Abstracts

Mode transitions between bound and leaky regimes in lossy dielectric waveguides: a numerical investigation

G.B. Athanasoulias and N.K. Uzunoglu. "Mode transitions between bound and leaky regimes in lossy dielectric waveguides: a numerical investigation." 1997 Microwave and Guided Wave Letters 7.12 (Dec. 1997 [MGWL]): 393-395.

The authors present a novel numerical study of mode transitions between bound and leaky regimes in a lossy-substrate dielectric rib waveguide. An entire-domain basis Galerkin's method is employed to determine the wavenumbers of the transmission line modes. The obtained results show that as the loss tangent gradually increases from zero to infinity, the plots of the attenuation constants alter between regions of constant and linear variation. In the progress of this behavior the modes evolve from leaky to bound state, or the inverse, and their corresponding poles in the spectral plane cross the real axis.

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