Abstracts

Weighted Haar Wavelet-Like Basis for Scattering Problems

W.Y. Tam. "Weighted Haar Wavelet-Like Basis for Scattering Problems." 1996 Microwave and Guided Wave Letters 6.12 (Dec. 1996 [MGWL]): 435-437.

A class of wavelet-like basis functions orthonormal to the oscillatory functions with spatial frequency near the free space propagation constant is introduced to solve the scattering of a transition matrix (TM)-polarized plane wave due to a metallic strip. The electric field integral equation (EFIE) for the unknown surface current distribution is formulated. The method of moments with rectangular pulse basis functions and point matching is applied to discretize the integral equation into a matrix equation. The dense impedance matrix is transformed to a sparse matrix using compact support wavelet-like basis functions. The effects of the discretization size on the performance of the wavelet-like basis functions are presented.

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