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## Retrieving signs of buried historical roads by GPR: preliminary results from Villa dei Sette Bassi in Rome

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Ground Penetrating Radar has widely proven to be an effective tool for archaeological purposes [1, 2]. Our contribution concerns a geophysical experimental activity carried out in the Complex of Villa dei Sette Bassi, an archaeological site located in Rome, Italy.

In particular, the area was hypothesized to be interested by the track of the ancient via Latina [3, 4], which was the main internal route that connected Rome with the ancient Region of Campania; it ran parallel to the Via Appia, but it was built way before it.

The historical evolution of this landscape has seen great changes since the Middle Ages with a new economy that designed new parcels, new land uses and the stripping of building material from ancient remains: activities that have profoundly altered the territory in its appearance and functioning but also its road network. The uncontrolled building development, has over time hidden the ancient road network, today witnessed only by decontextualized monuments immersed in modern urbanization. Accordingly, great portion of the ancient via Latina remains still buried.

This works reports on the outcomes of the geophysical tests conducted within the area of Villa dei Sette Bassi, with the specific goal of locating the buried track of the via Latina. The survey has been carried out by using multi-frequency ground penetrating radar (GPR) systems with different central frequencies. In detail, a preliminary low frequency analysis was conducted over the entire area that was indicated to be interested by the hidden remains by literary sources, to the intent of detecting the position of the buried road with higher accuracy. Based on the this, a second survey with higher resolution was conducted over a regularly spaced grid.

As a result, GPR tests have returned a coherent reflection pattern that is reasonably representative of a road subgrade/embankment. According to the preliminary archaeological interpretations, these results are most likely related to the historical track of via Latina, even though inspection pits are required in order to verify these assumptions.

In conclusion, GPR demonstrated a great applicability to archaeological purposes, i.e. to detect

buried remains and to interpret the function of buried structures, despite the reliability and productivity of the data interpretation are strongly influenced by the expertise of both the geophysicists and the archaeologists involved.

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