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Acoustic correlated sources direction finding in the presence of unknown spatial correlation noise

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Abstract

In this paper, a new method is proposed for DOA estimation of correlated acoustic signals, in the presence of unknown spatial correlation noise. By generating a matrix from the signal subspace with the Hankel-SVD method, the correlated resource information is extracted from each eigen-vector. Then a joint-diagonalization structure is constructed of the signal subspace and basis it, independent linear component, related to sources are recovered. Simulation results and comparisons with other commonly presented methods show the capability of this algorithm in low signal-to-noise ratio and close sources.

Keywords: Acoustic, Correlated sources, Direction finding, Hankel matrix.

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