

Workshop IV: Stochastic Analysis Related to Hamilton-Jacobi PDEs

Monday May 18, 2020

- 8:20–8:30 *Welcome & Opening Remarks: Dean Miguel García-Garibay (Dean of Physical Sciences, UCLA) and Dima Shlyakhtenko (Director, IPAM)*
- 8:30 *Session Chair Jeff Calder (UMN)*
- 8:30–9:20 **Yifeng Yu** (University of California, Irvine (UCI))
Properties of Effective Hamiltonians
- 9:30–9:45 *Break*
- 9:45–10:35 **Ofer Zeitouni** (Weizmann Institute of Science)
Polymers and stochastic heat equations on graphs
- 10:45–11:00 *Break*
- 11:00–11:50 **Hicham Kouhkouh** (Università degli Studi di Padova)
POSTER PRESENTATION: Singular perturbations in stochastic control and HJB equation (30 mins)
- 12:00–1:00 *Lunch (on your own)*
- 1:00–1:50 **Jessica Lin** (McGill University)
Homogenization of an Allen-Cahn Equation in Periodic Media
- 2:00–2:15 *Break*
- 2:15–3:05 **Fraydoun Rezakhanlou** (University of California, Berkeley (UC Berkeley))
Kinetic Theory for Hamilton-Jacobi PDEs

Tuesday May 19, 2020

- 8:30 *Session Chair Jessica Lin (McGill)*
- 8:30–9:20 **Jeremy Quastel** (University of Toronto)
Integrable fluctuations in 1+1 dimensional random growth
- 9:30–9:45 *Break*
- 9:45–10:35 **Atilla Yilmaz** (Temple University)
Nonconvex homogenization for one-dimensional controlled Brownian motion in a random potential
- 10:45–11:00 *Break*
- 11:00–11:50 **Elena Kosygina** (Bernard M. Baruch College, CUNY)
Stochastic homogenization of a class of nonconvex viscous HJ equations in one space dimension
- 12:00–1:00 *Lunch (on your own)*

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- 1:00–1:50 **Firas Rassoul-Agha** (University of Utah)
Geometry of geodesics through Busemann measures in directed last-passage percolation
- 2:00–2:15 *Break*
- 2:15–3:05 **Jeff Calder** (University of Minnesota, Twin Cities)
Discrete regularity for graph Laplacians

Wednesday May 20, 2020

- 8:30 *Session Chair Yifeng Yu (UC Irvine)*
- 8:30–9:20 **Nicolas Dirr** (Cardiff University)
Scaling Limits and Stochastic Homogenization
- 9:30–9:45 *Break*
- 9:45–10:35 **Jim Nolen** (Duke University)
A free boundary problem from Brownian bees in the infinite swarm limit in R^d
- 10:45–11:00 *Break*
- 11:00–11:50 **Christof Schuette** (Free University of Berlin and Zuse Institute Berlin)
Hamilton Jacobi PDEs and Efficient Estimation of Rare Event Statistics

Thursday May 21, 2020

- 8:30 *Session Chair Fraydoun Rezakhanlou (UC Berkeley)*
- 8:30–9:20 **Benjamin Gess** (Universität Leipzig)
Large deviations for conservative, stochastic PDE and non-equilibrium fluctuations
- 9:30–9:45 *Break*
- 9:45–10:35 **Houman Owhadi** (California Institute of Technology)
On interplays between stochastic and numerical analysis.
- 10:45–11:00 *Break*
- 11:00–11:50 **Jack Xin** (University of California, Irvine (UCI))
Lagrangian Approximations and Computations of Effective Diffusivities and Front Speeds in Chaotic and Stochastic Volume Preserving Flows

Friday May 22, 2020

- 8:30 *Session Chair Houman Owhadi (Caltech, ACM)*
- 8:30–9:20 **Aaron (Nung Kwan) Yip** (Purdue University)
Coarsening rates for non-local Cahn-Hilliard equation
- 9:30–9:45 *Break*
- 9:45–10:35 **Will Feldman** (IAS and Univ. of Utah)
Mean curvature flow with positive random forcing in 2-d
- 10:45–11:00 *Break*
- 11:00–11:50 **Grigorios Pavliotis** (Imperial College)
Mean field limits for interacting particle systems: phase transitions, fluctuations and applications
- 12:00 *Conclusion*

