Abstracts

Full-Wave Modal Analysis of Arbitrarily-Shaped Dielectric Waveguides through an Efficient Boundary-Element-Method Formulation (Dec. 1995, Part II [T-MTT])

In this work an original procedure, based on the boundary element method (BEM), is carried out for the full-wave modal analysis of dielectric waveguiding structures with arbitrary cross section. A novel integral-equation formulation is developed after a careful analysis of the discontinuities in the dyadic kernel. Numerical solutions are then achieved and tested for both conventional and the new algorithms. Results for several important practical structures are obtained and compared to data from other numerical approaches and from measurements, to emphasize the accuracy, efficiency, and versatility of the new implementation.

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