Performance Analysis of FSO Transmission of Halftoned Image over Double Ricean Turbulence Channel

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Abstract: In this paper we will analyze free space optics (FSO) transmission of halftoned image over Double Ricean turbulence channel. First, we will present halftoning method, and algorithm for FSO transmission simulation. Second, we will propose Double Ricean turbulence channel model, convenient for modeling both large-scale and small-scale irradiance fluctuations effects on FSO transmission. Further, we will observe standard performance criterions of reconstruceted image, such are Bit Error Rate (BER), Mean Square Error (MSE) and Peak Signal-to-Noise Ratio (PSNR) versus parameters of observed FSO link: K_1 and K_2 in order to determine whether the halftoned image can be successfully transmitted through FSO channel for corresponding values of link parameters.

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