

Abstract Submitted
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Status of the Radon EDM Experiment ERIC TARDIFF, TIMOTHY CHUPP, WOLFGANG LORENZON, SARAH NUSS-WARREN, University of Michigan, JOHN BEHR, MATTHEW PEARSON, TRIUMF, KERIM GULYUZ, RICHARD LEFFERTS, NORBERT PIETRALLA, GEORGI RAINOVSKI, JERRY SELL, GENE SPROUSE, SUNY Stony Brook — An experiment to measure the permanent electric dipole moment (EDM) of ^{223}Rn is under development at TRIUMF. The EDM of ^{223}Rn is expected to be enhanced by a factor of several hundred relative to ^{199}Hg due to effects of octupole deformation. In the first runs, the ^{223}Rn will be polarized by spin-exchange with laser polarized Rb and the precession frequency in combined magnetic fields will be measured using gamma-ray anisotropies detected in the large solid angle TIGRESS array of HPGe detectors. In preparation, polarization and relaxation of radon isotopes by spin exchange with laser optically pumped rubidium have been studied over the range 130°C to 220°C. The generation of a greater rubidium polarization in the radon spin-exchange optical pumping cells using a narrow-band diode laser is under investigation. Other preparations and the time frame for the measurements will be presented.

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