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Spin relaxation in ultracold collisions of molecular radicals with alkali-metal atoms TIMUR TSCHERBUL, Univ of Nevada - Reno, JACEK KLOS, University of Maryland, PIOTR ZUKOWSKI, Nicolaus Copernicus University, Torun, Poland — We present accurate quantum scattering calculations of spin relaxation in ultracold collisions of alkali-metal atoms and polar $^2\Sigma$ molecules CaH, SrF, and SrOH. The calculations employ state-of-the-art ab initio interaction potentials and a rigorous quantum theory of atom-molecule collisions in a magnetic field based on the total angular momentum representation. We will further discuss the relevance of the results to atom-molecule sympathetic cooling experiments in a magnetic trap.

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