

Abstracts

Analysis of Dielectric-Loaded Waveguide

C.-C. Yu and T.-H. Chu. "Analysis of Dielectric-Loaded Waveguide." 1990 Transactions on Microwave Theory and Techniques 38.9 (Sep. 1990 [T-MTT] (Special Issue on Multifunction MMIC's and their System Applications)): 1333-1338.

In this paper, the calculation of eigenvalues including propagation constants and cutoff wavelengths of LSE/sub nm/ and LSM/sub nm/ modes in homogeneous and inhomogeneous lossless dielectric-slab-loaded rectangular waveguides using a modified variation-iteration method is presented. The initial eigenvalues used in the iteration are selected on the basis of a physical consideration. Numerical examples shown are capable of efficiently calculating propagation constants and cutoff wavelengths of LSE/sub nm/ and LSM/sub nm/ modes given values of the free-space propagation constant and the lower bound of the cutoff wavelength, respectively.

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