



Regional and geomorphological controls on loess deposition during the late Quaternary at Slivata, North Bulgaria

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Loess is a key terrestrial climate archive providing unparalleled opportunities to investigate past dust cycles, a major component of the past climate system. These characteristic cyclical sequences, in loess records, reflect changes in climate (e.g. glacial and interglacial) and environment (e.g. landscape stability). In Central and Eastern Europe, loess deposits are often the only high-resolution, long-term terrestrial record and therefore are an important archive for understanding palaeoclimatic change within the region. During the last 40ka, however, the climate of these regions varied spatially across the individual sedimentary basins. This spatial variability is represented in highly variable proxies (e.g. grain size) and sedimentation rates across the Carpathian Basin, Wallachian and Bulgarian Planes.

Here we present an environmental reconstruction from a loess-palaeosol sequence in northern Bulgaria, which demonstrates a markedly different late Quaternary history to previously studied regional sites (c.f. Fitzsimmons et al., 2012). Using magnetic susceptibility, grain size and luminescence dating techniques, we identify particularly high sedimentation rates between 17-14ka. The level of sedimentation during this period is almost equivalent to a full glacial-interglacial cycle recorded at sites further downstream. Further, we note multiple thin palaeosol horizons during that period which do not appear to represent recognised global climatic events, implying the role of other factors (e.g. sediment availability at the source region, Danube's fluvial activity, regional climate) might have been controlling loess-palaeosol development at this site.