Abstracts

Modes and Pseudomodes in Dielectric Waveguides (Correspondence)

D. Marcuse. "Modes and Pseudomodes in Dielectric Waveguides (Correspondence)." 1970 Transactions on Microwave Theory and Techniques 18.1 (Jan. 1970 [T-MTT]): 62-63.

It is shown that a medium whose dielectric constant has a square-law distribution with complex coefficients possesses guided mode solutions even under the extreme condition that both the real and the imaginary part of the index of refraction have their lowest value at the axis of the waveguide. However, the resulting modes are unstable (pseudomodes). Stable guided modes exist if the imaginary part of the refractive index has its highest value on axis.

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