

Abstract Submitted  
for the DNP11 Meeting of  
The American Physical Society

**Progress towards the search for the permanent electric dipole moment of Ra-225** JAIDEEP SINGH, KEVIN BAILEY, MATT R. DIETRICH, JOHN P. GREENE, ROY J. HOLT, MUKUT R. KALITA, Argonne National Laboratory, WOLFGANG KORSCH, University of Kentucky, ZHENG-TIAN LU, PETER MUELLER, TOM P. O'CONNOR, Argonne National Laboratory, RICHARD H. PARKER, IBRAHIM A. SULAI, University of Chicago — We are searching for the permanent electric dipole moment (EDM) of Radium-225. In this context, a nonzero EDM is a signature of time-reversal-symmetry violating interactions within nuclei. The Ra-225 radioisotope (half-life of 15 days) is an attractive choice because, due to its unusually large nuclear deformations, it is expected to be an extraordinarily sensitive probe to these types of interactions. In our measurement scheme, Ra atoms are first laser-cooled & -trapped in a magneto-optical trap. Subsequently they are transferred into an optical dipole trap, which is used to transport the atoms into the science chamber. Finally, the atoms are transferred into a more stable & confining optical dipole trap, where the measurement takes place. The first two steps have already been demonstrated. We will report on progress towards measurements of atomic properties necessary for the EDM search and the EDM search itself. This work is supported by DOE, Office of Nuclear Physics, under contract No. DE-AC02-06CH11357.

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Date submitted: 01 Jul 2011

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