CU Physics Department Colloquium

Monday, April 2nd, 2012 4:10 PM

428 Pupin Hall

Tuning in to Ultra-Cold Atoms

Ultra-cold atoms are remarkable for their capacity to explore physics that may not be revealed in any other way. The key to this versatility is the ability to tune their parameters, including interaction strength and dimensionality, and to control their environment using tailored optical potentials, such as optical lattices or disordered speckle. I will illustrate the Feshbach resonance, which provides tunable interactions, with several examples including the BCS-BEC crossover in a Fermi gas of 6Li atoms, and the Efimov effect, matter-wave solitons, and the effects of disorder using Bose-Einstein condensates of 7Li.

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