Abstracts

Hybrid Boundary Contour Mode-Matching Analysis of Arbitrarily Shaped Waveguide Structures with Symmetry of Revolution

J.M. Reiter and F. Arndt. "Hybrid Boundary Contour Mode-Matching Analysis of Arbitrarily Shaped Waveguide Structures with Symmetry of Revolution." 1996 Microwave and Guided Wave Letters 6.10 (Oct. 1996 [MGWL]): 369-371.

A combined mode-matching/boundary contour mode-matching (MM/BCMM) technique is described for the rigorous and fast analysis of circular waveguide discontinuities including sections with arbitrarily shaped geometry with symmetry of revolution. The technique involves advantageously the flexibility of both the BCMM method for modeling waveguide regions of more general shape and the efficiency of the proven standard mode-matching (MM) method for circular waveguide step discontinuities. The usefulness of the hybrid method is demonstrated at the design of a spherical two-resonator filter fed by circular waveguides with circular irises. Excellent agreement with reference calculations for circular waveguide tapers verify the accuracy of the proposed method.

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