From micromorphology to palaeoenvironment: The MIS 10 to MIS 5 record in Paudorf (Lower Austria) - DTU Orbit (29/08/2019)

The loess-palaeosol sequence (LPS) in Paudorf, Lower Austria is characterised by varying dust sedimentation rates, re-deposition with admixture of local rock fragments, erosion and pedogenic overprinting. Detailed semi-quantitative micromorphological analyses reveal the complex genesis of the palaeosols/pedocomplexes and the palaeoenvironmental conditions present during their formation. Our genetic model of landscape formation is underpinned with luminescence (post-IR IRSL) ages; the resulting chronological framework indicates that the basal loess sediment was deposited during marine isotope stage (MIS) 10. The overlying lower pedocomplex experienced a complex genesis in a forest-steppe environment during MIS 9. In the sandloess sediment of MIS 8 a (forest-)steppe palaeosol (MIS 7) developed. The overlying MIS 6 loess sediment shows several intercalated Cryosols. The upper pedocomplex is a Chernozem (MIS 5c-a?) developed in a mixture of re-deposited Cambisol (attributed to MIS 5e), dust and local material. This study shows that the palaeoclimatic conditions in the study region were comparable to those of Central Europe during the last two glacial periods, whereas the conditions were more comparable to the Pannonian Basin climate during the last three interglacials. (C) 2013 Elsevier B.V. All rights reserved.