

[1]郭艺夺,童宁宁,宫健.适于非均匀线阵解相干的DOA估计算法[J].弹箭与制导学报,2009,1:293-296.

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GUO Yiduo, TONG Ningning, GONG Jian. DOA Estimation Algorithm for the Decorrelation of a Non uniform Linear Array [J]., 2009, 1: 293-296.

适于非均匀线阵解相干的DOA估计算法(PDF)

《弹箭与制导学报》[ISSN:1673-9728/CN:61-1234/TJ] 期数: 2009年第1期 页码: 293-296 栏目: 相关技术 出版日期: 2009-02-25

Title: DOA Estimation Algorithm for the Decorrelation of a Non uniform Linear Array

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关键词: [非均匀线阵](#); [DOA估计](#); [相干信号源](#); [斜投影](#)

Keywords: [non uniform linear array](#); [DOA estimation](#); [coherent signals](#); [oblique projection](#)

分类号: TN911 72

DOI: -

文献标识码: A

摘要: 在研究用非均匀线阵实现对相干信号源方位估计问题的基础上, 提出了一种改善方位估计的阵列设置方法和非相干与相干信号源分开估计的DOA估计方法。在阵元数一定的情况下, 该方法可使阵列对非相干信号源的分辨力较直均匀线阵(ULA)有较大的改善, 还克服了一般稀布线阵方位估计模糊和去相关能力差的缺点, 而且还具有很好的信源过载能力和估计性能。计算机仿真证明了该方法的正确性和有效性。

Abstract: An arrangement method of non uniform linear array and a DOA estimation algorithm that resolves the coherent sources and incoherent sources separately is presented in this paper, on the base of the research on non uniform linear array estimating the coherent sources. In the case of the same sensor number, this method which adopts appropriate array geometry arrangement can improve the resolvability of DOA estimation more obviously than the uniform linear array. It also overcomes the shortcoming of the ambiguity of DOA estimation and the poor quality of decorrelation in the conventional non uniform linear array, in addition, it can resolve more sources using the same number of sensors and have very good estimated performance. Computer simulation results verify the correctness and effectiveness of the proposed method.

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备注/Memo: 收稿日期: 2008-01-04 基金项目: 国家863计划 (2006AA701307) 资助作者简介: 郭艺夺 (1982-), 男, 福建龙海人, 硕士研究生, 研究方向: 阵列信号处理。
