

Abstract Submitted  
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**Ferromagnetism and Glassiness in a Disordered Ising Magnet** C. ANCONA-TORRES, T.F. ROSENBAUM, University of Chicago, G. AEPPLI, University College London —  $\text{LiHo}_{0.20}\text{Y}_{0.80}\text{F}_4$  is a diluted, dipolar-coupled Ising magnet on the boundary between ferromagnet and spin glass. Application of a magnetic field transverse to the Ising axis introduces quantum tunneling modes that speed relaxation and drive an order-disorder transition. We determine the Transverse Field - Temperature phase diagram through measurements of the linear and nonlinear magnetic susceptibility, as well as the spectral response of the system.

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