

Nonlocal PDEs, Variational Problems and their Applications

Monday February 27, 2012

- 8:00–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Luis Caffarelli** (University of Texas at Austin)
- 10:10–10:25 *Break*
- 10:25–11:15 **Cyril Imbert** (Centre National de la Recherche Scientifique (CNRS))
Lipschitz Regularity of Solutions for Mixed Integro-Differential Equations
- 11:25–11:40 *Break*
- 11:40–12:30 **Ovidiu Savin** (Columbia University)
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:20 **Panagiotis Souganidis** (University of Chicago)
Singular Hamilton-Jacobi Equations for the “Tail Problem”
- 3:30–4:00 *Break*
- 4:00–4:50 **Changfeng Gui** (University of Connecticut)
Traveling Wave Solutions to Allen-Cahn Equation with Fractional Laplacians
- 5:00–6:30 *Reception and Poster Session (Hosted by IPAM)*

Tuesday February 28, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Stanley Osher** (University of California, Los Angeles (UCLA))
Nonlocal Operators with Applications in Imaging
- 10:00–10:15 *Break*
- 10:15–11:05 **Ross Whitaker** (University of Utah)
Variational Formulations of Neighborhood Statistics
- 11:15–11:30 *Break*

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- 11:30–12:20 **Jose Carrillo** (Autonomous University of Barcelona)
Keller-Segel, Fast-Diffusion and Functional Inequalities
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Chad Higdon-Topaz** (Macalester College)
Nonlocal Models of Biological Swarming: Asymptotic Dynamics and Exotic Equilibria
- 3:30–4:00 *Break*
- 4:00–4:50 **Andrea Bertozzi** (University of California, Los Angeles (UCLA))
Nonlocal Aggregation Equations and Fluid Dynamics

Wednesday February 29, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Joel Lebowitz** (Rutgers University)
Microscopic Models and Macroscopic Equations
- 10:00–10:15 *Break*
- 10:15–11:05 **Cyrill Muratov** (New Jersey Institute of Technology)
Gamma-Convergence for Pattern Forming Systems with Competing Interactions
- 11:15–11:30 *Break*
- 11:30–12:20 **Regis Monneau** (École Nationale des Ponts-et-Chaussées)
Dislocation Dynamics: From Microscopic Models to Macroscopic Crystal Plasticity
- 12:30–2:00 *Lunch (on your own)*
- 2:00–2:50 **Henri Berestycki** (École des Hautes Études en Sciences Sociales)
- 3:00–3:15 *Break*
- 3:15–4:05 **Maria del Mar Gonzalez** (Universitat Politècnica de Catalunya)
Classical Solutions for a Nonlinear Fokker-Planck Equation Arising in Computational Neuroscience
- 4:15–4:30 *Break*
- 4:30–5:20 **Antoine Mellet** (University of Maryland)
On a Higher Order Non-Local Equation Arising in the Modeling of Hydraulic Fractures

Thursday March 1, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Pierre Cardaliaguet** (Université de Paris IX (Paris-Dauphine))
Holder Regularity for Solution of Parabolic Equations with Super-Quadratic Growth in the Gradient
- 10:00–10:15 *Break*
- 10:15–11:05 **Moritz Kassmann** (Universität Bielefeld)
Regularity Theory for Parabolic Nonlocal Operators
- 11:15–11:30 *Break*
- 11:30–12:20 **Jinqiao Duan** (Institute for Pure and Applied Mathematics)
Nonlocal PDEs & Non-Gaussian Stochastic Dynamics
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Arthur Szlam** (New York University)
Non-local Means and the Heat Equation on Feature Graphs
- 3:30–4:00 *Break*
- 4:00–4:50 **Patrick Guidotti** (University of California, Irvine (UCI))
Some Forward-Backward and Nonlocal Diffusions of Image Processing

Friday March 2, 2012

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Thomas Laurent** (University of California, Riverside (UC Riverside))
Aggregation via Newtonian Potential and Aggregation Patches
- 10:00–10:15 *Break*
- 10:15–11:05 **Razvan Fetecau** (Simon Fraser University)
Swarm Dynamics and Equilibria for a Nonlocal Aggregation Model
- 11:15–11:30 *Break*
- 11:30–12:20 **Russell Schwab** (Carnegie-Mellon University)
On Aleksandrov-Bakelman-Pucci Type Estimates for Integro Differential Equations
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Nestor Guillen** (University of California, Los Angeles (UCLA))
Non-local Notions of Convexity
- 3:30–4:00 *Break*
- 4:00–4:50 *Discussion and Wrap-Up*



