Abstracts

A full-wave modal analysis of inhomogeneous waveguide discontinuities with both planar and circular cylindrical boundaries

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A full-wave analysis of an inhomogeneous waveguide region with both planar and circular cylindrical boundaries is presented in this paper. Circular cylindrical modal functions are used to represent the fields. Field matching on the planar walls and apertures is rigorously achieved by the finite plane-wave series expansion of each modal field, whereas the addition theorem for cylindrical waves is used for rigorous field matching on the circular cylindrical boundaries. Numerical results are given for rectangular waveguides with 90/spl deg/ bends and rounded outer corners.

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