Abstract Submitted
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Progress toward a Radon EDM Measurement[1] TIM CHUPP, University of Michigan, THE RADON EDM COLLABORATION — An EDM is a permanent electric dipole moment of a system, i.e. a separation of charge along the total angular momentum vector. The EDM is a time-reversal-even vector, but the angular momentum is a time-reversal-odd axial vector. Thus a non-zero EDM in a non-degenerate system violates the symmetries of time reversal (T) and parity (P). By application of the CPT theorem, the EDM is CP violating and would arise due to elementary particle interactions among the system's constituents. Searches with atoms, molecules, the neutron and elementary particles continue with the goal of discovering an EDM and clarifying the sources of CP violation. Atoms with octupole deformed nuclei are among the newest systems to be considered because the nuclear deformation gives rise to an enhanced CP violating nuclear charge distribution, the Schiff moment. This talk will describe an experimental program underway at TRIUMF in Vancouver, B.C., to search for the EDM with laser-polarized radioactive radon isotopes, which are expected to have enhancements of several hundred relative to ^{199}Hg, which has recently improved limits on sources of the Schiff moment and other CP violating phenomena.

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