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Two-Dimensional DOA Estimation Using Cross-Correlation Matrix With L-Shaped Array

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Abstract

Two dimensional (2-D) direction-of-arrival (DOA) elevation and azimuth angles estimation for uncorrelated sources using L-shaped array is presented in this letter. The key points of the proposed method are the following: 1) The proposed scheme obtains the cross-correlation matrix between the subarrays data to construct a data matrix with free noise; 2) employ only linear operations on the data matrix hence low computational complexity; 3) it has better angle estimation with no failure in practical mobile elevation angle range (70°-90°). Simulation results demonstrate that the proposed method has better performance and lower computational complexity compared to the existing schemes. © 2015 IEEE.

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