

PHYSICS DEPARTMENT COLLOQUIUM

“Atom Interferometry using Bose-Einstein Condensates”

BY

Professor Cass Sackett
University of Virginia

Just as the laser revolutionized optical interferometry, it can be hoped that Bose-Einstein condensation will permit great advances in atom interferometry. Potential applications include inertial navigation, oil exploration, and measurements of chemical interactions. However, BEC interferometry also presents substantial challenges. Experiments to date have been limited to short interaction times, making precision measurements infeasible. It is thought that interatomic interactions are the main limiting factor. I will describe our recent implementation of a BEC atom interferometer that has been designed to minimize the effects of interactions and other noise sources, and I will discuss the prospects of implementing condensate interferometry on a truly macroscopic scale.

THURSDAY, APRIL 20, 2006
4:00 PM IN 102 JFB
REFRESHMENTS AT 3:30 PM IN 219 JFB