

Closed-form Expression for Outage Probability in Relay-Based Cooperative Diversity Systems over Nakagami Fading Channels with Interference

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Abstract: Incremental relaying, which is a form of the adaptive cooperative wireless networks, has been recently introduced to compensate for the channel resources utilization deficiencies associated with the fixed relaying schemes. Incremental relaying operates by exploiting a feedback from the destination to both the source and the relay that inform them about usability of the source-destination direct channel and by this, the channel resources will be saved since the relay will be used only when needed. This paper discusses the performance, namely the outage probability, of the decode-and-forward incremental relaying scheme over Nakagami-m fading channel and incorporates the effects of the multiple L interferers near the destination that will degrade the overall system performance. Numerical results are provided to validate our derivations.