Abstracts

Analysis of cylindrical transmission lines with the finite-difference time-domain method

N. Dib, T. Weller, M. Scardelletti and M. Imparato. "Analysis of cylindrical transmission lines with the finite-difference time-domain method." 1999 Transactions on Microwave Theory and Techniques 47.4 (Apr. 1999 [T-MTT]): 509-512.

In this paper, the finite-difference time-domain (FDTD) method is used to calculate the propagation characteristics of cylindrical transmission lines. An efficient two-dimensional FDTD algorithm is developed by projecting the three-dimensional FDTD cell in the cylindrical coordinates onto the r-/spl phi/ plane. An effective absorbing boundary condition is employed to truncate the mesh at its outer radial boundary. Numerical results are derived for different cylindrical transmission lines and compared to data available in the literature. Specifically, the newly proposed cylindrical coplanar waveguide is studied both theoretically and experimentally.

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