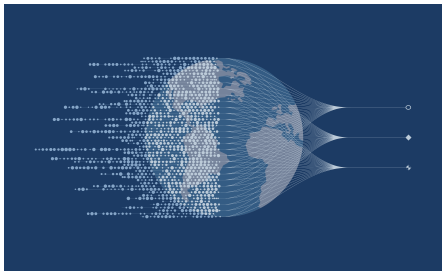

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Romanian infrasound stations performance for tracking repetitive explosive sources generated by military activity at near-regional ranges using IDC bulletins

Infrasound data recorded with Romanian stations BURARI and IPLOR are processed and analyzed on routinely basis at NIEP by using capabilities of NDC-in-a-Box, i.e., DTK-PMCC, DTK-GPMCC and DTK-DIVA software. This study focuses on the numerous and repeated high frequency signals (above 1 Hz) detected mainly from consistent sources related to the intense military activity caused by bombardment and shelling during Ukraine war. We used LEB events reported by IDC/CTBTO to search associated infrasound detections of the Romanian arrays. The observed and expected values of both backazimuths and arrival times for arrays recordings and LEB events were compared. Expected arrival time was estimated by using an average speed of 0.3 km/s of the sound wave to propagate to arrays straight from the event location. Allowed deviations between observed and expected values were considered as ±10 deg for backazimuth and ±10 min for arrival time. Deviating effects of zonal cross winds along the propagation path through the atmosphere is not considered for the observed backazimuths.
Approx. 35% of LEBs could be associated to infrasound detections. Almost 90% of these events are observed into a backazimuth interval between 10 and 120 degrees. Several examples of recurrent coherent infrasonic sources are showed.

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