Loess in Armenia - Stratigraphic findings and palaeoenvironmental indications

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Current loess research enables us to better understand factors that determine the ways that loess (dust) accumulation and soil formation has responded to the rapid and variable Late Quaternary climatic changes. With the recent discovery of loess-palaeosol sequences in Armenia by our research group we may close a gap between loess records of the Russian Plain and the Caspian Lowlands in northern Iran. Preliminary investigations present encouraging results. Loess-palaeosol sequences of Armenia proved to be especially rewarding due to their thickness (up to 45 m) and the presence of diagnostic tephra layers. The current composite profile is based on 2 individual profile sections and can be considered representative for north-eastern Armenia. Different kinds of pedogenesis have been identified that led to the formation of black chernozemic soils and brownish soils, respectively. Furthermore, polygenetic soil formations as well as characteristic layers of relocated soil material appear. Three well-developed pedocomplexes can be distinguished. First results of environmental magnetic analyses show that an individual magnetic fingerprint could be traced for each sedimentological unit. Considering magnetic properties of the loess, mainly regional Caucasian components could be identified. Furthermore, we realized first luminescence dating pointing to a sedimentation of the upper part of the sequences between 39 ka and 150 ka.