

MORPHONEOTECTONIC STRUCTURE OF PARNIS MT. AND GEODYNAMIC PHENOMENA DURING THE ATHENS (GREECE) EARTHQUAKE (7-9-1999).

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Parnis Mt. (NW of Athens), consists of neritic carbonates, volcanosedimentary formations and ophiolites, in a successive thrust structure, surrounded and partly covered by E. Miocene - Pliocene lacustrine deposits. The 7-9-1999 Athens earthquake ($M_s=5.9$) epicenter was located at the southern margin of Parnis Mt.. Large scale destruction in thousands of buildings and 140 human victims was the result in the area of the southeastern margins of the mountain (the rest of its area is not inhabited). In the highland, the seismic activity was expressed as rock-falls, seismic fractures and landslides along activated faults. The morphoneotectonic study of the mountain showed that the higher planation surfaces lay at the central area of the eastern Parnis, while the rest of them lay lower towards the north, south and west, giving the impression of a mega-anticlinic structure, in accordance to the east-west trending water divide of the mountain. In addition, the open folds of the L.Cretaceous carbonates with axes trending E-W, appear to have folded the older isoclinal or closed folds whose axes plunge northwards or southwards respectively. The contour-map of the contact between the L.Cretaceous carbonates and the underlying formations (originally an unconformity, but now only observed as a thrust surface) reveals that this contact is curved in a mega-anticline shape, with an axis trending approximately E-W, and plunging westwards. Thus, we conclude that Parnis Mt. is a complicated morphoneotectonic structure due to a long term active brittle-ductile deformation, expressed as a mega-anticline of an E-W axis with active fault zones with respective strike.