

Abstract Submitted
for the DAMOP12 Meeting of
The American Physical Society

Molecular Ion Spectroscopy¹ KUANG CHEN, STEVEN SCHOWALTER, WADE RELLERGERT, SCOTT SULLIVAN, ERIC HUDSON, UCLA — We discuss our efforts to perform high-resolution spectroscopy of the BaCl^+ ion, an exciting candidate for ultracold molecular ion studies. This work details our search for a predicted predissociation channel between the first-excited $B^1\Sigma$ and $A^1\Pi$ states. It is expected that the rovibrational resolution afforded by predissociation spectroscopy will allow us to efficiently measure molecular-ion rovibrational temperatures. This is a crucial step in confirming our method to produce ultracold molecular ions via sympathetic collisions with a ^{40}Ca MOT. To observe the predissociation of trapped BaCl^+ , we detect slight increases in fragment Ba^+ with a novel time-of-flight device using radial extraction from a linear quadrupole trap.

¹Work supported by NSF grant No. PHY-1005453, ARO No. W911NF-10-1-0505, and AFOSR grant.

Steven Schowalter
UCLA

Date submitted: 27 Jan 2012

Electronic form version 1.4