Abstracts

Efficient hybrid spatial and spectral techniques in analyzing planar periodic structures with nonuniform discretizations

Yongxue Yu and Chi Hou Chan. "Efficient hybrid spatial and spectral techniques in analyzing planar periodic structures with nonuniform discretizations." 2000 Transactions on Microwave Theory and Techniques 48.10 (Oct. 2000 [T-MTT]): 1623-1627.

A new efficient technique for analyzing planar periodic structures with arbitrary unit cell geometry rendered in a nonuniform discretization is proposed in this paper. The mixed potential integral equation is solved by the method of moments in conjunction with the Rao-Wilton-Glisson triangular discretization. The convergence of computing each element in the impedance matrix is accelerated using Ewald's method for contributions of quasi-dynamic and complex images and the lattice-sum method for the surface-wave contribution. Numerical efficiency and accuracy of this hybrid method are compared with the spectral-domain method.

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