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Cross dimensional relaxation in Lithium-7 and Rubidium-87 mixtures in spherical quadruple trap FANG FANG, SHUN WU, AARON SMULL, JOSH ISAACS, DAN STAMPER-KURN, UC Berkeley — We report measurements of interspecies interaction strength between Lithium-7 and Rubidium-87, both are spin polarized in |F=1, m = -1>state in a magnetic spherical quadrupole trap. Measurements of equilibration rates for Li-7 in Rb-87 reservoir undergoing cross-dimensional relaxation are done in three different trapping strengths. To relate the experimentally measured relaxation times to interspecies interaction strength, we perform Monte Carlo simulation assuming an energy independent isotropic scattering cross section, called "thermalization relaxation cross section", using the experimental parameters. In addition, a cross dimensional relaxation measurement is done on single bosonic species Rb-87. The measured relaxation time matches the Monte Carlo simulated value using the theoretically predicted differential cross section. In the end, we will present our progress towards a new apparatus for Li-7 and Rb-87 ultracold molecule.

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