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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

Engineering controlled terms: Availability Electromagnetic wave attenuation Optical communication Optical links Telecommunication networks

- Availability analysis
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- Free-space optical link
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- Specific rain attenuation
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Basahel, A. , Islam, M.R. , Suriza, A.Z.
(2016) Proceedings - 6th International Conference on Computer and Communication Engineering: Innovative Technologies to Serve Humanity, ICCCE 2016

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- 1 Bouchet, O., Sizun, H., Boisrobert, C.
(2006) Free Space Optics: Propagation and Communication. Cited 87 times.
 1st ed., ISTE Ltd, London, UK
-
- 2 Kim, I.I., Korevaar, E.
 Availability of Free Space Optics (FSO) and hybrid FSO/RF systems
(2001) Proceedings of SPIE - The International Society for Optical Engineering, 4530, pp. 84-95. Cited 100 times.
 doi: 10.1117/12.449800
[View at Publisher](#)
-
- 3 Prokes, A.
 Atmospheric effects on availability of free space optics systems
(2009) Optical Engineering, 48 (6), art. no. 066001. Cited 53 times.
 doi: 10.1117/1.3155431
[View at Publisher](#)
-
- 4 Achour, M.
 Simulating atmospheric free-space optical propagation: Part I, rainfall attenuation
(2002) Proceedings of SPIE - The International Society for Optical Engineering, 4635, pp. 192-201. Cited 36 times.
 doi: 10.1117/12.464100
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-
- 5 Brazda, V., Schejbal, V., Fiser, O.
 Rain impact on FSO link attenuation based on theory and measurement
(2012) Proceedings of 6th European Conference on Antennas and Propagation, EuCAP 2012, art. no. 6206120, pp. 1239-1243. Cited 5 times.
 ISBN: 978-145770918-0
 doi: 10.1109/EuCAP.2012.6206120
[View at Publisher](#)
-
- 6 *(2007) Prediction Methods Required for the Design of Terrestrial Free-space Optical Links*. Cited 12 times.
 Rec. ITU-R P.1814, International Telecommunication Union

-
- 7 Carbonneau, T.H., Wisely, D.R.
Opportunities and challenges for optical wireless; the competitive advantage of free space telecommunications links in today's crowded marketplace.

(1998) *Proceedings of SPIE - The International Society for Optical Engineering*, 3232, pp. 119-128. Cited 86 times.
doi: 10.1117/12.301022

[View at Publisher](#)
-
- 8 Rao, S.V.B., Ong, J.T., Timothy, K.I., Venugopal, D.
Propagation of free space optical links in Singapore

(2013) *Indian Journal of Radio and Space Physics*, 42 (3), pp. 182-186. Cited 2 times.
[http://nopr.niscair.res.in/bitstream/123456789/19412/1/IJRSP%2042\(3\)%20182-186.pdf](http://nopr.niscair.res.in/bitstream/123456789/19412/1/IJRSP%2042(3)%20182-186.pdf)
-
- 9 (1994) *Characteristics of Precipitation for Propagation Modeling*. Cited 241 times.
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