

Seismicity of the shelf of the Barents and Kara Seas (Western Arctic) for the instrumental period

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During the entire instrumental period, the vast territories of the Arctic were extremely uneven and poorly covered by permanent seismic stations. As a result, due to the high value of the magnitude threshold, low-magnitude earthquakes were excluded from the analysis. The calculation of the main parameters of recorded earthquakes in the Arctic during the entire instrumental period was carried out in conditions of a small number of stations and their remoteness from the source, using currently outdated velocity models and location algorithms. Also, bulletins of not all seismic stations operating in different periods of time were available to seismologists.

As a result, the distribution of the epicenters of some earthquakes, especially in shelf areas, does not always correspond to reality. And this, in turn, may have consequences for subsequent studies related to the assessment of the seismic hazard of the territory. After all, the study of the Arctic is not only of fundamental scientific interest but also of applied interest. Research should be aimed at ensuring the safety of nature management. World experience shows that insufficient consideration of geodynamic factors in the development and operation of fields leads to unreasonably large economic losses.

Therefore, research is currently relevant to the relocation of Arctic earthquakes recorded during the entire period of instrumental observations, and to identify seismically active zones based on data from new seismic stations in Arctic regions previously inaccessible for detailed seismic monitoring.

The article presents the results of research on the creation of a consolidated relocated catalog of earthquakes that occurred in the Barents-Kara region for the entire instrumental period. The catalog can serve as a basis for further studies related to the assessment of the seismic hazard of the territory, the construction of geodynamic models, and the study of the stress-strain state of the earth's crust in the Barents-Kara region.