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## Reconstruction of a floodplain area over the last 40.000 years (Tisza river, Hungary) – comparative case study of $^{14}\text{C}$ and OSL methods

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### Reconstruction of a floodplain area over the last 40.000 years (Tisza, Hungary)

#### – comparative case study of $^{14}\text{C}$ and OSL methods

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### Abstract

$^{14}\text{C}$  and OSL results of the 5 parallel, neighbouring cores (avg. depth 19 to 20 meters) were compared for a flood basin area (Jászság-basin). Four major sedimentary horizons were identified: meadow soil on the top; silty clay as the second horizon; a clay-silt section; and fine sand.  $^{14}\text{C}$  and OSL data were integrated into a consolidated age model by BACON software package. Formation of the recent top meadow soil (the upper 1-1.5m) falls in the Holocene. The mean conventional apparent radiocarbon age ( $940 \pm 420$  years) was used for correction of the radiocarbon reservoir effect of soil bulk ages. The SubAtlantic + SubBoreal section show increasing apparent deposition rates ( $\sim 11$  cm / ka). The silty-clay strata represents the whole Würm (Weichselian) Last Glacial to Upper Pleniglacial period (aDR  $\sim 6.3$  cm/ka). The Săgvár-Lascaux interstadial climate period section was apparently much slower (aDR decreases from  $\sim 4.2$  to  $\sim 1.6$  cm / ka). About 10 to 60 cms of sediment must be missing from this section. The next part of the section is a very long period ( $\sim 10$  kys) with a stable, much greater aDR than even at the end of the Holocene ( $\sim 20$ -25 cm/ky). The

clayey silt layers fall into the Late Pleistocene / Middle Pleniglacial period, a period of nearly 7.000 years of sedimentation resulting in deposits with a thickness of ~9 m, shown a very high apparent deposition rate (aDR) about ~0.12 m/ka.

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