Abstract Submitted
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Torque-mixing Magnetic Resonance Spectroscopy JOSEPH LOSBY, FATEMEH FANI SANI, Univ. of Alberta, Dept. of Physics and National Institute for Nanotechnology, DYLAN GRANDMONT, Univ. of Alberta, Department of Physics, ZHU DIAO, Univ. of Alberta, Dept. of Physics and National Institute for Nanotechnology, MIRO BELOV, National Institute for Nanotechnology, JACOB BURGESS, SHAWN COMPTON, WAYNE HIEBERT, Univ. of Alberta, Dept. of Physics and National Institute for Nanotechnology, DOUG VICK, National Institute for Nanotechnology, KAVEH MOHAMMAD, ELHAM SALIMI, GREGORY BRIDGES, DOUGLAS THOMSON, Electrical and Computer Engineering, University of Alberta, MARK FREEMAN, Univ. of Alberta, Dept. of Physics and National Institute for Nanotechnology — A universal, mechanical torque method for magnetic resonance spectroscopy is presented. In analogy to resonance detection by induction, a signal proportional to the transverse component of a precessing dipole moment can be measured as a pure mechanical torque in broadband, frequency-swept spectroscopy. Comprehensive electron spin resonance of a single-crystal, mesoscopic yttrium iron garnet disk at room temperature are presented to demonstrate the method. The rich detail allows analysis of even complex 3D spin textures.

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