



PHYSICS AND ASTRONOMY COLLOQUIUM

Dr. Dan Stamper-Kurn

University of California, Berkeley

“Magnetism in Quantum Gases”

Abstract

With quantum gases, one can explore magnetic ordering and dynamics in regimes inaccessible in solid-state systems. For example, in degenerate spinor Bose gases, magnetization of the atomic spin is established parasitically along with Bose-Einstein condensation, allowing minute spin-dependent energies to dictate the magnetic ordering of the gas. In addition, the extreme isolation of the atomic system allows for systems to be created far out of equilibrium, allowing the dynamics of symmetry breaking to be probed in real time. A second cold-atom "material," in which atoms are confined within the periodic potential of an optical lattice, bears a stronger resemblance to condensed-matter systems. I will present recent progress to explore the effects of geometric frustration with cold atoms that are confined in a two-dimensional kagome optical lattice.

Wednesday, November 06, 2013

3:30 p.m.

Bob Wright Centre

Room A104