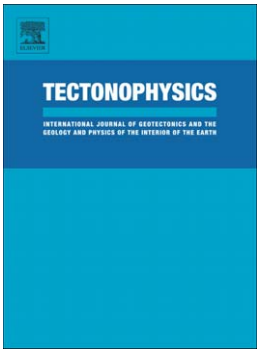

Detailed microseismicity study in the area of Florina (Greece): Evidence for fluid driven seismicity

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Detailed microseismicity study in the area of Florina (Greece): Evidence for fluid driven seismicity

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Abstract

A local seismic network was installed and operated in the area of Florina, northern Greece, during July 2013 – January 2014 for studying the high microseismic activity following the occurrence of an M_w=4.1 event on 17 February 2013. The recordings of the local network along with the ones of the Hellenic Unified Seismological Network (HUSN) are used for obtaining accurate locations and defining the characteristics of the seismic activity. A new velocity model is calculated for a broader area using the recordings of the HUSN stations. Relocation is performed for 1,330 events recorded by the local network and 423 events recorded by HUSN using the double difference technique and cross correlation measurements. Fault plane solutions are determined for the two largest events (M_w=3.6 and M_w=4.1) using waveform inversion technique. The causative fault of the largest event (M_w=4.1) is striking almost E-W and dipping to the north. However, most of the activity is concentrated to its south and forms an almost vertical, south dipping plane, striking almost E-W. This southern cluster is consisted of