



A detailed Mid- to Upper Pleistocene enviromagnetic record retrieved from a long loess sequence at Batajnica, Vojvodina, Serbia

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Vojvodina's loess-paleosol sequences reveal a continuous record of paleoclimatic variations since the late Lower Pleistocene. The Vojvodina region is located in the south-eastern part of Carpathian (Panonnian) basin and it is the area of the confluence of Danube, Sava, and Tisa rivers. Due to high accumulation rates and widespread occurrence detailed paleoclimatic information are preserved in loess-paleosol sequences (LPSS) of the 5 last glacial-interglacial cycles at least.

Here, we present results of an interdisciplinary research on LPSS from the Batajnica section. The section is exposed in cliffs forming the south-western banks of the Danube. It comprises 5 loess-paleosol couplets at least. Thick loess and fossil chernozems characterize the first and the second cycle. Below the second paleosol complex (S2) the thickness of the loess layers are decreasing and rubefied brown forest soils form the paleosol complexes. At least 2 tephra layers could be identified by rock magnetic and mineralogical investigations.

The main objective of this study is to reconstruct the paleoclimatic conditions during loess accumulation L1 to L2 and soil forming phases S0 to S5 which correspond roughly to MIS1 to MIS13/15. In autumn 2004, almost 750 samples were collected. Sample spacing is all over 5 cm. Samples were subjected to standard rock magnetic laboratory protocols including determination of frequency dependence and high- as well as low-temperature behaviour of magnetic susceptibility. Sedimentological, pedological, and mineralogical investigations are in progress. Selected horizons will

be dated by luminescence methods. Laboratory work is not finished yet.

Magnetic susceptibility (MS) as function of depth show a well known pattern of low values in loess and high values in paleosols indicating strong enhancement of magnetic minerals during soil formation. Beside the recent soil (S0) which is strongly contaminated by archaeological artefacts, the third paleosol (S3) reveals the highest values in all concentration dependent magnetic parameters and a very distinct double peak. On the whole, the rock magnetic signal at Batajnica resembles very much the typical pattern of the environmental magnetic record of the Chinese loess plateau. Independent age control is expected from luminescence dating of the uppermost cycles. Tephra chronology will hopefully allow for correlation with marine as well as lacustrine paleoclimatic archives.

The detailed rock magnetic record at Batajnica yields valuable data for the reconstruction of paleoclimatic fluctuations for the last 500 ka in SE Europe. Moreover, the record provides an important link between the classical Central European loess sites e.g. in Moravia (Czech Republic) to the North and West on the one hand and the Central Asian and Chinese loess provinces on the other hand.