

Abstract Submitted
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Optical control of two-body scattering in Fermi gases¹ NITHYA ARUNKUMAR, North Carolina State University, ARUNKUMAR JAGANNATHAN, Duke University, North Carolina State University, JAMES JOSEPH, JOHN THOMAS, North Carolina State University — Traditionally, collisional interactions in ultra-cold gases have been tuned by an external magnetic field near a Feshbach resonance. Optical tuning techniques permit much finer temporal and spatial control of two-body scattering, enabling new studies of non-equilibrium phenomena. Optical methods are of particular interest in strongly interacting Fermi gases, which are stable near resonance. Unfortunately, single field optical control methods suffer from spontaneous scattering, which limits their utility. We are developing two-field optical control methods that employ quantum interference to greatly suppress spontaneous scattering. We will describe experiments using this method for broad and narrow Feshbach resonances in ⁶Li.

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