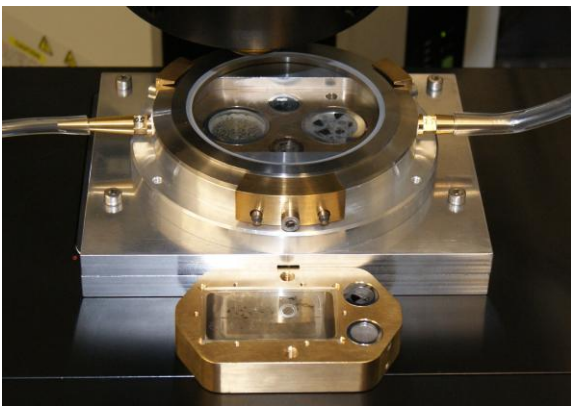


DMG and FU Berlin Short course

**Metal stable isotopes as fingerprints
in the Earth and the environment**

FU MSc-GG019 V and Ü

Prof. Friedhelm von Blanckenburg & Dr. Patrick Frings
GFZ Potsdam und FU Fachbereich Geowissenschaften



DMG Short Course 2026

Date: 23. March – 28. March 2026
Place: Section 3.3 „Earth Surface Geochemistry“, GFZ Potsdam
Registration: Until 15. February 2026 with Dr. Patrick Frings: patrick.frings@gfz.de
FU students please also enroll online in FU “Campusmanagement”.

Participants: about 12
Course language: English
Credit Points: 6 LP
Fees: None. DMG members can obtain a travel grant of € 100.-

Course methods: Lectures and simple calculation practicals of isotope fractionation.
Practicals in the clean laboratory and with the mass spectrometer.

Prerequisites: BSc in Geosciences, Chemistry, or Physics. Basics in analytical chemistry, basics of stable isotopes geochemistry, good knowledge of fundamental math and physics.

Topics: We explore the so-called „non-traditional“ stable isotopes, of which the minor shifts by isotope fractionation have been made detectable by multicollector ICP-mass spectrometry. These are for example the elements lithium, magnesium, silicon, calcium or iron. We will address the following topics:

- Why do isotopes shift their relative abundances? Principles of mass-dependent isotope fractionation. Isotope fractionation during precipitation, mineral dissolution, weathering, uptake by higher plants, biomedical applications, the hydrosphere, and paleo-climate. Basics of MC-ICP-mass spectrometry: sample preparation, ionisation, ion optics and mass separation, detection systems, laser ablation, data evaluation
- Lectures will alternate with conducting a real-life experiment on the mass spec and in the clean lab.

Further information : Friedhelm von Blanckenburg: f.v.b@fu-berlin.de