

T2.3-P03. ACOUSTIC WAVES FROM ATMOSPHERIC NUCLEAR EXPLOSIONS RECORDED BY INFRASOUND AND SEISMIC STATIONS OF KAZAKHSTAN

First infrasound stations in the USSR were installed in 1954. By 1991, the network consisted of 25 infrasound stations, 3 of them were located on the territory of Kazakhstan. These are stations in Kurchatov, in Borovoye Observatory, and in Talgar Observatory. A microbarograph in Talgar Observatory was installed in 1962; it recorded large number of air nuclear explosions conducted at Semipalatinsk Test Site and Novaya Zemlya Test Site. In addition, the archive of CSE IPE RAS contains large amount of records of atmosphere explosions (1961-1962) recorded by seismic stations at distance 330-3600 km away from the Test Sites; these records show acoustic signals. Historic analogue records of microbarograph and seismometers with signals related to acoustic wave were selected. The selected records were digitized, and a database for acoustic signals from nuclear explosions was created. The peculiarities of the wave pattern and spectral content of air wave were investigated as well as regularities of dependence of amplitudes and periods of acoustic wave on explosion yield and distance. The created database can be used for different monitoring tasks, such as calibration of infrasound stations, discrimination of nuclear explosions, precision of nuclear explosions parameters, determination of explosion yield and other.

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