

Abstract Submitted
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Ultracold collisions of molecular radicals with alkali-metal atoms in a magnetic field MASATO MORITA, Univ of Nevada - Reno, JACEK KLOS, University of Maryland, PIOTR S. ZUCHOWSKI, Nicolaus Copernicus University, Torun, Poland, TIMUR V. TSCHERBUL, Univ of Nevada - Reno — Collisional properties of ultracold molecular gases play a key role in sympathetic and evaporative cooling of molecular ensembles to ultralow temperatures. We use state-of-the-art ab initio and quantum scattering calculations to calculate the ratio between the elastic and spin-relaxation cross sections for molecular radicals SrOH and SrF colliding with ultracold alkali-metal atoms in the presence of an external magnetic field. We will discuss (1) the prospects of sympathetic cooling of these molecules in a magnetic trap and (2) the effect of the uncertainty of the atom-molecule interaction potential on the theoretical predictions.

Masato Morita
Univ of Nevada - Reno

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