

Abstract Submitted
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Spin ice on the trillium lattice¹ TRAVIS REDPATH, JOHN HOPKINSON, Brandon University — We study a local ferromagnetic Ising model for classical spins on the trillium lattice. The ground state of this model features two spins out(/in) and one spin in(/out) on each triangle, and leads to a macroscopic ground state degeneracy. Our Monte Carlo simulations find a ground state entropy intermediate to that of spin ice on the kagome and pyrochlore lattices, suggesting that trillium spin ice is highly frustrated. To motivate the search for trillium spin ice, we calculate the magnetic susceptibility and structure factor. We note the qualitative resemblance of the susceptibility to previously published work on EuPtSi, which features local moments on the trillium lattice.

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