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Ferromagnetic Resonance Studies of Individual Ferromagnetic Nanowires ROHAN ADUR, INHEE LEE, The Ohio State University, STEFAN PHILIPPI, THOMAS MUHL, IFW Dresden, DENIS V. PELEKHOV, P. CHRIS HAMMEL, The Ohio State University — We investigate magnetization dynamics in ferromagnetic nanowires using two techniques: Ferromagnetic Resonance Force Microscopy (FMRFM) and Vector Network Analyzer Ferromagnetic Resonance (VNA-FMR). Using FMRFM we report our attempts at scanned probe FMR imaging of individual ferromagnetic nanowires. By placing ferromagnetic nanowires on permalloy we can use the capability of localized mode imaging (I. Lee et. al, Nature 2010) to measure local fields both in and around the ferromagnetic nanowire. In addition, we use VNA-FMR to study dipolar interactions in densely packed nanowire arrays. The dipolar fields between neighboring nanowires introduce an anisotropy field that can dominate over the shape anisotropy expected for isolated nanowires, and this effect is observed in the angular dependence of VNA-FMR spectra.

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