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Characterization of ^{4}He Samples Exhibiting NCRI M.J. BOWNE, Z. CHENG, J.T. WEST, A.C. CLARK, M.H.W. CHAN, Penn State University — We plan to carry out sound measurements on solid ^{4}He samples contained in a torsional oscillator. We believe *in situ* characterization of samples demonstrating non-classical rotational inertia (NCRI) can lead to a better understanding of the microscopic mechanism behind supersolidity. Sound pulses will be generated and detected with a single quartz transducer housed within the torsion cell. The velocity of sound and attenuation will be extracted from the pulse echoes. This information conveys the relative quality of samples, as well as the orientation of the c-axis for single crystals. Preliminary measurements are under way in a test apparatus.

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