Abstracts

Fast Sweep Measurements of Relaxation Times in Superconducting Cavities (Correspondence)

H.J. Schmitt and H. Zimmer. "Fast Sweep Measurements of Relaxation Times in Superconducting Cavities (Correspondence)." 1966 Transactions on Microwave Theory and Techniques 14.4 (Apr. 1966 [T-MTT]): 206-207.

Conventional equilibrium methods used to determine the quality of cavity resonators become quite inaccurate if cavities with a high Q, especially superconducting cavities with Q~10/sup 6/ or more, are to be measured. A static measurement of the cavity impedance requires an extremely small frequency drift, and swept frequency methods require a very slow variation of the frequency because of the long energy relaxation times involved. If random frequency fluctuations due to generator noise are comparable to the bandwidth of the cavity delta omega/sub R/, measurements of half-power widths become inaccurate.

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