# Abstracts

## Numerical Solution of Coupling Between Two Collinear Parallel-Plate Waveguides

*Y.E. Elmoazzen and L. Shafai. "Numerical Solution of Coupling Between Two Collinear Parallel-Plate Waveguides." 1975 Transactions on Microwave Theory and Techniques 23.11 (Nov. 1975 [T-MTT]): 871-876.*

The problem of coupling between two collinear parallel-plate waveguides is investigated numerically using moment methods. The exciting mode in the waveguide is assumed as the incident field, and the integral equation for the induced current is expressed in terms of the reflected, transmitted, and evanescent currents on the waveguides. The integral equation is then solved numerically by a point-matching method and the reflection and the transmission coefficients and the radiated fields are obtained. To examine the accuracy of the results, the special case of a semi-infinite exciting waveguide coupled to a finite coupled waveguide is also considered and is solved numerically by treating the singularities of the induced currents using a transformation method. For a TE/sub 0,1/ excitation of the exciting waveguide, the results of both numerical methods are compared with the analytical results obtained previously using the Wiener-Hopf technique, and are found to be in good agreement. The methods are then used to study the effect of the coupled waveguide on the radiation field.

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