

## Progress Towards Measuring the Electron EDM with Thorium Monoxide

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Measurement of a non-zero electric dipole moment (EDM) of the electron within a few orders of magnitude of the current best limit [1] of  $|d_e| < 1.05 \cdot 10^{-27} \text{ e}\cdot\text{cm}$  would be an indication of CP violation beyond the Standard Model. The ACME Collaboration is searching for an electron EDM by performing a precision measurement of electron spin precession signals from the metastable  $\text{H } ^3\Delta_1$  state of thorium monoxide (ThO), using a cold and slow beam. We discuss the current status of the experiment. Based on a data set acquired from 14 hours of running time over a period of two days, we have achieved a one-sigma statistical uncertainty of  $\delta d_e = 1 \cdot 10^{-28} \text{ e}\cdot\text{cm}/\sqrt{T}$ , where T is the running time in days.

### **References:**

[1] JJ Hudson et al., "Improved measurement of the shape of the electron." *Nature* 473, 493 (2011)