

Earthquake on August 6, 2022 in the zone of the West Timan overthrust

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Abstract On August 6, 2022, an earthquake was registered in Komi Republic, in the Udora district. Data from 17 seismic stations with epicentral distances from 227 to 1142 km were involved in processing the seismic event on August 6. The azimuth environment is uneven, the maximum azimuth gap is $GAP=111.8^\circ$. As a result of instrumental processing, the following parameters were obtained: coordinates $64.023^\circ N$, $50.091^\circ E$, time at the source $t_0=10:21:32$ (UTC), depth $h=14$ km, energy class according to T.G. Rautian $K_R=10.2$, local magnitude $ML=3.6$, error ellipse $Az_{major}=40^\circ$, $R_{minor}=6.2$ km, $R_{major}=10.5$ km. According to our calculations, the seismic event occurred in the middle reaches of the river Mezen, on the territory of the state natural reserve of regional significance “Udorsky”. The nearest settlements to the epicenter are located only 50 km away and the residents did not feel the earthquake. This area is not mining, so the seismic event is classified by us as a “tectonic earthquake”. The earthquake is confined to the West Timan thrust zone, which is a collision suture of the Russian and Pechora plates. The source at a depth of 14 km is located in the region of pericratonic subsidence covering the northeastern margin of the Russian Plate and the Kanino-Timan belt; on the boundary of the basement of the Mezen syncline and the Timanid complex thrust over it. The earthquake may have been caused by tectonic pressure from the Pechora plate. This is the first earthquake in the West Timan thrust zone. Earthquakes occur mainly in the northeast of the Russian Plate, within the Volga-Ural anticline, Mezen and Moscow syncline. In addition, although the recorded earthquakes are mostly low-magnitude, they reflect the modern tectonic activation of the earth’s crust.

Keywords Earthquake, epicenter, weak seismicity, West Timan overthrust, Russian plate.

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