Abstracts

Ray Optic Approach to Magnetostatic Bulk Wave Propagation in a YIG Film Delay Line

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This paper discusses a ray optic approach to the magnetostatic wave propagation in a normally magnetized YIG film. The dispersion relation is obtained using the method of transverse resonance. The lateral shift due to reflection at the boundaries has been obtained from energy flow analysis. The path of the rays has been traced from which an approximate expression for the group delay time has been obtained. It is seen that, for the first-order mode, the agreement between this approximate expression for the delay with the rigorous one is satisfactory except near the lower cutoff. In the case of higher order, modes the two compare satisfactorily throughout the frequency range of guided waves.

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