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Cross Species Suppression of Optical Trap Loading Rate in a Heteronuclear Mixture[1] ANTHONY GORGES, Colorado State University, MATHEW HAMILTON, Colrado State University, JACOB ROBERTS, Colorado State University — We report the effects of simultaneously loading ^{85}Rb and ^{87}Rb into a far off resonant trap (FORT) resulting in the disruption of the ^{87}Rb load rate and number loaded. While many problems arise from cooling a relatively dense cloud of atoms (radiation pressure, Raman transitions, etc.), the large detuning between the transitions of ^{85}Rb and ^{87}Rb should act to mitigate many of those effects. We observe, however, significant decrease in the load rate and number of one isotope of Rb into the FORT when the other non-resonant isotope is present. For instance if a ^{85}Rb MOT is present during an ^{87}Rb FORT load, the loading rate for ^{87}Rb is reduced even if ^{85}Rb itself is not loading into the FORT. Examination of the dynamics behind this load rate reduction reveal that it is neither due to elastic collisions nor light- assisted loss. We theorize the long-range dipole-dipole interactions are responsible for the observed load rate reduction.

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