

Partial Order: Mathematics, Simulations and Applications

Monday January 25, 2016

- 8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*
- 8:55–9:00 *Welcome & Opening Remarks: Dean Miguel García-Garibay (Dean of Physical Sciences, UCLA) and Dima Shlyakhtenko (Director, IPAM)*
- 9:00–9:50 **Ping Sheng** (Hong Kong University of Science and Technology)
*Determining hydrodynamic boundary condition from equilibrium fluctuations**
- 10:00–10:15 *Break*
- 10:15–11:05 **Daniel Phillips** (Purdue University)
Defects in Smectic C Liquid Crystals
- 11:15–11:30 *Break*
- 11:30–12:20 **Epifanio Virga** (Università di Pavia)
Drops of twist-bend nematic liquid crystals
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Arghir Zarnescu** (University of Sussex)
Liquid crystal inertia in the Qian-Sheng model
- 3:30–4:00 *Break*
- 4:00–4:50 **Tao Huang** (NYU-ECNU Institute of Mathematical Sciences at NYU Shanghai)
Finite time singularity of the nematic liquid crystal flow in dimension three
- 5:00–6:30 *Poster Session & Reception (Hosted by IPAM)*

Tuesday January 26, 2016

- 8:00–9:00 *Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Patricia Bauman** (Purdue University)
Regularity and Related Properties for Minimizers of Maier-Saupe Energies for Liquid Crystals
- 10:00–10:15 *Break*
- 10:15–11:05 **Changyou Wang** (Purdue University)
On liquid crystal phase transitions between isotropic and nematic phase states
- 11:15–11:30 *Break*

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- 11:30–12:20 **Duvan Henao Manrique** (Pontificia Universidad Católica de Chile)
Biaxiality near defects in nematic equilibria at low temperatures
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Jinhae Park** (Chungnam National University)
Interface Problems arising in the Landau-de Gennes theory of Liquid Crystals
- 3:30–4:00 *Break*
- 4:00–4:50 **Halim Kusumaatmaja** (Durham University)
Analyzing the free energy landscapes of soft matter systems

Wednesday January 27, 2016

- 8:00–9:00 *Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Linda Cummings** (New Jersey Institute of Technology)
Modeling free surface flow of nematic liquid crystal
- 10:00–10:15 *Break*
- 10:15–11:05 **Paul Atzberger** (University of California, Santa Barbara (UCSB))
Fluctuating Hydrodynamics Approaches for Lipid Bilayer Membranes
- 11:15–11:30 *Break*
- 11:30–12:20 **Aparna Baskaran** (Brandeis University)
Taking a Ginzburg Landau Approach to Active Liquid Crystals
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Apala Majumdar** (University of Bath)
Nematic Order Reconstruction Solutions for Square Wells in the Landau-de Gennes theory
- 3:30–4:00 *Break*
- 4:00–4:50 **Mitchell Luskin** (University of Minnesota, Twin Cities)
Mathematical Modeling of Incommensurate Materials

Thursday January 28, 2016

- 8:00–9:00 *Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Miha Ravnik** (University of Ljubljana)
Topology of active and passive nematic defects
- 10:00–10:15 *Break*

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- 10:15–11:05 **Ivan Smalyukh** (University of Colorado Boulder)
Topological Colloids and Dispersed Liquid Crystals: From Theorems to Self-Assembly
- 11:15–11:30 *Break*
- 11:30–12:20 **L Mahadevan** (Harvard University)
Folded matter: from origami to the brain
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Patrick Dondl** (Albert-Ludwigs-Universität Freiburg)
Motion of interfaces in random media: pinning and some applications
- 3:30–3:45 *Break*
- 3:45–4:35 **Chun Liu** (Penn State University)
Complex Fluids in Biological Environments
- 4:45–5:00 *Break*
- 5:00–5:50 **Luca Giomi** (Leiden University)
Geometry and topology of turbulence in active nematics

Friday January 29, 2016

- 8:00–9:00 *Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Samo Kralj** (University of Maribor)
Topological defects in 2D nematic films : electrostatic analogy
- 10:00–10:15 *Break*
- 10:15–11:05 **John Ball** (University of Oxford)
Planar discontinuities for liquid crystals
- 11:15–11:30 *Break*
- 11:30–12:20 **Xu Yang** (University of California, Santa Barbara (UCSB))
Pathway-based mean-field models for E. coli chemotaxis
- 12:30 *Conclusion*

