Abstracts

Integral Equation Scalar Green's Function Formulation for Computation of Cutoff Wavenumbers and Modal Fields in Waveguides (Short Papers)

Z. Altman, D. Renaud and H. Baudrand. "Integral Equation Scalar Green's Function Formulation for Computation of Cutoff Wavenumbers and Modal Fields in Waveguides (Short Papers)." 1994 Transactions on Microwave Theory and Techniques 42.3 (Mar. 1994 [T-MTT]): 532-535.

A scalar formulation for cutoff wavenumber and modal field calculations is presented. Integral equations are used with a scalar Green's function for a two dimensional rectangular resonator for both TE and TM modes. These are transformed into matrix equations by the Galerkin method. The electric TE field is calculated from the scalar potential and is written in the form of a contour integral. The advantage of the scalar formulation is the simple form of the matrix eigenvalue equations which are used in the moment method solution, and the economy in CPU time in the determination of TE cutoff wavenumbers.

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