

Abstract Submitted
for the DAMOP14 Meeting of
The American Physical Society

Progress in the Radium EDM Experiment R.H. PARKER, University of Chicago, M.R. DIETRICH, Argonne National Laboratory, M.R. KALITA, University of Kentucky, N. LEMKE, K. BAILEY, J.P. GREENE, R.J. HOLT, Argonne National Laboratory, W. KORSCH, University of Kentucky, Z.-T. LU, P. MUELLER, T.P. O'CONNOR, Argonne National Laboratory, J. SINGH, Technische Universität München, W. TRIMBLE, Argonne National Laboratory — Ra-225 (half-life = 15 d, nuclear spin = $1/2$) is a promising isotope for a measurement of the EDM of a diamagnetic atom. Due to its large nuclear octupole deformation and high atomic mass, the EDM sensitivity of Ra-225 is expected to be 2-3 orders of magnitude larger than that of Hg-199. We demonstrate an efficient multiple-stage apparatus in which radium atoms are first loaded into a MOT, then transferred into a movable optical-dipole trap (ODT) that carries the atoms over 1 m to a magnetically-shielded science chamber, loaded into a standing-wave ODT, polarized, and then allowed to precess in magnetic and electric fields. We will discuss the results of our first attempt to measure the EDM of Ra-225, as well as plans for future improvements. This work is supported by DOE, Office of Nuclear Physics (DE-AC02-06CH11357).

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Date submitted: 17 Jan 2014

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