

## Seismic regime and features of geophysical fields in the epicentral area of the Andrey–Tas earthquake (seismotectonic zone of the Chersky Randege, northeast Yakutia)

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**Abstract** This paper describes the strong Andrey-Tas earthquake ( $M_w=6.1$ ), which occurred in 2008 on the northeastern flank of the seismotectonic zone of the Chersky Randege in the region of the interaction of the Eurasian and North American lithospheric plates. Geophysical fields were used to elucidate structural and tectonic features of the study area and their relationship with seismicity. Using data from digital maps of magnetic and gravity field anomalies, it was possible to clarify the kinematic parameters of the western end of the Ilin-Tas fault, where the epicenter of the Andrey-Tas earthquake occurred. This fault separates the Indigiro-Zyrian Trough from the Momekii Randege and Andrei Tas Locke elevations and is traced by gradient zones of transition from negative to positive  $\Delta T_a$  and  $\Delta g$  values. The main seismic shock is confined to thickening of  $\Delta g$  isoanomalies, which form a gravitational step, within which gravity values decrease from south to north. The entire epicentral field with aftershocks covers the western slope of the Andrei Tas Locke. The development of the seismic process during three stages was analyzed: 1963–2007 (before the event), 2008 (the event with aftershocks), 2009–2020 (after the event). We plotted the recurrence of the aftershocks of the Andrei Tas earthquake. Information obtained because of study of Andrei Tas earthquake aftershocks enables us to detail manifestations of local seismic activity.

**Keywords** Seismic regime, magnetic field, gravity field, macroseismic information, aftershocks, earthquake epicenter.

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