

Abstract Submitted
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Torsional Oscillator for Studying Supersolid ^4He at Two Resonant Frequencies¹ JOSEPH GRAVES, YUKI AOKI, HARRY KOJIMA, Rutgers University — In order to observe supersolid behavior in solid ^4He at multiple frequencies while keeping all other parameters constant, an oscillator with two torsional modes has been constructed. The torsion rod is made of beryllium copper and the cylindrical sample chamber is made of Stycast 1266. The two modes have resonant frequencies of 500 and 1200 Hz. Preliminary studies have shown fairly high quality factors of 10^4 at 300 K and 7×10^4 at 77 K. We plan to measure the changes, at the two frequencies in the identical solid ^4He sample, of the resonant frequency, dissipation and critical velocity associated with the supersolid phase at temperatures below 200 mK.

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