DOA determination by using an antenna system without phase center and MUSIC algorithm

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Abstract: Defining the direction of arrival (DOA) is an important problem in radar surveillance, mobile communications.,etc. There are many algorithms to address this. Among them some famous papers can be regards as MUSIC, ESPRIT, MLE. The signal model in that algorithms bases on assuming that array elements are similarly in both amplitude and phase pattern. This paper presents a new approach to find the DOA by using an antenna system without phase center and MUSIC algorithm. The antenna system consists of two antenna elements. In this suggested approach the phase pattern of array elements are taken in to account. The power spectrum improvement are verified by the simulation and the number of detected source is not limited by the number of antenna elements. © 2005 IEEE.

Author Keywords: Array of elements without phase center; DOA; MUSIC

Index Keywords: Algorithms; Computer simulation; Mathematical models; Mobile telecommunication systems; Radar; Direction of arrival (DOA); Phase center; Phase pattern; Antennas

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