



Holocene pedogenesis in the Black soil area of southern Central Germany – a multiproxy approach

Hans von Suchodoletz (1,2), Tobias Lauer (1), Christian Tinapp (1), Susann Müller (3), Eileen Eckmeier (4), Bruno Glaser (5), Lisa Goldmann (1), and Christoph Zielhofer (1)

(1) Leipzig University, Institute of Geography, Leipzig, Germany (hans.von.suchodoletz@uni-leipzig.de, +49 341 97 32799), (2) University of Technology Dresden, Institute of Geography, Dresden, Germany, (3) Goethe University Frankfurt/Main, Institute of Physical Geography, Frankfurt/Main, Germany, (4) University of Bonn, Institute of Crop Science and Resource Conservation, Division Soil Science, Bonn, Germany, (5) Martin-Luther University Halle-Wittenberg, Soil Biogeochemistry, Halle/S., Germany

Black soils (chernozems, phaeozems) cover some areas in the driest parts of Central Germany and are especially found on loessic material. However, time and causes of formation of these soils as well as their former distribution in the region have been a matter of debate for many decades: Accordingly, hypotheses about their age range from the Latest Pleistocene until the Neolithic period, and the assumed formation processes vary from natural (steppic vegetation, properties of parent material) to anthropogenic factors (forest-clearance, fire activity).

In order to shed light on some of these open questions, several sites with black soil material (recent black soils, black soil colluvia, black soil material at archaeological sites) in southern Central Germany were investigated. We applied a multi-proxy approach that combined intensive field work with the analysis of geochemical and environmental magnetic proxies with micromorphology as well as with OSL and archaeological dating. We tried to obtain information about the intensity of the development of black soils during different periods of the past and to look at their transformation during the Late Holocene. Finally, we tried to link this information with the known hypotheses about the formation of black soils as well as with landscape and palaeoclimatic development in Central Germany.