Nanomechanical AC Susceptometry of an Individual Mesoscopic Ferrimagnet

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— A new method for simultaneous detection of both DC and time-dependent magnetic signatures in individual mesoscopic structures has emerged from early studies in spin mechanics. Multifrequency nanomechanical detection of AC susceptibility and its harmonics highlights reversible nonlinearities in the magnetization response of a single yttrium iron (YIG) element, separating them from hysteretic jumps in the DC magnetization.