including redox, adsorption, precipitation, and incorporation processes at mineral/microbe – water interfaces. The aim of this session is to integrate these two complementary approaches to provide unparalleled new insights. The session will explore methods, tracers and applications using innovative spectroscopic techniques and multi-isotopic systematics that will provide stronger constraints on the origin (both natural and anthropogenic) and better characterization of the processes controlling the geochemical behavior of metal and metalloid contaminants in the environment (e.g., soil, sediment, water, air) at local and global scales. We aim to bring together experts from both communities to enhance the dialogue required for future collaborations.

Keynote speaker:	Carol Ptacek (University of Waterloo, Canada)
Confirmed invited speakers: (preliminary list)	Heileen Hsu-Kim (Duke University, USA) Martin Novak (Czech Geological Survey, Prague, Czech Republic) Nadine Mattielli (Université Libre de Bruxelles, Belgium) Christophe Cloquet (CRPG Nancy, France)
Session Convenors:	Jan Wiederhold (University of Vienna, Austria) Bhoopesh Mishra (University of Leeds, UK) Jiubin Chen (SKLEG, Guiyang, China) Romain Millot (BRGM, French Geological Survey, Orléans, France)

Please forward this announcement to potentially interested persons, especially students and postdocs.

Questions about the session may be directed to jan.wiederhold@univie.ac.at