Refining the chronology of the Balta Alba Kurgan loess (Romania) with a multi-method dating approach

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Aim:

* Evaluation of different dating techniques
* Robust chronology with multi-method approach
* Data base for bayesian age-depth-model

Methods:

Luminescence dating of 4-11 µm polymineral fine-grains, sand-sized K-feldspar, IR50 and pIRIR290 stimulation; quartz pending

Radiocarbon dating of bulk sediment; isolation of leaf-wax biomarkers (n-alkanes and n-alcanoic ads) for compound-specific analysis; no gastropods/earth-worm granules

Magnetic stratigraphy: oriented samples using magnetic susceptibility, palaeomagnetic directional data (in progress) and relative palaeomagnetic intensity (RPI, in progress) for correlation with Northern Hemisphere climatic pattern

Results:

Luminescence ages vary with grain-size and stimulation techniques.

Low organic carbon contents (<0.3 wt%); n-alkane fraction points to leaf wax origin.

Magnetic susceptibility correlates with LPS Vlasca (lower Danube).

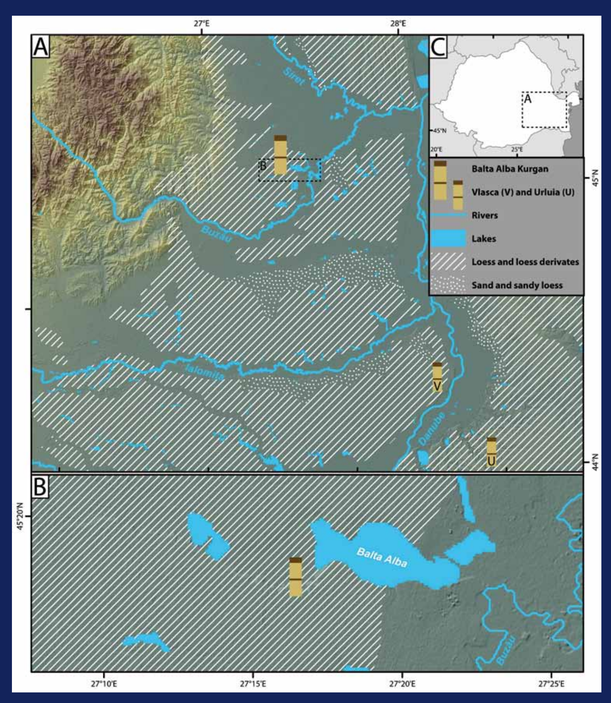
Conclusion:

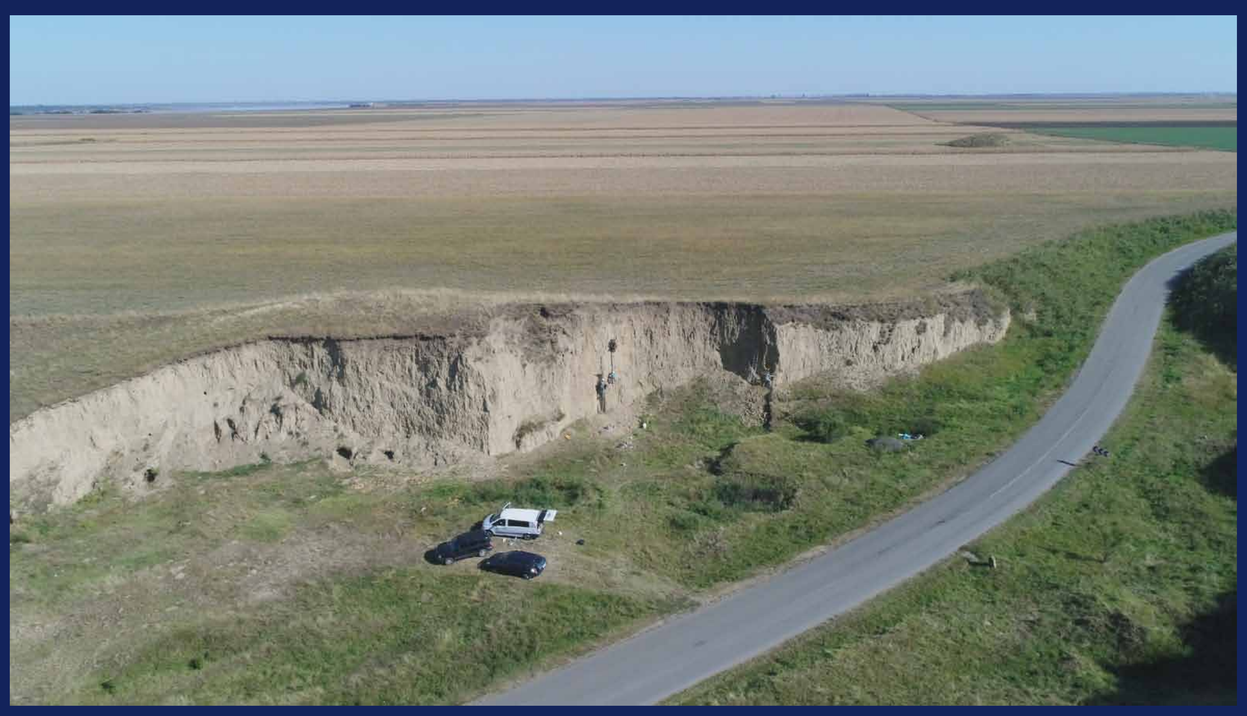
Luminescence dating of loess is not straightforward at Balta Alba site.

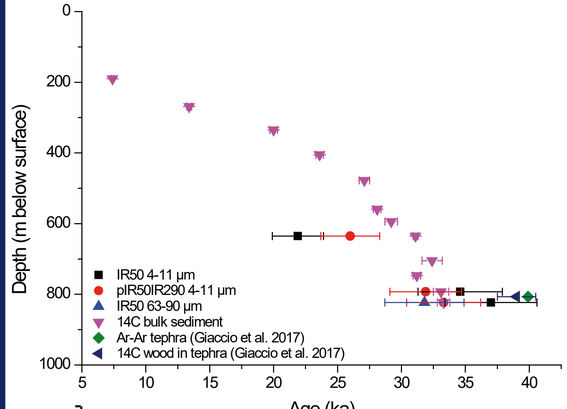
Identification of suitable dating approach is crucial.

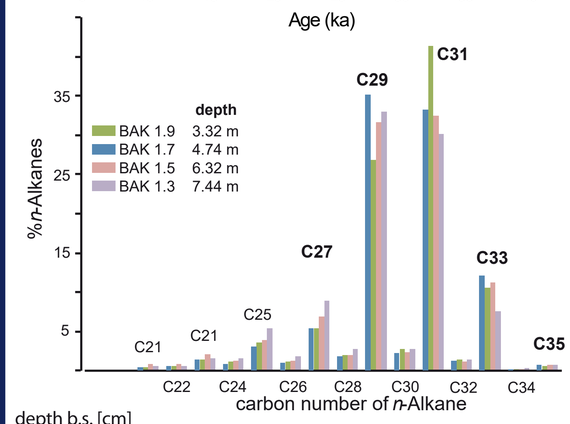
Relying on single-method approach might lead to misinterpretation.

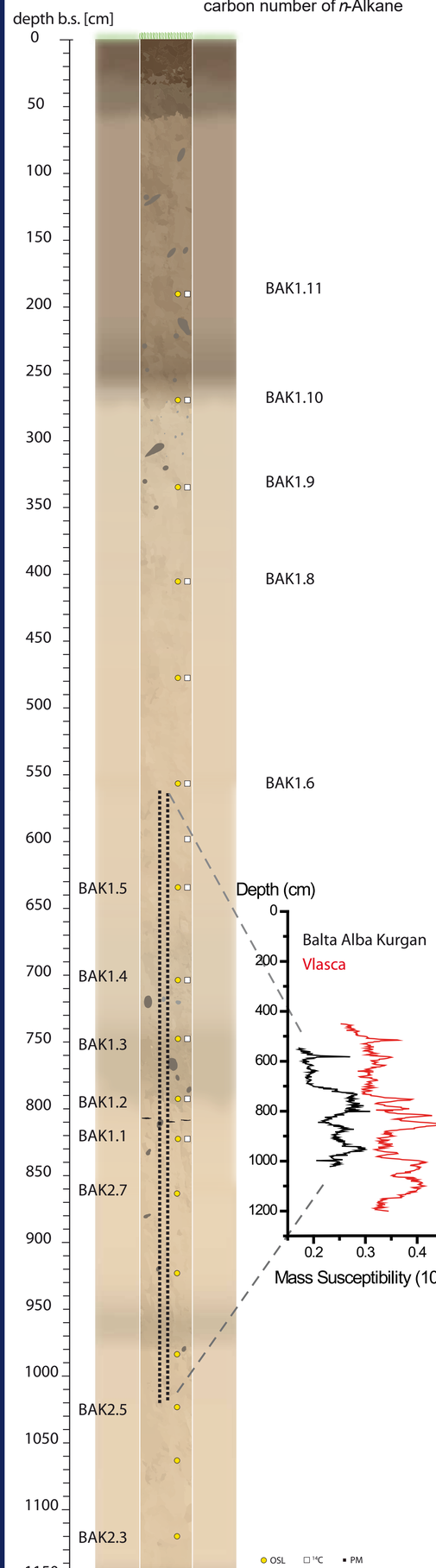
Different dating methods resulted in different age estimates for Balta Alba Kurgan loess-palaeosol-sequence

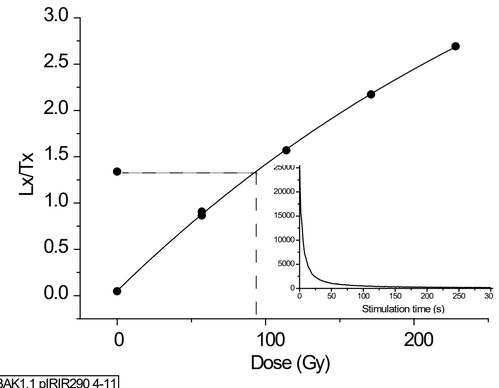


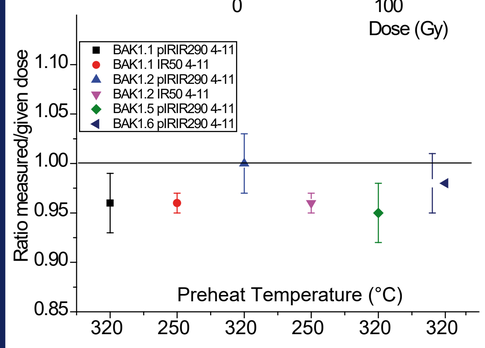


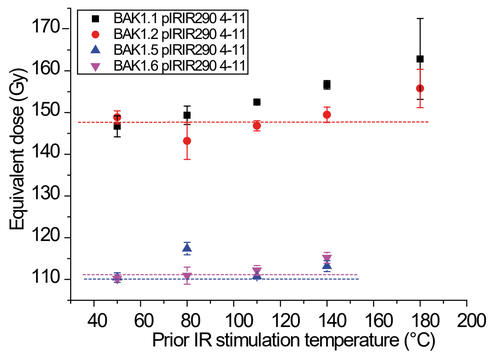












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