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Measurement of the ferromagnetic relaxation in a micron-size sample

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Abstract

It is shown that magnetic-resonance force microscopy can provide direct measurements of both the longitudinal and the transverse relaxation rates in a micron-size ferromagnetic sample. As a demonstration, we have applied the technique to a single crystal disk of yttrium iron garnet. Separation between the individual relaxation channels is achieved through a comparison of the results obtained by three different experiments: resonance linewidth measurements, source and frequency modulation, and quantitative measurement of the longitudinal magnetization.