

the association of infrasound events using a probabilistic categorization of clutter.

The IDC collects waveforms from a global network of infrasound sensors maintained by the IMS, and automatically detects signal onsets and associates them to form event hypotheses. However, a large number of signal onsets are due to local clutter sources such as microbaroms (from standing waves in the oceans), waterfalls, dams, gas flares, surf (ocean breaking waves) etc. These sources are either too diffuse or too local to form events. Worse still, the repetitive nature of this clutter leads to a large number of false event hypotheses due to the random matching of clutter at multiple stations. Previous studies, for example [1], have worked on categorization of clutter using long term trends on detection azimuth, frequency, and amplitude at each station. In this work we continue the same line of reasoning to build a probabilistic model of clutter that is used as part of NET-VISA [2], a Bayesian approach to network processing. References: [1] Infrasound categorization Towards a statistics-based approach. J. Vergoz, P. Gaillard, A. Le Pichon, N. Brachet, and L. Ceranna. ITW 2011 [2] NET-VISA: Network Processing Vertically Integrated Seismic Analysis. N. S. Arora, S. Russell, and E. Sudderth. BSSA 2013.

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