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Development of an empirical dust storm attenuation prediction model for microwave links in arid area - A proposed framework (Conference Paper)

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Abstract

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Wireless communication service providers are currently facing challenges due to the congested frequencies spectrum which has imposed the use of higher and higher frequencies. However, higher frequency bands are more sensitive to weather condition and the microwave signal attenuation due to atmospheric particles increases rapidly at higher frequency bands. Consequently dust storms and all related phenomena may cause signal attenuation which can consequently limit the performance of wireless communication systems specially frequencies above 10GHz for arid area. The aim of this paper is to show that real dust storm is a complex phenomena which is difficult to be described by the theoretical physical or mathematical models. An empirical dust storm prediction model based on the long term statistical observations of dust storm properties and its corresponding microwave signal levels will be a step forward to provide microwave link designers with a precise tool to rely on. This paper has proposed a research framework to collect necessary data from Khartoum, Sudan and develop an empirical attenuation prediction model. © 2014 IEEE.

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Dust storm attenuation Microwave links

Indexed keywords

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