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# The contribution of geophysical investigation for the identification of the Aurelian forum of Ostia (Rome, Italy)

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## Résumé

We studied the complex in the east of the Baths of the Porta Marina in the Archaeological Park of Ostia Antica, Rome, Italy, as a part of an international project for the resumption of investigations in the coastal district of Ostia. The vegetation anomalies revealed by aerial photographs has clearly evidenced the traces of a large complex in this unexcavated area. Our detailed study of satellite images and aerial photographs identified at least seven sectors in this large complex, covering an area of approx. 15,000 m<sup>2</sup>. We conducted geophysical surveys to understand the distribution of the artefacts under the surface in 2018 and 2019. A magnetic field mapping is realized by G858 (Geometrics) magnetometer with the GPS-INS fusion system, operated as a pseudo-gradiometer. The pseudo-gradient map confirms the many of the structures found in the vegetation analyses, though there are strong signatures from modern and/or unknown origins. A ladder-like shaped structure is found, which is not very visible in the vegetation anomalies. We also conducted electrical resistivity tomography (ERT; ABEM SAS4000) and the electro-magnetic sounding (Geonics EM-38) to understand the resistivity distribution. The ERT and EM results show that the east-side of the complex have only shallow or superficial (first 1 m or less) resistive layers, whereas the open area at the center of the studied field and the sectors close to the Baths (west-side) also have the deep (5 m in depth) resistive structures. The positions of those resistive structures are comparable to the vegetation anomalies.

Our geophysical study confirmed the existence of the large complex. Particularly, the integrated study of geophysical prospecting, satellite images, and topography defines a characteristic large open area, which can be recognized as a *forum* flanked by a building with a

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\*Intervenant

basilical plan. The location at short distance from the ancient coastline makes it possible to identify it with the "Aurelian's forum" and the public *praetorium* known from Late Roman Historiography (*Historia Augusta*).