

Abstract Submitted
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Observation of an Optical Feshbach Resonance in ^{88}Sr ¹ P.G. MICKELSON, Y.N. MARTINEZ DE ESCOBAR, M. YAN, Rice University, R. CHAKRABORTY, Harvard University, T.C. KILLIAN, Rice University — We have observed an optical Feshbach resonance (OFR) using the narrow intercombination line in ^{88}Sr . As suggested by Ciurylo et. al [Phys. Rev. A 71, 030701(R) (2005)], the scattering wave function is changed by applying an additional laser to the trapped atom sample and varying its intensity and detuning from a molecular level near the intercombination line transition. We use the change in the rate of thermalization of atoms as our diagnostic and a model of evaporation to determine the corresponding scattering length. While the change in scattering length due to the OFR is accompanied by modest losses, the decreased sample temperature leads to a slight increase in the phase space density of the sample. Demonstration of the OFR without large atom loss offers fine control of the properties of the atomic system.

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