



On the global coherent infrasound noise - avenues using the IMS

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In this study we are going to present results of global coherent infrasound noise field measured at IMS infrasound stations and its correlation with atmospheric dynamics. A new implementation of the Progressive Multi-Channel Correlation (PMCC) algorithm has been used, which enables a better characterization of all received signals in their wave parameter space (e.g., frequency-azimuth space, frequency-trace-velocity space). This, in-turn, allows an accurate signal discrimination, as well as source and propagation studies. For instance, we are using the processing for microbarom source and propagation studies and for analysing the occurrence of mountain associated waves.

Such analyses are enabled after performing a re-processing of the entire previous IMS infrasound database covering the time period from January 2003 to December 2015; whereas the number of stations has increased from 6 to 48. Results indicate a continuous spectrum of coherent signals at IMS stations within the 0.02 to 5.0 Hz band. Moreover, these results could be used for estimating network detection capability based on empirical station coherent infrasound noise models.