Abstracts

Scattering of Surface Waves at a Dielectric Discontinuity on a Planar Waveguide

S.F. Mahmoud and J.C. Beal. "Scattering of Surface Waves at a Dielectric Discontinuity on a Planar Waveguide." 1975 Transactions on Microwave Theory and Techniques 23.2 (Feb. 1975 [T-MTT]): 193-198.

A theoretical treatment is presented of the scattering of a surface-wave mode on a planar surface waveguide at an abrupt axial transition. The latter is due to a dielectric obstacle that covers the line completely up to a given height. The analysis involves the matching of the tangential fields, expressed in terms of complete sets of eigenmodes, on the transition plane. The problem arises in certain obstacle detection schemes currently being proposed for guided transportation, which use the principle of guided radar.

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