

Physics Special Colloquium

**Theoretical AMO Physics Candidate:
Andreas Becker,
JILA Colorado University Boulder and NIST**

Thursday, February 21, 2013

4:00 P.M. – 5:00 P.M.

PHYS room 203

Refreshments at 3:30 P.M. in PHYS room 242



Tracing Electron Dynamics on the Attosecond Time Scale

In the past time-resolved experiments and theoretical analysis explored molecular rotation and vibration as well as chemical reactions on the time scale of atomic motion. Recent advances in laser science led to the development of attosecond laser pulses (1 atomic unit = 24 attoseconds) which can uncover new insights in the electron dynamics in atoms and molecules on its natural time scale. I will present physical concepts behind attosecond laser technology and measurements. In particular, I will then discuss ongoing theoretical and experimental efforts to monitor and control the dynamics of an electron in the chemical bond of a molecule, using nature's most simplest molecule as an example.