Radio Frequency spectroscopy of a strongly interacting Fermi gas¹ JOHN STEWART, JOHN GAEBLER, DEBORAH JIN, JILA- University of Colorado — Experiments using ultra-cold atoms have allowed researchers to study the BCS-BEC crossover. We report on studies of the crossover using an ultracold gas of potassium-40 atoms and radio-frequency (RF) spectroscopy. Atoms from one of the two strongly interacting spin states are transfered into a third spin state, which can then be selectively imaged. Our experiments differ from previous measurements using lithium-6 atoms in that we output couple the atoms to a weakly interacting state.

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