

# Abstracts

## A Variational Analysis of Dielectric Waveguides by the Conformal Mapping Technique

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*R.-B. Wu and C.H. Chen. "A Variational Analysis of Dielectric Waveguides by the Conformal Mapping Technique." 1985 Transactions on Microwave Theory and Techniques 33.8 (Aug. 1985 [T-MTT]): 681-685.*

The variational formulation together with the finite-element method is a well-established technique for the solution of a dielectric waveguide. One common difficulty is the handling of the problem with the infinite extent of the electromagnetic fields in the transverse plane. In this paper, the conformal mapping technique is employed to improve the modeling of the region exterior to the guides; hence it may give more accurate results for the modes near the cutoff region. Also included are the numerical results for rectangular, strip, and channel waveguides to demonstrate the applications of the proposed technique.

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