

图形、图像、模式识别

基于MUSIC算法的OFDM系统参数盲估计仿真研究

张艳, 黄奇珊, 曹世文

西南电子电信技术研究所, 成都 610041

收稿日期 2008-5-28 修回日期 2008-8-13 网络版发布日期 2008-12-18 接受日期

摘要 在介绍正交频分复用 (OFDM) 技术基本原理和基本接收模型的基础上, 提出将空间谱估计中的多重信号分类 (MUSIC) 算法应用到OFDM系统参数盲估计中。经过MATLAB实验仿真表明, 在没有信号先验知识的情况下, 此算法对信噪比较低的仿真OFDM信号和实际802.11a信号均能有效估计出其子载波个数和发射端作傅立叶反变换的点数。

关键词 [正交频分复用](#) [子载波个数](#) [多重信号分类](#) [参数估计](#)

分类号

Simulation and research on blind parameters estimation of OFDM system based on MUSIC algorithm

ZHANG Yan, HUANG Qi-shan, CAO Shi-wen

Southwest Electronics and Telecommunication Technology Research Institute, Chengdu 610041, China

Abstract

Based on the introduction of an Orthogonal Frequency Division Multiplexing (OFDM) System and its basic receiving model, this paper achieves an application of Multiple Signal Classification (MUSIC) algorithm of space spectral estimation into the blind parameter estimation of this system. Experiments and simulations conducted using MATLAB are quoted to demonstrate that, even without any prior knowledge of signal-under-estimation, this algorithm is capable of effectively estimating the number of sub-carriers and IFFT points on emulated OFDM signal bearing an lower SNR and the actual 802.11a signal.

Key words [Orthogonal Frequency Division Multiplexing \(OFDM\)](#) [number of sub-carriers](#)
[Multiple Signal Classification \(MUSIC\)](#) [parameter estimation](#)

DOI: 10.3778/j.issn.1002-8331.2008.36.054

通讯作者 张艳 yaner.83@163.com

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(582KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“正交频分复用”的
相关文章](#)

▶ [本文作者相关文章](#)

- [张艳](#)
- [黄奇珊](#)
- [曹世文](#)