

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Nonlinear Response in strongly diluted $LiH_xY_{1-x}F$ MICHAEL SCHMIDT, THOMAS ROSENBAUM, DANIEL SILEVITCH, University of Chicago, GABRIEL AEPPLI, University College London — $LiH_xY_{1-x}F$ is a physical manifestation of the Ising model in transverse field, where substitution of Ho ions with magnetically inert Y generates random, internal transverse fields at the spin sites. In the low-temperature, small x regime, the spatial anisotropy of the dipolar interaction, disorder, and the random fields compete to balance tendencies towards glassy and spin liquid behavior and emphasize the effects of the nonlinear response. By measuring the ac magnetic susceptibility of single crystals with $x=0.045$ in both internal and external transverse fields, we explore the nonlinear dynamics and the stability of the glassy state.

Michael Schmidt
University of Chicago

Date submitted: 19 Nov 2009

Electronic form version 1.4