



INVITATION

for a

VERA-SEMINAR

with

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**Cosmic Links between Climate Archives –
Using cosmogenic radionuclides to constrain
paleoclimate dynamics**

Precise chronologies are the cornerstone of most paleosciences. They are a prerequisite for studying the couplings and feedbacks within the climate system and understanding its dynamics in the past. Yet, different dating methods yield partly inconsistent results and it remains a major challenge to consistently date different climate archives at the required precision and accuracy.

Cosmogenic radionuclides such as ^{10}Be and ^{14}C provide a tool to overcome these challenges: Their atmospheric production rates are controlled by the flux of cosmic rays, which in turn is modulated by changes in the helio- and geomagnetic field strength. The resulting variations of cosmogenic radionuclide production rates can be reconstructed globally from tree-rings and speleothems (^{14}C) as well as ice cores and sediments (^{10}Be), allowing us to tightly synchronize these records and provide new insights into paleoclimate dynamics.

In this talk, I will present applications of this methodology to elucidate on the propagation of climate changes between low- and high-latitudes in the past. Further, I will show examples of how we can use cosmogenic radionuclides to date sediments from the Arctic Ocean and provide insights into its glacial history.

Thursday, 16. November 2023, 16:30 o'clock

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