Abstracts

Application of the Boundary-Element Method to Waveguide Discontinuities (Short Papers)

M. Koshiba and M. Suzuki. "Application of the Boundary-Element Method to Waveguide Discontinuities (Short Papers)." 1986 Transactions on Microwave Theory and Techniques 34.2 (Feb. 1986 [T-MTT]): 301-307.

A numerical method for the solution of scattering of the H- and E-plane waveguide junctions is described. The approach is a combination of the boundary-element method and the analytical method. A general computer programs has been developed using the quadratic elements (higher order boundary elements). To show the validity and usefulness of this formulation, computed results are given for a right-angle corner bend, a T-junction, an inductive strip-planar circuit mounted in a waveguide, a waveguide-type dielectric filter, and an inhomogeneous waveguide junction, and a linear taper. Comparison of the present results with the results of the finite-element method shows good agreement.

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