Abstracts

Efficient 2D FD-TD Method for the Rigorous Analysis of Arbitrarily Shaped Guided Wave Structures on General Electrically and Magnetically Anisotropic Substrates

V.J. Brankovic, D.V. Krupezevic, J. Ritter and F. Arndt. "Efficient 2D FD-TD Method for the Rigorous Analysis of Arbitrarily Shaped Guided Wave Structures on General Electrically and Magnetically Anisotropic Substrates." 1994 MTT-S International Microwave Symposium Digest 94.2 (1994 Vol. II [MWSYM]): 1017-1020.

A new full wave two-dimensional finite difference time domain (2D FD-TD) algorithm is presented for the rigorous calculation of the dispersion characteristics and characteristic impedance of arbitrarily shaped guided wave structures on anisotropic substrates with full permittivity and permeability tensors. The theory is verified by comparison of results obtained by the Spectral Domain method for an open microstrip line printed on an anisotropic material where the permittivity and permeability tensors are rotated simultaneously. The second example is a ferrite loaded waveguide where analytical results are available. Excellent agreement between the FD-TD and the reference results is obtained.

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