Abstracts

Full-wave analysis and modeling of multiconductor transmission lines via 2-D-FDTD and signal-processing techniques

Feng Liu, J.E. Schutt-Aine and Ji Chen. "Full-wave analysis and modeling of multiconductor transmission lines via 2-D-FDTD and signal-processing techniques." 2002 Transactions on Microwave Theory and Techniques 50.2 (Feb. 2002 [T-MTT]): 570-577.

The full-wave analysis of multiconductor transmission lines on an inhomogeneous medium is performed by using the two-dimensional finite-difference time-domain (FDTD) method. The FDTD data are analyzed by using signal-processing techniques. The use of high-resolution signal-processing techniques allows one to extract the dispersive characteristics and normal-mode parameters, which include decoupled modal impedances and current and voltage eigenvector matrices. A new algorithm for extracting frequency-dependent equivalent-circuit parameters is presented in this paper. Smaller CPU time and memory are required as compared to the three-dimensional FDTD case. Numerical results are presented to demonstrate the accuracy and efficiency of this method.

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