Abstracts

A Method of Moments Solution of a Cylindrical Cavity Placed Between Two Coaxial Transmission Lines

M.A. Saed. "A Method of Moments Solution of a Cylindrical Cavity Placed Between Two Coaxial Transmission Lines." 1991 Transactions on Microwave Theory and Techniques 39.10 (Oct. 1991 [T-MTT]): 1712-1717.

This paper presents a method for analyzing a dielectric-filled cylindrical cavity separating two coaxial transmission lines. The method of analysis is based on the method of moments and the equivalence principle taking into account higher order modes excited at the junctions between the cavity and the two transmission lines. Expressions relating the cavity's scattering parameters to the structure dimensions and the dielectric parameters are derived and implemented numerically. Numerical simulation results as well as experimental results are presented. The method is also applied to the measurement of the dielectric parameters of certain dielectric materials.

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