



INVITATION

for a

VERA - SEMINAR

with

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**The bond of isotope physics and geosciences –  
A landscape evolution perspective**

Landscapes are subject to natural reshaping by weathering and erosion. Surface erosion is the primary driver of soil and minerals being permanently removed. However, like so many processes, erosion is subject to natural fluctuations. Understanding erosion holistically is essential to understanding the potential effects of the approaching climate change on our landscape's future evolution.

However, it is challenging to quantify erosion once the surface material is removed. Sediment deposits (e.g., deltas, river plains) usually describe average erosion rates from far away delivery areas. Yet, average rates lack information on variabilities and are only a diluted derivative of local erosion rates. Thus, to understand erosion variation drives, one must first quantify these fluctuations over a multi-millennia time scale, at best directly within the source area itself.

The innovations in terrestrial cosmogenic nuclides (TCNs), accelerator mass spectrometry (AMS), and original applications now resolve the research gap. This talk will present a novel application to derive continuous in-situ surface denudation models using unique landscape features. Come and join a demonstration on how TCNs can be innovatively used to provide insight into (soil) erosion variations over multi-millennia in Italy, Portugal, and New Zealand.

Thursday, 25<sup>th</sup> January 2024, 16:30 o'clock

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",  
1. Stock, Victor-Franz-Hess Hörsaal**