论文

基于多项式求根的双基地MIMO雷达多目标定位方法

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Multi-target Localization Based on Polynomial Rooting for Bistatic MIMO Radar

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摘要 该文提出了一种基于多项式求根的双基地MIMO雷达多目标定位方法，该方法将2维的收发方位角度估计分离为两个1维的方位角度估计过程，采用多项式求根法对1维方位角度进行估计，避免了传统的2维谱峰搜索，所估计的2维方位角能够自动配对，不需要额外的配对运算，而且系统的最大可定位目标数目不少于接收机数目。仿真结果证明了算法的有效性。

关键词： MIMO雷达 双基地 多项式求根 多目标定位

Abstract： A method for multi-target localization based on polynomial rooting is developed in bistatic MIMO radar. Utilizing the property of transmit-receive steering vector, the two-dimensional (2-D) direction finding is transformed into two 1-D direction finding procedures. Then the polynomial rooting technique is employed to determine the 1-D direction. The proposed method avoids the conventional 2-D spectrum peak searching, and the estimated parameters are automatically paired without additional paring computation. Moreover the maximum number of targets resolved by this method is no smaller than the number of array elements. Numerical results verify the effectiveness of this method.

Keywords： MIMO radar Bistatic Polynomial rooting Multi-target localization

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