

9.1 GEOPHYSICAL AND REMOTE SENSING SURVEYS AT THE ARCHAEOLOGICAL SITE OF PHILIPPI, N. GREECE

A. Stampolidis^{1*}, A. Karamitrou² and G. Tsokas¹

¹Department of Geophysics, School of Geology, Aristotle University of Thessaloniki, Thessaloniki, Greece

²Department of Archaeology, University of Southampton, UK.

*Corresponding author e-mail: astamp@geo.auth.gr

ABSTRACT

Geophysical techniques have emerged as an integral component of archaeological field exploration. Utilizing multiple overlapping geophysical methods in tandem is important, as they provide sensitivity to varying subsurface characteristics, enabling a more comprehensive and resilient depiction of the archaeological targets.

The electrical resistivity and the magnetic gradiometry methods are commonly used in conjunction in several archaeological sites. The resistivity method is able to map features like building foundations and structural remnants, while the magnetic method shows sensitivity in objects with significant magnetic susceptibility, such as ferrous metals, ceramic artifacts, and hearths.

Furthermore, remote sensing data has become a valuable asset in archaeological research, enhancing accessibility to even remote regions. In this context, image fusion, especially the curvelet-based fusion method, facilitates the seamless integration of multiple overlapping datasets from diverse remote sensing techniques, delineating features of subsurface structures.

Geophysical data and a near infrared image from the archaeological site of Philippi in North Greece are used to demonstrate the advantages of this approach.

KEYWORDS: Archaeological prospection, Electrical methods, Magnetic methods, Fusion

ACKNOWLEDGEMENTS

This work has been accomplished on behalf of the project EKATY: Innovative imaging of the subsurface of archaeological sites and the interior of structural elements of monuments in 3 and 4 Dimensions. The project is running under the framework of the Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK), Special Actions "Aquaculture" - "Industrial Materials" - "Open Innovation in Culture", T6YBP-00211.