COMPLEX SOURCE POINT BEAMS AND LOSSY BUILDING SURFACES IN URBAN PROPAGATION MODELLING

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Abstract:

Using a complex source point beam with the uniform geometrical theory of diffraction is a convenient way of including source directivity in scattering by local buildings in urban propagation modelling. Diffraction by lossy building surfaces can also be included by using using a surface impedance boundary condition in the solution for line source scattering by a right-angled impedance wedge. While these proximity and surface impedance effects are often negligible, in some situations they are important.In this paper we indicate arrangements where this is likely to occur. For example, surface wave excitation on lossy buildings may have a profound effect on the received signal even in the far field, for specular reflection with near-grazing incidence.These observations are based on numerical results for two-dimensional scattering by rectangular wedges and buildings.The computer models will be presented.