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Closed-form Expression of Bit Error Rate in Dual-Hop Dual-Branch Mixed Relaying Cooperative Networks with Best-Path Selection over Rayleigh Fading Channels

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Abstract: In this paper, a new cooperative-diversity network with simple dual hop virtual diversity with mixed decode-and-forward and amplify-and-forward with best path selection is proposed. A closed-form expression for the average bit error rate of the communication system, assuming phase shift keying modulation scheme over independent non-identical Rayleigh fading channels, is derived. The results show that the proposed model outperforms the regular cooperative network models with a sub-optimal allocation for the relay relative distance.