

# **STUDY OF THE GEODYNAMICS IN AITOLOAKARNANIA (W. GREECE) BASED ON JOINT SEISMOLOGICAL AND GPS DATA**

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Joint seismological data and GPS velocities are used to investigate the geodynamics of Aitolokarnania region (W. Greece). The study area is a thrust and fold belt, located among four rapidly deforming zones, namely the northwestern tip of the Hellenic subduction, the Cephalonia transform fault, the NW Greece collision and the western Corinth rift. During the last decade, several moderate to strong earthquakes occurred in the broader region, providing a large amount of new information. Seismological data used are recent earthquakes, recorded by temporary local and permanent regional networks, and reliable focal mechanisms determined by regional moment tensor inversion and local P-wave first motion polarities. Data from previous microseismic campaigns have also been considered. Hypocentral relocation, traveltimes and focal mechanisms inversion were performed in order to investigate the velocity structure and the stress field distribution. A number of continuously recording GPS stations (CGPS) installed in the broader area have been employed. Analysis of the CGPS data with respect to various reference stations resulted to the estimation of the horizontal and vertical deformation on both regional and local scale. Most observations support the concept that the study area constitutes a rigid crustal block bounded by dextral strike-slip deformation imposing counterclockwise rotation. The slight internal deformation observed is characterized by normal, reverse and strike-slip faulting. Although the pattern is quite complex, the deformation appears concentrated and homogeneous at specific depths.