



## **Categorization of infrasound detections**

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The IMS network of infrasound arrays has demonstrated its capability for detecting and locating infrasonic sources such as mining explosion, air force activity or atmospheric entry of meteoroids. However, many other sources which are not of primary interest are also recorded by the network. It includes microbaroms, surf noise or volcanoes eruptions that are usually long duration and repetitive signals.

In order to identify and isolate the detections associated to transient signals, which are then used as inputs for network processing (association and location), PMCC bulletins are first “cleaned” with a categorization algorithm.

In this article, we propose a new statistical method to classify the detection background as “noise”. We use a kd-tree in the azimuth / frequency domain where the splits are made according to the density separability of the clusters. Then, we perform an amplitude-outlier detection for each cluster before we classify them with respect to their density of number of detections and their duration. We present the methodology and we compare the results of this new algorithm with those from a state-of-the-art method.