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TECTONIC AND TECHNOGENIC EARTHQUAKES IN CENTRAL KAZAKHSTAN

Abstract. In the article seismic events of tectonic and technogenic nature in Central Kazakhstan are considered. The characteristic of seismic monitoring of the territory of this region by the seismic network of the Institute of Geophysical Investigations of the Ministry of Energy of the Republic of Kazakhstan is given.

The new instrumental level of monitoring made it possible to obtain and study preliminary statistics on tectonic earthquakes, explosions in quarries, mines, and other technogenic events in Central Kazakhstan, as well as data on the stress-strain state of the deepest parts of the earth's crust.

A retrospective analysis of the features of the manifestation of foci of tectonic and technogenic seismicity on the platform structures of Central Kazakhstan is presented. The parameters of earthquakes in this region, the judgments about the nature of the mechanism of earthquake foci and the types of tectonic movements, maps of isoseism are constructed.

At the same time, it is shown that, in spite of tangible progress in the study of seismic events in Central Kazakhstan, some technical and methodological issues have not been developed in the long run, and work on this continues.

Key words: earthquake, focal mechanism, seismic stations, aftershock, magnitude, epicenter, isoseist.

Introduction. Central Kazakhstan has traditionally been considered aseismic, where seismic events with an intensity on the MSK-64 scale of more than 5 are not expected [1].

Based on these representations, a network of seismological stations was located in the South, South-East and East Kazakhstan, for which catalogs of earthquakes were compiled in the current regime.

According to Central Kazakhstan, earthquake catalogs were not compiled, since special seismological observations were not conducted here.

Based on these representations, the network of seismological stations was concentrated over the territories of the Northern Tien-Shan and Dzungaria, and also in part of Eastern Kazakhstan [2], for which catalogs of earthquakes were compiled in the current regime.

However, in connection with the creation of a new modern high-tech system for monitoring earthquakes and industrial explosions, the view of the seismicity of Central Kazakhstan has changed.

The use of these seismic stations, characterized by high sensitivity, made it possible to identify a number of focal zones in areas that had not previously attracted the attention of seismologists and to change the point of view on the geodynamics of this region of Kazakhstan.

All this can be considered as a leitmotif for the study of earthquake foci in Central Kazakhstan, which relevance is obvious, because in themselves they carry the potential threat to the industrial and civil facilities located nearby to these people [3].

At the same time, it should be noted that the study of natural seismicity in this region is difficult due to its low level. Approximately at the same energy level, seismic events occur regularly, generated by numerous explosions in quarries, industrial facilities and landfills.