Abstracts

Propagation of Magnetostatic Waves Along Curved Ferrite Surfaces

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Electromagnetic equations have been appropriately transformed and solved in order to investigate the propagation of magnetostatic waves in curved geometries. The results have been utilized to study magnetostatic propagation along the surface of a cylindrically curved slab of ferrite in the azimuthal direction. In the case of an unbacked- or a metal-backed slab, it is found that the effect of curvature is to slightly reduce the phase as well as the group velocity by a constant factor throughout the frequency range of allowed modes. However, under favorable conditions, the presence of a dielectric layer between ferrite and metal leads to a strong enhancement in the propagation constant. It is also found that an axially magnetized homogeneous ferrite cylinder cannot support magnetostatic surface waves propagating along its curved surface in the azimuthal direction.

❑ Return to main document.