Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Torsional oscillator and specific heat studies of 4He in Vycor[1]
Z.G. CHENG, X. LIN, J.T. WEST, M.H.W. CHAN, Penn State University — Nonclassical rotational inertia (NCRI) was first reported in solid helium confined in Vycor using the torsional oscillator technique [1]. Most of the work since then has focused on bulk solid helium. Recent specific heat measurements of bulk solid helium show a peak centering near the NCRI onset temperature [2], a good indication that the two may be related. We report on a series of experiments to study the NCRI fraction and specific heat of solid helium in Vycor. The torsional oscillator experiment is revisited to study the stability of the NCRI fraction. The purpose of the specific heat measurement is to probe the relation between the specific heat peak and NCRI.

[1] E. Kim, M. H. W. Chan, Nature 427, 225 (2004).
[2] X. Lin, A. C. Clark, M. H. W. Chan, Nature 449, 1025 (2007).

[1]The work is supported by NSF Grants No. DMR-0706339.

Z. G. Cheng
Penn State University

Date submitted: 19 Nov 2008 Electronic form version 1.4