Abstracts

Computation of Approximate Polynomial Solutions to TE Modes in an Arbitrarily Shaped Waveguide

R.M. Bulley and J.B. Davies. "Computation of Approximate Polynomial Solutions to TE Modes in an Arbitrarily Shaped Waveguide." 1969 Transactions on Microwave Theory and Techniques 17.8 (Aug. 1969 [T-MTT] (Special Issue on Computer-Oriented Microwave Practices)): 440-446.

Computer programs have been developed to investigate the construction of polynomial approximations to H-modes in empty guide of arbitrary shape. Mathematically this corresponds to the approximate solution of the Helmholtz equation with homogeneous Neumann boundary conditions. The method used is the well-known Rayleigh-Ritz. Both polynomial and piecewise polynomial function spaces have been investigated for several types of waveguide cross section. Particularly good results have been obtained for convexguides.A comprehensive set of H-mode contour plots are presented for four well-known guide sections.

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