



High-resolution airborne survey of the Ischia volcanic island

V. Paoletti (1), M. Fedi (1), G. Florio (1), A. Rapolla (1), K. Motschka (2), R. Supper (2)

(1) Dipartimento di Scienze della Terra, Largo S. Marcellino 10, I-80138 Naples, (2)
Geological Survey of Austria, Department of Geophysics, Rasumofskygasse 23, A-1031
Vienna

We present the results of the analysis and preliminary interpretation of a high resolution airborne dataset of the Ischia Island, in the Neapolitan volcanic region. The survey included magnetic and radiometric measurements and was performed on a surface parallel to the topography of the area (with a clearance of about 300 m) along flight lines 300 m apart. Data pre-processing consisted of several steps such as removal of spikes and gaps in the data, flight path check and re-positioning, earth's magnetic field diurnal variation corrections, removal of the IGRF and statistical leveling. The magnetic data are characterized by a number of meaningful anomalies with amplitude of 400-600 nT, both onshore and offshore. Some of the anomalies onshore correlate with the main geo-volcanological characteristics of the island, such as domes and lava flows. Other anomalies (onshore and offshore) are uncorrelated to both geological and topographical features. A first interpretation of the magnetic data involved the computation of the horizontal gradient and analytic signal, in order to locate the sources and to highlight their horizontal boundaries. The radiometric data highlight the pattern of the Green Tuff outcrops and show a good agreement with some of the known faults of the island. The measured airborne data were interpreted to define the most important geo-volcanological and structural features of the Ischia volcanic island.