

## Aeromagnetic survey of the Somma-Vesuvius volcanic area

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### Abstract

In this paper we present and discuss the results of a geophysical airborne survey carried out in the Somma-Vesuvius volcanic area, Southern Italy, in 1999. The helicopter-borne survey was aimed at giving new detailed insights into the distribution of the magnetization of the area and, therefore, into the volcanological characteristics of the region, enhancing the knowledge given by a previous low resolution survey carried out at a regional scale by Agip. The new survey was carried out by flying on a surface parallel to the topography of the area, along flight lines spaced 600 m apart. The obtained total field map is dominated by a large anomaly related to the Mt. Somma-Vesuvius complex itself and characterized by a roughly elliptical shape. High-frequency anomalies occur in the edifice and in the area east of it, partly produced by cultural noise due to the densely inhabited area. The compilation of the maps of the analytic signal and of the horizontal derivative of the field allowed the location of the lateral boundaries of the magnetic sources of the area and represents a first step toward the interpretation of the maps in terms of geological structures.

### Keywords

Somma-Vesuvius;aeromagnetic survey

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
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