Schedule of Atomic Physics Seminars, Spring 1997

January
30 Michael Chapman, CALTECH

February
6 Dr. Tim Dinneen, LBNL: "Laser trapping $^{221}$Fr from a radioactive source."
13 Prof. Eric Cornell, JILA, U. of Colorado, Boulder: "Paradox Lost and Paradox Regained: Recent Experimental Results in Dilute-Gas Bose-Einstein condensation."
20 Prof. Rodolfo Bonifacio, Physics Department of the University of Milan, and INFN, INFM: "Collective Atomic Recoil Laser (CARL): theory and experiment."
   Abstract:
   A new scheme to produce coherent tunable radiation is presented. This is the atomic analog of the free electron laser since also here coherent emission comes from the spontaneous formation of a longitudinal atomic grating analogous to the electron bunching in a FEL. The basic theory and the experimental observation of the effect will be presented.
27 Prof. Petr Vogel, Caltech: "Atomic parity violation and neutron radii"

March
6 Dr. Dave DeMille, UC Berkeley: "Nuclear spin-dependent parity nonconservation in atoms: how and why to measure it."
20 Dr. Andrew Westphal, UC Berkeley: "Investigation of the atomic physics of highly relativistic atomic collisions using track-etch detectors."
27 Prof. L. Rosenberg, MIT: "RF cavity search for dark matter axions."

April
3 Prof. Stuart Freedman, UC Berkeley: "Symmetry tests with trapped radioactive atoms."
24 Prof. Richard Marrus, UC Berkeley: "Hyperfine effects in the radiative decay of helium-like ions at high-Z."

May
8 Dr. T.Y. Fan, MIT Lincoln Laboratory: "Diode-pumped solid-state lasers".
13 A.-T. Nguyen, UC Berkeley: "Search for Parity Violation in Atomic Dysprosium"
27 Prof. Buford Price, UC Berkeley: "Optical properties of Antarctic ice as measured by AMANDA".
Schedule of Atomic Physics Seminars, Fall 1997

**September**
23  Prof. Howard Shugart, UCB Physics: "The history of ATOMIC BEAMS"
    (A joint seminar with SPS)

**October**
7    No seminar: APS DNP meeting
14   Andrew Youdin, UCB Physics: "Looking for Dark Matter in all the Wrong Places: Spin-Mass Coupling Within the Axion Window"
21   Dr. Paul Vetter, LBNL: "A Ridiculously Expensive Atomic Clock -- Precise Measurement of the Ground State Hyperfine Splitting of Radioactive $^{21}\text{Na}$"

**November**
11   Laura Lising, UCB Physics: "Time-Reversal Violation in Neutron Decay"
18   Dr. Christian Schmidt, UCB Physics: "$^{3}\text{He}$ Spin Echo: a New Method for Investigating Surface Dynamics"
25   Dr. Joachim Steiger, LLNL: “Physics with Highly Charged Ions in EBIT snd RETRAP”

**December**
2    Dr. Wim Leemans, CBP LBNL: "Laser acceleration and optical manipulation of particle beam"
9    Dr. Kristin Rauschenbach, MIT Lincoln Laboratories: "Wideband Optical Network"
16   Prof. Leonid Keldysh, UCB Visiting Miller Professor: “Interaction and condensation of excitons”
Schedule of Atomic Physics Seminars, Spring 1998

January

20  Dr. Dmitri E. Nikonov, UC Santa Barbara: "Lasing without inversion and Fano interference: from gas lasers to semiconductor lasers".
28  Prof. Boris Ya. Zel'dovich, CREOL-UCF: Center for Research and Education in Optics and Lasers, University of Central Florida: "Title: Spin-orbit interaction of a photon: mutual influence of polarization and propagation".
30  Dr. Xavier Maitre, Ecole Normale Superieure, Laboratoire Kastler-Brossel, Paris, France: "Experimental Cavity QED: Manipulating entanglement".

February

10  a. Dr. Simon Kuppens, Institute for Quantum Optics, University of Hannover: "Polarization Gradient Cooling in a Strong Donut Mode Dipole Potential"
   b. Dr. XinXin Zhao, Los Alamos National Laboratory: “Trapping Radioactive Atoms and Doing Physics with them”

March

3   Simon Rochester, UCB Physics: "Experimental determination of lifetimes and electric polarizabilities and search for new energy levels in samarium"
10  Prof. Kam-Biu Luk, UCB Physics: "Longing for third coming of CP violation: could hyperon decays be the answer?"
17  Dr. Michael Prior, LBNL : "Momentum Spectroscopy---New "Fingerprints" from Photon and Ion Collisions with Atoms and Molecules"
31  Prof. Raymond Chiao, UCB Physics: "Self-trapping revisited: A photonic fluid associated with optical solitons”.

April

7   Dr. Eric Bolda, Dept. of Physics, University of Auckland, New Zealand: "Aspects of vortices in atomic Bose-Einstein condensates: optical creation and detection"
14  Dr. Valeriy Yashchuk, UCB Physics: "Resonant Magneto-Optical Rotation: New Twists in an Old Plot" 
21  Prof. Donald A. Glaser, Nobel Laureate in Physics, Professor of Physics and Neurobiology, UCB: "Human Vision; Should You Believe What You See?"
28  Dr. Daniel Lidar, UCB Chemistry: "Teleporting Superpositions of Chiral Amplitudes"

May

19  Dr. Ulrich Schmidt, University of Heidelberg, Germany: "Induced Polarization of Ultra-Cold Neutrons by Radio Frequency Irradiation and anomalous Larmor Precession"
Schedule of Atomic Physics Seminars, Fall 1998

September

8  Prof. Luis Orozco, SUNY, Stoney Brook, "Spectroscopy of Francium"
9  Prof. Peter Toschek, University of Hamburg, "Quantum Measurement of a Single Ion in a Trap"

October

6  Heun-Jin Lee, Stanford University, "Making Atoms REALLY Big: Magnetically Tunable Cross Sections of Trapped Sodium"
27 Prof. Vitaly Kresin, University of Southern California: "Electronic states, evaporation, and scattering of metal nanoclusters"
30(Fr) Dr. Naseem Rahman, University of Trieste and ICTP (special brown-bag lunch seminar, 12-1)

November

3  Prof. Umar Mohideen, UC Riverside. "The Weirdness of the Quantum Vacuum: An Experimental Exploration with the Casimir Force"
10 Dr. Rod Clark, Nuclear Science Division, LBNL, "A New Spin on Nuclei"
12(Th) Prof. Alexandre Dolgov, Teoretisk Astrofysik Center, Copenhagen, Denmark, "Baryons and antibaryons in the universe" (special brown-bag lunch seminar, 12-1)
17 D. Clyde and D.F. Kimball, UCB Physics, "Experiments on the Collisional Perturbation of Ytterbium Excited States"
24 Lukman Winoto, UCB Physics, "Cold atoms in Optical Lattices"

December

1  Dr. Paul Kwiat, Los Alamos National Laboratory, "Recent advances in photonic quantum information"
8
15 Prof. Ivan Deutsch, University of New Mexico, Albuquerque, "Quantum Logic Gates with Neutral Atoms in Optical Lattices"
Schedule of Atomic Physics Seminars, Spring 1999

January
19 Morgan Mitchell, UCB Physics, “Atom-mediated photon-photon scattering”
26 Dr. Dian-Jiun Han, UCB Physics, “Bose-Einstein Condensation of Rubidium Atoms in a Magnetic TOP Trap”

February
2 Dr. Mike Romalis, University of Washington, Seattle, "Search for CP violation in $^{199}$Hg and other atoms."
9 Konstantin Kouznetsov, UCB Physics, “High-Tc SQUID Magnetometers and Gradiometers”
16 Dr. Volker Koch, NSD LBNL, “Engineering the QCD vacuum: Restoration of Chiral Symmetry in Relativistic Heavy Ion Collisions”
23 Aaron Lindenberg, UCB Physics, “Ultrafast dynamics of atoms, molecules, and solids, as probed by time-resolved x-ray scattering”

March
2 Prof. Lars Bildsten, UCB Physics, “Using Lithium Burning in Stars to measure their age”
9 Dr. Iinuma Masataka, Hiroshima University, “Status of parity violation experiments at Hiroshima”
16 Prof. Erwin L. Hahn, UCB Physics, “Radiation damping and self-induced transparency”
30 Dr. Steffen Wolf, UCB Physics, “Ion recoil momentum spectroscopy with laser-cooled atoms”

April
13 Prof. Dmitry D. Ryutov, LLNL, “The role of finite photon mass in magnetohydrodynamics of space plasmas”
27 Dr. I-Yang Lee, NSD LBNL, “New research directions in nuclear physics”

May
4 Morgan Mitchell, UCB Physics, “New approaches to Quantum Computation”
August
6 Dr. Wojciech Gawlik, University of Krakow, Poland and JILA, "Amplification without inversion with dephasing collisions"

September
7 Alex Sushkov, UCB Physics, "The Aharonov-Bohm Effect for photon"
21 David Ponce, UCB Physics, "Plasma Channels for Heavy Ion Transport"
28 Dr. Eric Hudson, UCB Physics, "STM Study of Quasi-Particle Scattering in the High Temperature Superconductor Bi2Sr2CaCu2O8+x"

October
5 Prof. Nima Arkani-Hamed, UCB Physics, "Atomic Physics and Quantum Gravity"
12 Prof. A. E. Siegman, Stanford University, President, Optical Society of America, "Quantum Noise in Lasers, or What's Life Like in a Nonhermitian World?"
19 Prof. Ivan Deutsch, University of New Mexico, UCB Visiting Miller Professor, "Quantum coherent control of atoms in optical lattices"

November
2 Prof. Joseph Cerny, Vice Chancellor for Research, UCB and Nuclear Science Division, LBNL, "A New Research Capability at LBNL: Berkeley Experiments with Accelerated Radioactive Species (BEARS)."
9 Dr. Charles Munger, SLAC, "Experiments with anti-hydrogen, observation and Lamb shift measurement"
16 Dr. Lyle Shirley, MIT Lincoln Labs, "3D Imaging Using Tunable Lasers"
23 Dr. David L. Mitchell, UCB Space Sciences Laboratory, "Paleomagnetic Fields in the Martian Crust: Observations by the Mars Global Surveyor Magnetometer/ Electron Reflectometer"
30 Prof. Randy Hulet, Rice University, "Experiments with Quantum Gases of Lithium"

December
7 Scott Sharpe, Stanford University, "Efficient Vacuum Ultraviolet Upconversion using EIT"
Schedule of Atomic Physics Seminars, **Spring 2000**

Regular time: Tuesdays, 4:10 p.m., Room 430 Birge

**January**

18 Dr. Lew Cocke, Kansas State University and LBNL, "Cold-target recoil-momentum spectroscopy of photon- and particle-induced ionization of He and \( \text{H}_2 \)."

25 Prof. Carl Heiles, Astronomy Department, UCB, "Magnetic fields in interstellar space."

**February**

1 Dr. Dan M. Stamper-Kurn, CalTech, "Shedding light on gaseous Bose-Einstein condensates"

8 Dr. Mikhail Lukin, Harvard University, "Nonlinear optics and quantum entanglement with Electromagnetically Induced Transparency"

22 Dr. Bill McCurdy, LBNL, "Solving a long-standing fundamental problem of the quantum mechanics of atoms: Ionization by electron impact"

29 Dr. Chandra Raman, MIT "Shaking and Stirring a Quantum Gas: Light Forces and BEC."

**March**

7 Dr. Howard Matis, NSD LBNL, "STAR: A quest for the quark-gluon plasma, a state of matter that existed in the early Universe"

14 Dr. Steve K. Lamoreaux, Los Alamos, "Magnetic Trapping of Neutrons"

21 Dr. Savely G. Karshenboim, D. I. Mendeleev Institute for Metrology, St. Petersburg, Russia,"QED zoo: precise physics of simple atoms"

28 **Spring break**

**April**

11 Dr. Andrey Matsko, Texas A&M University, "Quantum limits of sensitivity of optical atomic magnetometry in Faraday configuration"

18 Prof. Barry C. Sanders, Macquarie University, Sydney, Australia, "Geometric phase in an SU(3) interferometer"

25 Steven Oliver, UCB Physics, "State of the Art Laser Cooling"

**May**

2 Dr. Alex Hamza, LLNL, "Silicon nanodots formed by intense, ultrafast electronic excitation"

16 Dr. Harvey Gould, LBNL, "Possibilities for storing neutral molecules and cooling them to microK temperature in a molecular synchrotron storage ring"