

COMPARISON OF THE SEISMOTECTONIC FEATURES OF GORNYI AND MONGOLIAN ALTAI

E.A. Rogozhin¹, Shen Jun², S.N. Rodina¹

¹ *Shmidt Institute of Physics of the Earth, RAS, Moscow, Russia*

² *Institute of Disaster Prevention of Xinjiang, Urumchi, China*

Abstract. Fulfilled paleoseismic research within two representative segments of systems of the Altai mobile belt (on the Gornyi-Mountain and in the Mongolian Altai) allow assert that within the studied regions in both cases detected primary seismic ruptures (seismic faults) of the ancient historical and prehistoric earthquakes. On the evaluation of the amplitudes of one-act seismic shifts reflecting significant component of the shear the magnitude of these ancient events in the first area was approximately 7.5 (amplitude of thrust and normal fault offsets 0.5–1.6 m, and shear – more than 1.5 m). The recurrence period in average is of 1400 years between earthquakes with a magnitude of about 7.0 and 2100 years between the events with a magnitude of about 7.5. In the western part of the Mongolian Altai the thrust offset by faults reaches 2 m, which corresponds to the magnitude of generating their earthquake around 8.0 (by analogy with the Fu Yun event 1931). At the same time, the period of recurrence of the strongest earthquakes in the limits of the Mongolian Altai exceeded those for the Altai mountains – about 3000 years. This can be explained greater numbers of the maximum magnitude of the major earthquake to the western part of the Mongolian Altai. We can also make a conclusion, that the seismic regime of the Mountain and Mongolian Altai has remained practically unchanged for most of the Holocene.

Keywords: Mountain Altai, Mongolian Altai, seismotectonics, seismic focus, seismic activity, Earth's crust, faults, earthquakes, geological and morphological analysis, paleoseismodislocations, schedule of recurrence, lineament.