4CF07-2007-000146

Abstract for an Invited Paper
for the 4CF07 Meeting of
the American Physical Society

Fun with ultracold atoms

DEBORAH JIN, NIST and University of Colorado

Ultracold gases of atoms are well-controlled model systems for exploring interesting many-body quantum phenomena, such as superfluidity in a Fermi gas. With ultracold atom gases we have the unique ability to control the interactions between particles by using atomic scattering resonances, called Feshbach resonances. These resonances can be used to pair atoms in an atomic Fermi gas and thereby create molecular Bose-Einstein condensates and Fermi superfluids.