



Analysis of the earthquakes swarms during the 2001-2009 period in the western part of the Corinth rift (Greece)

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The Gulf of Corinth is one of the most seismically active zones in Europe. Previous works (Rigo et al. 1996, Gauthier et al. 2006) have outlined a seismogenic zone between 5 and 12 km. The seismic activity follows a swarm organization with alternation of intensive crisis and more quiescent periods. The presence of fluids seems to play a key role in the occurrence of these seismic swarms (Bourouis and Cornet 2009, Pacchiani and Lyon-Caen 2009).

In this study, we analyze the seismic swarm activity in the western part of the Corinth rift. We first compute the fault plane solutions of the multiplets identified and relocated by Lambotte et al. (2011) during the 2001-2007 period, in order to constrain the geometry of the active faults. The fault plane solutions are determined by the amplitude inversion of the direct P wave (Godano et al. 2009). The obtained nodal planes are compared with the planes delineated by the multiplets.

In a second part, we focus on a seismic swarm occurred between April and July 2009 and located NW of the Aigion city. The automatic locations given by the Corinth Rift Laboratory Network (CRLNET) clearly show a bilateral migration of the seismicity along an E-W direction. We perform a fine spatio-temporal analysis of the swarm by identifying and relocating the multiplets, and by computing the focal mechanisms.