Abstracts

Finite Difference Frequency-Domain Treatment of Open Transmission Structures

T.K. Sarkar, M. Manela, V. Narayanan and A.R. Djordjevic. "Finite Difference Frequency-Domain Treatment of Open Transmission Structures." 1990 Transactions on Microwave Theory and Techniques 38.11 (Nov. 1990 [T-MTT]): 1609-1616.

In this paper, a full-wave solution utilizing the finite difference frequency-domain approach is applied to the computation of propagation characteristics of open transmission structures. For this, one must find a way for terminating the finite difference grid at some finite distance, although the field actually extends to infinity. A method is presented based on boundary operators that terminates the grid. The boundary operators require a knowledge of the radial propagation constant which is to be solved for. This difficulty is overcome by an innovative iterative technique. Typical numerical results are presented to illustrate the accuracy of this method.

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