Abstracts

Efficient Method for Scattering from a Homogeneous, Circular, Cylindrical Shell with an Inhomogeneous Angular-Region (Short Papers)

The two-dimensional (2-D) scalar problem of a circular, dielectric, cylindrical shell exposed to transverse magnetic (TM) incident field is considered. The shell is considered to be homogeneous everywhere, except in a narrow angular-region where it is allowed to be inhomogeneous. The problem is formulated using the moment method (MM). It is shown that the resulting system of MM equations could be very efficiently solved employing a new theory of diagonally-perturbed circulant matrices. The method presented here could be applied for thin shells as well as shells which are "not-so-thin." Results of computer simulations are also provided verifying the validity of the method proposed.

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