论文

WCDMA反向突发两级相关快速捕获算法

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摘要
该文针对WCDMA反向随机接入信道前置同步码的多码限时捕获特点，提出了一种低复杂度的两级相关捕获电路，给出了快速捕获算法。该算法对多径信号进行联合处理，由于利用了多径信息，分析和数值结果表明该算法在多用户多径衰落环境下能获得比单径衰落时更好的捕获性能。

关键词　WCDMA反向链路　码捕获　检测概率

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Twice-Correlate Rapid Acquisition Algorithm for Synchronization of PRACH Preamble in WCDMA Reverse Link

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Abstract
A twice-correlate code-acquisition circuit and a rapid acquisition algorithm are proposed according to the characteristics of multi-code and time-limited acquisition for Phys-ical Random Access Channel (PRACH) preamble part in WCDMA reverse link. Compared with the conventional matched-filter and parallel acquisition methods, this scheme has lower complexity with fast series correlate calculation for multiple codes in the fcwice-correlate cir-cuit. The proposed acquisition algorithm uses the information of multiple paths to achieve higher detection probability in multi-path fading environments than that in single patli fad-ing channel. Performance analysis with theory expressions and numerical results is provided.

Key words　WCDMA reverse link　Code acquisition　Detection probability

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