Abstracts

Numerical Analysis of H-Plane Waveguide Junctions by Combination of Finite and Boundary Elements

A new numerical method is formulated for the analysis of H-plane waveguide junctions with arbitrary cross sections. The junctions are loaded with arbitrarily shaped dielectric or ferrite. The method is a combination of the finite-element method and the boundary-element method where the finite-element method and the boundary-element method are applied to the regions with and without dielectric or ferrite, respectively. To show the validity and usefulness of the method, a lossy dielectric post and a ferrite slab in a rectangular waveguide are investigated in detail, and the computed results are compared with earlier theoretical and experimental results.

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