GEOLOGICAL STRUCTURE AND EVOLUTION OF THE NISYROS VOLCANO

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Detailed mapping at scale 1/10.000 permitted us the establishment of the stratigraphic and tectonic structure of the Nisyros volcano. The stratigraphy comprises four lava formations A, B, C, D each followed by pyroclastics and pumise which form a volcanic cone. This stratovolcanic succession is followed by massive rhyolite extrusions in the SW of the cone (Nikia) followed by an important pumise formation contemporaneous and slightly postdating the caldera formation in the centre of the former cone. Post-caldera massive extrusions of rhyolitic-dacitic lavas cut through the former volcanic cone and caldera building up high mountains in the central and western part of Nisyros.

The tectonic structure is dominated by the activation of four major fault zones dissecting the volcano in triangular segments. The throw of the major faults ranges from 70-100 m and it is the result of both pre-caldera and post-caldera tectonic activity. The faults have influenced the local stratigraphy of the volcano because they have limited as natural barriers the lava flows and consequent volcanic materials only in some segments of Nisyros. Intense geothermal alteration is observed along the major fault zones of Nisyros.

OBSERVATIONS ON THE KINEMATIC AND DYNAMIC EVOLUTION OF NEOTECTONIC BASINS IN EASTERN KORINTHOS

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Structural analysis of some small neotectonic grabens in the area of eastern Korinthos, showed that during the first stages of their formation in Late Miocene – Early Pliocene they could be regarded as «pull apart basins», created within the shear zone of en echelon vertical and/or inclined strike-slip faults.

Younger slip motions indicate a gradual change towards oblique-slip faults, whereas finally most recent slip motions indicete dip-slip normal faults.

The overall stress-field seems to be constant throughout the neotectonic evolution (Late Miocene – Present) with a mutual change of the position between o_1 and o_2 principal stress axes.

Thus, (i) in the early stages o_1 was sub-horizontal in the E-W direction whereas in the late stages it became sub-vertical, (ii) o_2 was sub-vertical and became sub-horizontal in the