

Abstract Submitted  
for the HAW14 Meeting of  
The American Physical Society

**Development of a Francium Electron Electric Dipole Moment Experiment** CHARLES T. MUNGER JR., B. FEINBERG, HARVEY GOULD, JURIS KALNINS, HIROSHI NISHIMURA, LBNL, ULRICH JENTSCHURA, Missouri S&T, JOHN BEHR, MATT PEARSON, TRIUMF — An experiment to discover or rule out a permanent electric dipole moment (EDM) of the electron, at a sensitivity well beyond the present experimental limit, is being developed. The experiment will use  $^{211}\text{Fr}$ , obtainable online at TRIUMF at rates of  $10^9/\text{s}$ , in a laser-cooled fountain. The experiment is done in free space and free fall, with an electric field, but no applied magnetic field, between optical state preparation and analysis. The relation between an electron EDM and an EDM of a francium atom has recently been recalculated using field theory alone (Blundell, Griffith & Sapirstein, Phys. Rev. **D86**, 025023 [2012]), confirming previous atomic physics calculations and removing any ambiguity in the experimental interpretation.

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Date submitted: 20 Jun 2014

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