



Tectonic features of the Lipari-Vulcano complex (Aeolian archipelago, Italy) from ten years of dense GPS measurements

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The Aeolian islands are a volcanic archipelago located in the southern Tyrrhenian Sea, off the north-east coast of Sicily. The present-day geographic framework of this area is the result of geodynamic processes due to the Neogene-Quaternary convergence between the African and the Eurasian plates. Several authors have investigated this area through GPS measurements defining a pattern of crustal motion that is generally consistent with geological and seismological data. The dominant feature is a strong north-south compression in north-eastern part of Sicily and southern part of Aeolian archipelago.

In this work we analyze non-permanent and continuous GPS data collected between 1996 and 2006 on a dense geodetic network installed on the Lipari-Vulcano complex, obtaining a detailed spatial resolution of the ongoing crustal deformation. We present and discuss mayor results in terms of the pattern of 1) velocity field (computed in ITRF20005, Eurasian and Nubian reference frames) and 2) strain-rate field of this area. In particular, results provide new insights on the investigated area about: 1) the geodynamical aspects of the Eurasia-Africa blocks interaction; 2) the ongoing strain distribution and 3) the tectonic pattern.