

Abstract Submitted
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Measurement of the ground state tensor polarizability of Cesium atoms TENG ZHANG, DAVID WEISS, Pennsylvania State University — We will describe an in-progress measurement of the ground state tensor polarizability (GSTP) of Cs using laser cooled atoms trapped in optical lattices. Precision measurement of the Cs GSTP will test atomic calculations of the hyperfine interactions between nuclear moments and electrons which are a challenging part of atomic parity-violation calculations. We will directly measure the GSTP by simultaneously driving transitions in two pairs of magnetic sublevels and measuring the populations in individual magnetic sublevels. Ours will be the first GSTP of the F=3 hyperfine level, and we anticipate an F=4 GSTP measurement that is more than an order of magnitude more precise than the best previous measurement [S. Ulzega, et al, Phys. Rev. A 75, 042505 (2007)1].

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