

-of-health assessment of infrasound elements using operational data

A desirable adjunct for infrasound arrays in the International Monitoring System is remote diagnosis of data quality. In-situ comparison measurement provides an unparalleled degree of diagnosis for infrasound-array elements; however, this method requires either a visit to the station or installation of a permanent reference sensor at each element. A technique that uses only the normal array data to assess the health and data quality would have value. The method described in this paper is based on long-term monitoring of element-pair correlations. Detection events – signal periods in which correlation across the array exceeds some threshold – are frequently of little interest to the IMS mission; however, these more frequent, unimportant “events” are valuable for monitoring the correlations between pairs of elements. By using a detection metric that is resistant to single-element degradation and by examining all of the element-pair correlations, elements with performance significantly below the average can, at least in some cases, be identified.

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