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 Hohlraums & 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)*