Abstracts

Finite-Difference Time-Domain Algorithm for Solving Maxwell's Equations in Rotationally Symmetric Geometries

Y. Chen, R. Mittra and P. Harms. "Finite-Difference Time-Domain Algorithm for Solving Maxwell's Equations in Rotationally Symmetric Geometries." 1996 Transactions on Microwave Theory and Techniques 44.6 (Jun. 1996 [T-MTT]): 832-839.

In this paper, an efficient finite-difference time-domain algorithm (FDTD) is presented for solving Maxwell's equations with rotationally symmetric geometries. The azimuthal symmetry enables us to employ a two-dimensional (2-D) differ-ence lattice by projecting the three-dimensional (3-D) Yee-cell in cylindrical coordinates (r./spl oslash/.z) onto the r-z plane. Extensive numerical results have been derived for various cavity structures and these results have been compared with those available in the literature. Excellent agreement has been observed for all of the cases investigated.

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