Abstracts

Scattering of a Plane Wave on a Ferrite Cylinder at Normal Incidence

W.H. Eggimann. "Scattering of a Plane Wave on a Ferrite Cylinder at Normal Incidence." 1960 Transactions on Microwave Theory and Techniques 8.4 (Jul. 1960 [T-MTT]): 440-445.

The scattered field is given as a series of cylinder functions. If the ferrite cylinder is magnetized along its axis the scattering pattern becomes asymmetrical about the direction of incidence. Approximation formulas for the thin cylinder and the far field zone are given. It is shown that in the first approximation the amplitude is an even function and the phase angle of the field is an odd function of the scattering angle. Exact numerical results have been obtained with a Univac digital computer. By a suitable arrangement of the ferrite cylinders, a unidirectional pattern can be obtained which is controlled by the applied magnetic dc field.

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