

Seismic impact of variously distant earthquakes upon the territory of Belarus

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Abstract The control of the geological environment is one of the most important tasks of the seismological monitoring in the territory of Belarus. The seismological monitoring in Belarus is carried out with a system of continuous round-the-clock computer-aided observations of the seismic events of natural and artificial origin in a wide range of distances and energies. The major task of the seismic environment observation network in the territory of Belarus is recording of the distant, regional and local seismic events. Since 1966 till the present the environmental monitoring network of the seismic stations located within the territory of Belarus recorded 60,876 seismic events in various regions of the Earth. The data obtained from strong distant, regional and local seismic events recorded by the seismic stations were analyzed, and the intensity of the seismic impact of the recorded earthquakes upon the studied territory was calculated using the N.V. Shebalin's formula. The results of investigations performed were used to assess the seismic impact upon the territory of Belarus. A catastrophic earthquake that occurred in the Northern Sumatra western coasts in December 26, 2004 should be mentioned first among the largest earthquakes of the Earth that exerted the strongest impact upon the studied territory. An earthquake in southern Greece in January 8, 2006 and the second one in Turkey in October 23, 2011 are the events that should be mentioned among the strongest earthquakes of Europe and its adjacent areas which impact was important for the territory under study. An earthquake in Rumania in September 23, 2016 was one of the regional earthquakes that had a strong influence on the territory of Belarus. The results of the quantitative assessment of the ground shaking from earthquakes differently distant from the territory of Belarus are used for upgrading maps of the general and local seismicity, as well as for solving several other scientific and applied problems.

Keywords monitoring, seismic station, earthquake, epicenter, magnitude, catalogue, seismic impact, intensity.

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