Abstracts

Wideband Modeling of Arbitrarily Shaped E-Plane Waveguide Components by the "Boundary Integral-Resonant Mode Expansion Method"

P. Arcioni, M. Bressan, G. Conciauro and L. Perregrini. "Wideband Modeling of Arbitrarily Shaped E-Plane Waveguide Components by the "Boundary Integral-Resonant Mode Expansion Method"." 1996 Transactions on Microwave Theory and Techniques 44.11 (Nov. 1996 [T-MTT]): 2083-2092.

The boundary integral-resonant mode expansion method is used for the solution of the eigenvalue problem involved in the determination of the poles and the residues of the Y-parameters of arbitrarily shaped E-plane waveguide junctions. Using this method, the frequency response and its sensitivity to deformations of the boundary can be calculated much faster than by other more conventional methods for arbitrary shapes. Therefore, the described algorithm is eligible for setting up very efficient CAD tools to produce optimized designs of complex E-plane components in reasonable times. Some examples demonstrate the efficiency of the method in the modeling of components of practical interest.

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