Abstracts

Transmission Line Matrix Modeling of Dispersive Wide-Band Absorbing Boundaries with Time-Domain Diakoptics for S-Parameter Extraction

Eswarappa, G.I. Costache and W.J.R. Hoefer. "Transmission Line Matrix Modeling of Dispersive Wide-Band Absorbing Boundaries with Time-Domain Diakoptics for S-Parameter Extraction." 1990 Transactions on Microwave Theory and Techniques 38.4 (Apr. 1990 [T-MTT]): 379-386.

A numerical modeling procedure based on Johns' time-domain diakoptics approach has been developed for efficient transmission line matrix (TLM) analysis of two-dimensional microwave circuits by introducing space interpolation techniques. Frequency dispersive boundaries are represented in the time domain by their characteristic impulse response or numerical Green's function (Johns matrix). Almost perfect wide-band absorbing boundary conditions have been obtained with this technique, permitting accurate characterization of waveguide discontinuities and components. The application of these techniques saves considerable computer run time and memory when compared with conventional TLM analysis.

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