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Experiments with Quantum Degenerate Atomic Strontium[1] MI YAN, BRIAN DESALVO, YING HUANG, RAMACHAND BALASUBRAMANIAN, HAN PU, THOMAS KILLIAN, Rice University — We will describe experiments with quantum degenerate gases of atomic strontium. We are able to produce Bose-Einstein condensates of ^{84}Sr and quantum degenerate mixtures of ^{87}Sr (fermion) and ^{88}Sr (boson). With ^{88}Sr we have demonstrated control over condensate dynamics with an optical Feshbach resonance and have developed tools to model the dynamics after a rapid change in scattering length. We will describe photoassociative spectroscopy near the $^1S_0-^3P_1$ atomic asymptote for various isotopes and the calculation of parameters for optical Feshbach resonances. We will also discuss our recent progress loading condensates into optical lattices.

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