Abstracts

A Vertex-Based Finite-Volume Time-Domain Method for Analyzing Waveguide Discontinuities

C.H. Chan and J.T. Elson. "A Vertex-Based Finite-Volume Time-Domain Method for Analyzing Waveguide Discontinuities." 1993 Microwave and Guided Wave Letters 3.10 (Oct. 1993 [MGWL]): 372-374.

A vertex based finite-volume time-domain method is proposed for analyzing parallel-plate waveguide discontinuities. An irregular grid is chosen so that it can conform linearly to any discontinuity. In this scheme, the electric field vector is located at the vertices of the grid and the magnetic vector is located at the centroids of the elements formed by the grid. Reflection and transmission coefficients are calculated for the TE case. Excellent agreement is obtained for single- and double-step discontinuities when compared with the mode matching method.

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