



## **The western submerged sector of the Ischia volcanic island (Tyrrhenian Sea, Italy): new insights into its volcano-tectonic evolution**

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The Island of Ischia is a volcanic complex located in the northern boundary of the Gulf of Naples (south-eastern Tyrrhenian Sea, Italy). The island represents only the 30% of a larger, E-W trending, volcanic ridge and likely controlled by a regional tectonic lineament. Despite the many geo-volcanological and geophysical investigations conducted on the island since long time, still little is the knowledge of its offshore. Several marine surveys have been carried out over the past 10 years from IAMC – CNR research institute (Naples, Italy) mostly in the frame of INGV and GNV projects, funded by Italy Civil Protection Department. Such surveys have largely improved the knowledge of the entire volcanic complex. Multibeam bathymetry surveys has revealed several, previously unexpected, morphological and morphostructural features. Moreover some structural patterns and volcano alignments offshore show similarities with those occurring at a regional scale in the Campania region and, locally, between the island of Procida and Phlegrean Fields.

Here we report the joint interpretation of geophysical data focused on the western underwater sector of the island. Interpretation was chiefly based on processing/inversion of magnetic data in turn constrained by bathymetry and seismic reflection profiles. Magnetic data, acquired by the IAMC during two different cruises in 2000 and 2002 onboard of the Urania R/V oceanographic vessel, put in evidence that the western seafloor of Ischia is characterized by the presence of a strong residual magnetic anomaly field of complex behaviour, somewhere correlated to local bathymetry. These two last methods allowed to define and distinguish between undersea and subsurface magnetic (i.e. magmatic) basement. Interpretation was also constrained by seismological data.