

Abstract Submitted
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Progress towards a permanent electron electric dipole moment search using cold atoms in an optical lattice NEAL E. MEYER, KUNYAN ZHU, FANG FANG, DAVID S. WEISS, Penn State Physics Dept. — Observation of a permanent electric dipole moment of the electron would imply CP violating effects not contained in the Standard Model. We present our progress towards measuring the electron EDM using laser-cooled cesium and rubidium atoms trapped in a one dimensional optical lattice. We have launched laser-cooled Cs atoms in a cavity-enhanced optical lattice guide. We re-cool and re-trap the atoms in the 90 cm high measurement region, obtaining an overall transfer efficiency from the magneto-optic trap of 50%. We will describe the development of two such lattices in parallel, passing between specially-coated fused silica electric field plates.

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