

Abstract Submitted
for the DAMOP20 Meeting of
The American Physical Society

Magnetic Field Dependent Collisional Dynamics of NaLi Molecules in the Triplet Ground State JULIANA PARK, Massachusetts Institute of Technology MIT, HYUNGMOK SON TEAM, YUKUN LU TEAM, ALAN JAMISON TEAM, WOLFGANG KETTERLE TEAM — Ultracold gases of molecules offers a new platform to study short-range chemical reactions, many-body systems, and quantum information science. The NaLi molecule, the lightest bi-alkali molecule, in the triplet ground state have long collisional lifetime which allow us to investigate the complexity of chemical reactions by finding links to scattering theory. We have previously observed internal state dependent collision of Na-NaLi mixture and have seen favorable collisional properties in their fully stretched states enabling collisional cooling of NaLi molecules. We report results of recent studies with our triplet state molecules including the observation of magnetically controlled collision of Na-NaLi mixture. This can give positive influence on understanding molecular collisions in the quantum regime and discovering more efficient way of sympathetic cooling of molecules.

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Date submitted: 30 Jan 2020

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