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Authors:

Divya Kumar, Arun Kumar

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Abstract

In the present paper, a multihop-multicast cooperative wireless network with one source node, K destination nodes, and M relay clusters each consists of N decode-and-forward relay nodes is considered. In each hop of transmission a relay having highest value of received signal-to-noise-ratio (SNR) is selected to forward the source's data. The system is said to be in outage if any one of the destination nodes is in outage, i.e., the received SNR of any destination node is less than a predefined threshold value. The exact value of end-to-end outage probability of the considered system is derived over Rayleigh fading channels. It is shown that with increase in the number of relaying hops the performance of the system improves. Simulations are presented to verify the correctness of obtained analytical results.

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Index Terms

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Keywords

Cooperative multicast system, Multihop, Outage Probability, Rayleigh fading, Relay selection