ITAMP NEWS

Spring 2007

NSF Renews ITAMP Grant

website.http://www.cfa.harvard.edu/itamp/XFEL/XFELSchedule.html

High Accuracy Atomic Physics in Astronomy

August 7-9, 2006

A joint workshop with participants from the International Iron Project and ITAMP

Organized by:

Anil K. Pradhan (Ohio State University)
Sultana Nahar (Ohio State University)

The aim of the workshop was to bring together astrophysicists and atomic physicists to discuss atomic physics applied to high-resolution astrophysical spectroscopy. The presentations covered all areas of astrophysical spectroscopy. They included observational results from space-based observatories such as the Chandra X-ray Observatory, Far Ultraviolet Spectroscopic Explorer (FUSE), and Solar Heliospheric Observatory (SOHO), and ground based telescopes. In addition to discussing computational approaches for generating atomic data, the thrust of the Iron Project presentations was the development of new computational methods and codes to meet future needs of the next generation of large ground based and space based observatories.

As a result of the workshop, several initiatives are under way. Among these is the recent launch of an electronic on-line database of customized opacities for stellar modeling, called OPSERVER, from the Ohio Supercomputer Center. Another new program involves nano-bio-medicine involving a multi-disciplinary and multi-institutional consortium of physicists, chemists, bio-medical engineers, and clinical researchers to explore the application of AMO science to cancer diagnostics and therapy. Finally, several proposals to funding agencies are planned to pursue the agenda laid out at the workshop. Abstracts and PowerPoint presentations remain available online at: http://www.cfa.harvard.edu/itamp/HA06/HASchedule.html

AMO Theory, has joined the ITAMP scientific staff. Many ITAMP postdocs and visitors now

Jun Ye (NIST and JILA)

The three days brought together experimentalists and theorists working on cold, trapped Group II atomic species. This is a sequel to similar workshops at ITAMP in 2000 and in Copenhagen in 2003. Cold atomic gases or lattices of these alkaline earth species have applications in areas such as precise time and frequency measurements, quantum degenerate bosonic or fermionic gases, cold molecule formation, and quantum information. Abstracts and presentations remain available online at: http://www.cfa.harvard.edu/itamp/UltraColdII/UltraColdIISchedule.html

Upcoming Workshops for 2007

Hybrid Approaches to Scalable Quantum Information Systems

May 24-26, 2007

Organized by:

Tommaso Calarco (ITAMP, Harvard U.)
Mikhail Lukin (Harvard U.)
Robert Schoelkopf (Yale U.)
Vladan Vuletic (MIT)

This workshop will discuss theoretical ideas and experimental methods to interface different quantum systems in order to build larger-scale quantum information processing devices.

Coherent Control of Ultracold Molecular Processes

August 1-4, 2007

Co-sponsored by ITAMP and held at The University of British Columbia in Vancouver, Canada

Organized by:

Roman Krems (University of British Columbia)
Moshe Shapiro (University of British Columbia)

This workshop will bring together leading experts in two new and rapidly developing areas of physics and chemistry: coherent control of molecular dynamics and ultracold molecules. The goal of these three days will be to delineate