

Dynamic parameters of earthquake sources that occurred on Sakhalin Island in 1978–2024

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Abstract. The values of dynamic parameters (DP) for 110 earthquakes with magnitudes $MW = 4.7–7.7$ that occurred on Sakhalin in 1978–2024 were obtained. A scalar seismic moment was previously determined for these earthquakes. To estimate the other DP: the radii of the foci, the shear stress drop, and the reduced seismic energy a phenomenological approach was used based on the presence of regression, which links the source radius and the values of the scalar seismic moment for earthquakes within the Sakhalin-Kuril region. The results of the study were summarized in a data table. Distribution maps of the averaged values of these DP across the studied region were constructed. Thus, the amount of data on the stress drop and reduced seismic energy for Sakhalin earthquakes has been significantly increased.

Keywords:

seismicity, earthquake, catalog, scalar seismic moment, source radius, stress drop, Sakhalin Island, North-West of the Pacific

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