

Abstract Submitted  
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**An intercombination-line optical Feshbach resonance in a  $^{88}\text{Sr}$  BEC** MI YAN, BRIAN DESALVO, THOMAS KILLIAN, Rice University, Department of Physics and Astronomy and Rice Quantum Institute, Houston, Texas, 77251 — We demonstrate control of the scattering properties of strontium atoms in a  $^{88}\text{Sr}$  BEC with an optical Feshbach resonance (OFR) near the  $^1\text{S}_0$ – $^3\text{P}_1$  intercombination transition at 689 nm. Significant changes in scattering length on the order of  $30 a_0$  can be achieved within 5 MHz detuning of several different photoassociative lines with extremely small atom losses. We observe changes of the size of the expanded BEC due to the OFR beam. The background scattering length of  $^{88}\text{Sr}$  is very close to zero ( $a = -2 a_0$ ), so a red-detuned OFR laser leads to more negative scattering length and condensate collapse, while blue-detuned laser leads to more expansion energy, as expected if the scattering length is made more positive.

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