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Optical dipole trapping of radium atoms for EDM search W.L. TRIMBLE, Physics Div., Argonne National Lab., I.A. SULAI, R.H. PARKER, Physics Div., Argonne National Lab.; University of Chicago, K. BAILEY, J.P. GREENE, R.J. HOLT, Physics Div., Argonne National Lab., W. KORSCH, Dept. of Physics, University of Kentucky, Z.-T. LU, Physics Div., Argonne National Lab.; Dept. of Physics, University of Chicago, P. MUELLER, T.P. O'CONNOR, J. SINGH, Physics Div., Argonne National Lab. — We are developing an EDM search based on laser-cooled and trapped Ra-225 (half-life = 15 d) atoms. Due to octupole deformation of the nucleus, Ra-225 is predicted to be 2-3 orders of magnitude more sensitive to T-violating interactions than Hg-199, which currently sets the most stringent limits in the nuclear sector. Recently, we have succeeded in transferring Ra-226 atoms from a MOT into an optical dipole trap formed by a fiber laser beam at 1550 nm. For the EDM measurement, the cold atoms will be moved into the neighboring vacuum chamber inside magnetic shields where a pair of electrodes apply a 10 kV cm^{-1}electric field. This work is supported by DOE, Office of Nuclear Physics under contract No. DE-AC02-06CH11357.

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