Four Years of Continuous Recordings at German Infrasound Station I26DE

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The BGR operates the five-element IMS infrasound array I26DE in the Bavarian Forest for more than four years. The Progressive Multi-Channel Correlation (PMCC) method is applied to the entire data set in order to produce automatic bulletins of coherent transient and continuous signals.

To avoid the mixing of microbaroms with transient infrasonic signals, two consecutive frequency bands are considered for the range between 20 s and 4 Hz. Since September 2000 more than 230,000 detections were counted in the lower range from 0.05 to 0.7 Hz, whereas only 90,000 were found in the [0.7 4.0] Hz band.

The detection parameters in both bulletins show a strong seasonal variation with respect to back-azimuths. This correlates with the change in the prevailing zonal wind direction in the stratosphere. Almost no low-frequency signals were detected during the summer.

In the remaining time of the year the bearings were directed to the North Atlantic Ocean and were basically caused by strong storm systems. The polar distribution of high-frequency detections is dominated by signals from Etna, the Concorde, and the North Sea. Between May and September coherent signals from easterly directions were detected where most of them were suspected to be generated by draining of storage lakes in Austria and the Czech Republic.

The presentation will also inform on the identification of transient infrasonic signals from quarry blasts at distances up to several hundred kilometres that are recorded at I26DE. A routine for seismo-acoustic event association has been developed which makes use of the automatic locations obtained at the co-located seismic IMS array GERES.