31st General Assembly of the European Seismological Commission, Crete, 7-12 Sept. 2008
poster session ACQUIS-3-PROPAG, (Oral & Poster Abstracts, pg. 110)

Preliminary Results from the Study of a Seismic Swarm Occurred in February 2008 in NW Peloponnesus, Greece

Kapetanidis V (1), Agalos A (1), Moshou A (1), Kaviris G (1), Karakonstantis A (1), Papadimitriou P (1), Makropoulos K (1)

(1) University of Athens, Department of Geophysics-Geothermics, Panepistimioupolis-Zographou 157 84, Athens, GREECE, vkapetan@geol.uoa.gr, aagalos@geol.uoa.gr, amoshou@geol.uoa.gr, gkaviris@geol.uoa.gr, akarakon@geol.uoa.gr, ppapadim@geol.uoa.gr, kmacrop@geol.uoa.gr

In February 4th, 2008, two moderate earthquakes ~M4.9 triggered a seismic swarm in NW Peloponnesus, Greece. The epicentral area is close to the Chalandritsa fault which is located in the transition between the normal faulting zone of the southern Corinth rift and a strike-slip faulting zone which characterizes NW Peloponnesus. In this work we present a preliminary relocation of this earthquake sequence using the double-difference method. The focal mechanisms of the main shock and the major aftershocks were studied by a recently developed methodology based on the generalized inversion using the singular value decomposition technique. Waveforms from local stations were used and the fit between data and synthetics is well constrained. The relocation reveals two separate main clusters within the swarm, with direction NNW-SSE that is in agreement with the calculated fault plane solutions which indicate a strike-slip type fault. The strike of the fault is almost perpendicular to the well-known E-W active normal faults of the area. During the analysis of the data, the shear wave splitting phenomenon was observed for the events that fulfill the selection criteria, the direction of anisotropy, the time delay between the two split shear waves and the polarization direction of the source were estimated. This swarm was followed by a strong M6.5 earthquake 4 months later, at about 45km WSW.