

## Torsional oscillator studies of helium-4 single crystals

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We have studied the rotational inertia of <sup>4</sup>He single crystals with the torsional oscillator (TO) method. The cell is a sapphire minibottle with a cylindrical shape, 20 mm tall and 11 mm on the inner diameter. Our results show that for single crystals grown at constant temperature and pressure from the superfluid liquid (natural purity), there is no measurable change in the TO resonance frequency between 10 and 600 mK that could be attributed to a change in inertia of solid <sup>4</sup>He. This means that, if it exists, the non-classical rotational inertia fraction is less than 0.03% in these crystals. At the beginning of May 2011, a comparison with samples grown at constant volume by the “blocked capillary method” is in progress in our laboratory.

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