

Geophysical prospecting in Porolissum

Tamás Lipovics¹ – István Bajusz² – László Lenkey³

1. Geophysical Department, Institute of Geography and Earth Sciences, Eötvös University, Budapest

2. Historical Museum of Zalău, Zalău – Babes-Bolyai University, Cluj

3. Research Group of Geophysics and Environmental Physics, Hungarian Academy of Sciences, Budapest

The talk presents the results of a magnetic survey carried out with archeological purposes by the Geophysical Department of the Eötvös University near the small, Transylvanian village of Mojgrad. In the past here laid the fortress and town of Porolissum, which guarded the north-western border of the Roman Empire's Dacia province. The camp was founded after the end of the Dacian wars in cc. 106 AD in order to serve as a garrison for the auxiliary troops, and later a military settlement evolved in its surroundings. In its best period the town was an important trading center with a population of 25-30000. The settlement existed until the fourth century, however, since that time no other ethnical groups lived for a longer time in its territory. The buildings of Porolissum were only disturbed by the late nineteenth century's agricultural activity which was also accompanied by wall exploitation, but most of the walls remained undisturbed. This fact provides a tremendous opportunity for the systematically continuing archeological excavations since 1908.

To help the archeological investigations the first magnetic surveys were carried out by GSM-19 type Overhauser gradiometers with vertical gradient method in a meter times meter grid. In the surroundings of the town three places were surveyed an area of 1.5-2 hectares: a) in the south-western forefront of the fortress, in front of the Porta Decumana; b) inside the fortress, also in the south-western area; and c) in the northern area of the fortification, along the road that leads to the town. In all the three of locations the walls of the buried buildings were mapped. The buried walls show significant positive anomalies on the magnetic anomaly maps which is due to the fact that they were constructed of dacite stones. The volcanic rocks come from the quarry of the neighbouring Magura mountain, and bears a very strong magnetization.