Abstracts

A Numerical Method for the Solution of the Junction of Cylindrical Waveguides (Short Papers)

H. Oraizi and J. Perini. "A Numerical Method for the Solution of the Junction of Cylindrical Waveguides (Short Papers)." 1973 Transactions on Microwave Theory and Techniques 21.10 (Oct. 1973 [T-MTT]): 640-642.

In order to solve the waveguide junction problem numerically, we express the fields in the guides by truncated modal expansions and construct an error function which is a measure of the mean-square error in the matching of the boundary conditions at the junction. The minimum of this error leads to a set of linear equations for the modal amplitudes. Offset rectangular waveguides with amplitude and current excitations are studied. A weighting factor which multiplies the error contribution due to the magnetic field is studied, and a criterion for its selection given.

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