

Study on the Effects of Precipitation on Earth-to-Satellite Links in the Ka Band

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Abstract

The use of higher frequency bands, above 10 GHz, for satellite communication provides a number of important benefits. It relieves congestion in the lower frequencies which are shared with terrestrial links, in the same time providing larger bandwidths and cheaper implementation of terrestrial equipment. However, the severity of atmospheric influence on the radiowave propagation (especially due to rain) increases markedly with frequency. It is therefore necessary to identify and predict the effects of hydrometeors on wireless links.