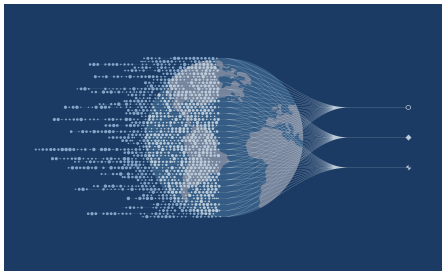

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# of Selection Methods and Localization of Infrasound Sources for Solving Problems in the Monitoring of the Comprehensive Nuclear-Test-Ban Treaty

A method for network selection and localization of global infrasound sources based on propagation velocities and azimuth deviations of infrasound signal arrivals at the infrasound stations of the International Monitoring System (IMS) of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) is developed. The method uses a network likelihood ratio approach, incorporating the Revised Event Bulletin statistics, as well as an algorithm for checking the adequacy of applying models of high altitude jet streams. To eliminate false signals that fall within the specified azimuth deviations and velocity ranges at each individual station, it is necessary to perform not only station selection but also network selection. For a large number of events from the Revised Event Bulletin, histograms of azimuth deviations and changes in signal velocities are constructed, taking into account corrections for altitude jet streams. The likelihood ratio is defined as the ratio of probabilities for true and false sources. The network likelihood ratio is compared against a threshold determined using the Monte Carlo method. Signals from a real source that exceed this network selection threshold are considered true.

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