Submission Summary

Conference Name	First International Conference on Electronics, Communication and Signal Processing
Track Name	Communication Systems & Networks
Paper ID	417
Paper Title	Evaluating FSO-HAPS Model in Communication Network
Abstract	In this study, the error performance and the capacity analysis is performed for the decode-and-forward based dual-hop asymmetric free space optical communication (FSO) system. The FSO link is characterized by path loss, Gamma–Gamma distributed turbulence and pointing error. For this mixed FSO cooperative system, novel closed-form mathematical expressions are derived for cumulative distribution function, probability density function and moment generating function of the equivalent signal-to-noise ratio in terms of Meijer-G function. Using these channel statistics, new finite power series based analytical expressions are obtained for the outage probability, the average bit error rate for various binary and M-ary modulation techniques and the average channel capacity of the considered system in terms of Meijer-G function. As a special case, the analytical framework can also be obtained for channel statistics and performance metrics of dual-hop mixed Rayleigh–Gamma–Gamma system. Simulation results validate the proposed mathematical analysis. The effects of fading, turbulence and pointing error are studied on the outage probability, average bit error rate and channel capacity of the asymmetric FSO system.
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