# Abstracts

## Efficient computation of resonant frequencies and quality factors of cavities via a combination of the finite-difference time-domain technique and the Pade approximation

*S. Dey and R. Mittra. "Efficient computation of resonant frequencies and quality factors of cavities via a combination of the finite-difference time-domain technique and the Pade approximation." 1998 Microwave and Guided Wave Letters 8.12 (Dec. 1998 [MGWL]): 415-417.*

An efficient method for analyzing cavity structures by using the fast Fourier transform (FFT)/Pade technique, in combination with the finite-difference time-domain (FDTD) method, is presented. Without sacrificing the accuracy of the results, this new method significantly reduces the computational time compared to that needed where the conventional FFT algorithm is used. The usefulness of this approach is demonstrated by modeling a lossy cavity and computing its resonant frequencies as well as Q.

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