



INVITATION

for a

VERA - SEMINAR

with

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**Cosmogenic $^{26}\text{Al}/^{10}\text{Be}$ burial age determination of
cave sediments, results and challenges of low and
high concentration samples from Hungary**

The sandy–gravelly infillings of cave systems often go unnoticed, yet they preserve valuable evidence of early cave development and, because they originate from the surface, the landscape evolution of the area. The cosmogenic radionuclide (CRN) pair ^{26}Al – ^{10}Be accumulates in quartz grains exposed to cosmic radiation in a known ratio. Once sediments are washed into a cave, shielding stops further CRN production. The nuclides' different half-lives cause their ratio to change over time, allowing the calculation of the CRN burial age. The geomorphic position and burial age of the sediments reveal periods when fossil cave passages acted as vadose water channels and, where cave sediments are absent at the surface today, record the time of their past surface occurrence.

Reconstructing the determination of the burial age becomes difficult when CRN concentrations are low. Laboratory blanks and AMS background may approach sample values, increasing uncertainties and having considerable effect on blank-corrected concentrations. Additionally, if the burial depth within the cave is insufficient, post-burial CRN production by penetrating muons may significantly contribute to measured concentrations. While negligible in high-concentration samples, this muogenic component can cause underestimation of burial ages in low-concentration samples.

The talk will illustrate these challenges and present a reconstruction of landscape evolution based on the burial history of cave sediments.

Thursday, 23.04.2026, 16:30 o'clock

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