

Abstracts

Analysis of Dielectric Resonator Cavities Using the Finite Integration Technique

J.E. Lebaric and D. Kajfez. "Analysis of Dielectric Resonator Cavities Using the Finite Integration Technique." 1989 Transactions on Microwave Theory and Techniques 37.11 (Nov. 1989 [T-MTT]): 1740-1748.

Resonant modes in shielded dielectric resonators are studied by a numerical technique which yields the resonant frequencies, modal field distribution, and Q factors of various resonant modes, including the hybrid modes. The technique employs field discretization by virtue of dual electric and magnetic grids and allows for a direct numerical solution of the integral form of Maxwell's equations for specified boundary conditions. The details of the matrix formulation are explained on an example of the cavity subdivided into a grid consisting of 3 x 3 electric cells. A modal field plot exhibiting a spiraling behavior has been observed.

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