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## Physisch-geographisches Forschungskolloquium Leipzig WiSe 2022/23

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### Beyond temporal limits: Data Science and methodological developments in luminescence dating towards better a constraint of palaeolandscapes

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Adaption to climate change is our utmost challenge and our greatest opportunity. As geoscientists, we seek to understand recent alterations and map future changes through deciphering past landscapes, their governing processes and timing. Geochronology is the discipline that dates past events and develops new methods to constrain past landscapes more accurately and precisely. For Quaternary sediment archives, one of the key methods is luminescence dating. It dates the last exposure of mineral grains to heat or sunlight and enables the quantification of landscape process dynamics.

The presentation sets out to highlight the importance of methodological research in luminescence dating to expand the dateable age range and increase the accuracy and precision of ages. It features examples of ongoing research (for instance, radiofluorescence) and how blending geography, geochronology, and data science leads to better knowledge about past landscape dynamics.

