Abstracts

Continuous Mode Spectrum of a Circular Dielectric Rod

A.W. Snyder. "Continuous Mode Spectrum of a Circular Dielectric Rod." 1971 Transactions on Microwave Theory and Techniques 19.8 (Aug. 1971 [T-MTT]): 720-727.

The continuous modes for a circular dielectric rod are derived. These modes are identified with the fields due to the scattering of a plane wave at oblique incidence from a dielectric rod, thus providing insight into their behavior. This identification suggests that the modes be classified as incident transverse magnetic (ITM) modes when the incident plane-wave portion of H/sub z/ is zero and as incident transverse electric (ITE) modes when the incident plane-wave portion of E/sub z/ is zero. The transition region from discrete to continuous modes is analyzed in detail. Very simple approximate modes are derived for use in optical waveguide studies.

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