

P13-3**PREVLAKA ISLAND (MONTENEGRO)
ARCHAEOGEOPHYSICAL EXPLORATION****SNEZANA KOMATINA** and **ZORAN TIMOTIJEVIC**

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The Prevlaka island, famous as the Flowers Island, is located near town Tivat in Boka Kotorska Bay, Mediterranean part of Montenegro (Yugoslavia) – Fig.1. The island is 300m long and 200m wide. At Prevlaka and neighbouring hills, remnants of Roman constructions and crypts are existent. During the end of the 12th century, when King Stevan Prvovencani ruled a country, over the foundations of Benedictine monastery, an Orthodox Church of Arhangel Mihailo was constructed. The church was destroyed in the 15th century.

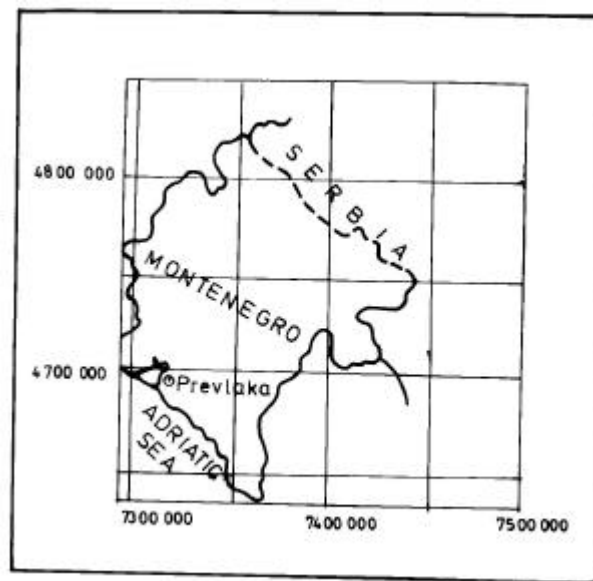


Fig.1. The study area (1:3 000 000)

Purpose of geophysical exploration performed in 1997 at the Prevlaka site was to determine presence and position of the archaeological remnants, that is – dimensions and inside walls of the old church, walls of potential fortress surrounding, existence of crypts, as well as other buried and flooded subsurface objects important for archaeological excavations.

Resistivity measurements were carried out by electric mapping and soundings. The mapping was made along twelve lines (total length: 1200m), by Wenner array, with two depths of exploration (AB=3m, MN=1m and AB=6m, MN=2m) in 1m intervals. At some intervals, where a detailed measurement was not required, depth of exploration was AB= 6m, MN= 2m and AB= 9m, MN= 3m, in 2m intervals. According to the obtained data, presence of covered subsurface structures was identified (arrows at Fig.2.(left), meaning indications along the object).

The soundings was performed at two points, by Schlumberger symmetric array, to $AB/2max=20m$, in order to define potential layer interesting for archaeologists. The depth of such layer was determined to be 8m.

Magnetic method was applied along four lines at approx. 400 measuring points, in 1m intervals, by proton magnetometer. Total component of the geomagnetic field was measured at two height levels: 60 and 180cm. As in the data processing, difference for the levels was calculated, it can be treated as a vertical gradient. In Fig.2.(right) places with archaeological remnants are marked as indications by arrows. Carriers are at the surface of the terrain or very near under the surface, characterized by very low magnetization.

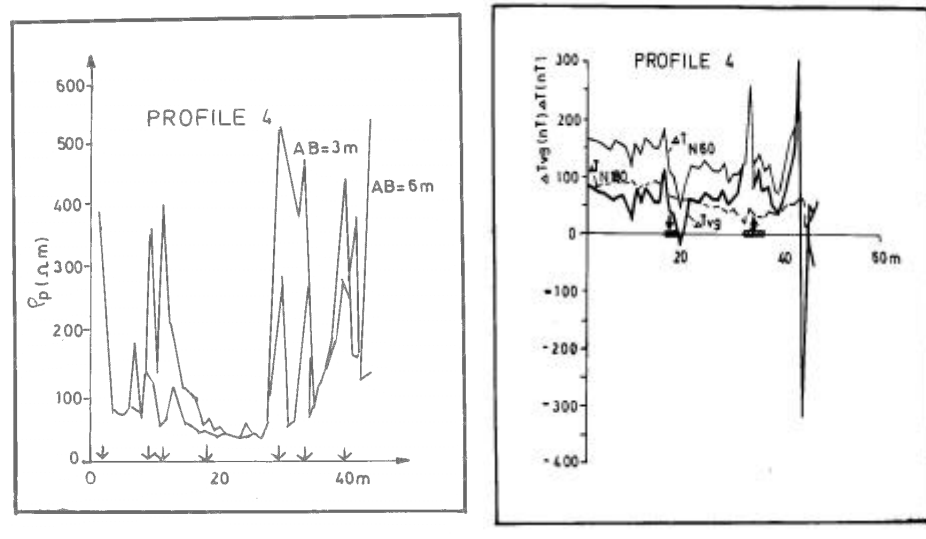


Fig.2. Prevlaka locality. Diagram of electric mapping (AB=3m and AB=6m) with indications of archaeological remnants (arrows) (1:500) (left); Diagram of magnetic measurements (height of sensors: 60cm and 180cm) and vertical gradient with influence zones of the carriers (arrows) with low induced and remanent magnetization (remnants) and zones with intensive induced magnetization (metal framework and fences, pipes, etc.) (shaded areas with arrow) (right).

Geophysical results were justified by excavation. So, geophysical methods are essential tools for subsurface investigations, assisting not only in the improvement of the land – planning, but also in making archaeological maps of interested terrain. Further application will lead us to more complete knowledge of the capabilities and limitations of these methods in domain of buried object exploration, some intentionally placed and some as a result of industrial progress.