信号处理 2014, 30(1) 37-43 DOI: ISSN: 1003-0530 CN: 11-2406/TN

算法研究

上行OFDMA系统快速盲信道估计

周游,胡捍英

解放军信息工程大学

摘要： 信道估计直接影响正交频分多址接入（OFDMA）系统的性能，为了提升多用户盲信道估计精度和收敛速度，提出一种快速盲信道估计算法。该算法通过叠加多个接收天线上的频域数据建立子空间，然后利用子空间之间的正交性完成多用户信道频域响应的盲估计，并通过抽样分段进一步提升算法的估计精度和收敛速度。算法不受多用户子载波分配规则的限制，也不依赖于虚拟子载波，且降低了对多用户定时同步的要求。仿真结果表明，与已有算法相比，该算法具有较好的收敛性能和较快的收敛速度，且对信道阶数具有鲁棒性。

关键词： 抽样估计

Fast Blind Channel Estimation for Uplink OFDMA Systems

ZHOU YouHU Han-ying

PLA Information Engineering University, Zhengzhou

Abstract: Channel estimation has a great impact on the performance of OFDMA systems. In order to improve the accuracy and accelerate the multi-user’s channel estimation, a fast blind channel estimation algorithm is proposed. The received data from multi-antennas in the frequency domain is piled up, and the subspace is built whose orthogonality is exploited to blindly estimate the frequency channel response. The accuracy and convergence rate are further improved through a sampling method. The algorithm is not limited to the subcarrier allocation scheme, and independent to the virtual subcarriers. Moreover, it has a low requirement on the timing of multi-user. Simulations show that the algorithm effectively improves the convergence rate while keeping a considerable performance compared with that of existed one, and it’s insensitive to the channel order.

Keywords: orthogonal frequency division multiple access blind channel estimation subspace sample estimation

收稿日期 2013-04-27 修回日期 2013-08-16 网络版发布日期 2014-01-25

DOI:

基金项目:

国家高技术研究发展计划（2012AA01A502,2012AA01A505）

通讯作者:

作者简介:

作者Email: emailzhouyou@sina.com

参考文献：

本刊中的类似文章

文章评论

反馈人		邮箱地址	
反馈标题		验证码	9031

Copyright by 信号处理