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and interpretation of explosive events by seismic and infrasound networks of Ukraine

In recent years, Ukraine and the adjacent territory has been shaken by a large number of explosions. These are industrial explosions, fireball explosions, man-made accidents and the consequences of military actions. The geophysical network of the Main Center for Special Monitoring (MCSM) confidently records the signals from all these events. Additionally, data of MSM and national networks of neighboring states are connected for processing. In addition, satellite images of emergency regions are actively used to refine data verification methods. At the same time, there is an urgent need to identify an event and calculate its spatial and energy parameters. Joint monitoring of seismic and infrasound data is the most effective for monitoring explosions. In this case, with a ground explosion, the location of the event by the seismic method is confirmed by infrasound data. At the same time, the presence of only an infrasonic response indicates an air explosion. In addition, such explosions are important for network calibration. To determine the energy of the explosions, empirical dependences were constructed based on hundreds of signals from career explosions, for which the coordinates and the amount of explosives are already known in advance. Subsequent evaluations for accidental explosions confirmed their viability.

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