

Identification of Explosions and Earthquakes Using Infrasound and Seismic Data

During the monitoring compliance of the Treaty, a big problem for the Ukrainian seismic networks are mining explosions. Distinguish of industrial explosions is possible by number of criteria (time of the explosion and the day of the week, power, location). But in the same regions periodically there are earthquakes, including those due to induced seismicity. Separately, there are events caused by emergencies and combat operations. Therefore, the separation and identification of the events, determination of danger degree to the public is an important task. One way to solve it is to use a complex of geophysical methods (seismic and infrasound), which is implemented in the MCSM. For known mines the database was created that includes their location, distance to the observation sites and travel times of seismic and infrasound waves from the source to the observation sites, azimuth to the source. As a result of the identification process for such places may be carried out in automatic mode after the selection of seismic and infrasound waves. Presence only of infrasound waves can talk about an emergency event. Availability in MCSM of three small-aperture infrasonic groups enables location of all local powerful events, which generate an acoustic wave.

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