

# Jordan University of Science and Technology

## Performance of dual-hop wireless communication systems over the Alpha-Mu fading channels

**Authors:** Amer M. Magableh, Taimour Aldalgamouni & Nemah M. Jafreh

**Abstract:** In this paper, we consider a dual-hop wireless communication system with non-regenerative relay node and we study its performance over the Alpha-Mu fading channels. Specifically, we derive a closed-form expression for the moment generating function (MGF) of the harmonic mean of end-to-end signal-to-noise ratio (SNR) assuming the  $\alpha$ - $\mu$  fading models. We also derive closed-form expressions for the end-to-end outage probability and average bit error rate of coherent modulation techniques. The obtained expressions can be reduced to study the performance of dual-hop communication systems over other fading channel models by using the proper values for the  $\alpha$  and  $\mu$  parameters. Numerical results are provided and conclusion remarks are drawn.