Abstracts

Characteristics of rain fading on Ka-band satellite-earth links in a Pacific maritime climate

C. Amaya and D.V. Rogers. "Characteristics of rain fading on Ka-band satellite-earth links in a Pacific maritime climate." 2002 Transactions on Microwave Theory and Techniques 50.1 (Jan. 2002, Part I [T-MTT] (Mini-Special Issue on 1999 International Microwave and Optoelectronics Conference (IMOC'99))): 41-45.

Characteristics of rain-induced attenuation at Ka-band measured over a four-year period (1994-1997) with the advanced communications technology satellite (ACTS), Vancouver, BC, Canada, are reported. Event-based analyses of fading are performed and examples of the instantaneous 30/20-GHz frequency-scaling ratio are presented. Long-term cumulative statistics of rain rate as derived from rain-gauge measurements, along with annual attenuation statistics at 20 and 30 GHz, are provided. Finally, attenuation statistics are compared with the ITU-R model and aspects related to local climatic characteristics are considered, aiming to improve the predictions of attenuation due to rain.

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