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论文

异步DS-CDMA盲多用户检测

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摘要
该文研究了频率选择性瑞利衰落信道中的异步DS-CDMA系统盲多用户检测。提出一种期望信号矢量估计方法, 该方法同时利用了多径传播和接收机同步失调的特性, 以利于把盲线性滤波优化技术应用于稳健的干扰抑制。为了抑制多址干扰(MAI), 提出一种基于投影的辅助矢量(PAV)算法。该算法计算复杂度低, 特别适用于短数据采样时滤波矢量的快速优化, 仿真结果表明在低输入信号干扰噪声比(SINR)时能提供有效的干扰抑制, 在高输入SINR时具有稳健的性能。

关键词 DS-CDMA 盲多用户检测 失配 稳健干扰抑制

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Blind Multiuser Detection for Asynchronous DS-CDMA

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Abstract
This paper investigates blind multiuser detection for asynchronous DS-CDMA in frequency selective Rayleigh fading channel. A method of estimating the desired signal vector is presented. The method not only exploits the characteristics of multipath propagation but also the characteristics of timing-offsets which may occur in the receiver, to facilitate the application of a blind linear filter-optimization technique to robust interference suppression. To suppress Multiuser Access Interference (MAI), a Projection-based Auxiliary Vector (PAV) algorithm is proposed. The algorithm has low computation complexity, especially suitable for fast optimization of filter vector with short data samples. It can provide efficient interference suppression in low input SINR, and shows robust performance in high input SINR.

Key words DS-CDMA Blind multiuser detection Mismatch Robust interference suppression

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