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Closed-form Expression for Bit Error Rate in Relay-Based Cooperative Diversity Systems over Multipath Fading Channels with Interference

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Abstract: Incremental relaying has been recently introduced to overcome the problem with the restricted resources utilization associated with fixed relaying schemes in a pre-determined manner. Only when the direct path is not usable, the incremental relaying exploits the feedback from the destination to inform the relay about the necessity to send the source signal. In this paper, the performance analysis in terms of the bit error rate (BER) of the decode-and-forward (DF) incremental relaying over mixed fading channels is provided. The effects of the Co-channel interference near the destination caused by the multiple L interferers are presented. Numerical results are provided to prove the solidity of our assumptions.