Abstracts

The use of FDTD for the analysis of magnetoplasma channel waveguides

R.G. Farias and A.J. Giarola. "The use of FDTD for the analysis of magnetoplasma channel waveguides." 1998 Transactions on Microwave Theory and Techniques 46.4 (Apr. 1998 [T-MTT]): 387-394.

The finite-difference time-domain (FDTD) method is used for the analysis of magnetoplasma rectangular channel waveguides. Single and parallel-coupled waveguides are considered. The effect of varying the amplitude and the orientation of the bias magnetic field B/sub 0/ on the dispersion characteristics of the first modes is examined. However, the FDTD formulation, does not excite evanescent modes for a sufficiently long time interval, particularly when in the presence of the propagating or dynamic modes. As a result, the nonreciprocal properties of these structures, primarily associated with the evanescent modes, could not be investigated.

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