

The statistical properties of the em wave scattering from building surfaces for the mobile propagation modeling

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Abstrak

The electromagnetic wave propagation in the mobile communication environments can be predicted by using ray tracing approach which incorporates reflection and diffraction. However, the diffuse scattering effects are often non-negligible in the experiment, since the roughness of the building surfaces is comparable with or larger than wavelength.

In this paper we present Method of Moments (MOM) analysis of the scattering from the 2D rough surface model of the building. The fluctuation of the field strength due to the change of the specular reflection point on the surface has been evaluated by statistical properties (the cumulative distribution and the autocorrelation). The effects of the incident angle and frequency are also studied.