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An environmental historic reconstruction of the Sárköz region
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Applied

The central area of the Pannonian basin encompasses mostly low-relief areas. One of the largest valleys is a conspicuously straight valley of the River Sárköz between Székesfehérvár and Szekszárd. Although the river in its natural condition originally a marshland, its hydrological characteristics was artificially changed to due to river regulation in the 19th century.

The area shows settlement remains since the Neolithic, and we assumed that the settlement pattern might have been influenced by the various water levels. This research is aimed to detect the original features by collecting data on archaeological site locations and compare them to the fine elevation pattern of the sites.

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In order to derive the elevations of the identified sites LiDAR data acquisition has been carried out. The data have been processed with of OPALS software to create a high-resolution, high-accuracy digital terrain model (DTM). We integrated the DTM and the known archaeological site locations in GIS system for qualitative and quantitative analysis. The processing aimed at discovering small-scale surface changes and its possible causes.

The water level changes may be due to several factors: (1) there may be long-term climatic changes influencing runoff; (2) the area is known to show geodynamic activity that may cause tilting, slight tectonic uplift and/or subsidence so that the relief of the valley could have changed; (3) anthropogenic influence may also happened.

Our goal is to achieve an environmental historical reconstruction of the Valley of Sárköz, to make methodological analysis with the LiDAR-based DTM to make predictions concerning the archaeological heritage.

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**High resolution mineralogical investigation in the Tölgyhát
Quarry, Gerecse Hills, Hungary**

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Theoretical

Our aim was to carry out a high resolution stratigraphical mineralogical investigation of the Toarcian anoxic event. The studied section was the Tölgyhát Quarry, Gerecse Hills, Hungary. The Gerecse Hills are one of the geologically most intensively studied (paleontological, lithostratigraphical, structural, chemostratigraphical and mineralogical) area in Hungary.

We collected 17 samples from different layers (the top of the Törökbükk Limestone Formation the overlying clay bed regarded as correlative of the Úrkút Manganese Ore Formation known from the Bakony Mts., and the lower part of the Kiskerecsse Marl Formation. For combined interpretation of the results the investigated section was

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