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**Linewidths of Spin-Torque-Driven Nanomagnetic Oscillators as a Function of Field Angle and Temperature** KIRAN V. THADANI, Z.-P. LI, O. OZATAY, J.C. SANKEY, I.N. KRIVOROTOV, Y.-T. CUI, R.A. BUHRMAN, D.C. RALPH, Cornell University, G. FINOCCHIO, U. of Messina (Italy) — In a magnetic multilayer device, spin-transfer torque from a direct current can excite steady-state magnetic oscillations. We observe that the linewidths of the oscillations decrease dramatically as an applied magnetic field is rotated away from the magnetic easy axis towards the in-plane hard axis. Micromagnetic simulations show that the spatial coherence of the oscillations improves greatly as the field is rotated, and their amplitude increases, making them less susceptible to thermal fluctuations. We report the temperature dependence of the linewidths for the field directions giving the minimum linewidths. It has been suggested previously that the linewidths are dominated by fluctuations of the precession angle of the nonlinear oscillator [1,2]. We analyze the mechanisms governing our linewidths by comparing them to micromagnetic modeling. [1] J. C. Sankey et al., Phys. Rev. B 72, 224427 (2005). [2] J.-V. Kim et al., cond-mat/0703317.

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