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## Relay-based cooperative transmission protocol with preferable-link switching combining scheme

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**Abstract:** In this paper, we propose a new transmission protocol for cooperative wireless communication system with  $L$  relay nodes under the influence of fading channels. We also propose a new switching combining scheme named preferable-link switching combining (PL-SC) to be implemented at the receiver side. We consider the source-destination link as the preferred transmission link. However,  $L$  relay nodes are used to handle the transmission whenever the direct link is in severe conditions. The bit error rate of a binary shift keying (BPSK), the outage probability, and the normalized throughput for the proposed system model are all derived in this paper. Numerical results are also provided for all of the obtained expressions