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Comparison between eight glacial cycles recorded at Antarctic EPICA ice core and Serbian loess

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Serbian loess deposits are among the oldest and most complete loess-paleosol sequences in Europe. The thick Serbian loess-paleosol sequences (SLPS) contain a detailed paleoclimatic record of the last eight glacial-interglacial cycles. Despite of general agreement with marine sediments and EPICA Dome C (EPC) records (*EPICA, Nature 429, 2004*) detailed reconstruction determined from SLPS indicates some specific differences.

The main feature of EDC deuterium is the so-called Midd-Bruhnes Event (MBE) at the marine isotope stages (MIS) 11/12 transition. In the contrast of sharp difference between pre- and post MBE interglacials recorded at EDC ice core, detailed variations of sedimentologial, magnetic, and geochemical proxies, and intensity of pedogenesis from SLPS demonstrate successions of environmental changes form semi humid subtropical environments, then to temperate forest, and finally towards landscapes with typical steppe soils. Other Eurasian loess-paleosol records indicate similar paleoclimatic trend during the last about 850 millennia, but environmental indices of progressive aridization especially during the interglacials are even sharper expressed at SLPS. Remarkable evidence of progressive drier interglacial climates recorded at SLPS coincide with some quantitative vegetation changes after MIS 16, as increasing of domination of *Quercus* and *Carpinus* tries which are drought tolerant taxa (*Tzedakis et al.*,

QSR 25, 2006).

The onset of loess deposition in Serbia indicate link or phase delay to the temporally and spatially progressive aridization of interior Asia since the lower Pleistocene. This paleoclimatic trend can be causally related to expansion of northern hemisphere ice and/or changes in atmospheric circulation after tectonic uplift in Asian high mountains (*e.g. Yang et al., Geochim. Cosmochim. Acta 70, 2006*). This study raises questions about the global climatic significance of Arctic and Antarctic ice volume dynamics.