

Kamchatka seismic monitoring and Earthquake prediction system and its evolution. Main results of observations in 2016–2020

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Abstract In this paper we present brief review of results of Kamchatka Seismic Monitoring and Earthquake Prediction System operations in the last five years. In addition, the retrospective of development of hardware, equipment and software of the System performed. The main direction in the System evolution in this period concerned the creation and modernization of data acquiring and processing methods. One of main results is creation basic informational space, that includes all processes if seismic observations, from data acquiring till exchange (including external users) of data processing results. In particular, the system of data storage was deeply modernized, high-speed access to the data archive was provides, high-performance computing clusters were deployed, all seismic stations were combined in the unified network. Development algorithms and software for data processing and seismic regime controlling was continued. Creation and development of the Seismological Data Informational System (SDIS) provide the access to seismic observations results for research community. The service of automatic data exchange with external users was created and incorporated in SDIS. Kamchatka Seismic Monitoring and Earthquake Prediction System in 2016-2020 allowed registering and processing over 83 thousand tectonic and volcanic earthquakes. The complex studies for seven the strongest ones were conducted. Detailed analysis showed, that magnitude of completeness for regional scale is $ML_c=2.5$, and for local scale (for example – volcano seismic monitoring) – $ML_c=-0.2$.

Keywords seismic observations, geophysical monitoring, informational system, seismology, Kamchatka, volcano, earthquake, earthquake prediction.

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