ThF^+ AS A CANDIDATE FOR eEDM MEASUREMENTS

MICHAEL C. HEAVEN, JOSHUA H. BARTLETT, *Department of Chemistry, Emory University, Atlanta, GA 30322*.

The low-lying $^3\Delta_1$ state of ThF^+ has advantageous properties for studies of the electron electric dipole moment. Calculations indicate that internal fields as high as 90 GV/cm can be generated, and there is just one isotope of ThF with significant natural abundance. Previous experiments show two low-lying electronic states of ThF^+ spaced by 315 cm^{-1} (JCP 136, 104305 (2012)). These are $^1\Sigma$ and $^3\Delta_1$, but the ordering is still in question. Experiments are in progress to determine the electronic angular momentum of the ground state. Laser excitation spectra for ThF^+ have been recorded for transitions in the 19300-21100 cm^{-1} range. For eEDM studies it is technically more convenient to work with lower energy transitions. Survey spectra covering the range 15000-19000 cm^{-1} are currently being recorded. Results from these measurements will be presented and their relevance to possible eEDM studies will be discussed.