Abstracts

Characteristics of New 3D Distributed Node TLM Mesh with Cells of Arbitrary Aspect Ratio

Q. Zhang and W.J.R. Hoefer. "Characteristics of New 3D Distributed Node TLM Mesh with Cells of Arbitrary Aspect Ratio." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 369-372.

The paper describes a modification of the transmission line matrix (TLM) method of numerical analysis in three dimensions. The traditional 3D distributed node (cubic cell) TLM algorithms are generalized for cuboid cells of arbitrary aspect ratio. The basic theory of the cuboid 3D distributed node will be described in detail. Numerical results for a canonical rectangular waveguide cavity are compared with those obtained with a cubic cell to demonstrate the validity of the algorithm. Based on this comparison, we demonstrate that the cuboid cell provides improved flexibility in discretization, and saves memory as well as CPU time.

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