Abstract Submitted
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Nano-Torsional Resonator Torque Magnetometry[1] JOHN DAVIS, University of Alberta, DOUG VICK, National Institute for Nanotechnology, DAVE FORTIN, University of Alberta, JACOB BURGESS, University of Alberta and National Institute for Nanotechnology, WAYNE HIEBERT, National Institute for Nanotechnology, MARK FREEMAN, University of Alberta and National Institute for Nanotechnology — Torque magnetometry has been used for many years for a variety of magnetic measurements. Moving to nanoscale torsional resonators can push the limits of sensitivity for mechanical torque measurements. We report the use of magnetic torque to drive multiple torsion modes of nanoresonators that have been integrated with nanomagnetic elements. The interferometric response can be used to sensitively measure the magnetic behavior of single nanoscale magnetic objects with excellent sensitivity ($\approx 10^8 \mu_B$ for a single hysteresis curve).

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