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Quantum and classical dynamics in three-dimensional frustrated magnets

Unexpected features in the linear and non-linear response of three-dimensional, rare-earth-based frustrated magnets are described. External magnetic fields tune the relative importance of quantum and classical effects. Detailed results to be described include a dissipation-less monopole response in spin ice (1), spectral hole burning in gallium gadolinium garnet (2), and dimensional reduction in LiErF_4 (3).

(1) Bovo et al., submitted (2012).

(2) Kraemer et al., *Science* 336, 6087, 1416-1419 (2012).

(3) Ghosh et al. *Phys. Rev. Lett.* 101, 157205 (2008).