Abstracts

Study of TE/sub 0/ and TM/sub 0/ Modes in Dielectric Resonators by a Finite Difference Time-Domain Method Coupled with the Discrete Fourier Transform

A. Navarro, M.J. Nufiez and E. Martin. "Study of TE/sub 0/ and TM/sub 0/ Modes in Dielectric Resonators by a Finite Difference Time-Domain Method Coupled with the Discrete Fourier Transform." 1991 Transactions on Microwave Theory and Techniques 39.1 (Jan. 1991 [T-MTT]): 14-17.

We present an application of a numerical method of finite differences in the time domain (FDTD), coupled with the discrete Fourier transform, to determine the resonant frequencies of the TE/sub 0/ and TM/sub 0/ modes of axially symmetric dielectric resonators closed in a cavity. We analyze the cylindrical cavity dielectrically loaded at the base and the resonant frequency of the TE/sub 0/, a mode in two systems: a cylindrical cavity with a cylindrical dielectric resonator of variable radius and the shielded dielectric resonator on a microstrip substrate. The results obtained are compared first with the rigorous (exact) theoretical solutions and then with experimental results.

❑ Return to main document.