

## 信源数目估计误差影响下的修正二维MUSIC算法分析

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**摘要** 针对信源数目过估计下二维MUSIC算法会出现虚假信号和欠估计下某些谱峰消失的问题, 通过将降维技术与一维噪声子空间算法相结合, 提出一种基于正交阵列结构的修正二维MUSIC算法. 该算法将复杂的二维处理问题转化为3个简单的一维问题, 通过组合3个并行的均匀线阵分别估计出一维波达方向进行空间测向. 仿真结果表明该算法在未知信源数目的情况下, 仍能正确判断出信号的来波方向.

**关键词** [阵列信号处理](#) [信号DOA估计](#) [二维MUSIC算法](#) [正交阵列](#)

**分类号** [TN911.7](#)

## Performance analysis of the modified 2-D MUSIC algorithm under the effect of the source number estimation Error

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### Abstract

Based on the problem that some unexpected peaks appear in the 2-D MUSIC spectrum when the source number is over estimated and some peaks of the 2-D MUSIC spectrum disappear when the source number is under-estimated. By combining the reducing-dimension technique with the ONE-DIMENSION NOISE SUBSPACE algorithm, an modified 2-D MUSIC algorithm based on three orthogonal linear arrays is discussed in this paper. It could convert the complicated 2-D processing into three simple 1-D processings. This algorithm utilizes the 1-D DOA which is estimated by the three collateral linear arrays respectively. Computer simulation results indicate that the modified algorithm can give the DOA successfully under the situation of un-known source numbers. <BR>

**Key words** [array signal processing](#) [signal DOA estimation](#) [2-D MUSIC algorithm](#) [orthogonal array](#)

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