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Multidisciplinary study (CO_2 flux, ERT, self-potential, permeability and structural surveys) in Fondi di Baia, Astroni and Agnano volcanoes: insights for the structural architecture of the Campi Flegrei caldera (southern Italy)

Roberto Isaia (1), Maria Luisa Carapezza (2), Eric Conti (3), Maria Giulia Di Giuseppe (1), Carlo Lucchetti (3), Ernesto Prinzi (4), Massimo Ranaldi (3), Luca Tarchini (3), Francesco Tramparulo (4), Antonio Troiano (1), Stefano Vitale (4), Enrico Cascella (4), Nicola Castello (4), Alessandro Cicatiello (4), Marco Maiolino (4), Domenico Puzio (4), Lucia Tazza (4), and Roberto Villani (4)

(1) INGV - Osservatorio Vesuviano, (2) INGV - Roma1, (3) Università Roma3 - DS, (4) Università Federico II Napoli - DiSTAR

Recent volcanism at Campi Flegrei caldera produced more than 70 eruptions in the last 15 ka formed different volcanic edifices. The vent distribution was related to the main volcano-tectonic structure active in the caldera along which also concentrated part of the present hydrothermal and fumarolic activity, such as in the Solfatara area. In order to define the role of major faults in the Campi Flegrei Caldera, we analyzed some volcanic craters (Fondi di Baia and Astroni) and the Agnano caldera, by means of different geochemical and geophysical technics including CO_2 flux, electrical resistivity (ERT), self-potential and permeability surveys. We provided some ERT profiles and different maps of geochemical and geophysical features. Major fault planes were identified comparing ERT imaging with alignments of anomalies in maps. The results can improve the knowledge on the present state of these volcanoes actually not fully monitored though included in the area with high probability of future vent opening within the Campi Flegrei caldera.