Abstracts

Amplification Factor of Echo Signals in Ferromagnetic Materials

H. How, C. Vittoria and G.E. Everett. "Amplification Factor of Echo Signals in Ferromagnetic Materials." 1991 Transactions on Microwave Theory and Techniques 39.11 (Nov. 1991 [T-MTT]): 1828-1835.

It is well known that spin echoes in ferromagnetic materials can only be excited upon the application of high power microwave signals. In this paper the amplification factor of spin echoes is calculated for ferromagnetic materials in which long-range dipolar fields, external rf-field couplings, and magnetization relaxations are included in the calculations. The inclusion of such interactions provide a mechanism by which realistic amplification of echoes may be calculable. Our theoretical estimate of amplification is in reasonable agreement with previous experiments. We have, thus, systematically calculated the effects of carrier frequency, field gradient, and microwave power upon echo amplification.

❑ Return to main document.