Abstracts

Calculation of Propagation Constants and Cutoff Frequencies of Radially Inhomogeneous Optical Fibers

C.-C. Su and C.H. Chen. "Calculation of Propagation Constants and Cutoff Frequencies of Radially Inhomogeneous Optical Fibers." 1986 Transactions on Microwave Theory and Techniques 34.3 (Mar. 1986 [T-MTT]): 328-332.

Based on the finite-difference technique, an efficient numerical method that can treat both the propagation constants and cutoff frequencies of optical fibers with arbitrary permittivity profiles is developed in the rigorous vector form. Such a propagation problem is formulated in transverse fields so that the proposed method does not suffer from spurious modes. The associated boundary conditions including those at cntoff are derived in a novel way. Thereafter, numerical results of the cutoff frequency and propagation constant of a fiber with the parabolic profile are presented.

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