

# 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 regarded 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

Year: 2005

Source title: IEEE Antennas and Propagation Society, AP-S International Symposium (Digest)

Volume: 4:00 AM

Art. No.: 1552602

Page : 134-137

Link: [Scopus Link](#)

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Conference name: 2005 IEEE Antennas and Propagation Society International Symposium and USNC/URSI Meeting

Conference date: 3 July 2005 through 8 July 2005

Conference location: Washington, DC

Conference code: 69115

ISSN: 15223965

ISBN: 0780388836; 9780780388833

CODEN: IAPSB

DOI: 10.1109/APS.2005.1552602

Language of Original Document: English

Abbreviated Source Title: IEEE Antennas and Propagation Society, AP-S International Symposium (Digest)

Document Type: Conference Paper

Source: Scopus

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Antennas Without Phase Center and Their Applications In Radio Engineering, Phan Anh, Series: Monograph, No 23, Wroclaw, Poland, 1986, ISSN 0324-9328