

EGU2020-2925

<https://doi.org/10.5194/egusphere-egu2020-2925>

EGU General Assembly 2020

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## Luminescence dating challenges: about hiati and methodological considerations in the Urluia and Vlasca loess-paleosol sequences, Romania

Janina Böskén<sup>1,2</sup>, Nicole Klasen<sup>3</sup>, Daniela Constantin<sup>2</sup>, Ulrich Hambach<sup>4</sup>, Daniel Veres<sup>2,5</sup>, Christoph Schmidt<sup>4</sup>, Stephan Pötter<sup>1</sup>, Christian Zeeden<sup>6</sup>, Frank Lehmkuhl<sup>1</sup>, and Alida Timar-Gabor<sup>2</sup>

<sup>1</sup>Department of Geography, RWTH Aachen University, Germany, Janina.boesken@geo.rwth-aachen.de

<sup>2</sup>Interdisciplinary Research Institute on Bio-Nano-Science of Babes-Bolyai University, Cluj-Napoca, Romania

<sup>3</sup>Institute of Geography, University of Cologne, Cologne, Germany

<sup>4</sup>BayCEER & Chair of Geomorphology, University of Bayreuth, Bayreuth, Germany

<sup>5</sup>Institute of Speleology, Romanian Academy, Cluj-Napoca, Romania

<sup>6</sup>Leibniz Institute for Applied Geophysics, Hannover, Germany

Loess-paleosol sequences are in the focus of paleoenvironmental research because they offer potentially quasi-continuous terrestrial records of environmental change. For the research on paleoenvironments, paleoclimates, and human evolution studies reliable dating approaches are essential. Age models can be based on different methods, e.g. proxy data correlation and chronometric dating approaches. For the Urluia loess-paleosol sequence, which provides a high-resolution record covering the Last Glacial Cycle in the Lower Danube-Black Sea area (Romania), correlative and luminescence age models do not agree with each other (Böskén et al., 2018). While the results of internal quality checks of the luminescence data speaks for a reliable chronology, the radiometric ages of samples assigned to the MIS 4-5 interval based on stratigraphic evidence are significantly overestimated. As ages in the lower half of the section do not increase with depth, field saturation has been suggested, while new measurements indicate that laboratory saturation has not been reached. This contribution presents a detailed luminescence dating approach using OSL and pIRIR protocols for fine-grain quartz and polymineral samples. Furthermore, the geochronology of the Vlasca loess-paleosol sequence that is located at the bank of the Danube ~40 km north of Urluia is presented. The section was chosen because it contains a vast accumulation of loess with one prominent paleosol at the bottom (total height ~27 m), presumably covering a similar time-interval as the Urluia sequence. The dating approach includes fine-grain quartz, coarse-grain quartz, polymineral pIRIR<sub>225</sub>, and portable OSL measurements. The question whether the observed discrepancy between the dating results and the stratigraphy at Urluia represents a regional pattern and/or possibly intrinsic luminescence properties are responsible will be discussed.

### References

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