Abstracts

A Rigorous and Computationally Efficient Analysis of Microstrip for Use as an Electro-Optic Modulator

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Much interest has been shown in the literature concerning the direct modulation of an optical signal by a microwave signal making use of a microstrip-like structure with a diffused optical waveguide. Due to the particular geometry of the modulator, the usual rigorous methods of analysis, such as the spectral-domain method (SDM), encounter problems and less efficient methods have had to be used. In this paper it is shown that by using an asymptotic form of the Green's function in the standard SDM, an accurate, efficient, and rigorous full-wave analysis can readily be undertaken. A closed-form first-order solution to the field patterns is also derived.

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