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European Infrasound Bulletin

The European Infrasound Bulletin highlights infrasound activity produced by mostly anthropogenic sources, recorded all over Europe and collected in the course of the ARISE project (Atmospheric dynamics Research InfraStructure in Europe). Data includes high frequency (>0.7 Hz) infrasound detections of 24 European infrasound arrays from 9 different national institutions complemented with CTBT IMS infrasound stations. Data was acquired during 16 years of operation (from 2000 to 2015), and processed to identify and localize about 48.000 infrasound events within Europe. The source location of these events was derived by combining at least two corresponding station detections per event. Comparisons to ground-truth sources, as e.g. Scandinavian mining activity, are provided. Relocation is performed using ray-tracing methods to estimate celerity and back-azimuth corrections based on either HWM-07/MSISE-00 climatologies or actual ECMWF wind and temperature values for each event. This study focuses on repeating infrasound events (e.g. mining blasts and supersonic flights) and on the seasonal, weekly and diurnal variation of the infrasonic activity of sources in Europe. Estimations of the detection and location capability and accuracy will be given in the course of this study to achieve a comprehensive picture of the activity of infrasound sources and capability of infrasound station in Europe.

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