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Decoupling NCRI from shear modulus changes in solid ^{4}He[1]
JOSHUA T. WEST, MOSES H.W. CHAN, Department of Physics, The Pennsylvania State University, University Park, PA 16802 — Day and Beamish report a significant increase in the shear modulus of solid ^{4}He [1] below 250 mK with temperature dependence similar to the non-classical rotational inertia (NCRI) response seen in torsional oscillator measurements [2]. Finite element calculations show that stiffening of the solid ^{4}He could mimic very small NCRI signals [3]. We have constructed a one-piece, welded oscillator which is designed to minimize the effect from stiffening of the solid helium. Preliminary data will be presented.
[1] J. Day and J. R. Beamish, arXiv:0709.4666v1 (2007).
[2] E. Kim and M. H. W. Chan, Science **305**, 1941 (2004).
[3] A. C. Clark and M. H. W. arXiv:0711.3619v1 (2007).

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