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NCRI in Helium Crystals Grown Under Constant Pressure A.C. CLARK, M.H.W. CHAN, Penn State University — A prominent issue concerning supersolidity in ^{4}He is crystal quality. Several theoretical studies have demonstrated that a perfect crystal is insulating. Apparent experimental discrepancies between different laboratories, while very interesting, have not resolved the matter. In the torsional oscillator experiments, all solid samples previously studied were grown under constant volume. A decrease in pressure occurs during growth so that crystals are forced to expand, possibly resulting in highly strained crystals. There has also been no attempt to seed a single crystal, presumably leading to polycrystallinity. It is known that crystals carefully grown under constant pressure are of high quality. We report on new torsional oscillator measurements of isotopically pure solid ^{4}He grown under constant pressure. We detect non-classical rotational inertia (NCRI) in all samples grown to date. Comparisons will be made to earlier studies.

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