Abstracts

Accuracy of microwave cavity perturbation measurements

R.G. Carter. "Accuracy of microwave cavity perturbation measurements." 2001 Transactions on Microwave Theory and Techniques 49.5 (May 2001 [T-MTT]): 918-923.

Techniques based on the perturbation of cavity resonators are commonly used to measure the permittivity and permeability of samples of dielectric and ferrite materials at microwave frequencies. They are also used to measure the local electric- and magnetic-field strengths in microwave structures including the shunt impedances of cavity resonators and the coupling impedances of slow-wave structures. This paper reexamines the assumptions made in the theory of these techniques and provides estimates of the errors of measurement arising from them.

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