

论文

A ROBUSTNESS ANALYSIS OF THE MUSIC AND THE MINIMUM-NORM ALGORITHMS WITH RESPECT TO CORRELATED NOISE

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摘要 A robustness analysis of the MUSIC and the MiniNorm algorithms with respect to spatially correlated noise in array processing is presented in this paper. Let the covariance matrix of correlated noise be the correlated noise introduces a bias into the direction-of-arrival estimates, produced by the two algorithms. For the else of two closely spaced sources, the influence functions of the two algorithms and the resolving power as a function of ϵ of the two algorithms are derived. The results show that the above two robust performances of the MiniNorm algorithm are slightly better than those of the MUSIC algorithm, but both algorithms have poor robustness with respect to correlated noise. The analysis assumes that the exact covariance matrix of array element outputs is known (the infinite data case).

关键词 [Array processing](#), [direction of arrival](#) ϵ

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Abstract A robustness analysis of the MUSIC and the MiniNorm algorithms with respect to spatially correlated noise in array processing is presented in this paper. Let the covariance matrix of correlated noise be the correlated noise introduces a bias into the direction-of-arrival estimates, produced by the two algorithms. For the else of two closely spaced sources, the influence functions of the two algorithms and the resolving power as a function of ϵ of the two algorithms are derived. The results show that the above two robust performances of the MiniNorm algorithm are slightly better than those of the MUSIC algorithm, but both algorithms have poor robustness with respect to correlated noise. The analysis assumes that the exact covariance matrix of array element outputs is known (the infinite data case).

Key words [Array processing](#), [direction of arrival estimate](#), [robustness analysis](#)

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