



# PHYSICS COLLOQUIUM

## Diatomic Molecules as Quantum Tools

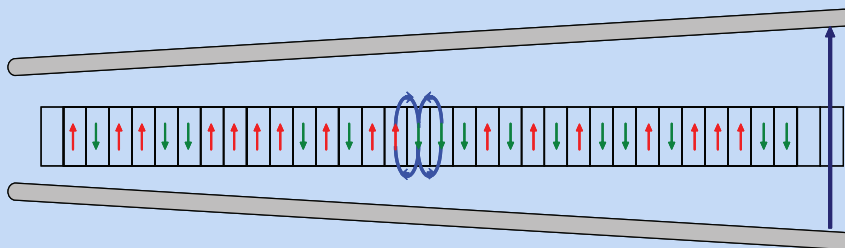


### Dave DeMille

Yale University

Host: Walker

**Abstract:** Our group is applying the techniques of modern atomic physics—cooling, trapping, and ultra-precise control and measurement—to the more complex system of diatomic molecules. The vibrational and rotational degrees of freedom in molecules make these systems qualitatively different than atoms. Despite the apparent complexity, we have identified a variety of simple principles that make control of these “new” properties useful. This is enabling new and powerful ways to attack a broad range of problems, all the way from particle physics and cosmology to quantum information processing and chemical physics. This talk will give an overview of the field, along with some specific examples of our recent work.



2241 Chamberlin Hall • Friday, February 27, 2009 • 4:00 P.M.  
cookies & coffee served at 3:30 p.m.