光子学报 2011, 40(6) 898-901 DOI: 10.3788/gzxb20114006.0898 ISSN: 1004-4213 CN: 61-1235/O4

论文

基于Dual-Mode MMA+MDD 双模式T/2分数间隔盲均衡算法的研究

柳雷,赖惠成,贾振红

（新疆大学 信息科学与工程学院,乌鲁木齐 830046）

摘要:

均衡技术是用来解决通信系统中码间干扰的常用方法.针对传统恒模算法的收敛速度和稳态剩余码间干扰大的缺点,将双模式多模算法和改进型判决引导算法结合起来,并且应用于分数间隔盲均衡器中.该算法初期用双模式算法收敛均衡器,然后切换到改进型判决引导算法中进一步收敛,由于分数间隔均衡器解决了波特间隔均衡器因抽样率不高带来的频谱混叠问题,从而进一步地提高了均衡效果.蒙特卡罗仿真表明,该算法不仅收敛速度快,而且得到较低的剩余码间干扰.

关键词: 恒模算法 盲均衡 分数间隔 双模式多模算法

Research of Dual-Mode MMA+MDD Dual Mode based on T/2 fractionally-spaced equalization

LIU Lei,LAI Hui-cheng,JIA Zhen-hong

(College of Information Science &|Engineering,Xinjiang University,Urumqi 830046,China)

Abstract:

Equalization technique is an usual way to solve the inter-symbol interference problem in communication system.The dual-mode modified multi-mode algorithm and modified decision directed algorithm were combined in the fractionally-spaced equalizer to improve the performance about convergence speed and steady residual inter-symbol interference which produced by traditional constant modulus algorithm.The dual-mode was used to adjust equalizer,and the equalizer was further adjusted by switching to decision directed algorithm.And fractionally-spaced equalizer solves the spectrum aliasing problem,caused by baund-spaced equalizer because the sampling rate is not high,thus the performance of equalizer was further improved.Monte Carlo simulation shows that the algorithm has fast convergence with lower residual ISI.

Keywords: Constant Modulus Agorithm(CMA) Blind equalization Fractionally-spaced Dual-mode blind equalization algorithm

收稿日期 2010-11-01 **修回日期** 2011-01-28 **网络版发布日期** 2011-06-25

DOI: 10.3788/gzxb20114006.0898

基金项目:

科技部国际科技合作项目（No.2009DFA12870）资助

通讯作者: 赖惠成(1963-),男,教授,主要研究方向为光通信与光传感器.Email:lai@xju.edu.cn收稿日期|20101031|

作者简介:

参考文献:

[1] LIANG Bo,ZHU Hai,CHEN Wei-biao.Equalization and denoise techniques for potical communication in time-varied bandlimited channel[J].Acta Photonica Sinica,2008,37(6):1195-1199.
梁波,朱海,陈卫标.时变带限信道中光通信的均衡与去噪技术[J].光子学报,2008,37(6):1195-1199.

[2] GUO Ye-Cai,ZHANG Yan-ping.Dual-mode multi-modulus blind equalization algorithm for high-order QAM signals[J].Journal of System Simulation,2008,20(6):1423-1426.
郭业才,张艳萍.一种适用于高阶QAM信号的双模式多模盲均衡算法[J].系统仿真学报,2008,20(6):1423-1426.

[3] SUN Li-jun,SUN Chao.Making blind algorithm of multi-path fading underwater acoustic channels suitable for high order QAM Signals[J].Journal of Northwestern Polytechnical University,2005,23(5):598-601.
孙丽君,孙超.一种适用于高阶QAM信号的水声信道盲均衡算法[J].西北工业大学学报,2005,23(5):598-601.
[4]XU Jin-biao,GE Jian-hua,WANG Yu-min.Dual-mode algorithms for blind equalization based on CMA [J].Journal of China Institute of Communications,1997,18(2):65-69.
徐金标,葛建华,王育民.基于CMA算法的双模式盲均衡算法[J].通信学报,1997,18(2):65-69.
[5]GUO Yuan-shu,YUE Lei,Yao Bo-bin.Dual mode blind equalization algorithm based on dual-mode MCMA+DD[J].Acta Photonica Sinica,2009,38(10):2702-2706.
郭元术,玥蕾,姚博彬.基于Dual-Mode MMA+DD双模式盲均衡算法研究[J].光子学报,2009,38(10):2702-2706.

本刊中的类似文章

1．郭元术,岳蕾,姚博彬.基于Dual-Mode MCMA+DD双模式盲均衡算法研究*[J]. 光子学报, 2009,38(10): 2702-2706

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

反馈人		邮箱地址	
反馈标题		验证码	5267