

Abstracts

Analysis of Irregularities in a Planar Dielectric Waveguide

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A numerical method based on the partial variational principle (PVP) is proposed to solve discontinuity problems due to arbitrary irregularities in a planar dielectric waveguide. In this study, a variational equation is established and solved by the finite element method along with the Green's function technique. The integral variable of the Green's function is changed so that numerical calculations can easily be performed. Owing to the accuracy of the present method, the radiation fields can be obtained with no difficulty. Several numerical results, including the reflection and transmission coefficients as well as the radiation losses and patterns, are calculated and compared.

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