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Dust deposition during the Early Holocene on the loess plateaus of the Vojvodina region in Northern Serbia

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The Northern Serbian province of Vojvodina is a lowland area encompassing the confluence of the Danube, Sava, Tisa (Tisza), Drava, Morava and Tamiš (Temes, Timiş) rivers, which separate several remnant loess plateaus. Loess sediments in the Vojvodina region are among the oldest and most complete loess-paleosol formations in Europe. These thick sequences contain a detailed paleoclimatic record since the Early Pleistocene. The better preservation of Serbian loess-paleosol sequences compared to other European loess records is most likely related to the persistence of much drier conditions in the region, coupled with “plateau-like” dust accumulation style.
Recently and through detailed luminescence-based chronological investigations of accumulation derived from several loess sections we aimed at addressing the timing of the onset of Holocene soil (S0) formation in the wider region. So far, the chronological results demonstrate a lack of intensive pedogenesis coeval with the postulated Holocene onset (ie., 11.7 ka BP), and continuation of Aeolian dust deposition during the Early Holocene in some of the investigated sections. Lake sediment and speleothem records from the wider area also suggest that, at least regionally, the hydroclimatic characteristics of the Early Holocene differed markedly. This evidence leads to an important question about the validity of previously generalized direct stratigraphic correlations between regional terrestrial environmental archives and global marine and ice core records (direct synchronization of records vs. acknowledging leads/lags), that employ the Late Pleistocene/Holocene boundary at 11.7 as an absolute tie point.