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Performance Evaluation of Bit Error Probability in DCSK Cooperative Communication Systems over Nakagami-m Fading Channels

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Abstract: In this paper, two user Cooperation systems based on differential chaos shift keying (DCSK) with orthogonal sub-channel in the broadcast phase and cooperative phase using Walsh code sequence is proposed. Single relay of decode and forward (DF) type is investigated according to the conventional cooperation protocol. A lower bound bit error probability (BEP) is derived and verified by simulation. Independent three paths Nakagami-m fading channel is considered. Numerical results show an enhancement of the system performance for the Nakagami-m fading channel over the Rayleigh fading channel. Higher values of the fading parameter m give better performance as expected.