The System Performance Evaluation of MC-CDMA Systems Working in Linear and Triangular Antennas Environments

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ABSTRACT

The system BER (bit error rate) and user capacity performance for MC-CDMA (multi-carrier coded-division multiple-access) communi- cation systems are investigated in this paper. The different antenna configurations include triangular and liner configuration antenna array are applied. In addition, the branch is assumed operating in correlated Nakagami-m fading environments. We adopted the CF(characteristic function) to solve the pdf (probability density function) of the SNR (signal-to-noise ratio) at the MRC (maximal ratio combining) output instead of other complicated analysis methods. Finally, the numerical results obviously show that the performance degradation of the MC-CDMA system is sensitive to the correlation of fading channels, which is validated by comparing to some of the results shown in published researches.

Keywords : MC-CDMA, correlated Nakagami-m, characteristic function, triangular configuration antenna, linear configuration antenna.

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