

# The Khubsugul earthquake of 2021 in the seismicity structure of the Tuva-Mongolian block

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The Tuva-Mongolian block of the Earth's crust is an ancient element of the earth's crust of Central Asia. It includes the rift depressions of the Baikal rift system that are extreme to the southwest. It is in this block that the boundary between different types of earthquake distribution across geological structures is located. One species is typical for the Altai-Sayan region, and the other for the Baikal rift zone. The largest earthquakes of Central Asia are timed to the tectonic boundaries of the Tuva-Mongolian block: the Tsetserlang earthquake of 1905, with  $M = 7.6$  and the Bolnai earthquake of 1905, with  $M=8.2$ , as well as a series of weaker ones, the last of which is the Khubsugul earthquake, 2021. With  $M L=6.9$ . Earthquakes in the area of the Tuva-Mongolian block are interesting for their aftershock processes. The spatial and temporal features of aftershock processes of earthquakes confined to the Tuva-Mongolian block: Khubsugulsky, Busingolsky, Belin-Biy-Khemsy, etc. are considered. The Khubsugul earthquake is timed to the tectonic fault, which is the boundary of the block, and more than seven thousand aftershocks allow us to restore the features of the development of seismicity of the fault zone. Aftershocks develop along the local fault zone and over time there is a transition of seismic activity to feathering faults on the eastern side, going towards the Khubsugul rift depression. The Busingol earthquake occurred near the western border of the Tuva-Mongolian block and is not confined to the main Busingol fault, but to the feathering one going towards the Shishkhid Upland. The aftershock process was formed as a series of activations in time shifting from the Busingol depression deep into the highlands and is a long pulsating process of the development of a tectonic fault in the direction. Based on studies of aftershocks of large earthquakes in the vicinity of the Tuva-Mongolian block, conclusions were drawn: The block is a tectonic structure that plays a leading role in changing the structure of seismicity from the Altai to the Baikal; many of the large earthquakes are associated with tectonic stresses in the vicinity of the feathering faults; The Khubsugul earthquake, in addition to an intense aftershock process, caused the activation of the structures of the Tuva-Mongolian block and associated structures.