



MOMENT TENSOR SOLUTIONS OF SMALL AND MODERATE EARTHQUAKES OF THE JANUARY-FEBRUARY 2014 CEPHALONIA (GREECE) AFTERSHOCK SEQUENCE

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In this study we attempt to provide moment tensor solutions (MTs) for small and moderate earthquakes for the aftershock sequence of the January-February 2014 Cephalonia events. The analysis is performed using data coming from the permanent the Hellenic Unified Seismic Network (HUSN) and temporary deployments. Based on first estimates of the MWFMNear automatic MTs method (Delouis et. al. 2009), we apply waveform inversion using the “Cut And Paste” (CAP: Zhu and Helmberger, 1996) and the ISOLA (Sokos and Zahradnik, 2008) methods. The source depth and focal mechanisms are determined using a grid search technique. We allow time shifts between synthetics and observed data in order to reduce dependence of the solution on the assumed velocity model and on earthquake locations. These methods, successfully applied also in the case of earthquakes with magnitude lower than 3 in other regions (e.g. D’Amico et al. 2010, 2011, 2013), furnishes good-quality solutions in the area in a magnitude range not properly represented in the official databases and in the major literature. The results will lead us to obtain remarkable progress in the knowledge of tectonic stress field and accumulation mechanisms and consequent processes of seismogenic faulting in the area.

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