Abstracts

New Boundary Integral Equations for CAD of Waveguide Circuits: Guided-Mode Extracted Integral Equations

K. Tanaka and M. Nakahara. "New Boundary Integral Equations for CAD of Waveguide Circuits: Guided-Mode Extracted Integral Equations." 1992 Transactions on Microwave Theory and Techniques 40.8 (Aug. 1992 [T-MTT]): 1647-1654.

Novel boundary integral equations which are applicable to the analysis of many kinds of waveguide circuits are presented. The new integral equations can treat the waveguide discontinuity problems like the scattering by the isolated finite-sized metallic objects or cavity problems and do not employ normal-mode expansion techniques. They are suitable for the basic theory of CAD software for various waveguide circuits. The 2-port and H-plane waveguide discontinuity problems which satisfy the single-mode and two-mode conditions are treated in this paper. The case of waveguide corner bend is considered as an example. The numerical examples are shown in order to confirm the validity of the new integral equations.

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