Abstracts

Coaxial Probe Modeling in Waveguides and Cavities (Dec. 1992 [T-MTT])

J.-F. Liang, H.-C. Chang and K.A. Zaki. "Coaxial Probe Modeling in Waveguides and Cavities (Dec. 1992 [T-MTT])." 1992 Transactions on Microwave Theory and Techniques 40.12 (Dec. 1992 [T-MTT] (1992 Symposium Issue)): 2172-2180.

Modeling, design and sensitivity analysis of probe-excited cavities are presented. The 3 cavities moment method is used to obtain the 2-port scattering matrix of the probe-excited semi-infinite waveguide while a novel equivalent circuit is introduced and used as a circuit model for the scattering matrix. A design procedure for probe-excited input/output cavities in waveguide filters is proposed and a sensitivity analysis is carried out to show the effect of the probe's dimensions on the electrical characteristics of the circuit. Agreement with experimental data is excellent for loosely-coupled probe-excited semi-infinite waveguide problems. An example for a 15 GHz thick iris filter verifies the validity of the proposed design.

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