Abstracts

Scattering of Plane Waves by Metallic Gratings

A new and unifying approach is presented for the analysis of plane-wave scattering by metal-strip gratings with a complex permittivity to account for their finite conductivity. A new set of metal modes is discovered, and the method of mode matching is employed for the formulation of the boundary-value problem. The effect of grating conductivity and thickness on the scattering characteristics are systematically examined, including the current distribution and power absorption within the metal strips.

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