

MAR07-2007-020630

Abstract for an Invited Paper
for the MAR07 Meeting of
the American Physical Society

Quantum helimagnetism of the frustrated spin 1/2 chain LiCuVO₄

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Inelastic neutron scattering, susceptibility, and high-field magnetization identify LiCuVO₄ as a nearest-neighbour ferromagnetic, next-nearest-neighbour frustrated, quasi-one-dimensional helimagnet, which is largely influenced by quantum fluctuations. Complementary band structure calculations provide a microscopic model with the correct sign and magnitude of the major exchange integrals.

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