



Highly resolved rubification indices recorded at the Stari Slankamen loess site (Vojvodina, Serbia)

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The loess sequences in the Vojvodina region are among the oldest and most complete loess deposits in Europe and include a detailed palaeoclimatic record of the Pleistocene. The loess-palaeosol sequences of the Vojvodina are located in the south-eastern part of the Pannonian Basin, at the confluence of the rivers Danube, Sava and Tisza. Within the Eurasian loess belt the Vojvodina is the key section for understanding and reconstructing the palaeoclimatic developments in South-Eastern Europe.

The Stari Slankamen loess-palaeosol sequence is situated in the eastern part of the Srem Loess Plateau on the right bank of the Danube near by the river mouth of the Tisza into the Danube. Eight loess layers were distinguished, intercalated by nine pedocomplexes. The sequence under study has a total thickness of approximately 45 m. According to previous investigations the Stari Slankamen loess site is considered as one of the most important sections in the Pannonian basin.

Color indices were calculated following HARDEN (1982), using the spreadsheet template developed by TAYLOR (1988). These indices quantify the degree of color change between assumed parent material and soil developments. Wet and dry colors were determined in Munsell notation. The rubification index as numerical expressions of soil redness is following the definitions of SCHWERTMANN et al. (1982) and KEMP (1985).

We determined color indices and calculated the rubification index for each 5 cm of the Stari Slankamen exposure. Rubification values for the loess layers are considerably lower than palaeosol values and the differences between the soils are showing age

dependence. An increased rubification value is found in the lower palaeosols. Similar results were reported in previous studies of rubification, recorded at other Eurasian loess sites.

These results are giving additional palaeoclimatic evidence important for the understanding of the Middle Pleistocene palaeoclimatic transition and shows important information about the development of palaeosols during warm periods of the Pleistocene. Eventually they allow a better insight in the competition between aeolian dust sedimentation and interruptive soil formation, identifying short periods of soil formation that are linked with warmer and wetter climates.

This is part of an ongoing study including detailed grain size investigations, luminescence dating, amino acid racemization and palaeo- and environmental magnetic studies.