

Abstract Submitted
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Micromagnetic Modeling of Localized Ferromagnetic Resonance Detected with Magnetic Resonance Force Microscopy DENIS V. PELEKHOV, Ohio State University, IVAR MARTIN, Los Alamos National Laboratory, YURI OBUKHOV, JONGJOO KIM, INHEE LEE, Ohio State University, EVGUENI NAZARETSKI, ROMAN MOVSHOVICH, Los Alamos National Laboratory, P. CHRIS HAMMEL, Ohio State University — Magnetic Resonance Force Microscopy (MRFM) is a novel scanned probe technique based on mechanical detection of magnetic resonance. Its extreme sensitivity originates partially from the high magnetic field gradient of MRFM probe micromagnet which couples the MRFM probe to the magnetic moments in the sample. We report micromagnetic modeling of Ferromagnetic Resonance (FMR) performed in the local field of the micromagnetic MRFM probe: its strongly inhomogeneous field enables the excitation of localized FMR modes in the sample. This unusual effect provides a mechanism for spatially resolved FMR investigations of ferromagnetic systems. We discuss spatial resolution and results for both quasi 2D and 1D systems.

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