

ERROR PERFORMANCE of BPSK COOPERATIVE WIRELESS COMMUNICATION SYSTEMS with CO-CHANNEL INTERFERENCE in NAKAGAMI FADING CHANNELS

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Abstract—In this paper, the bit error rate (BER) performance of binary phase shift keying (BPSK) modulation scheme in wireless communication systems with co-channel interference at the receiver side is analyzed assuming Nakagami- m fading channels with arbitrary (integer as well as non-integer) values of m . This channel condition is assumed for both the desired signal as well as the co-channel interfering signals. In addition, the practical case of unequal average fading powers among the interference signals is assumed in the analysis. Accurate closed-form approximate expression for the BER performance of the modulation scheme under study is derived. The analysis assumes an arbitrary number of independent and non-identically distributed (i.n.i.d.) interfering signals at receiver. The derived closed-form expression is simple and easy to evaluate as compared to the exact one using simulation.

Keywords: BPSK, Nakagami- m , BER, Cooperative Wireless Communication.

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