

Abstracts

A New Class of Leaky Modes on Open Dielectric Waveguides

A.A. Oliner and S.T. Peng. "A New Class of Leaky Modes on Open Dielectric Waveguides." 1979 MTT-S International Microwave Symposium Digest 79.1 (1979 [MWSYM]): 569-571.

It is not generally known that most guided modes on many open dielectric waveguides for integrated optics and millimeter waves can be leaky, rather than purely bound, as is customarily assumed. The previously-unrecognized leakage on this new class of modes is the result of coupling between constituent TE and TM waves produced at the sides of the waveguide when these waves bounce back and forth inside the dielectric waveguide, as part of the guiding process. A generally-applicable simple criterion will be presented which predicts when such leakage can occur.

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