Abstract:

Atomic clocks realize the most accurate measurements of any physical observables, frequency and time. There are a number of interesting physics problems in current microwave and optical frequency atomic clocks. I will give an overview of the clocks and discuss several of the problems, including novel collisions of fermions in optical lattice clocks, collisions in microwave clocks, and a frequency shift due to the momentum of a microwave photon. I will also describe a novel clock atom-interferometer. It gives a precision measurement of scattering phase shifts and may set stringent limits on the time variation of fundamental constants.

Friday, February 4th, 2011
4:00-5:00 pm
Goudsmit Conference Room, LP 208