

Paleoclimatic and paleoenvironmental fluctuations inferred for the Middle and Late Pleniglacial transition and Late Pleniglacial (MIS3/MIS2 and MIS2) based on high-resolution (ca. 35 and 70 years) complex sedimentological and paleoecological data from the loess profile of Katymár brickyard (Hungary)

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The Katymár brickyard profile, found at the northernmost fringe of the Backa loess plateau, is one of the thickest and best developed last glacial loess sequences of Central Europe. In the present work high resolution (at 2 cm and 4 cm intervals representing ca. 35 and 70 years) magnetic susceptibility, grain-size, LOI, water-solution trace elements measurements and pollen, phytolith, anthracological and malacological analyses were implemented on samples derived from the 11,5 m profile corresponding to a period between 35,000 and 13,000 cal BP years (from the terminal phase of MIS3 to the end of MIS2).

One aim was to correlate the findings with the ice core records of northern Greenland in order to establish a high-resolution “decadal” paleoclimatic - paleoecological record for the last climatic cycle, which could contribute to a better understanding of the process of regional landscape and paleoenvironmental evolution documented in other biotic and abiotic proxies so far. Our results revealed a strong variability of loess deposition and pedogenesis during the Middle and Upper Pleniglacial (MIS3/MIS2 and MIS 2).

Millennial time-scale climatic events that characterize the North Atlantic area during the last climatic cycle have been also clearly identified. The strong correspondence between the Greenland dust record and our magnetic susceptibility record up to 35-70 kys implies that magnetic susceptibility of the studied deposits was strongly controlled by dust accumulation in the area. From 35-70 kys onwards however temperature must have played a more prominent role seen in the opposite course of dust influx values at NGRIP and the recorded susceptibility, sedimentologic, geochemical values and paleoecological (anthracological, pollen, phytolith and mollusc) data at our site.