

## **The February 1, 2011, Mw=4.7 earthquake: evidence of local extension in western Transbaikalia**

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We describe major parameters and tectonic settings of the rare February 1, 2011, earthquake ( $M_w=4.3$ ) in western Transbaikalia. It was confined to the zone of contact between the slope of the Zagan range and the Tugnui basin. From geological point of view this structure is a Zagan metamorphic core complex (MCC). For the instrumental observation period (1957–2015) in the study area, the Zagan earthquake became the second most important seismic event after the October 2, 1980,  $M=5.1$  earthquake located near the Orongoi basins.

Earthquake source parameters (hypocentral depth, moment magnitude, scalar seismic moment and focal mechanism) have been determined from the data on amplitude spectra of surface waves and the first body-wave arrivals recorded on regional stations. The results obtained have shown that the origin of this event was formed in the conjunction zone between the listric fault and main detachment fault plane and thus was controlled by the MCC structure. Local extension processes are typical for MCCs and in this case manifest in normal-fault displacement along low-angle dipping rupture plane in the earthquake origin. This fact correlates with numerous published relationships between regular trends in the MCC structures and their-confined earthquake focal mechanisms in different regions of the Earth. To sum up, the data obtained on the Zagan earthquake contribute to our knowledge about development of present-day structures in Transbaikalia.

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