

Abstract Submitted
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Specific heat of solid helium XI LIN, Penn State University, ANTHONY CLARK, EUNSEONG KIM, MOSES CHAN — Recently superflow in solid ^4He was found below 200mK via a torsional oscillator technique¹. While there were a number of measurements on the specific heat of solid helium carried out down to 100mK, there is no evidence of a heat capacity signature related to the onset of the supersolid phase². A serious experimental challenge is discerning the small specific heat of solid helium from that of the metallic cells which are typically used to confine the solid. We have recently begun a new measurement of the heat capacity of solid helium contained in a silicon cell. The heat capacity of the silicon cell below 300mK is always less than that of the solid helium sample. Results of the measurement will be presented. This work is supported by NSF under grant number 0207071. [1] E. Kim and M. H. W. Chan, *Nature* **427**, 225 (2004); E. Kim and M. H. W. Chan, *Science* **305**, 1941 (2004); E. Kim and M. H. W. Chan, *J. Low Temp. Phys.* **138**, 859 (2005). [2] S. H. Castles and E. D. Adams, *J. Low Temp. Phys.* **19**, 397 (1975); B. Hébral *et al.*, *Phonons in Condensed Matter*, edited by H. J. Maris (Plenum, New York, 1980), pg. 169; A. C. Clark and M. H. W. Chan, *J. Low Temp. Phys.* **138**, 853 (2005).

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