Abstracts

First-Order Nonlinear Theory in Hexagonal Ferrites with Planar Anisotropy under Perpendicular Pumping

The first-order spinwave instability under perpendicular pumping at large signal power in an hexagonal ferrite ellipsoid with planar anisotropy biased in the easy plane is studied. The nonlinear coupling coefficient is obtained in terms of the physical variables of the unstable spinwaves and the uniform mode magnetization such as the orientation and ellipticity of the unstable spinwaves, the coordinates of the spinwave propagation vector k, and the uniform mode ellipticity. Results obtained using a computer in the case of a sphere are included. Also included are experimental results on the coincidence region with the dc field in the easy plane and with the dc field out of the easy plane. This latter arrangement leads to a new tunable coincidence limiter.

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