

Abstract Submitted  
for the DAMOP19 Meeting of  
The American Physical Society

**Upgrades for an Improved Measurement of the Permanent EDM of Ra-225** TENZIN RABGA, Argonne National Lab, Michigan State University, KEVIN BAILEY, MICHAEL BISHOF, DONALD BOOTH, MATTHEW DIETRICH, JOHN GREENE, PETER MUELLER, THOMAS O'CONNOR, Argonne National Lab, ZHENG-TIAN LU, University of Science and Technology of China, ROY READY, JAIDEEP SINGH, Michigan State University, TIAN XIA, University of Science and Technology of China — A non-zero Electric Dipole Moment (EDM) in a non-degenerate system violates time-reversal (T) symmetry and consequently also charge-parity (CP) symmetry. EDM measurements are therefore sensitive searches for new CP violating interactions. The octupole deformation and nearly degenerate nuclear parity doublet in Ra-225 make it an attractive candidate for probing CP violations in the hadronic sector. Further experimental upgrades are being implemented to enhance the current EDM sensitivity for Ra-225. These include more than a factor of three enhancement in the electric field from our electrode upgrade and a STIRAP-based electron shelving for improved state detection efficiency. With these upgrades in place our EDM sensitivity should increase by about two orders of magnitude and allow us to substantially improve constraints on certain T-violating processes within the nucleus. Updates on the status of these upgrades will be provided. This work is supported by the U.S. DOE, Office of Science, Office of Nuclear Physics, under contract DE-AC02-06CH11357 and the Michigan State University.

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Date submitted: 06 Feb 2019

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