Abstracts

A Simple Numerical Method for the Cutoff Frequency of a Single-Mode Fiber with an Arbitrary Index-Profile (Comments)

J.P. Meunier, J. Pigeon and J.N. Massot. "A Simple Numerical Method for the Cutoff Frequency of a Single-Mode Fiber with an Arbitrary Index-Profile (Comments)." 1982 Transactions on Microwave Theory and Techniques 30.1 (Jan. 1982 [T-MTT]): 108-109.

In the above paper, Sharma and Ghatak have proposed a numerical method for calculating the cutoff frequency of single mode operation in optical fibers with an arbitrary index profile. We want to comment on the validity of their results using their notations. The referenced paper requires in particular the knowl-edge of the boundary conditions on the modal field Psi and its derivatives at R=0. To this aim, Sharma and Ghatak have used a series solution method. Their series expansion [1, eq. (A. 1)] is valid only in the vicinity of an ordinary point but the point R=0 is a regular singular point for the scalar wave differential equation [1, eq. (A.3)].

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