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Seismo-acoustic array installed in Vrancea seismogenic area

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The National Institute for Earth Physics (NIEP) has installed two infrasound networks: a four-element seismo-acoustic array with an 1.2 km aperture (IPLOR) and a three-element array with a 400m aperture (IOANE). Both arrays are installed in Vrancea seismogenic area.
Each array element of IPLOR consists of three sensors (a seismic 3C broad-band instrument with 1000V/m/s sensitivity, an accelerometer +/-2g EpiSensor type, and an infrasound Chaparral type sensor) and a 24-bit digitizer (Quanterra Q330). The BB sensors and accelerometers are located in 3 meters deep boreholes, while the infrasound sensors are installed in a plastic 1 mc container connected to a porous flexible pipe or plastic tube (for the central element).
Inter-array communication is achieved by radio link (2.4 GHz frequency band) which transmits the data from the six-channel digitizers to the local acquisition system. Each power array element consisted of a 12 V DC source powered by the commercial power line or solar panels. The data acquisition system is based on the Seiscomp3 software; a sampling rate of 100 samples per second is applied for BB seismic instruments and accelerometers, whilst for the infrasound sensor a 20 sps rate is used.
Each array element of IPLOR consists of a MBAZEL2007 microbarometer and a 24-bit digitizer. Inter-array communication is achieved by a fiber optic link. The sampling rate is 10 sps.
The Vrancea seismo-acoustic array is used to identify and locate events associated with industrial blasts, to detect local and regional events, as well for the complex studies on the Vrancea seismogenic area. Moreover, the array data accelerometers are used in the early warning system for Bucharest. At NIEP, several programs are running to analyze each type of data (seismic and acoustic): for BB seismic data, a software for event detection and characterization, kindly provided by NORSAR, is applied, acceleration data recorded by the episensors are processed with a software developed at NIEP, while for the infrasound data, programs as PMCC and GEOTOOL are used.
Noise PSD measurements were performed for both arrays.
Recently, the infrasound data recorded with the seismo-acoustic Vrancea array could be used to detect and identify the acoustic event generated by the calibration explosion experiment conducted by the Geophysical Institute of Israel (GII) at SaYarim Military Range, Negev desert, Israel, on 26 August 2009.