

Abstract Submitted  
for the DAMOP20 Meeting of  
The American Physical Society

**Progress towards an electron EDM measurement using Cesium atoms** ZHENYU WEI, TENG ZHANG, DAVID WEISS, Pennsylvania State University — Observation of a permanent electron electric dipole moment (eEDM) would imply time reversal symmetry violating effects not contained in the Standard Model. We have constructed an apparatus designed to measure the EDM of laser-cooled Cesium (Cs) atoms trapped in optical lattices. We will describe our measurement scheme and discuss preliminary results for a related measurement on the ground state tensor polarizability (GSTP) of Cs. The GSTP measurement, which will represent more than an order of magnitude increase in precision over current experiments, provides a challenge to atomic theory, some aspects of which relate to atomic parity violation measurements. It also shares many systematic effects in common with the eEDM measurement. We anticipate an ultimate shot noise limit of  $4 \times 10^{-28}$  ecm of the atomic Cs EDM, which would correspond to a limit on the eEDM of  $3 \times 10^{-30}$  ecm.

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Date submitted: 31 Jan 2020

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