1.3-P-35

## Relationships Between the Active Structural Lineaments of The Campi Flegrei Area (Southern Italy) From Morphometric Analysis and Recent Ground Deformation

NAPPI, Rosa[1]; ALESSIO, Giuliana; AQUINO, Ida; DEL GAUDIO, Carlo; CIRO, Ricco
Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Napoli Osservatorio Vesuviano, Via Diocleziano 328, Napoli/Italy
rosa.nappi@ov.ingv.it

The Campi Flegrei volcanic district formed within an extensional tectonic regime that was active in the region since the Plio-Quaternary times (Rosi & Sbrana, 1987). The tectonic elements outcropping in the area are mainly correlated with a circular geometry of deformation, and could also have been inherited by the regional NW-SE and NE-SW normal faults; likely, such faults acted as preferential magma rise conduits feeding the active Campanian volcanoes. In this paper we apply a methodology for identifying the structural lineaments from morphometrical data analysis (Nappi et al. 2007) derived by processing of a very high resolution DTM. The criteria of lineament extraction is based on the identification of linear topographic surface features, such as valleys, ridges, breaks in slope, boundaries of elevated areas aligned in a rectilinear or slightly curvilinear shape and that distinctly differ from the patterns of adjacent features (Jordan et al., 2005). We have identified significant structural lineaments extracting the linear continuity of the morphostructural features observed on the DEM. Their spatial and statistical coherence has been examined and the comparison with the structural lineaments already known from literature has been carried out. The results of the analysis have been correlated to the spatial distribution of the recent seismicity (crises of 1982-1984 and 2004-2006) as well as with the local ground deformation measured through high precision levelling surveys over the last 20 years, together with the tiltmetric data continuously recorded over the last 10 years. The aim of this analysis is understanding the relationships between the recent dynamics of the area and its active structural lineaments. References: Rosi & Sbrana 1987, CNR; Nappi et al. 2007, Mem. Soc. Geogr. It.; Mitasova & Hofierka 1993, Matem. Geol.