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Source Rupture Process And Seismotectonic Implication Of Van Tabanli Earthquake, October 23, 2011

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A large magnitude earthquake (Mw:7.2) hit on October 23, 2011 Van – Ercis (Eastern Turkey) region and surrounding area at 13:41 pm local time, resulted in life and property losses in Van, Ercis and many villages. The epicenter is located on 24 km of north of Van city, close to Tabanli village. To review the details of ruptures along the main shock, with Kikuchi and Kanamori (1991) method using the 37 stations recorded teleseismic P waveforms are modeled. According to the results obtained, the earthquake occurred with three shocks. If we give the magnitudes of their occurrence in order of Mw=6.6, Mw=7.1 and Mw=6.5. According to the spatial distribution of the shocks, rupturing started in the northeast and advanced in a systematic way towards SW and occured with different faulting mechanism. The first and second shock have been near each other in space and time dimension of the component is dominated by oblique reverse faulting mechanism suggest that the type of faulting. The third shock occurred after 30 seconds with a normal fault mechanism on SW part of the earthquake region. The biggest seismic moment which occurred with main shock dropped in 20 km depth. The parameters of first and second nodel planes (strike, dip and slip vector) respectively are 116, 57, 110 and 262, 38, 62. According to, the strike of slip vectors for first nodel plane is in direction of NW-SE and NE-SW for the second nodel plane.

Key Words: Tabanlı-Van, earthquake, main shock, source mechanism