Abstracts

Numerical Solution of the Coupled-Power Equation in Step-Index Optical Fibers

M. Rousseau and L. Jeunhomme. "Numerical Solution of the Coupled-Power Equation in Step-Index Optical Fibers." 1977 Transactions on Microwave Theory and Techniques 25.7 (Jul. 1977 [T-MTT]): 577-585.

By use of the finite-difference method of numerical analysis, a simple numerical solution is obtained for the coupled-power equation in optical fibers. For a specified arbitrary coupling coefficient and launching condition, the solution yields all the quantities of interest in the interior of the fiber: power distribution, attenuation, and far-field radiation pattern as functions of length. Results for buffered and cabled Corning fibers are reported. Attention is mainly focused on the influence of the microbends on the optical losses.

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