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Availability analysis of terrestrial free space optical link under the impact of rain condition (Conference Paper)

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Abstract

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Availability is one of the main factors to measure the QoS of any telecommunication networks. An accurate availability prediction for Free Space Optical link of carrier class grade is needed. In tropical areas, rain is the most dominant factor affecting the FSO link availability. In this paper, the effect of rain attenuation on the availability of FSO links is analyzed by examining the impact distance of different FSO systems. As the rain attenuation of FSO is independent of wavelength, the analysis of rain attenuation will be based on rain intensity. ITU-R (Carbonneau and Japan) models have been used for the analysis. From the results, Carrier class availability with good enough resolution for estimated availability can be predicted. This paper provides recommendations to FSO researchers in general and local telecom service provider in particular about possible availability figures that can be useful for deployment of FSO link as a last mile solution, back-up for fiber optic and other applications. © 2014 IEEE.

Author keywords

Carrier grade availability in FSO Links rain attenuation on FSO specific rain attenuation modelsg

Indexed keywords

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Availability analysis

Availability predictions

Carrier grades

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Specific rain attenuation

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