



基于符号频域均衡的CPM迭代检测算法

李强 严庆* 罗胜*

电子科技大学通信抗干扰技术国家级重点实验室 成都 611731

Iterative Detection Algorithm Based on Symbol Frequency Domain Equalization for Continuous Phase Modulation

Li Qiang Yan Qing Luo Sheng*

National Key Laboratory of Communication, University of Electronic Science and Technology of China, Chengdu 611731, China

摘要

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摘要 该文研究了部分响应连续相位调制(CPM)信号的频域均衡技术,设计了一种新的发射信号帧结构,并在此基础上提出了一种低复杂度的CPM迭代检测算法,分析了该迭代检测算法的复杂度和误码性能。理论分析和仿真结果表明,在多径衰落信道下,该算法比已有的CPM双迭代频域均衡算法具有更低的复杂度和更好的性能。

关键词: 无线通信 连续相位调制 Laurent分解 频域均衡 迭代检测

Abstract: In this paper, the Frequency Domain Equalization (FDE) algorithm for partial response Continuous Phase Modulation (CPM) signals is studied. A new framework of CPM transmitted signals is designed, and a novel low-complexity iterative detection approach for CPM is proposed. The computational complexity and the bit error rate are analysed for this iterative detection algorithm. The computational complexity analysis and simulations show that this approach provides not only a significant reduction in the overall computational complexity, but also a performance improvement over previously proposed double Turbo FDE algorithm in multipath fading channels.

Keywords: Wireless communication Continuous Phase Modulation (CPM) Laurent decomposition Frequency Domain Equalization (FDE) Iterative detection

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通讯作者: 严庆 Email: qinglong_yan@163.com

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