Abstract

In this work, we investigate the end-to-end performance of a multiple-input-multiple-output (MIMO) relay system over a flat Rayleigh fading channel to study the performance in terms of outage probability (OP) and the average bit error rate (ABER) of the digital receivers. New closed form expressions for the statistics of the received signal-to-noise ratio (SNR) for both amplify-and-forward and decode-and-forward systems are obtained from the novel approach of moment generating function (MGF). Comparisons between amplify-and-forward and decode-and-forward systems are also presented. The calculated results reveal that the performance of MIMO-antenna relay system improves significantly for both modes with the increase of number of input antennas (M) and output antennas(N). It is also observed that both the system performance improves significantly (roughly 3 dB) when the number of input antennas (M) is varied from M=N to N+1 at both low and high SNR regimes.
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Index Terms

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Keywords
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