

Airborne fissure fillings of karstified limestones in the Carpathian Basin

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Triassic paleokarst limestone served as a dust trap for the Pliocene red clay (paleosol) deposits in the Carpathian basin. This study evaluates a silt/clay-rich geological deposit, paleo-cave/karst fissures sediments derived from mixtures of dust (eolian silt) and karst breccias. Evidence that the fluvial cave/fissure sediments in the Triassic limestones are derived from this eolian red clay include compositional and textural matches, especially grain size distribution trends vertically downward from the former landscape surface. These grain size trends indicate infiltration of the eolian red clay into the underlying karst system. The deposits also contains abundant vertebrate fossil. Faunas accumulated in fissure fillings of karstified limestone and thus provide a minimum age for the subaerial exposure (exhumation) of the bedrock at the given site. The study sites are: Ivanovce (Slovakia), Beremend and Csarnóta (Hungary), and Ridake (Serbia). According to the morphological characteristics, the rodent association from these localities be placed in the Pliocene.

Late Cenozoic cave/fissure sediments are increasingly utilized as archives of geologic change. The role of dust (eolian silt), including its inherited compositional and textural properties from a distant source area, land-atmosphere transfer processes, and resedimentation processes on the land surface overlying the cave-karst system, remain promising areas for research.

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