Abstracts

Efficient TLM Diakoptics for Separable Structures (Apr. 1995, Part I [T-MTT])

M. Righi, W.J.R. Hoefer, M. Mongiardo and R. Sorrentino. "Efficient TLM Diakoptics for Separable Structures (Apr. 1995, Part I [T-MTT])." 1995 Transactions on Microwave Theory and Techniques 43.4 (Apr. 1995, Part I [T-MTT]): 854-859.

An efficient yet rigorous application of diakoptics to TLM simulation of discontinuities in homogeneously filled waveguides is proposed. The method, based on the expansion of the time-domain Green's function into frequency independent eigen-functions, leads to a dramatic reduction of the numerical effort when compared to the standard Johns Matrix approach. Numerical results show that this new approach provides wide band absorbing boundaries for waveguide problems where several modes (whether propagating or evanescent) are present. In this way, the computational domain is also reduced to just a small region around the discontinuity, with the absorbing boundaries placed just a few cells away.

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