

# Abstracts

## FDTD Analysis of Magnetized Ferrites: An Approach Based on the Rotated Richtmyer Difference Scheme

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*J.A. Pereda, L.A. Vielva, A. Vegas and A. Prieto. "FDTD Analysis of Magnetized Ferrites: An Approach Based on the Rotated Richtmyer Difference Scheme." 1993 Microwave and Guided Wave Letters 3.9 (Sep. 1993 [MGWL]): 322-324.*

Electromagnetic wave propagation in magnetized ferrites is modelled by solving Maxwell's time-dependent curl equations coupled with the equation of motion of the magnetization vector. A discretization approach based on the rotated Richtmyer finite-difference scheme is proposed. The new approach has been used to calculate the phase constants of transversally magnetized ferrite-loaded waveguides. The numerical dispersion equation for TE<sub>sub n0</sub> modes is derived. The results obtained with this approach for a ferrite-filled and a ferrite-slab loaded waveguide are compared with those obtained with Yee's scheme extended for the treatment of ferrites and with the exact results.

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