

## **Performance Evaluation of Direction of Arrival Estimation using Uniform and Non-uniform Linear Arrays.(2017)**

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### **Abstract**

In sensor array signal processing, the direction of arrival (DOA) estimation denotes the angle at which an electromagnetic or acoustic wave arrives at an array of antennas or sensors. Using an array of antennas has an advantage over the single antenna in achieving an improved performance by applying Multiple Signal Classification (MUSIC) algorithm. This paper focuses on estimating the DOA using uniform linear array (ULA) and non-uniform linear array (NLA) of antennas to analyze the performance factors that affect the accuracy and resolution of the system based on MUSIC algorithm. The direction of arrival estimation is simulated on a MATLAB platform with a set of input parameters such as array elements, signal to noise ratio, number of snapshots and number of signal sources. An extensive simulation has been conducted and the results show that the NLA with DOA estimation for co-prime array can achieve an accurate and efficient DOA estimation.

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