

Abstract Submitted
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RbCs molecules co-trapped with Rb and Cs atoms¹ MICHAEL BELLOS, TOSHIHIKO SHIMASAKI, DAVID DEMILLE, Yale University — We present studies of the formation and collisions of RbCs molecules in an optical trap. We produce trapped RbCs molecules in a variety of states, including their rovibronic ground state $X^1\Sigma^+(v=0, J=0)$, via short-range photoassociation.² We then monitor loss rates of individual molecular states when co-trapped with Rb or Cs atoms. RbCs molecules in the $X^1\Sigma^+(v=0, J=0)$ state are energetically forbidden to chemically react with each other or with Cs atoms. One specific goal of our work is to test proposals for “scrubbing” molecular excited states from the trapped sample via inelastic collisions with atoms. We will present data relevant to this proposal and to other ultracold atom-molecule collisional interactions.

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