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Progresses with Net-VISA on Global Infrasound Association

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Global Infrasound Association algorithms are an important area of active development at the International Data Centre (IDC). These algorithms play an important part of the automatic processing system for verification technologies. A key focus at the IDC is to enhance association and signal characterization methods by incorporating the identification of signals of interest and the optimization of the network detection threshold. The overall objective is to reduce the number of associated infrasound arrivals that are rejected from the automatic bulletins when generating the Reviewed Event Bulletins (REB), and hence reduce IDC analyst workload. Despite good accuracy by the IDC categorization, a number of signal detections due to clutter sources such as microbaroms or surf are built into events. In this work we aim to optimize the association criteria based on knowledge acquired by IDC in the last 6 years, and focus on the specificity of seismo-acoustic events. The resulting work has been incorporated into NETVISA [1], a Bayesian approach to network processing. The model that we propose is a fusion of seismic, hydroacoustic and infrasound processing built on a unified probabilistic framework.

References:
[1] NETVISA: Network Processing Vertically Integrated Seismic Analysis. N. S. Arora, S. Russell, and E. Sudderth. BSSA 2013