Abstracts

Optimum Mesh Grading for Finite-Difference Method

W. Heinrich, K. Beilenhoff, P. Mezzanotte and L. Roselli. "Optimum Mesh Grading for Finite-Difference Method." 1996 Transactions on Microwave Theory and Techniques 44.9 (Sep. 1996 [T-MTT]): 1569-1574.

The coarseness error of the finite-difference (FD) method is studied analyzing a typical planar waveguide and a rectangular coaxial geometry. Results for equidistant and graded mesh are compared in terms of accuracy and numerical efforts. Because of the field singularities involved a graded mesh proves to be superior compared to the equidistant case. A grading strategy with optimum efficiency is presented. Furthermore, the results show that the most significant improvement in accuracy can be obtained by incorporating the edge behavior into the FD scheme.

❑ Return to main document.