

TOWARDS AN IMPROVED MEASUREMENT OF THE ELECTRON'S ELECTRIC DIPOLE MOMENT IN A TRAPPED MOLECULAR ION

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Many proposed extensions to the standard model of particle physics predict that the electrons electric dipole moment (eEDM) should be nonzero, yet all measurements to date are consistent with zero. We are attempting to improve the current limit a factor of one hundred, by taking advantage of the very large internal electric field in a polar molecule, and the very long coherence times possible with trapped ions. Our favorite candidates are HfF^+ and ThF^+ . I'll discuss the difficulties of doing an experiment that requires the application of a uniform electric bias field to an ion, and touch on the techniques we've developed for doing massively parallel survey spectroscopy on ionic species.