Performance Analysis of DS-CDMA Systems in Multiple-cell with Correlated Fading Channels

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ABSTRACT

In this paper, the impact of the correlation on the performance of multiple-cell DS-CDMA cellular systems over correlated fading channels is investigated. A new closed-form formula for the joint probability density function (joint pdf) of the diversity combiner with arbitrary correlation coefficients in terms of the generalized Laguere polynomial and the new expressions of average bit-error rate (BER) for the DS-CDMA system are given in this paper. The results demonstrate that the BER is significantly dependent on the correlation characteristic of diversity branching for multiple-cell environments.

Keywords : multiple-cell、correlated Nakagami-m fading、DS-CDMA、Laguerre polynomial

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