High resolution GPR investigations employing single and multichannel systems in the Necropolis of Monte Abatone, Cerveteri (Roma, Italy).

Salvatore Piro and Bruna Malandruccolo
CNR - ISPC, Cultural Heritage Department, Monterotondo Scalo, Italy (salvatore.piro@cnr.it)

The Monte Abatone Necropolis is one of the main important necropolis of Cerveteri, located 60 km north of Rome (Latium, Italy). In this area, several tombs have been discovered and excavated from the 1800, though still many remain hidden underneath the subsurface.

In the last two years, geophysical surveys have been carried out to investigate the unexplored portions of the ancient Etruscan Necropolis, to provide a complete mapping of the position of the tombs. Ground Penetrating Radar and the Magnetometric methods have been used during 2018 to investigate few parts of the Necropolis. During 2019 (July and September) GPR system SIR 3000 (GSSI), equipped with a 400 MHz antenna with constant offset, SIR4000 (GSSI) equipped with a dual frequency antenna with 300/800 MHz and the 3D Radar Geoscope multichannel stepped frequency system were employed to survey 5 hectares where the presence of tombs was hypothesized from previous archaeological studies.

All the GPR profiles were processed with GPR-SLICE v7.0 Ground Penetrating Radar Imaging Software (Goodman 2017). The basic radargram signal processing steps included: post processing pulse regaining; DC drift removal; data resampling; band pass filtering; background filter and migration. With the aim of obtaining a planimetric vision of all possible anomalous bodies, the time-slice representation technique was applied using all processed profiles showing anomalous sources up to a depth of about 2.5 m.

The preliminary obtained results clearly show the presence of a network of strong circular features, linked with the buried structural elements of the searched tombs.

Together with archaeologists, these anomalies, have been interpreted to have a better understanding of the archaeological definition of these features and to enhance the knowledge of the necropolis layout and mapping; after the geophysical surveys, excavations have been conducted, which brought to light few of the investigated structures.

References