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The Campi Flegrei (Campania, Southern Italy) 2000-2006 Ground Deformation Episode Analyzed In The Light Of The Local Seismotectonic Background.

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

The Campi Flegrei is an active volcanic area characterized by many different eruptive episodes. A peculiar behaviour of Campi Flegrei since historical times has been the bradyseism, characterized by alternating intense ground uplift and slow subsidence episodes, with intense seismic activity. The major bradyseismic crises occurred in 1969-1972 (maximum ground uplift of about 177 cm), accompanied by seismic crises consisting of 4000 earthquakes of moderate energy (maximum magnitude M_D=2.5), and in 1982-1984 (about 179 cm), characterized by 15000 earthquakes located in the central area of maximum deformation, near the harbour of Pozzuoli (Orsi et al., 1999). Minor crises were observed recently in 1989, 1994, 2000 and the last from June 2004 to October 2006, with slight ground deformation and low seismicity located in the eastern side of the Solfatara crater. The goal of our paper is to reconstruct the deformation pattern in the Campi Flegrei in 2000-2006, respect to the previous periods, particularly as regards its eastern sector, through the analysis of the altimetric and the tiltmetric measurements. In detail the uplift recorded by the tilt stations during the 2006 show asymmetrical deformation pattern with a higher tilt value observed near the Solfatara sector (Ricco et al., 2007). This deformation has been correlated to the hypocentral locations of the local seismic events over the same period, and also to the morphostructural lineaments derived from high resolution DTM (Digital Terrain Model). The results show a recent remarkable change of the deformation pattern in the eastern sector of the Campi Flegrei, which has been correlated with NNW-SSE active structural discontinuity on the eastern border of the Solfatara crater. References: Orsi et al., 1999, J. Volc. Geoth. Res.; Ricco et al., 2007, Ann. Geoph.