

Abstract Submitted
for the DAMOP18 Meeting of
The American Physical Society

Ultracold Triplet Ground State NaLi Molecules¹ HYUNG MOK SON, Harvard University, Massachusetts Institute of Technology, TIMUR RAVACHOV, JULIANA PARK, MARTIN ZWIERLEIN, ALAN JAMISON, WOLFGANG KETTERLE, Massachusetts Institute of Technology — Ultracold heteronuclear molecules offer a unique platform for the study of many-body physics, quantum information processing, and chemistry at the quantum level. For this purpose, diatomic molecules in the absolute, singlet ground state have been created with various combinations of alkali atoms. Ultracold, fermionic NaLi molecules in the triplet ground state have a long collisional lifetime and both electric and magnetic dipole moments. Therefore, by varying the strength and the relative orientation of the electric and magnetic fields applied to the molecules, we will be able to study novel spin lattice Hamiltonians and controlled molecular and atom-molecule collisions. We will report the results of our recent experiments with triplet ground state NaLi molecules, which are produced through STIRAP from magnetically-associated weakly-bound molecules.

¹NSF, ONR, ARO, Samsung Scholarship

Hyungmok Son
Harvard University, Massachusetts Institute of Technology

Date submitted: 26 Jan 2018

Electronic form version 1.4