

Last glacial loess records from the Lower Danube Basin – a comparative study of the key sites Vlasca and Balta Alba Kurgan

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The Lower Danube Basin hosts vast Pleistocene loess deposits. The thickness and the accumulation rates of the loess-paleosol sequences (LPS) are the results of manifold interplaying factors, e.g. the available detrital material in the source area and the topography of the sink area. The aeolian deposits of the Lower Danube Basin were investigated thoroughly throughout the years, using a variety of geoscientific methods applicable to LPS. Many of the investigated LPS cover several glacial cycles, providing paleoclimatic evidence from the middle to the Late Pleistocene. Some geomorphic situations lead to thicker loess accumulation during the last glacial cycle, enabling the study of high-resolution paleoenvironmental archives for the last 125 ka and beyond. Here, we present two Late Pleistocene LPS from the Bărăgan steppe area in south-eastern Romania: Vlasca (VLA) and Balta Alba Kurgan (BAK). The two sections are approx. 100 km afar and were formed under different geomorphic situations resulting in differing accumulation rates. Vlasca, e.g. is located at the left bank of the Lower Danube and has a thickness of ca. 27 meters, whereas BAK is exposed at a road cut near the Balta Alba alkaline lake ca. 15 km south of the Carpathian bending and covers presumably the last glacial cycle in ca. 15 meters. On that basis, we compare the results of VLA and BAK in order to investigate the differences and commonalities in paleoclimatic dynamics between a riverine site (VLA) and a full steppe setting (BAK). Amidst climatic evolution patterns, the geographic location, as well as the geomorphic situations, are considered to have a significant influence on the sedimentation

dynamics as well as processes such as in-situ weathering or pedogenesis. Against this backdrop, the two sections provide valuable information about the formation of LPS under varying topography, potential dust sources and (recent) climate conditions.