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Investigating the BCS-BEC crossover region using ultra-cold fermionic atoms JOHN STEWART, JOHN GAEBLER, CINDY REGAL, DEB-ORAH JIN, JILA, National Institute of Standards and Technology and University of Colorado, Department of Physics, University of Colorado, Boulder, CO 80309-0440 — Progress towards the experimental realization of the BCS-BEC crossover has opened a rich area of physics. Starting with a two-component gas of 40 K atoms cooled to quantum degeneracy we can create strong, tunable interactions through the use of a magnetic Feshbach resonance. We report on recent experiments including current thermodynamics measurements.

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