Abstract Submitted
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Spin wave emission patterns from a point source in a magnonic crystal[1] GLADE SIETSEMA, MICHAEL E. FLATTÉ, University of Iowa — We have calculated the spin-wave emission patterns for a point source of spin waves, such as a spin-torque oscillator, embedded within a two-dimensional magnonic crystal. The magnonic crystal consists of cylinders of one magnetic material embedded within another, in a square or hexagonal lattice. Spin wave frequencies and linewidths have been calculated using the Landau-Lifshitz-Gilbert equation[1] and the emission patterns calculated from the resulting Green's function of the spin-wave system. As the frequency of the spin torque oscillator increases the emission patterns change from roughly isotropic to highly anisotropic, demonstrating efficient spin-wave transfer along certain crystallographic directions.

[1] Tiwari and Stroud, PRB 81, 220403 (2010)

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Glade Sietsema
University of Iowa

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