Abstracts

The Transition Region Between Bound-Wave and Leaky-Wave Ranges for a Partially Dielectric-Loaded Open Guiding Structure (Dec. 1990 [T-MTT])

P. Lampariello, F. Frezza and A.A. Oliner. "The Transition Region Between Bound-Wave and Leaky-Wave Ranges for a Partially Dielectric-Loaded Open Guiding Structure (Dec. 1990 [T-MTT])." 1990 Transactions on Microwave Theory and Techniques 38.12 (Dec. 1990 [T-MTT] (1990 Symposium Issue)): 1831-1836.

Most modes on partially dielectric-loaded open guiding structures are purely bound in some frequency range and leaky in another. The transition region between them is complicated and interesting, including a section where the dispersion curve doubles back because it connects a complex nonspectral (leaky-wave) solution with a real spectral (bound-wave or surface-wave) solution. The physical nature of this type of transition region is first discussed qualitatively, where some anomalous features are considered; then numerical values are presented for a specific example, a recently proposed novel leaky-wave antenna structure.

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