

Abstract Submitted
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Progress towards a measurement of the electron electric dipole moment with trapped molecular ions KEVIN COSSEL, HUANQIAN LOH, KANG-KUEN NI, MATT GRAU, DAN GRESH, JUN YE, ERIC CORNELL, JILA, NIST and University of Colorado-Boulder, and Department of Physics, University of Colorado-Boulder — Trapped molecular ions are well suited to searches for the electric dipole moment of the electron (eEDM) due to the long coherence times possible. The current experiment at JILA focuses on the metastable $^3\Delta_1$ level of HfF^+ in a Paul trap. We have now demonstrated the ability to state-selectively transfer population to the desired $^3\Delta_1$ $J = 1$ states in the ion trap and to efficiently read-out the population using photodissociation. Using these techniques, we performed detailed characterizations of the hyperfine and Zeeman states with the application of rotating electric fields and magnetic fields. This has enabled initial attempts at Ramsey spectroscopy of the eEDM sensitive states.

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