

# From Past Topography to Understanding the Evolution of Landscapes and Life

January 29, 2020 at 12:00

## Andreas Mulch

*Senckenberg Biodiversity and Climate Research Centre & Natural History Museum Frankfurt*

The elevation history of the Earth's surface, and large orogens in particular, reflects the competing roles of geodynamic processes in crust and mantle as well as erosion. At the same time, mountains host a substantial proportion of the world's species, and the long-term surface elevation history of orogens not only affects local but also global climatic conditions. Recovering the timing and rates of Earth's surface processes, therefore, directly links to patterns of biomes and biodiversity at the interface of atmospheric and geodynamic processes. Here, I present stable and clumped isotope ( $\Delta_{47}$ ) approaches to identify the interactions of regional surface uplift and climate change on paleo-environmental conditions. Given the rapid technological advances in modeling, (geochemical) proxy and phylogenetic approaches, understanding the interactions among biodiversity and Earth surface processes will develop into a key opportunity for the geological and biological sciences.

**Andreas Mulch** obtained his doctoral degree from the Université de Lausanne in 2004. Subsequently, he held a postdoctoral position at the University of Minnesota before becoming a research associate at Stanford University. Following a professorship at Leibniz University Hannover, he accepted a joint appointment as Professor at Goethe University Frankfurt and the Senckenberg Biodiversity and Climate Research Centre in 2010. He is currently Director of the Senckenberg Research Institute and Natural History Museum Frankfurt and Vice-Director General of Senckenberg. Andreas Mulch is elected Fellow of the Geological Society of America and Cox-Award recipient from Stanford University.



*Main lecture hall, Haus H*