



Institute for Pure and Applied Mathematics
University of California, Los Angeles presents a program in

Grand Challenge Problems in Computational Astrophysics

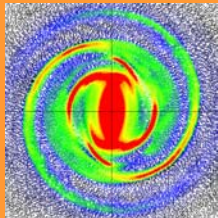
Workshop IV: Transfer Phenomena May 16 - 20, 2005

Members of the Organizing Committee include: **Rolf-Peter Kudritzki**, Chair (University of Hawaii), **Adam Burrows** (University of Arizona), **Jim Morel** (Los Alamos National Laboratory), **Mark Morris** (UCLA), **Chi-Wang Shu** (Brown University), **William Watson** (University of Illinois at Urbana Champaign), and **Harold Yorke** (Jet Propulsion Laboratory)

Scientific Overview: The transport of radiation and particles is an essential element of the description of almost any astrophysical phenomenon. While radiative transport is a mature area of inquiry, new astrophysical paradigms are giving rise to new approaches and methodologies that challenge even the most modern computational capabilities. Progress in these new methodologies will be explored in detail in this workshop.

Topics to include:

- *relativistic Boltzmann equation*
- *photon-matter interactions*
- *line transfer in moving media*
- *polarized radiation*
- *masers*
- *continuum radiation transport*
- *neutrino and neutron transport*
- *cosmic rays*



Semester Program Schedule:

Tutorials. March 8 - 11, 2005

Workshop I: Astrophysical Fluid Dynamics. April 4 - 9, 2005

Workshop II: N-Body Problems in Astrophysics. April 18 - 22, 2005

Workshop III: Relativistic Astrophysics. May 2 - 6, 2005

➤ **Workshop IV: Transfer Phenomena. May 16 - 20, 2005**

Confirmed Speakers:

Tom Abel (Stanford University), **Marvin Adams** (Texas A&M University), **Donald Batchelor** (ORNL), **Roberto Casini** (High Altitude Observatory), **Irene Gamba** (University of Texas, Austin), **Peter Hoeflich** (University of Texas), **Louis Howell** (Lawrence Livermore National Laboratory), **Randy Jokipii** (University of Arizona), **Michael Knobel** (High Altitude Observatory), **Edward Larsen** (University of Michigan), **Dave Levermore** (University of Maryland), **Matthias Liebendorfer** (CITA, University of Toronto), **Jim Morel** (Los Alamos National Laboratory), **Peter Nugent** (Lawrence Berkeley National Laboratory), **Adalbert Pauldrach** (Ludwig-Maximilians-Universität), **Christian Ringhofer** (Arizona State University), **Juergen Steinacker** (Max Planck Institute for Astrophysics), **James Warsa** (Los Alamos National Laboratory), **William Watson** (University of Illinois at Urbana Champaign), **Sebastian Wolf** (Max Planck Institute for Astrophysics)

Participation:

Financial support for this workshop is available for participants at all academic levels, and recent PhD's, graduate students, and researchers in the early stages of their career are especially encouraged to apply. An online application for support is available at <http://www.ipam.ucla.edu/programs/pcaws4>. Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM's mission and we welcome their applications. Applicants who are interested in becoming core participants and participating in the semester program (March 7 – June 10, 2005) should apply at <http://www.ipam.ucla.edu/programs/pca2005>.

Please visit our website at

<http://www.ipam.ucla.edu/programs/pcaws4>

or email questions to pcaws4@ipam.ucla.edu

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