



Early regional LGM (MIS 3) reflected in Central European Loess-Paleosol Sequences?

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The age of the “Brandenburg Phase”, representing the regional LGM in Northern Germany and Poland, has been under debate. Evidence was found recently by OSL dating that it occurred during late MIS 3.

In a new loess profile in the famous quarry of Nußloch south of Heidelberg (Germany) an exceptionally thick (6 m) loess-paleosol sequence (LPS) starts with a boreal brown soil regionally known as “Lohne soil”, which terminates the Middle Pleniglacial LPS, according to classical stratigraphies. This paleosol is overlain by loess beds interbedding with weakly developed tundra-gley soils of typically Upper Pleniglacial habitus. Mean OSL ages from quartz fine and middle grains range between ca. 29 ka and ca. 35 ka in this part of the section which is much thicker than in previously studied corresponding parts of the loess stratigraphy at the Nußloch site. Our surprising dating results are, however, supported by recently dated loess beds in the Central European corridor between the ice margin of the Brandenburg Phase and the Northern Alpine LGM terminal moraines. Paleoenvironmental reconstructions point to cold but rather humid climatic conditions favouring rapid ice advance.

We, thus, hypothesize that the rapid advance of Scandinavian ice into northern Central Europe which may have occurred ca. 10 ka prior to the global LGM, is reflected in some well-preserved Central European loess sections covering the last glacial cycle.