

Abstracts

Modal Analysis of Coupling Problems in Optical Fibers

A. Cardama and E.T. Kornhauser. "Modal Analysis of Coupling Problems in Optical Fibers." 1975 *Transactions on Microwave Theory and Techniques* 23.1 (Jan. 1975 [T-MTT] (Special Issue on Integrated Optics and Optical Waveguides)): 162-169.

A modal analysis of the problems of excitation of the dominant mode in an optical fiber by incident plane waves and Gaussian beams has been carried out, and the results applied to the effect on transmission of misalignment in fiber junctions due to offsets, tilts, and gaps. The results in cases of matched media confirm the accuracy of previous theoretical treatments using the Born approximation, which in turn show good agreement with experimental results. In addition, the modal analysis gives more precise solutions when there is a mismatch of media and makes possible the treatment of some problems to which the Born approximation is not applicable.

 [Return to main document.](#)