

Beam Dynamics

Monday January 23, 2017

- 7:00 *General Overview*
- 8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00–9:50 **Claudio Pellegrini** (SLAC National Accelerator Laboratory)
Particle accelerators in science and technology: status, future developments and challenges
- 10:00–10:15 *Break*
- 10:15–11:05 **Kwang-Je Kim** (University of Chicago)
Three Beam Dynamics Problems
- 11:15–11:30 *Break*
- 11:30–12:20 **James Sethna** (Cornell University)
Mathematical questions about particle beam dynamics
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Rafael de la Llave** (Georgia Institute of Technology)
Perturbations of quasi-periodic orbits: From Theory to computations
- 3:30–4:00 *Break*
- 4:00–4:50 **Sergei Nagaitsev** (University of Chicago)
Integrable Dynamical Systems in Particle Accelerators
- 5:00–6:30 *Poster Session & Reception (Hosted by IPAM)*

Tuesday January 24, 2017

- 7:00 *Nonlinear Dynamics*
- 8:15–9:00 *Breakfast (Hosted by IPAM)*
- 12:15–2:15 *Lunch (on your own)*
- 1:00–1:45 **David Rubin** (Cornell University)
Optics Design and Measurements
- 1:45–2:30 **Marian Gidea** (Yeshiva University)
Application of Hamiltonian Instability and Diffusion
- 2:30–2:45 *Break*

(Tuesday schedule continued on next page)



(Tuesday schedule continued from previous page)

- 2:45–3:30 **Konstantin Khanin** (University of Toronto)
Dynamical systems, KAM
- 3:30–4:15 **Tere Martinez-Seara** (Universitat Politecnica de Catalunya)
Stability of the phase motion in race-track microtrons

Wednesday January 25, 2017

- 7:00 *FEL, Plasma Accelerators, and Related Beam Dynamics*
- 8:15–9:00 *Breakfast (Hosted by IPAM)*
- 9:00–9:45 **Zhirong Huang** (Stanford University)
Solving High-Gain FEL systems using Van Kampen's Normal Mode Expansion
- 9:55–10:10 *Break*
- 10:10–10:55 **Ryan Lindberg** (Argonne National Laboratory)
FEL oscillator
- 11:05–11:20 *Break*
- 11:20–12:05 **Gennady Stupakov** (SLAC National Accelerator Laboratory)
Using methods of kinetic theory of gases to treat fluctuations in particle beams
- 12:15–2:15 *Lunch (on your own)*
- 2:15–3:00 **James Ellison** (University of New Mexico)
Random N-Particle Klimontovich-Maxwell System: Probabilistic Analysis, Fluctuations from Mean and Ecker Hierarchy
- 3:10–3:25 *Break*
- 3:25–4:10 **Enrico Allaria** (Elettra Sincrotrone Trieste)
Need of high quality electron beams for seeded FEL
- 4:20–4:35 *Break*
- 4:35–5:20 **Gianluca Geloni** (European XFEL)
Statistical Optics and Free Electron Lasers

Thursday January 26, 2017

- 7:00 *FEL, Plasma Accelerators, and Related Beam Dynamics*
- 8:15–9:00 *Breakfast (Hosted by IPAM)*
- 9:00–9:45 **Yine Sun** (Argonne National Laboratory)
6D Phase-Space Manipulation of High Brightness Electron Beams
- 9:55–10:25 *Break*
- 10:10–10:55 **Warren Mori** (University of California, Los Angeles (UCLA))
Plasma simulation
- 11:05–11:20 *Break*
- 11:20–12:05 **Luis Silva** (Instituto Superior Tecnico, University of Lisbon)
Coupling plasma simulations with QED processes
- 12:15–2:15 *Lunch (on your own)*
- 2:15–3:00 **Diego del-Castillo-Negrete** (Oak Ridge National Laboratory)
A mean-field model of collective effects in beam dynamics
- 3:10–3:25 *Break*
- 3:25–4:10 **Sven Reiche** (Paul Scherrer Institut)
Numerical computations for X-ray FELs (PSI)
- 4:20–4:35 *Break*
- 4:35–5:20 *Panel Discussion*

Friday January 27, 2017

- 7:00 *Wrap-up and Discussion*
- 8:00–8:30 *Breakfast (Hosted by IPAM)*
- 8:30–9:20 **Konstantin Mischaikow** (Rutgers University New Brunswick/Piscataway)
Topological methods for the analysis of dynamical systems
- 9:30–10:20 **James Meiss** (University of Colorado Boulder)
Drift and Diffusion in Volume Preserving and Symplectic Maps
- 10:30–10:45 *Break*
- 10:45–11:35 **Alex Dragt** (University of Maryland)
Surface Methods for the Computation of Realistic Symplectic Transfer Maps from Numerical Field Data on a Grid
- 11:45–12:30 *Discussion and Conclusion*

