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# A multidisciplinary chronology of a SE European last glacial loess archive: comparison of results from magnetic stratigraphy, tephrochronology, OSL dating, and radiocarbon dating

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Loess-palaeosol sequences (LPSs) are widespread archives of Pleistocene environmental changes in Eurasia. In Europe, LPPs can be found from the oceanic regions of France in the NW via the Pannonian Basin to the continental plains to the north and east of the Black and Caspian seas. Their chronologies are determined by various direct and indirect dating methods; however, in most cases only a single method is applied. We present first results of a multidisciplinary dating study on a loess record from southeastern Romania, in which evidence of tephrochronology, magnetic stratigraphy, OSL dating, and radiocarbon dating are compared. The LPS of the Balta Alba Kurgan (BAK) profile is located in the steppe landscapes of the Lower Danube (Romania). The approximately 15 m thick LPS starts with an interglacial palaeosol complex at its base and is capped by the Holocene soil, which includes the distal flank of a Neolithic to Bronze Age tumulus. Furthermore, it comprises interstadial soil horizons and a tephra layer that was identified as the Campanian Ignimbrite (CI/Y5) tephra (39-40 ka BP). These chronostratigraphic markers function as anchor points for the high-resolution dating results. The chronostratigraphy obtained by the multiproxy dating approach forms the backbone of a detailed reconstruction of the spatio-temporal palaeoenvironmental changes during a time interval when anatomical modern humans (AMHs) dispersed into Europe.