Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Micromagnetic Modeling of Ferromagnetic Resonance in Nonuniform Magnetic Field D.V. PELEKHOV, The Ohio State University, I. MARTIN, Los Alamos National Laboratory, YU. OBUKHOV, J. KIM, The Ohio State University, E. NAZARETSKI, Los Alamos National Laboratory, T. MEWES, The University of Alabama, P.E. WIGEN, The Ohio State University, R. MOVSHOVICH, Los Alamos National Laboratory, P.C. HAMMEL, The Ohio State University — We compare micromagnetic modeling of Ferromagnetic Resonance (FMR) excitations in thin ferromagnetic samples in the presence of a nonuniform magnetic field to our FMR data obtained with Magnetic Resonance Force Microscopy (MRFM). 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 the MRFM probe micromagnet. The presence of the high field gradient imposes unusual conditions on the FMR resonance in the sample under investigation. We will discuss their manifestations in both simulations and experimental data.

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Date submitted: 14 Dec 2006 Electronic form version 1.4