

13th APS Topical Conference on Atomic Processes in Plasmas

Gatlinburg, Tennessee, April 22-25, 2002

APIP Meeting location: Park Vista Resort Hotel, Tennessee Ballroom 4

Monday, April 22, 2002

7:00 - 8:15 Breakfast, Park Vista Resort Hotel, Tennessee Ballroom Foyer

Inertial Confinement Fusion I

- 8:30 – 9:00 **Roberto Mancini**, *University of Nevada*
“Spectroscopic Determination of Core Gradients in ICF Implosions”
- 9:00 – 9:30 **Ronnie Shepherd**, *Lawrence Livermore National Laboratory*
“The Production of Exotic Satellite Structures in Short Pulse Laser Heated Foils”
- 9:30 – 10:00 **Joe Abdallah**, *Los Alamos National Laboratory*
“Spectral Studies of Short Pulse Laser Irradiated Argon Clusters”
- 10:00 – 10:15 Break

Magnetic Fusion Energy I

- 10:15 – 10:45 **Ron McKnight**, *Office of Fusion Energy Sciences, DOE*
“The US Magnetic and Inertial Fusion Energy Programs – An Overview”
- 10:45 – 11:15 **Eugene Oks**, *Auburn University*
“Advanced Spectroscopic Methods for Diagnosing Magnetic-Fusion-Plasmas”
- 11:15 – 11:45 **Mark Adams**, *Massachusetts Institute of Technology*
“Atomic Line Profiles in the Presence of an External Magnetic Field”
- 11:45 – 1:00 Lunch, Park Vista Resort Hotel, Tennessee Ballroom 2

Z Pinch and X-ray Sources

- 1:00 – 1:30 **Joe MacFarlane**, *Prism Computational Sciences*
“Spectral Properties of Materials Heated by Intense Z-Pinch Radiation”
- 1:30 – 2:00 **Marcus Knudson**, *Sandia National Laboratory*
“Equation of State (EOS) Measurements of Warm Dense Deuterium”
- 2:00 – 2:30 **Howard Milchberg**, *University of Maryland*
“Interaction of Intense Laser Pulses with Noble Gas Clusters and Droplets”
- 2:30 – 2:45 Break

Atomic & Molecular Physics I

- 2:45 – 3:15 **Ken LaGattuta**, *Los Alamos National Laboratory*
“Fermion Molecular Dynamics Applied to Problems in the Atomic Physics of Plasmas”
- 3:15 – 3:45 **Fred Meyer**, *Oak Ridge National Laboratory*
“Atomic Collisions Applications in the Ion Implantation Industry”
- 3:45 – 4:15 **Peter Beiersdorfer**, *Lawrence Livermore National Laboratory*
“New Insights into the X-ray Spectra of Heliumlike and Neonlike Ions”
- 4:30 – 6:00 Posters, Park Vista Resort Hotel, Garden View C, D, E
- 7:00 – 8:00 Dinner, Park Vista Resort Hotel, Tennessee Ballroom 2

Tuesday, April 23, 2002

7:00 – 8:15 Breakfast, Park Vista Resort Hotel, Tennessee Ballroom Foyer

Low Temperature Plasmas I

- 8:30 – 9:00 **Peter Ventzek**, *Motorola*
“Impact of Fundamental Atomic Plasma Chemistry Processes on Semiconductor Fabrication Process Analysis”
- 9:00 – 9:30 **Thomas Killian**, *Rice University*
“Ultracold Neutral Plasmas”
- 9:30 – 10:00 **Thomas Gallagher**, *University of Virginia*
“From Ultracold Rydberg Atoms to an Ultracold Plasma”
- 10:00 – 10:15 Break

Astrophysics I

- 10:15 – 10:45 **Thomas Cravens**, *University of Kansas*
“X-Ray Emission in the Solar System”
- 10:45 – 11:15 **Nigel Adams**, *University of Georgia*
“Ionic Processes in Low Temperature Interstellar Molecular Plasmas”
- 11:15 – 11:45 **Joyce Guzik**, *Los Alamos National Laboratory*
“Helioseismic Tests of Radiative Opacities”
- 11:45 – 1:00 Lunch, Park Vista Resort Hotel, Tennessee Ballroom 2
- 11:45 – 1:00 Executive Committee Meeting I, Park Vista Resort Hotel, Garden View A,B

FREE AFTERNOON

Wednesday, April 24, 2002

7:00 – 8:15 Breakfast, Park Vista Resort Hotel, Tennessee Ballroom Foyer

Plenary Lecture I

8:30 – 9:15 **Hans Griem**, *University of Maryland*
“Atomic Processes in Plasmas - An Overview”
9:15 – 9:30 Break

Inertial Confinement Fusion II

9:30 – 10:00 **Avraham Bar-Shalom**, *NRCN and ARTEP, Inc.*
“HULLAC: A Detailed Level Collisional Radiative Model Generator for Ionized Atoms”

Magnetic Fusion Energy II

10:00 – 10:30 **Jean-Paul Allain**, *University of Illinois, Urbana-Champaign*
“Liquid Metal Erosion in Future Fusion Device Plasma-Facing Components”
10:30 – 11:00 **Daren Stotler**, *Princeton Plasma Physics Laboratory*
“Understanding of Neutral Gas Transport in the Alcator C-Mod Tokamak Divertor”
11:00 – 11:30 **John Hogan**, *Oak Ridge National Laboratory*
“Role of Atomic Physics in Models for Enhanced Edge Transport Regimes”

11:30 – 1:00 Lunch, Park Vista Resort Hotel, Tennessee Ballroom 1,2

Atomic & Molecular Physics II

1:00 – 1:30 **James Colgan**, *Auburn University*
“Benchmark Calculations of Electron-Lithium Scattering for Beam Diagnostics on Tokamaks”
1:30 – 2:00 **Stephane Mazevet**, *Los Alamos National Laboratory*
“Initial State Resolved (e,2e) Experiments”
2:00 – 2:30 **Mark Baertschy**, *JILA, University of Colorado*
“Near-Threshold Studies of Electron-Impact Ionization”
2:30 – 2:45 Break

Low Temperature Plasmas II

2:45 – 3:15 **Manolo Sherrill**, *University of Nevada, Reno*
“Spectroscopic Analysis of a Low Fluence Li--Ag Laser Driven Plasma”
3:15 – 3:45 **Helmar Adler**, *Osrarn-Sylvania*
“X-treme Diagnostics for HID-Lamps?”
3:45 – 4:15 **Tim Sommerer**, *General Electric*
“High-Intensity-Discharge Lamps for Projection Displays”
4:30 – 7:00 Aquarium of the Smokies (Buses depart hotel at 4:30, 4:45; depart Aquarium 6:30, 6:45)
7:00 – 8:30 Banquet, Park Vista Resort Hotel, Tennessee Ballroom 1,2

Thursday, April 25, 2002

7:00 – 8:15 Breakfast, Park Vista Resort Hotel, Tennessee Ballroom Foyer
7:00 – 8:15 Executive Committee Meeting II, Park Vista Resort Hotel, Garden View B

Plenary Lecture II

8:30 – 9:15 **John Rumble**, *National Institute of Standards and Technology*
“Data in Modern Science: New Methods for Scientific Discovery”
9:15 – 9:30 Break

Inertial Confinement Fusion III

9:30 – 10:00 **Frank Rosmej**, *University of Provence, France*
“Observation of Two-Electron Transitions in Dense Non-Maxwellian
Laser-Produced Plasmas and their Use as Diagnostic Reference Lines”

Astrophysics II

10:00 – 10:30 **Frederik Paerels**, *Columbia University*
“High Resolution Spectroscopy of Astrophysical X-ray Plasmas”
10:30 – 10:45 Break
10:45 – 11:15 **Alfred Glassgold**, *New York University and University of California, Berkeley*
“The Microphysics of Jets in Star Formation”

Low Temperature Plasmas III

11:15 – 11:45 **Hyun-Kyung Chung**, *Lawrence Livermore National Laboratory*
“Spectroscopic Characterization of Argon Plasmas Produced by Intense
Irradiation of Clusters from a Gas Jet”
11:45 – 12:00 Closing, student prize awards