Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Specific Heat Studies of a 2D S = Heisenberg Antiferromagnet CHRISTOPHER LANDEE, FAN XIAO, Department of Physics, Clark University, SIMON GERBER, MICHEL KENZELMANN, Paul Scherrer Institute, NU XU, ANDERS SANDVIK, Department of Physics, Boston University — We report on the field-dependent specific heat of a highly two-dimensional Heisenberg, S = 1/2 antiferromagnet (2D QHAF), $[Cu(pz)_2(2\text{-}OHpy)_2](ClO_4)_2$, where pz = pyrazine and 2-OHpy = 2-pyridone. The copper atoms and pyrazine molecules form distorted rectangular layers of pyrazine-bridged copper(II) ions with the pyridone molecules normal to the layers, providing exceptional spacing between layers [1]. The zero-field specific heat of this compound (1.8 – 35 K) is compared to the recent QMC simulations of the specific heat for the 2D QHAF. Under applied field, the temperature dependence of the specific heat varies smoothly, but no field-induced ordering is observed. This behavior differs from the field-induced ordering in the 2D QHAF $Cu(pz)_2(ClO_4)_2$ reported previously [2]. [1] V. Selmani, C. P. Landee, M. M. Turnbull, J. L. Wikaira, and F. Xiao. Inorg. Chem. Comm. 13, 1399-1401 (2010), doi: 10.1016/j.inoche.2010.07.045 [2] N. Tsyrulin, F. Xiao, A. P. Schneidewindm H. M. Rönnow, J. Gavilano, C. P. Landee, M. M. Turnbull, M. Kenzelmann. Phys. Rev. B, 81, 134409 (2010), doi: 10.1103/PhysRevB.81.134409.

Christopher Landee
Department of Physics, Clark University

Date submitted: 05 Nov 2015 Electronic form version 1.4