Abstracts

A Novel Treatment of Open Dielectric Waveguides

A spectral-domain approach is introduced for the analysis of a general class of open dielectric waveguides. This technique reduces the dimensionality of the space-domain integral equation by use of higher-order boundary conditions. A simple rectangular slab guide is treated as an example and the results are compared to other methods. For the numerical solution of the spectral-domain equations, the method of moments is employed with a Hermite-Gaussian entire-domain basis. It will be seen that only a few basis functions are sufficient to obtain satisfactory results.

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