Abstracts

Scattering of Guided Modes Caused by an Arbitrarily Shaped Broken End in a Dielectric Slab Waveguide

E. Nishimura, N. Morita and N. Kumagai. "Scattering of Guided Modes Caused by an Arbitrarily Shaped Broken End in a Dielectric Slab Waveguide." 1983 Transactions on Microwave Theory and Techniques 31.11 (Nov. 1983 [T-MTT]): 923-930.

Electromagnetic scattering of guided modes in a dielectric slab waveguide caused by an arbitrarily shaped broken end is analyzed theoretically by using the integral equation method. By solving the integral equations iteratively, the tangential components of the electric and magnetic fields on the broken end surface are determined, from which the reflected mode power, the radiation wave power and field patterns, and the total scattered power are obtained. Numerical results are presented for the plane-perpendicular, plane-tilted, and arc-shaped end surfaces. Both TE and TM modes are assumed as an incident wave.

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