Abstracts

Finite Element Analysis of Optical Waveguides (Jun. 1981, Part I [T-MTT])

N. Mabaya, P.E. Lagasse and P. Vandenbulcke. "Finite Element Analysis of Optical Waveguides (Jun. 1981, Part I [T-MTT])." 1981 Transactions on Microwave Theory and Techniques 29.6 (Jun. 1981, Part I [T-MTT]): 600-605.

A finite element program for the analysis of anisotropic optical waveguides is described. The appearance of spurious numerical modes, due to the fact that the functional is nonpositive definite is discussed and a possible solution to the problem is presented. For isotropic waveguides it is shown that both EH- and HE-type modes can be very accurately approximated by two different scalar finite element programs. Finally, a method for calculating the attenuation of leaky modes in a single material integrated optic waveguide using this scalar finite element method is proposed.

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