

## **IPLOR infrasound detections for characterization of near-field explosive seismoacoustic sources**

National Institute for Earth Physics operates Plostinia six-element infrasound array (IPLOR), as well as the dense Romanian Seismic Network (RSN) (over 100 stations). As a result of its sensors' type (Chaparral Physics Model 25) and large aperture (2.5 km), IPLOR array has proven effective in detecting acoustic signals produced by near-field impulsive seismoacoustic sources such as atmospheric, surface and near-surface explosions, or underwater blasts. Most of these sources generate also seismic waves, that can be observed with seismometers (chemical explosions, quarry and mining blasts, seismic air-gun blasting). However, in case of some sources like bolides and thunderstorms, only infrasonic signals are radiated and simultaneously detected by microbarometers and seismometers. Acoustic data recorded with IPLOR were analyzed and combined with RSN seismic observations in an attempt to characterize explosive seismoacoustic events and to distinguish between artificial and natural sources (i.e., explosions from earthquakes). Several seismoacoustic sources observed with IPLOR and RSN stations are presented: accidental explosion in Bulgaria, quarry blast in Dobrogea region, air-gun blasting for oil exploration off the Black Sea West shore, meteorite explosion and local thunderstorm over Plostinia region. Surface explosions are useful sources for examination of event location accuracy when seismic and acoustic measurements are jointly processed.

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**Track Classification:** 5. Analysis of Sources and Scientific Applications