

Abstract Submitted  
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**Influence of sample geometry on the supersolid signal** ANN SOPHIE C. RITTNER, JOHN D. REPPY, Cornell University — We have used a torsional oscillator with an annular geometry in order to study the correlation between sample volume and supersolid signals systematically. We varied the width of the annulus in the cell with cylindrical magnesium inserts of different radii. In preliminary measurements on an open cylinder cell, we have found an apparent supersolid fraction  $\frac{\rho_s}{\rho}$  of 0.04 % at 26 bar, a maximum velocity of 23  $\mu\text{m}/\text{s}$  and a sample volume of 2 cc. In an annular cell with a width of 0.635 mm we measured a supersolid fraction of about 0.33 % at a velocity of 16  $\mu\text{m}/\text{s}$  and a pressure of 32 bar. The increase of the supersolid fraction in restricted geometries suggests that defects cause the NCRI behavior and could explain the different results of previous torsional oscillator measurements.

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