# Abstracts

## Propagation Characteristics of Microstrip Transmission Line on an Anisotropic Material Ridge

*G.W. Hanson. "Propagation Characteristics of Microstrip Transmission Line on an Anisotropic Material Ridge." 1995 Transactions on Microwave Theory and Techniques 43.11 (Nov. 1995 [T-MTT]): 2608-2613.*

A microstrip transmission line residing on an electrically anisotropic material ridge embedded in a multilayered environment is studied using a coupled set of integral equations (IE's). The full-wave IE formulation easily accommodates arbitrary material anisotropy and inhomogeneity in the finite ridge region using equivalent polarization currents residing in a multilayered isotropic background. New results are presented for uniaxially anisotropic ridge structures which show that the transmission line propagation constant is sensitive to anisotropy for certain ridge structures and insensitive for others, compared to the conventional line on an infinite substrate. Results are also presented for a transmission line printed on a nonreciprocal solid-state magnetoplasma ridge. The current distribution associated with the dominant microstrip mode is investigated, where it is found that the transverse component of current is much larger for the ridge geometry than for the infinite substrate case, although the transverse component is still small compared to the longitudinal component.

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