

The investigation in the impact of phase noise for MC-CDMA systems

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ABSTRACT

In this thesis the impact of the phase correlation noise (CPN) generated in the fading channel is studied. On the other hand, the performance of multiple-cell MC-CDMA (multi-carrier coded-division multiple-access) operating in cellular systems over correlated fading channels is investigated. A new closed-form formula for the joint probability density function (joint pdf) of the maximum ratio combining (MRC) diversity combiner with arbitrary correlation coefficients in terms of the generalized polynomial and the new expressions of average bit-error rate (BER) for the MC-CDMA system are given in this thesis. Apart from, in fact the multiple-input and multiple-output (MIMO) system is involved into the analysis. The results demonstrate that the system capacity is significantly dependent on the CPN characteristic with the MRC diversity over multiple-cell and fading propagation environments.

Keywords : MRC diversity、MIMO、correlated fading channels、MC-CDMA system、CPN

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