Earthquakes felt on November 6, 2025 (ML=5.2) and February 10, 2026 (ML=4.5) on Sakhalin Island (Tymovsky district)

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Abstract The article presents instrumental and macroseismic data of two felt earthquakes that occurred in November 2025 (ML=5.2) and February 2026 (ML=4.5) on Sakhalin Island in the Tymovsky district. The first earthquake was felt by residents of nearby settlements with a magnitude of 2 to 6 on the MSK-64 scale; instrumental intensity calculations based on peak ground acceleration data at the locations of the nearest seismic stations generally coincide with the macroseismic survey data. The next event occurred in February 2026 and was felt by the population with a magnitude of 2 to 5 in various settlements. The estimated shaking intensity at the epicenters of these earthquakes could be I_0=7.2 and I_0=5.9, respectively. Focal mechanisms of both earthquakes were constructed, macroseismic data were collected, and a map of earthquake manifestations was compiled. Following the February 10, 2026 earthquake, 18 more seismic events with magnitudes ML=0.9–3.6 were recorded within a month. Data analyses showed that both earthquakes were localized in nature, confined to a zone of low seismic activity, and are unlikely to contribute to a reduction in seismic hazard in the medium term.

Keywords Earthquake, seismicity, focal mechanism, epicenter, macroseismic manifestations, intensity of oscillations.

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