Abstracts

Guided Waves Propagating Along the Magnetostatic Field at a Plane Boundary of a Semi-Infinite Magnetoionic Medium

G.H. Owyang and S.R. Seshadri. "Guided Waves Propagating Along the Magnetostatic Field at a Plane Boundary of a Semi-Infinite Magnetoionic Medium." 1966 Transactions on Microwave Theory and Techniques 14.3 (Mar. 1966 [T-MTT]): 136-144.

The characteristics of the surface waves supported by a plane boundary of a semi-infiite region of gyrotropic plasma are investigated for the case in which the direction of the magnetostatic field is parallel to both the interface and the propagation direction. Two cases are considered, one for which the plasma is terminated by a perfectly conducting screen, and the other for which it is terminated by a semi-infinite region of free space. Surface waves are found to be propagated for all frequencies below both the plasma and the gyromagnetic frequency in the first case, and below both the plasma and 1//spl radic/2 times the upper hybrid resonant frequency in the second case. The characteristics of the surface waves are discussed, and numerical results of the phase velocity and the propagation coefficient of the surface waves along the interface, as well as their attenuation rates normal to the interface, are given.

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