



Dynamics of aeolian dust sedimentation during the Middle and Late Pleistocene in the Vojvodina, Northern Serbia

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The thick loess-paleosol sequences of the Vojvodina region (Northern Serbia) contain a detailed paleoclimatic record since the late Lower Pleistocene. The most complete record of Middle Pleistocene climatic changes is preserved in the Stari Slankamen, Batajnica, and Ruma loess sections.

Stari Slankamen and Batajnica sections are exposed on the more than 40 m high steep cliffs at the right bank of the Danube. Up to ten loess/paleosol couplets can be recognized. The characteristic remanent magnetization obtained after alternating field demagnetisation point to a polarity reversal near to the base of both profiles. The Ruma loess section reveals a 20 m thick series of loesses and paleosols uncovered in the local brickyard and represents complete signature of paleoclimatic fluctuations during the past ca. 350 ka.

The current stratigraphic model of the Vojvodinian loess-paleosol chronostratigraphic units is following the Chinese loess stratigraphic system.

Detailed magnetic susceptibility (MS) records from these three sections give a general overview of the late Lower, Middle, and Late Pleistocene paleoclimatic fluctuations. The accumulation rates in Vojvodina's loess-paleosol sequences are derived from MS data sets versus depth which are tuned to the SPECMAP age model. Variations of MS values, dust accumulation rates, and intensity of pedogenesis demonstrate clear evidence for the Middle Pleistocene climatic and environmental transition. The onset of

loess deposition in Vojvodina region indicate direct link to the temporally and spatially progressive aridization of interior Eurasia since the lower Pleistocene.

The oldest part of the Middle Pleistocene is characterized by relative high and uniform dust accumulation and soil forming rates as well as relatively higher MS values. In contrast, the last five interglacial-glacial cycles are characterized by sharp environmental differences between high dust accumulation rates during the glacials and low sedimentation rates observed in fossil soils.

The data presented in this study demonstrate the great potential of Vojvodina's loess archive for the reconstruction of local as well as global Pleistocene climatic evolution.