Geophysical Research Abstracts,
Vol. 11, EGU2009-6705-2, 2009
EGU General Assembly 2009

Moment Tensor Solutions of Bala (Ankara) Earthquake of December 20, 2007 and Aftershocks Using National Network

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Moment tensor can provide the important information such as faulting type and moment magnitude. In this study, we estimated moment tensors of Bala (Ankara) Earthquake of December 20, 2007 and its aftershocks using long period waveform inversion of near-source data set, to understand seismotectonic in the region. The moment tensors of 10 earthquakes which occurred between December 2007 and September 2008 are studied. In the moment tensor analysis, we used three components (BHE, BHN and BHZ) seismograms at each station. Used data taken from USAG network that is operated by General Directorate of Disaster Affairs Earthquake Research Department. We used the Moment Tensor Inversion program developed by Yagi for local networks. So far, we applied this technique to determine the moment tensors for the earthquakes which have magnitude of 4 and greater and recorded at national network of Turkey for the period from December 2007 to September 2008. Moment tensor solutions show strike slip fault geometry that these results consistent with the general tectonic of the region. Only one of them show pure double couple solution. Moreover, P axes approximately oriented to the NW-SE, N-S and NE-SW respectively.