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论文

基于TD-SCDMA系统下行链路的码复用方案

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摘要
TD-SCDMA系统是码字受限系统，为使有限的扩频码在高速率数据下行链路中支持更多用户，该文提出了码复用方案。文中采用智能天线技术，充分利用用户空间分割度较大的空间特征，实现若干高速用户共享同一码字，提高了对有限码资源的利用率。该文对使用若干种波束赋型算法的码复用系统进行仿真，结果表明了其性能与非码复用系统性能相近；对传统零限约束赋形算法加以改进，仿真结果表明改进的算法对系统性能的改善较为明显，尤其适用于高速下行链路若干少量用户同时工作的情况。

关键词 TD-SCDMA 码字受限 码复用 智能天线

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A Code-reuse Scheme in the Downlink of TD-SCDMA System

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Abstract
The TD-SCDMA system is code-limited. A code-reuse scheme is proposed to make the limited spreading codes support more subscribers. The smart antenna technique is used to realize the scheme. It takes advantaged of the big differences of space characteristic among subscribes to meet the demand of reuse of same spreading codes for several high data rate of users. This can improve utilization of code resources. In comparisons of system performances using several beam-forming algorithms, the results show that performance of the system using the code-reuse scheme is almost the same as that of traditional system; Moreover, an improved algorithm based on tradition null-steering method is proposed, which can improve system performance, especially for the high data rate downlink with a few subscribers.

Key words TD-SCDMA Code-limited Code-reuse Smart antennas

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