Abstracts

Scattering of Surface Waves on Transverse Discontinuities in Symmetrical Three-Layer Dielectric Waveguides

K. Uchida and K. Aoki. "Scattering of Surface Waves on Transverse Discontinuities in Symmetrical Three-Layer Dielectric Waveguides." 1984 Transactions on Microwave Theory and Techniques 32.1 (Jan. 1984 [T-MTT]): 11-19.

This paper presents a rigorous Wiener-Hopf solution to the problem of transverse discontinuities in a symmetrical three-layer dielectric waveguide excited by the dominant TE mode. Fourier transformation and the proper boundary conditions provide the Wiener-Hopf equation for the Fourier components of the scattered fields at the interface between the free space and the dielectric waveguide. A formal solution to this equation is derived by conventional factorization methods, and an iterative method is proposed to calculate the reflected, transmitted, and radiated fields numerically.

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