Abstracts

Computation of Proper and Improper Modes in Multilayered Bianisotropic Waveguides (Short Papers)

F. Mesa and M. Horno. "Computation of Proper and Improper Modes in Multilayered Bianisotropic Waveguides (Short Papers)." 1995 Transactions on Microwave Theory and Techniques 43.1 (Jan. 1995 [T-MTT]): 233-235.

An efficient numerical method is presented to determine the loci of both the proper and complex improper modes of a multilayered bianisotropic planar waveguide. The propagation constants of the waveguide modes are expressed in terms of the zeros of a specific analytic function. The use of appropriate integration zero-searching methods is proposed since information about the possible number of complex improper modes cannot be previously extracted. The general formulation presented here has been applied to the study of the complex improper modes of single and two-layer structures containing magnetized ferrites. It has been found that the transition from physical proper to complex improper modes is made throughout a nonphysical real improper mode.

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