

Abstract Submitted
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Light Assisted Collisional Losses in a $^{85/87}\text{Rb}$ Optical Trap¹ ANTHONY GORGES, MICHAEL DEANGELO, NICHOLAS BINGHAM, MATHEW HAMILTON, JACOB ROBERTS, Colorado State University — Light-assisted collisional loss, loss due to the excitation of an atom-atom pair to a stronger interatomic potential, poses an interesting problem with respect to loading two isotopes into the same optical trap. By loading both ^{85}Rb and ^{87}Rb into a far off resonant trap (FORT), we have studied inter- and intraspecies excited state/ground state collisional losses. Because of the relatively weak confinement of the FORT we expect the hyperfine structure of the different isotopes to play a crucial role in the collisional loss rates. This allows us to directly compare losses associated with long range excited state potentials; from purely attractive to purely repulsive, long range to short range. We observe radically different loss rates for different excited state potentials. Additionally, we observe that some collisional channels' loss rates are heavily saturated at our operating intensities ($\sim 15 \text{ mW/cm}^2$). These losses are important limitations in loading dual isotope optical traps.

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