



## Structural evolution of the NE rift zone of Tenerife, Canary Island

I. Galindo (1) and C. Soriano (2)

(1) Environmental Research Division, ITER, Pol. Ind. de Granadilla, 38611, Tenerife, Canary Islands, Spain, (ines@iter.es), (2) Institut de Ciències de la Terra Jaume Almera, CSIC, c/ Lluís Soler Sabarçó s/n, Barcelona 08028, Spain

Tenerife is formed by a central part with volcanic edifices showing phonolitic volcanism, and three rift zones that extend from the central part of the island towards the basaltic shield massifs. The rift zones display NE, NW and S directions, and consist of structural ridges and fields of monogenetic cinder and spatter cones and basaltic lava flows. They have been active during the last 1 Ma, and the historical eruptions in Tenerife took place along the NW and NE rift zones. The NE rift zone of Tenerife is a prominent ridge that extends in NE direction from the Las Cañadas caldera to the Anaga massif. Flank collapses of this ridge triggered giant landslides and caused the formation of the La Orotava and Guimar valleys. The geomorphology, stratigraphy and structure of this ridge are studied here. Results indicate that fissure eruptions along the NE direction of the rift zone have been active since the early development of the rift until the last historical eruptions in 1705. Lava flows emplaced downslope from the axis of the rift towards the northern and southern coasts of the island. In the central part of the rift, eruptions of ankaramitic pahoehoe lavas built up the Pedro Gil dome shape volcano. It is an edifice that shows marked lithologic, stratigraphical and structural differences with respect to the main NE rift zone. It also shows a subvolcanic system mainly consisting of mafic dykes displaying a radial and concentric distribution. Chronostratigraphic relationships between stratigraphic units of the NE rift zone suggest that the La Orotava giant landslide is younger than previously thought. It is synchronous, and probably related, to the explosive activity of the Diego Hernández Fm. in the Las Cañadas caldera. Geomorphology and chronostratigraphy also suggests that the formation of the Guimar valley by giant landslides is associated to the collapse of the Pedro Gil volcano and the formation of the Pedro Gil caldera. Flank instability

along the NE rift seems to be related to the structural reorganization as deduced from dyke pattern distribution.