Abstracts

Measurements of Microwave Conductivity and Dielectric Constant by the Cavity Perturbation Method and Their Errors

S.-H. Chao. "Measurements of Microwave Conductivity and Dielectric Constant by the Cavity Perturbation Method and Their Errors." 1985 Transactions on Microwave Theory and Techniques 33.6 (Jun. 1985 [T-MTT]): 519-526.

The theory and technique of the cavity perturbation method for measuring the conductivity and dielectric constant of materials are reviewed. An analytical formula for calculating the errors of the conductivity and dielectric constant caused by the measured error in the resonant frequency and quality factor are derived. This formula can be used for both rectangular and cylindrical cavities. The results of measurements on silicon samples are presented to illustrate this analysis.

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