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Experiments with mixtures of bosonic/fermionic isotopes of Rb
DAVID FELDBAUM, MARK HAUSMANN, VIEIRA DAVID, ZHAO XINXIN, Los Alamos National Lab, LANL C-INC ATOM TRAPPING TEAM — Mixture of ^{87}Rb and ^{84}Rb (predicted to have a Feshbach resonance at $\sim$100 Gauss for (5/2,5/2) and (5/2,3/2) states, $t_{1/2}$=33 days) is an interesting system for studies of fermionic quantum degeneracy, as well as of formation of ultra-cold molecules. Our high efficiency double MOT system is coupled to a mass separator, which allows us to isolate and trap short-lived isotopes of various elements. In this system we have obtained a BEC of ^{87}Rb, and demonstrated the trapping of ^{84}Rb in a MOT. Progress towards sympathetic cooling of ^{84}Rb, and the creation of ultra-cold molecules will be presented.

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