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End-to-End Performance of MPPM in Multihop MIMO-FSO System Over Dependent GG Atmospheric Turbulence Channels

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Abstract : The performance of decode and forward (DF) multihop free space optical (FSO) scheme deploying multiple input multiple output (MIMO) configuration under gamma-gamma (GG) statistical distribution, that adopts M-ary pulse position modulation (MPPM) coding, is investigated. We have extracted exact and estimated values of symbol-error rates (SERs) respectively. The probability density function (PDF)'s closed-form formula is expressed for our designed system. Thanks to the use of DF multihop MIMO FSO configuration and MPPM signaling, atmospheric turbulence is combatted; hence the transmitted signal quality is improved.

Keywords : free space optical, gamma gamma channel, radio frequency, decode and forward, multiple-input multiple-output, M-ary pulse position modulation, symbol error rate
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