Abstracts

Simplifying Maxwell's Equations in Gyrotropic Media (Correspondence)

C.F. Vasile. "Simplifying Maxwell's Equations in Gyrotropic Media (Correspondence)." 1967 Transactions on Microwave Theory and Techniques 15.5 (May 1967 [T-MTT]): 324-325.

The purpose of this correspondence is to describe a method of handling Maxwell's equations in gyrotropic media. We have found this method to be particularly useful in the analysis of a small, ferrite filled waveguide, but believe it may be useful in general. The form of the equations appear to be considerably less complicated and capable of affording more insight than the methods employed in the literature. We will make use of a pair of oppositely rotating, elliptically polarized vectors which, as is well known, can be used to diagonalize parts of the permeability, permittivity, and conductivity tensors. However, except in infinite media, these polarized variables will not simplify Maxwell's equations unless a new formulation is used.

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