Abstracts

The Continuous Spectrum of the Inset Dielectric Guide and Its Application to Waveguide Transitions

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The analysis of discontinuities in open waveguides, particularly strongly radiating discontinuities, requires a knowledge of the complete modal spectrum of the guide. The continuous spectrum of nonseparable open waveguides, a category which includes many useful high frequency structures, may be developed from a characteristic Green's function approach. This paper shall present as an example the continuous hybrid spectrum of the Inset Dielectric Guide (I.D.G.), a structure that shows promise for both propagation and antenna applications. As a verification, this spectrum has further been used to analyze strongly radiating rectangular waveguide to I.D.G. transitions, achieving a good correlation with experimental data.

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