

Abstract Submitted  
for the DAMOP18 Meeting of  
The American Physical Society

**Study of collisional processes of magnetically trapped cold Methyl radicals.** MANISH VASHISHTA, TAKAMASA MOMOSE, Department Of Chemistry, UBC, Canada — Cold atomic collisions have been characterized by known interatomic potentials, and various quantum effects such as resonance scattering have been explained by the standard scattering theories. On the other hand, collisions of cold molecules, especially those of reactive molecules, have been studied less than those of atoms due to the difficulties in making cold molecules, and information is still lacking to fully understand cold collisional processes of molecules with complex internal structures. Recently, we demonstrated that methyl radicals, one of the fundamental and important reactive intermediates, can be trapped in a magnetic trap at 200 mK. We determine the collision cross section of different gases with the trapped methyl radicals by measuring the loss rate of methyl radicals from the trap to study their collision dynamics.

References:

1. Yang Liu, Manish Vashishta, Pavle Djuricanin, Sida Zhou, Wei Zhong, Tony Mittertreiner, David Carty, and Takamasa Momose. “Magnetic Trapping of Cold Methyl Radicals” *Phys. Rev. Lett.* **118**, 093201 (2017).

Manish Vashishta  
Department Of Chemistry, UBC, Canada

Date submitted: 07 Feb 2018

Electronic form version 1.4