

Simulation of 3-D Direction-of-Arrival Estimation Using MUSIC Algorithm

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Abstract : DOA (Direction of Arrival) estimation is an important method in array signal processing and has a wide range of applications such as direction finding, beam forming, and so on. In this paper, we briefly introduce the MUSIC (Multiple Signal Classification) Algorithm, one of DOA estimation methods for analyzing several targets. Then we apply the MUSIC algorithm to the two-dimensional antenna array to analyze DOA estimation in 3D space through MATLAB simulation. We also analyze the design factors that can affect the accuracy of DOA estimation through simulation, and proceed with further consideration on how to apply the system.

Keywords : DOA estimation, MUSIC algorithm, spatial spectrum, array signal processing

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