Abstracts

Application of the nonuniform FDTD technique to analysis of coaxial discontinuity structures

W. Yu, R. Mittra and S. Dey. "Application of the nonuniform FDTD technique to analysis of coaxial discontinuity structures." 2001 Transactions on Microwave Theory and Techniques 49.1 (Jan. 2001 [T-MTT] (Mini-Special Issue on 2000 Radio-Frequency Integrated Circuits (RFIC) Conference and Automatic Radio Frequency Techniques Group (ARFTG) Meeting)): 207-209.

In this paper, we employ the nonuniform finite-difference time-domain (NUFDTD) technique to accurately model discontinues in complex coaxial configurations. We take advantage of the azimuthal symmetry of the structure to reduce the original problem into an equivalent two-dimensional one, and we do this by projecting the three-dimensional Yee cell onto two-dimensional planes. Numerical results are presented for various discontinuities to illustrate the application of the method. We show that the NUFDTD technique yields results that are in excellent agreement with the mode-matching method.

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