Abstracts

Finite Element Analysis of Lossy Dielectric Waveguides

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This paper presents a frill-wave analysis of lossy dielectric waveguides using a hybrid vector finite element method. To avoid the occurrences of spurious modes in the formulation, edge elements and first-order nodal finite element basis functions are used to span the transverse and the z components of the electric field, respectively. Furthermore, the direct matrix solution technique with minimum degree of reordering has been combined with the modified Lanczos algorithm to solve for the resultant sparse generalized eigenmatrix equation efficiently.

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