



**RESEARCH ON SOURCE RUPTURE PROCESS OF MS6.6
EARTHQUAKE OF JUN.30, 2012, IN THE BORDER AREA OF
XINYUAN AND HEJING COUNTY, XINJIANG**

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By using the digital teleseismic seismograms recorded by the global network (IRIS), we studied the rupture process of the Ms6.6 earthquake of Jun.30,2012, in the border area of Xinyuan and Hejing county, Xinjiang. In addition, based on the tectonic feature of the eastern segment of Kashi river fault and regional stress field state in the central segment of Tianshan region before the Ms6.6 earthquake, we discussed the possible seismogenic mechanism of Ms6.6 earthquake.

The result indicates that the lasting time of Ms6.6 earthquake rupture process is about 35s, and the main energy release appears in the early 16s. The total rupture process consists of two subevents, the first rupture strength is higher than the second one. The rupture process is relatively simple, and has bilateral rupture characteristics, and the maximum slip amount is 45.0cm. The initial rupture point of Ms6.6 earthquake locates on the verge of high slip amount area, the dislocation mode of main rupture area in the depth is reverse and right-lateral strike-slip type, and the one in the shallow is mainly right-lateral strike-slip type ; $M_s \geq 3.0$ aftershocks mainly distributes on the verge of high slip amount area or high gradient area of slip amount change, and the mechanism solution feature of these aftershocks occurred within the short time after mainshock is consistent with the slip vector distribution on the fault surface; The mid-strong earthquakes with reverse type before Ms6.6 earthquake increase obviously in Xinjiang area, especially in the central segment of Tianshan area. The horizontal compressive stress strengthening in the central segment of Tianshan area may encourage the right-lateral strike-slip motion of the eastern segment of Kashi river fault with right-lateral twisting character, which may be the mechanical reason of Ms6.6 earthquake.

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