Abstracts

A Variational Vector Finite Difference Analysis for Dielectric Waveguides

S.S. Patrick and K.J. Webb. "A Variational Vector Finite Difference Analysis for Dielectric Waveguides." 1992 Transactions on Microwave Theory and Techniques 40.4 (Apr. 1992 [T-MTT]): 692-698.

A numerical technique based on the finite difference method is developed for the analysis of lossless dielectric waveguides. This method is a variational approach using all three components of the magnetic field vector, allowing for the enforcement of the divergence condition. The dispersion characteristics and field distributions for dielectric waveguides are accurately computed. Comparisons are made between the magnetic vectorial finite difference method and a finite element method incorporating the same functional.

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