

Workshop I: Computational Challenges in Hot Dense Plasmas

Monday March 26, 2012

- 8:00–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Denise Hinkel** (Lawrence Livermore National Laboratory)
Computational Challenges in Hot, Dense Plasmas
- 10:00–10:15 *Break*
- 10:15–11:05
TBA
- 11:15–11:30 *Break*
- 11:30–12:20 **Riccardo Betti** (University of Rochester)
Theory and Simulations of Hydrodynamic Instabilities in Inertial Fusion
- 1:00–2:30 *Lunch (on your own)*
- 2:30–3:20 **Debra Callahan** (Lawrence Livermore National Laboratory)
Inertial Confinement Fusion Experiments on the National Ignition Facility Laser
- 3:30–4:00 *Break*
- 4:00–4:50 **Mordecai Rosen** (Lawrence Livermore National Laboratory)
Computational Challenges in Modeling the Physics Of ICF Ignition Scale Hohlräume & ICF Implosions
- 5:00–6:30 *Reception and Poster Session (Hosted by IPAM)*

Tuesday March 27, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **R. Paul Drake** (University of Michigan)
Various Challenges in Simulations of Laboratory Astrophysics Experiments
- 10:00–10:15 *Break*
- 10:15–11:05 **Gilbert (Rip) Collins** (Lawrence Livermore National Laboratory)
- 11:15–11:30 *Break*

(Tuesday schedule continued on next page)



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- 11:30–12:20 **Igor Sokolov** (University of Michigan)
Plasma Flow in a Laser Target as Used in the CRASH Project and its Sensitivity to the Equation-of-State for Non-Ideal Plasmas and a Warm-Dense Matter
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Don Winget** (University of Texas at Austin)
Problems with Line Broadening and Opacities in White Dwarf Stars
- 3:30–4:00 *Break*
- 4:00–4:50 **Sergey Lebedev** (Imperial College)
Radiatively Cooled Supersonic Jets and Shocks in Laboratory Plasma Experiments

Wednesday March 28, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Mark Herrmann** (Sandia National Laboratories)
Using Magnetic Fields to Create and Control High Energy Density Matter
- 10:00–10:15 *Break*
- 10:15–11:05 **Thomas Mehlhorn** (United States Naval Research Laboratory)
The Role of Non-Local and Non-Equilibrium Physics in High Energy Density Plasmas
- 11:15–11:30 *Break*
- 11:30–12:20 **Nathaniel Fisch** (Princeton University)
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Max Tabak** (Lawrence Livermore National Laboratory)
Status and Needs of Computational Tools for Fast Ignition
- 3:30–3:45 *Break*
- 3:45–4:35 **Jean-Luc Vay** (Lawrence Berkeley Laboratory)
*Recent Developments and Applications of the Particle-In-Cell Accelerator Code-Framework Warp**
- 4:45–5:00 *Break*
- 5:00–5:50 **Michael Murillo** (Los Alamos National Laboratory)
Dynamical Electron Models in Molecular Dynamics

Thursday March 29, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Jim Glosli** (Lawrence Livermore National Laboratory)
Direct Numerical Simulations of Dense Thermonuclear-Burning Plasmas Using Molecular Dynamics: The Role of High Performance Computing
- 10:00–10:15 *Break*
- 10:15–11:05 **Jianmin Yuan** (National University of Defense Technology)
Application of First Principle Langiven Molecular Dynamics to Hot Dense Plasmas
- 11:15–11:30 *Break*
- 11:30–12:20 **Brian Albright** (Los Alamos National Laboratory)
Computational Challenges in Kinetic Modeling of Laser-Plasma Interaction and Thermonuclear Burning Plasma
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Viktor Decyk** (University of California, Los Angeles (UCLA))
Developing PIC Codes for the Next Generation Supercomputer using GPUs
- 3:30–4:00 *Break*
- 4:00–4:50 **Patrick Ludwig** (Christian-Albrechts Universität Kiel)

Friday March 30, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Cory Hauck** (Oak Ridge National Laboratory)
High-order, Entropy-based Models for Linear Transport in Slab Geometries
- 10:00–10:15 *Break*
- 10:15–11:05 **Marty Marinak** (Lawrence Livermore National Laboratory)
Modelling of Inertial Fusion and High Energy Density Physics Targets with Hydra
- 11:15–11:30 *Break*
- 11:30–1:30 *Discussion and Wrap-up*
- 12:30–1:30 *Lunch (hosted by IPAM)*

