

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Magnetic Ordering in Copper Pyrazine Perchlorate, a $S=1/2$ 2D Quantum Heisenberg Antiferromagnet F. XIAO, C. P. LANDEE, M. M. TURNBULL, Clark University, Worcester, MA 01610, M. NOVAK, S. SORIANO, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil — Copper pyrazine perchlorate, $\text{Cu}(\text{Pz})_2(\text{ClO}_4)_2$, consists of antiferromagnetic layers of Cu^{2+} ions bridged by neutral pyrazine molecules. The exchange strength within the layers is $J/k_B = 17.5$ K; excellent isolation between layers is provided by the bulky perchlorate ions. Specific heat studies and muon spin resonance measurements [1] show the ordering temperature to be 4.25 K, corresponding [2] to an interlayer/intralayer exchange ratio of 1×10^{-3} . The specific heat data show no characteristic anomaly at T_N , only a broad contribution attributable to the short-range order within the layers. This result is consistent with recent theoretical predictions [3]. The excellent isolation results in the observation of field-induced XY-behavior in the magnetic susceptibility, as predicted elsewhere [4]. 1. J. Manson *et al*, unpublished results. 2. C. Yasuda *et al*, *Phys. Rev. Lett.* **94**, 217201 (2005). 3. P. Sengupta *et al*, *Phys. Rev. B*, **68**, 094423 (2003). 4. A. Cuccoli *et al*, *Phys. Rev. B*, **68**, 060402 (2003).

Christopher Landee
Clark University

Date submitted: 30 Nov 2005

Electronic form version 1.4