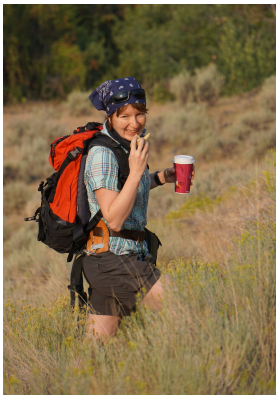
UNIVERSITÄT BERN

Institut für Geologie

Kolloquium:

Paleoclimate and paleoelevation of the Central Alps through a stable ($\delta^{18}O$, $\delta^{13}C$) and clumped (Δ_{47}) isotope perspective



Date: Monday, 29 April 2019, 16:15

Location: **Institut für Geologie**, Baltzerstrasse 3, 3012 Bern, Studer Auditorium, 2.OG

Speaker: **Dr. Katharina Methner**

Senckenberg Biodiversity and Climate Research Centre Frankfurt, Germany

The topographic evolution of mountain ranges is an integral part of the interactions between climate, landscape and biome evolution, and mountain building processes. Mountain topography, created by underlying geodynamic processes and climate driven erosion, modulate atmospheric circulation, precipitation, and temperature on regional to global scales.

Here, we constrain $\delta^{18}O$-based **paleoelevation estimates of the Miocene Alps** by coupling high- and low-elevation stable isotope records (δ-δ approach). This approach needs quantification and correction for the paleoclimate signal in the observed stable isotope records and we address this challenge through an integration of **paleosol carbonate stable isotope ($\delta^{18}O$, $\delta^{13}C$) and clumped isotope temperature ($T(\Delta_{47})$) data from the Swiss Molasse Basin** with isotope-enabled climate model (ECHAM5-wiso) simulations. The integration of combined stable and clumped isotope data, in conjunction with sedimentological and paleontological information, is a powerful tool for **assessing paleoclimate and paleoenvironmental conditions of the Swiss Molasse Basin during the Miocene.**

Institut für Geologie, Baltzerstrase 1+3, CH-3012 Bern
Tel. +41 031 631 87 61, Fax +41 031 631 48 43, info@geo.unibe.ch, www.geo.unibe.ch