# Performance Evaluation of MRC for MC-CDMA Communication Systems over Nakagami-m Channels


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**ABSTRACT**

The performance of a MC-CDMA (multi-carrier coded-division multiple-access) system working in correlated and PBI (partial band interference) channels with Nakagami-m distribution is investigated in this paper. We adopt the BPSK modulation scheme with an alternative expression for Q-function to evaluate the average BER (bit error rate) performance of the MC-CDMA system. The sum of Gamma variates is adopted to derive a closed-form solution for arbitrarily correlated channel in order to avoid the difficulty of explicitly obtaining the pdf (probability density function) for the SNR (signal-to-noise ratio) at the MRC (maximum ratio combining) output. The system performance will become superior in anti-multipath fading and noise immune when the number of carriers is increase. All results from the numerical analysis in the paper are validated with the published researches.



Keywords : MC-CDMA、MRC、Nakagami-m correlated channel、PBI (partial band interference) fading channels


**Table of Contents**

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