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Abstract for an Invited Paper
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Measuring the electron electric dipole moment with cold Cs and Rb atoms in optical lattices¹

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We will describe an experiment to search for the electron electric dipole moment using laser cooled alkali atoms trapped in two parallel 1D optical lattices. We have completed the first step in the experiment, the transfer $\sim 50\%$ of the atoms from a MOT to the measurement region 90 cm above the MOT. Transfer is accomplished by a ballistic launch, using the 1D lattice as a transverse guide. Our experimental geometry minimizes many sources of possible systematic error, and we project an ultimate sensitivity of $\sim 4 \times 10^{-30} e^{-cm}$, which would be a 400-fold improvement over the current experimental limit.

¹This work was performed in collaboration with Fang Fang.