

ERROR PERFORMANCE of DBPSK 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 differential binary phase shift keying (DBPSK) 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 between 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 one using simulation.

Keywords: DPSK, Nakagami- m , BER, Wireless Communication.

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