

University of Washington Department of Physics

PHYSICS COLLOQUIUM

Valerie Milner (University of British Columbia)
"Coherent Scattering with Incoherent Light: New Spectroscopy with Ultra-Short Laser Pulses"

Monday, October 13, 2008

4:00 PM, Ronald Geballe Auditorium, Rm. A-102

Abstract: High peak power ultrafast lasers are widely used in nonlinear spectroscopy but often limit its spectral resolution because of the broad frequency bandwidth of ultrashort laser pulses. Improving the resolution by achieving spectrally narrow excitation of, or emission from, the resonant medium has been the focus of many recent developments in ultrafast spectroscopy. Similar to many traditional nonlinear optical methods, state-of-the-art ultrafast spectroscopy relies on the coherence of laser pulses. In my talk, I will show that contrary to the common belief that spectral noise is detrimental to coherent spectroscopic measurements, it can be used for improving the resolution, efficiency and robustness against unavoidable degradation of pulse coherence. Using the example of Coherent Anti-Stokes Raman Scattering (CARS), I will review a few novel approaches to nonlinear ultrafast spectroscopy, in which random or pseudo-random noise is deliberately introduced and successfully used for the retrieval of high-resolution spectral information about the medium of interest.

Tuesday, October 14

General Exam

10:00 AM, Rm B-305, PAB

Daniel Ventura, University of Washington

CENPA Seminar

2:30 PM, Rm 178, CENPA

Miguel Morales, University of Washington
"21 cm Cosmology: Plans for Signal Extraction"

Condensed Matter Seminar

4:00 PM, Rm. 421, PAT

Miguel Morales, University of Washington
"21 cm Cosmology"

Thursday, October 16

Astronomy Colloquium

4:00 PM, Rm. A-102, PAA

Philip Hopkins, University of California, Berkeley
"Galaxy Collisions: A Factory for Quasars, Feedback, Ellipticals, and even Disks?"

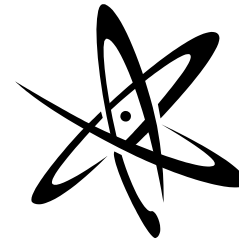
Friday, October 17

Particle Theory Seminar

12:30 PM, Rm. C-520, PAT

Wai Yee Keung, University of Illinois at Chicago
"On Decays of Z-prime into Two Z Bosons and the Landau-Yang Theorem"

Seminars



Oct 13th-Oct 17th