Abstracts

Mode Completeness, Normalization, and Green's Function of the Inset Dielectric Guide

T. Rozzi and L. Ma. "Mode Completeness, Normalization, and Green's Function of the Inset Dielectric Guide." 1988 Transactions on Microwave Theory and Techniques 36.3 (Mar. 1988 [T-MTT]): 542-551.

The inset dielectric guide (IDG) is an easy-to-fabricate alternative to image line that is also less sensitive to loss by radiation at unwanted discontinuities. The discrete spectrum of the IDG was recently analyzed by the transverse resonance diffraction (TRD) method. In this paper we complete the characterization of the spectrum to include the continuum. We also address from a fundamental viewpoint the question of its orthonormalization, and determine the Green's function of the guide, which is an essential prerequisite to the analysis of IDG components and of IDG antenna feeds. An application is given to the scattering by a dipole on the air-dielectric interface.

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