# Abstracts

## Scattering of TE-Polarized EM Wave by Discontinuity in Grounded Dielectric Layer

*J. Song, S. Ohnuki, D.P. Nyquist, K.-M. Chen and E.J. Rothwell. "Scattering of TE-Polarized EM Wave by Discontinuity in Grounded Dielectric Layer." 1994 Transactions on Microwave Theory and Techniques 42.3 (Mar. 1994 [T-MTT]): 481-488.*

The two-dimensional problem of EM wave interaction with a dielectric discontinuity in an infinite grounded dielectric layer is studied. An electric field integral equation (EFIE) for TE illumination has been derived based on the Green's function for the electric field produced by induced polarization currents in the discontinuity region. Impressed electric fields consist of either plane waves incident from space above the dielectric layer or surface waves supported by that layer. Method of Moments (MoM) numerical solutions for the induced electric field in the discontinuity region are implemented. The amplitudes of surface waves excited by excess discontinuity-region polarization currents are calculated, as well as the pattern of the scattered field and the associated scattering width. It is observed that the excitation of a surface-wave mode reduces the back scattered radiation for TE-polarized plane wave incidence. The accuracy of the theory is verified by comparison of numerical results with those of existing studies.

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