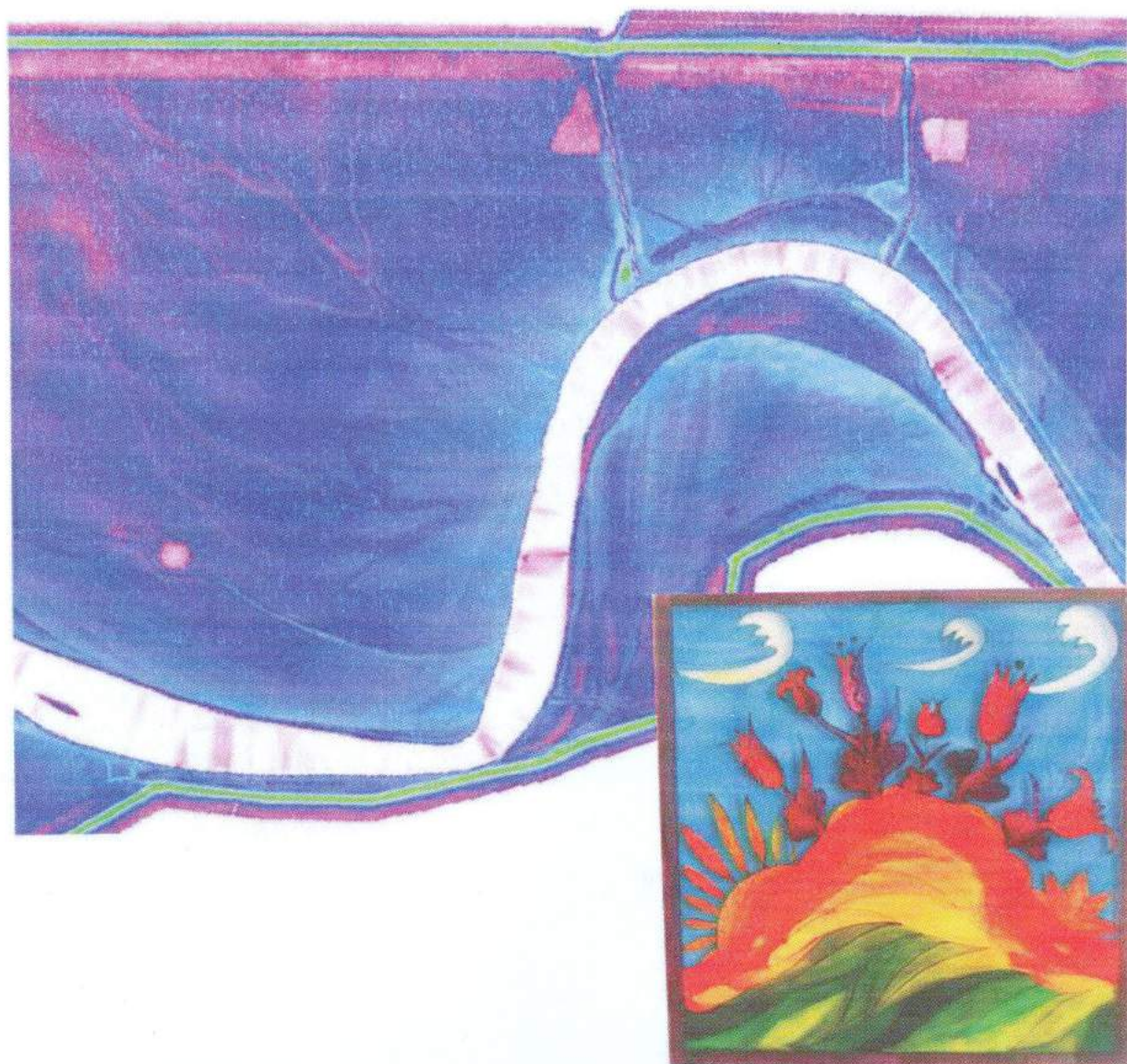


International scientific conference of the Carpatho-Balkan-Dinaric Geomorphological Commission

Programme

Abstracts

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Front page: LiDAR image of the Maros: the southern floodplain section is divided into lower and higher floodplain areas. On the northern floodplain the natural levee is dissected by a crevasse system, which drains the flood water towards the distal part of the floodplain.

Geo-artistic interpretation of these fluvial forms: redish colours refer to actively forming areas: the channel, the low floodplain and the crevasse-system. Green colours indicate the less active high floodplain areas. (© T. Kiss)

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1963	Kraków-Bratislava
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UPPER PLEISTOCENE LANDSLIDE EVIDENCES AT COSTEȘTI (MOLDAVIAN PLATEAU, ROMANIA)

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Pleistocene landslides deposits are not so frequent around the world (Panek, 2015). In the North-Eastern Romania hilly area known as the Moldavian Plateau, there are many Holocene and actual landslides (Niculiță et al., 2016a), favoured by the geology, geomorphology and climate (Mărgărint and Niculiță, 2017). For several sites, the usage of landslide mapping and landslide morphology analysis in connection with known archaeological sites morphology was used to hypothesize the possible Upper Pleistocene age of some landslide deposits (Niculiță et al., 2016ab). One such site is the Costești complex landslide (Iași County). The radiocarbon dating of three samples, two of wood and one of organic material, from the floodplain deposits that covers the landslide deposit showed that this floodplain deposited in the 45-20ky cal. BP period. In this situation the age of the landslide is older than 45ky cal. BP, without being able to say exactly yet (due to the lack of datable material in the landslide deposit) the age of the failure. To our knowledge this is the oldest landslide deposit in Romania, this finding increasing the geoheritage value of the site (Niculiță, 2018).

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TEMPERATE WOODLAND EXPANSION DURING MIDDLE HOLOCENE IN SAND DUNE ENVIRONMENT (VIENNA BASIN)

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Use of multi-proxy approach presents appropriate ability for hypothesis verification about vegetation development in the postglacial vegetation development. Several proxies (palynology analysis, macrofossil analysis, radiocarbon dating, sedimentary analysis, microprobe chemical analysis) were used to characterize changes of vegetation cover during Holocene in the Zelenka protection area (Slovakia). Lithological changes together with magnetic susceptibility and Loss-on Ignition (LOI) suggests disturbances in the Early/Middle Holocene as well as local changes in the vegetation composition of the wetland area. Regional vegetation cover consisted of the open steppe area with several forest stands. Forested area was dominated by *Pinus* type in the Early Holocene. While in the Middle Holocene we observed dramatic increase of woodland species with

Quercus, *Corylus* and *Fagus* that infiltrated the *Pinus* taxa. However, the Middle Holocene temperate taxa expanded in this area later than in the surrounding areas, which is probably because of specific geology conditions with sandy substrate forming geomorphology with sand dunes. Consequently, causing higher temperature amplitudes (lower specific heat capacity of sands) this substrate effected different climatic conditions. The problematic was sedimentary hiatus, that occurred in the soil profile, suggesting local changes in the mire. Absence of the peat sediment during middle Holocene occurred in this region, suggesting different climatic conditions. Human interaction with landscape and first settlements around this area started in Eneolithic. Archaeological records showed fully developed culture functioning around this area at the beginning of Late Bronze Age (Urnfield Culture) and further anthropogenic changes later during Modern Age.

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S2

DEVELOPMENT OF FLUVIAL LANDFORMS IN THE BEREK-PLAIN, UPPER TISZA REGION, HUNGARY

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The Bereg Plain has highest density of active and paleo-channels in the NE part of the Pannonian Plain, because the rivers had various courses and directions. The Bereg Plain was part of the alluvial fan built by the Tisza and its tributaries during Pleistocene. As a result of tectonic movements ca. 22,000 years ago the Bereg Plain and the neighbouring Szatmár Plain sank, which caused changes in landscape evolution: the Tisza and its tributaries eroded large proportion of the alluvial fan and later accumulated silty/clayey floodplain deposits. The paleo-channel structure of region at the Late Pleistocene is not fully understood, therefore we aimed to reconstruct the landscape evolution of the Bereg Plain, applying detailed analysis of the terrain, sedimentary analysis, OSL and radiocarbon dating, and pollen analysis.

The elevation of the Bereg Plain (area: 500 km²) ranges between 94 and 114 m. Four natural levees were identified on the DEM. The largest of these is located on the SE part of the plain and was built by the Tisza. The other three run approximately parallel direction alongside the natural levee of Tisza. Their length is several tens of kilometers; their width is 800-1000 m; and their height is 0.5-2m. The near-surface deposits of the natural levees consist of very fine grained sandy and clayey silt. The structure of these levees was well visible in 4-5 artificial pits which were several hundred-meter-long and 2-3.5 m deep. The most characteristic features were black paleosol layers at 60-200 cm depth, indicating organic-rich environment. Between the paleosol layers 10-70 cm thick silty inclusions can be detected. On distal parts of the floodplain 10-15 cm thick, dark-grey layers were observed. Towards the proximal part of the floodplain only one layer of well-developed paleosol layer was found in a thickness of 40-80 cm. The age of the paleosol is between 7150–7510 cal BP year and 6830–7270 cal BP year. The age of the uppermost layer of the distal floodplain is 5052–4081 cal BP year. The age of the inorganic-rich layers in a depth of 350 cm is 21-25 ky (by OSL method). No paleosols were found in the backswamp areas between the levees, probably because greater water depth. The palynological study referred to 32,000, 12,000 and 7,000 year old paleo-channels in the backswamps.

The data suggest that the sandy-clayey silt layers were deposited in Bereg Plain until 7500 years ago; and later then the back swamps started to form as a result of decreasing energy of the river system. On the higher parts of the distal swamp areas a well-developed paleosol layer formed out (between the levees). This paleosol layer splits into three, brighter coloured and thinner layers towards the proximal floodplain areas. The endpoint of this back swamp condition was in the Atlantic phase, which was followed by natural levee formation processes.

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