

论文

WCDMA系统上行链路空时干扰抑制技术

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摘要

该文提出一种将自适应并行干扰对消技术简化为利用软判决变量在一个比特周期内的平均作为再生信号幅度估计的并行干扰对消方法, 这种简化大大降低了原方法的运算量, 而且具有很好的稳定性。仿真实验表明在单阵元接收情况下, 简化方法的对消效果较原方法有些下降, 但在阵列接收然后进行并行干扰对消的情况下, 二者的性能基本没有差别。因而该文针对WCDMA系统上行链路的帧结构特征, 进一步提出了导频位辅助LMS-DRMTA算法加上软判决变量平均幅度估计法的空时联合WCDMA系统的干扰对消方案。

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The space-temporal interference cancellation technology for the uplink of wcdma system

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Abstract

This paper simplifies the adaptive parallel interference cancellation (PIC) scheme into a new method named soft-decision variant averaging amplitude estimation PIC technology. Relative to the adaptive PIC, the new method cuts down large amount of computational complexity, furthermore, it has better robustness than the adaptive PIC method. The simulations indicate that when a single sensor is used at the base station, the new method performs worse than the adaptive PIC method, especially under near far conditions. However, when an antenna array is used at the base station, and the array output is fed into PIC processing, the two PIC methods perform almost the same. Therefore, accounting to the frame structure of WCDMA, a space-temporal interference cancellation scheme including pilot-bits assisted LMS-DRMTA algorithm and soft-decision averaging amplitude estimation PIC is proposed for the uplink of WCDMA system. The overall scheme is characterized by low complexity and strong robustness.

Key words [Parallel interference cancellation](#) [Soft-decision](#) [WCDMA](#) [Uplink](#) [Smart antenna](#) [Pilot bit](#)

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