Robust System Architecture for DOA Estimation based on Total Forward Backward Matrix Pencil Algorithm

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Abstract

Radio Direction Finding (DF) is a technique that identifies the bearing angle or the coordinates of an incoming radio signal(s). The primary function of DF is to get the Direction of Arrival (DOA) information. In this paper, we propose the robust system architecture for DOA estimation using the Total Forward - Backward Matrix Pencil Method (TFBMP). This method works directly on signal samples of incoming signals received by an M-element Uniform Linear Antenna (ULA) array. The simulation results for DOA estimation of RF signals using the proposed system will be shown and analyzed to verify its performance.

References

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**Index Terms**

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**Keywords**

Direction of arrival (DOA); Wideband signal; Total Forward-Backward Matrix Pencil (TFBMP), Uniform Linear Antenna Array (ULA).