

# Geophysical Prospection: From the detection and imaging of buried antiquities to the contribution in protecting and preserving monuments

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## ABSTRACT

The geophysical prospecting methods are applied in archaeological research till the decade of 40ies aiming to detect and map buried antiquities. The idea is that since the buried remains of the past human activity comprise local inhomogeneities of the shallower most strata of the ground, it is much likely that they create anomalies to natural and artificial fields.

The anomalies are recorded by very accurate instruments in high resolution mode. Next, these signals are processed and interpreted by advanced methods. The final product should be a map (an image) resembling the ground view of the buried remains similar to what would have been drawn (or photographed) if an excavation had taken place. Clearly, such kind of mapping is aiding greatly the excavator, since he can choose the places to open trenches and program his work. Further, he can draw conclusions from rather limited excavation work and extrapolate these conclusions for the whole site.

The use of geophysical prospection is an inexpensive and time saving procedure. Usually large areas are covered in a few days.

Nowadays, the geophysical methods are not restricted in assisting and accelerating the excavation research as explained above. They are also used in order to protect and preserve the archaeological heritage. In fact, they are also applied in tracing the water ways which threaten ancient constructions, in studying the foundation conditions of monuments, in detecting antiquities buried under others or in standing monuments (eg. crypts in the walls, etc.), in assessing the moisture content of walls and many other applications.