

Abstract Submitted
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Trapped Ground State Ultracold Polar Molecules NATHAN B. GILFOY, ERIC R. HUDSON, STEPHAN FALKE, C.D. BRUZEWICZ, DAVID DEMILLE, Yale University — Recently we have optically trapped ultra-cold, polar RbCs molecules in high-lying vibrational levels of the triplet ground electronic state. Inelastic collision rates of these molecules with Rb and Cs atoms have been measured for individual vibrational levels over an order of magnitude of binding energies. A simple model of the collisional process is shown to accurately reproduce the observed scattering rates. We are currently implementing a state transfer process, previously demonstrated in our lab, to populate the absolute ground state. We will discuss our recent measurements of ultra-cold inelastic molecular collisions as well as progress towards trapping molecules in the absolute ground state.

Nathan Gilfoy
Yale University

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