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Crustal deformation models for Tenerife Island (Canary Island, Spain)

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In this work it is presented the results obtained from the GPS data processing in the volcanic complex Teide- Pico Viejo (Tenerife, Canary Islands, Spain). This archipelago lies 100 km to the west of Africa, and constitute and important reference from the volcanic point of view since there are nearly a dozen of historical eruptions from 1500 to 1900.

In 2004, there was reported an increase in the seismic activity as well as the appearance of a fumarole in the north part of the island. These events together with the populated area Tenerife is make its permanent volcanic monitoring necessary. Permanent and episodic measurement form different fields are currently got. The results will provide information about the present status of the volcanic activity of the complex Teide-Pico Viejo.

GPS observations from the geodetic network TEGETEIDE-GEODESIA are processed by means of the BERNESE v5.0 software. The network is formed by seven stations in Tenerife Island, and two more stations are considered for the processing: MASP IGS station in Gran Canaria Island, and EUREF station La Palma, is La Palma Island. All these data are complemented by a wide levelling network, TEGETEIDE-NIVELACION, which allows the determination of the vertical deformation models.