Abstracts

Spinwave Linewidth Measurements with Low-Power RF Sources (Correspondence)

W.E. Courtney and D.H. Temme. "Spinwave Linewidth Measurements with Low-Power RF Sources (Correspondence)." 1970 Transactions on Microwave Theory and Techniques 18.8 (Aug. 1970 [T-MTT]): 510-510.

This correspondence describes a perturbation technique for obtaining the spinwave linewidth of polycrystalline garnet spheres with large values of Delta H/sub k/. Conventions waveguide cavity techniques require power levels in the kilowatt region to excite the parallel-pump instability. By using a dielectric resonator, large RF magnetic field intensities can be generated using relatively low-power levels, and the presently available low-loss dielectric materials enable high Q-values to be attained in the resonator. Since the sensitivity of cavity perturbation techniques depend on high Q-values, the ferrite sphere can be made small enough so that perturbation assumptions apply. Results are presented for some representative polycrystalline samples. The largest spinwave linewidth measurement required a RF magnetic field intensity of approximately 27.0 Oe.

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