Abstracts

A Numerical Method of Evaluating Electromagnetic Fields in a Generalized Anisotropic Medium (Short Papers)

H.-Y. Yang. "A Numerical Method of Evaluating Electromagnetic Fields in a Generalized Anisotropic Medium (Short Papers)." 1995 Transactions on Microwave Theory and Techniques 43.7 (Jul. 1995, Part I [T-MTT]): 1626-1628.

A transition matrix method is commonly used to deal with the problems of either plane-wave scattering from or the Green's function of a generalized anisotropic medium. This method, although rigorous analytically, introduces numerical breakdown, when the layers are electrically thick and the waves are evanescent. A variable transformation method is developed to deal with the exponentially-growing terms associated with exponential-matrix method. The proposed scheme is suitable for the numerical analysis of generalized anisotropic layers including ferrites, magneto-plasmas, chiral layers, and bianistropic layers.

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