Abstracts

Application of Volume Discretization Methods to Oblique Scattering from High-Contrast Penetrable Cylinders (Short Papers)

A.F. Peterson. "Application of Volume Discretization Methods to Oblique Scattering from High-Contrast Penetrable Cylinders (Short Papers)." 1994 Transactions on Microwave Theory and Techniques 42.4 (Apr. 1994, Part I [T-MTT]): 686-689.

Two triangular-cell volume discretization methods for oblique scattering from heterogeneous, penetrable cylinders are shown to maintain their accuracy and ease of applicability when applied to high-contrast scatterers. The first method is an integral equation formulation; the second is a differential equation formulation incorporating an exact radiation boundary condition. For a cylinder aligned parallel to the z-axis, the primary unknowns in both procedures are the z-components of the electric and magnetic fields. Potential applications include electromagnetic penetration into biological tissue and scattering from radar absorbing materials.

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