

## **Multiproxy evidence of Late Pleistocene environmental changes in the loess-paleosol sequence of Bůhzdař (Czech Republic)**

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Loess-paleosol sequences preserve information that can be used to reconstruct paleoenvironment, specifically the climatic conditions and the vegetation present at the time of their formation, or determine their age. A dense network of reliably analyzed sequences from different geographic locations is crucial for representation of ecological and climatic trends during the Pleistocene (Frechen, 2011). The aim of this study is to fill the gap in the geographical distribution of well described loess-paleosol sequences in Central Europe. Therefore, it focuses on a loess-paleosol sequence in Bůhzdař, situated 9 km NW of Prague, Czech Republic. This profile was last studied in 1952 by naturalist Vojen Ložek.

This study uses a number of analyses in order to get a multi-proxy record of local paleoenvironmental changes archived in a sequence of alternating loess sediments and paleosols in Bůhzdař. Geochemical approaches are combined with paleozoology to define climatic conditions at the time of formation of the strata. Oxygen isotope  $\delta^{18}O$  values of pedogenic carbonates can be used as a proxy of climatic factors such as temperature and precipitation, whereas carbon isotope values can be used to reconstruct changes in the atmospheric  $CO_2$  concentration (Obreht et al. 2013), perhaps also the relative proportions of plants using C3 and C4 metabolic pathways (Kaakinen et al., 2006). Findings of fossil malacofauna, which occupied specific ecological niches, can complement these results. The Bůhzdař locality is exceptional in terms of density of pedogenic carbonates, such as loess dolls, pseudomycelia and marl concretions. These concretions are, in some parts, more compact and form a compact layer. Analysis of pedogenic processes could bring new clues regarding the understanding of the way various forms of carbonates were formed.

The analyses are in progress and the first results will be presented during an EGU session in April 2016.

### References

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