論MC-CDMA 系統工作於Weibull 衰落中之通道相關特性On the Channel Correlation of an MC-CDMA System over Weibull Fading

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ABSTRACT

This thesis investigates in the performance of an MC-CDMA (multi-carrier coded-division multiple-access) system based on the techniques of multi-carrier spread spectrum. The working environments are not only assumed that in correlated-Weibull fading distributed but also in small scale fading channels models. Besides, the multipath scenario is considered in this analysis. The evaluation of performance of MC-CDMA with MRC (maximal ratio combining) diversity is with the MGF (moment generating function) to provide the pdf (probability density function) of the SNR (signal-to-noise ratio) at the combiner output. The inverse Laplace transform is also applied to obtain the pdf of the SNR at the output of MC-CDMA system output. Finally, the average BER (bit error rate) are calculated by adopting the formulas with error function. There are also including in the parameters of exponent MIP (multipath intensity profile). The fading parameter of the correlated-Weibull fading distribute is the most important affect parameter for the performance of MC-CDMA systems when it is working in the correlated fading channels. On the other hand, the others, e.g., path number, subcarriers number, parameters are almost able to ignore in the performance analysis of MC-CDMA systems.

Keywords : MC-CDMA, small scale fading, MRC, MGF, SNR

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