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Optimization Methods of Network Parametric Selection of Infrasound Signal Sources

The methods make it possible to get most credible results of the source parameters determination as they are based on the calculation of probability maximum for recorded signal parameters using data bank that contains signal and source parameters and their model theoretical dependence. Theoretical model parameters are optimized on the same principle of maximum credibility of the available data bank. Methods being developed are based on a serial principle. 1. Build up ratio statistics of theoretical and experimental values for each signal parameter using the data bank. 2. Transformation of obtained statistics to the Gauss normalized distribution. 3. Calculation of correlation matrix that contains correlation factors between statistics by averaging the product for all signals from the data bank. 4. Calculation of D matrix determinant and algebraic complement for each element of correlation matrix. 5. Calculation of probability density of multidimensional random normally distributed value with projections for detected signal with parameters from a specified source. 6. Sequentially, with enumerative technique we change parameters of the source and calculate the maximum value of the density possibility.

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