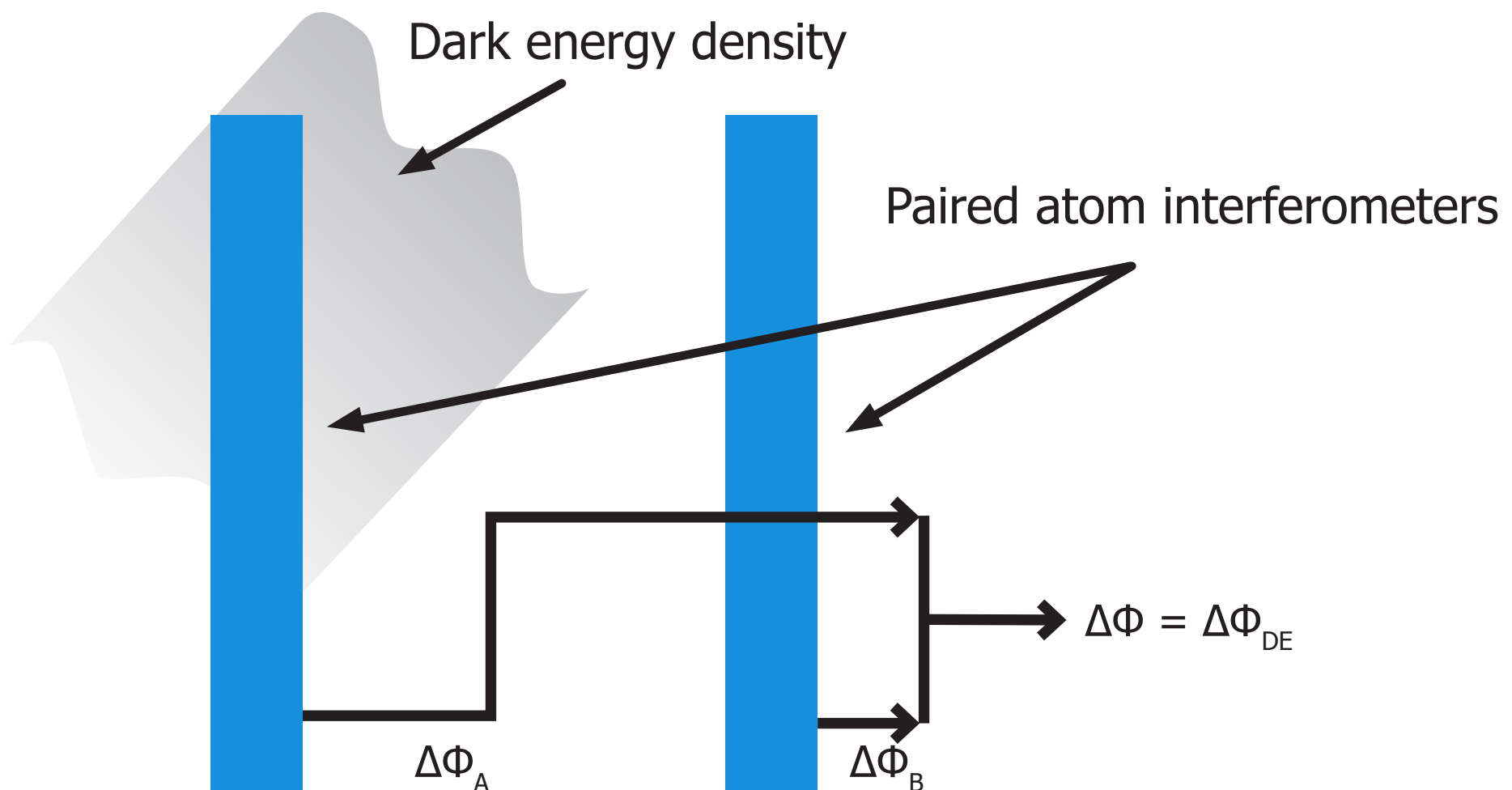


Boston University Physics Colloquium

The 2011 Dean Edmonds Distinguished Lecture



Looking for Dark Energy on Earth: A New Experiment Using Atom Interferometry that Galileo Would Understand

The acceleration of the expansion of the universe was discovered about a decade ago by ingenious and amazing astronomical observations of supernova. This unexpected phenomenon is called dark energy, but very little is known about the nature of the phenomenon. Numerous astronomical observations are continuing.

We are building a unique atom interferometer laboratory experiment to investigate on earth the nature of dark energy and at the same time to look for other unknown contents of the vacuum. This experiment assumes that dark energy exerts a force on atoms. The experiment also assumes that the density of dark energy is inhomogeneous since atom interferometry depends on a non-uniform potential.

I will give a pictorial introduction to the wonders of atom interferometry technology, to the essence of this experiment, and our speculative hopes.

Martin L. Perl

Stanford University and SLAC

April 5, 2011 (Tuesday) at 3:30pm (Refreshments at 3:00pm)

SCI 107, Metcalf Science Center, Boston University

For parking and information call: Winna Somers (wsomers@bu.edu) (617) 353-9320

Host: Lawrence Sulak

