Abstracts

Spectral and Variational Analysis of Generalized Cylindrical and Elliptical Strip and Microstrip Lines

F. Medina and M. Horno. "Spectral and Variational Analysis of Generalized Cylindrical and Elliptical Strip and Microstrip Lines." 1990 Transactions on Microwave Theory and Techniques 38.9 (Sep. 1990 [T-MTT] (Special Issue on Multifunction MMIC's and their System Applications)): 1287-1293.

In this paper, the variational technique in the spectral domain (VTSD) is shown to be an efficient method for computing the quasi-TEM parameters of arbitrary multiconductor and multidielectric cylindrical or elliptical strip configurations. Simple conformal mappings reduce the cylindrical or elliptical geometries to an equivalent rectangular one with periodic boundary conditions. Minor modifications of previous work on planar structures allow us to analyze any cylindrical or elliptical geometry, computing the capacitance [C] and inductance [L] matrices, from which the effective dielectric constants and mode impedances are obtained.

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