

Abstract Submitted
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Excess specific heat of solid ^4He XI LIN, A. C. CLARK, M. H. W. CHAN, Penn State U. — An experimental challenge on heat capacity measurement is discerning the small specific heat of solid helium from that of the metallic cells typically used to confine the high-pressure solid. We report on heat capacity measurements of solid ^4He contained in a silicon cell, in our search of a thermodynamic signature of the supersolid phase. Data will be presented for several solid samples around 26 bar, where the heat capacity is at least 10 times larger than that of the silicon cell. Below 200mK we observe a heat capacity in excess of that predicted by Debye theory. It is unclear if our observations are directly associated with the supersolid ^4He phase. In the hope to elucidate whether this phenomenon is connected to the supersolid phase, we are currently investigating the effect of ^3He impurities.

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