Abstracts

Integral equation modeling of cylindrically periodic scatterers in the interior of a cylindrical waveguide

H.T. Anastassiu, J.L. Volakis and D.S. Filipovic. "Integral equation modeling of cylindrically periodic scatterers in the interior of a cylindrical waveguide." 1998 Transactions on Microwave Theory and Techniques 46.11 (Nov. 1998, Part I [T-MTT]): 1713-1720.

We examine the scattering from cylindrically periodic engine-like structures using integral-equation methods. The periodic scatterer is enclosed in a cylindrical waveguide, and the primary goal of this paper is to show that this type of geometry affords substantial computational reductions by exploiting the periodicity of the blade structure and characteristics of the modal scattering matrix of the engine-like termination. Also, as a result of the periodic waveguide termination, a limited number of modes are excited by a given incoming mode, and this is exploited for a further reduction of the storage requirements of the modal scattering matrix.

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