

Performance of MFSK Signals With Postdetection Square-Law Diversity Combining in Arbitrarily Correlated Nakagami- m Fading Channels

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Abstract

This letter presents an analysis of the error probability for noncoherent orthogonal multiple frequency-shift keying (MFSK) signals with postdetection square-law combining (SLC) when the signals transmitted over additive white Gaussian noise (AWGN) and slow frequency-nonselective arbitrarily correlated Nakagami- m fading channels. New exact expressions in a onefold integral for the probability of error of MFSK signals with postdetection square-law diversity combining operating in AWGN channel as well as in arbitrarily correlated Nakagami- m fading channels are derived. The effects of arbitrarily values of fading severity parameter m and the arbitrarily correlation between the L diversity channels are considered. The derived expressions can be easily computed, and hence, can be usefully exploited in the performance evaluation of digital mobile radio systems.