

Interacting Particle Systems and Their Applications

(05 Oct 2026–16 Oct 2026)

List of Speakers and Talks' Title

Name and Affiliation	Talk Title
Giacomo Borghi Technical University of Munich, Germany	A Fast Spectral Particle Method for the Landau Equation
Edoardo Calvello Lawrence Berkeley National Laboratory, USA	Transformers for Operator Learning on Probability Measures: From Theory to Scientific Workflows
Jose Antonio Carrillo University of Oxford, UK	Nonlocal Interaction Kernels Inference in Nonlinear Gradient Flow Equations
Lénaïc Chizat National University of Singapore, Singapore	Convergence of Kernelized Wasserstein Flows
Jing Dong Columbia University, USA	Computing Stationary Equilibria in Measure-Dependent Markov Systems
Bertram Düring University of Warwick, UK	Opinion Dynamics: Socio-economic Factors and Social Networks
Yifan Feng National University of Singapore, Singapore	Learning to Rank under Strategic Corruption: A Nonatomic Approach
Franca Hoffmann California Institute of Technology, USA	Derivative-Free Ensemble Based Algorithms for Optimization, Sampling, and Filtering
Daniel Kelly University of Oxford, UK	Continuity Equations with Non-local Mobility and Applications to Self-attention
Dohyeon Kim California Institute of Technology, USA	Uniform-in-Time Propagation of Chaos and Long-Time Asymptotics for Consensus-Based Optimization
Bar Light National University of Singapore, Singapore	Equilibrium in Multi-Agent Reinforcement Learning
Yulong Lu University of Minnesota, USA	Learning Elliptic PDEs with Mean Field Langevin Dynamics
Aimee Maurais Massachusetts Institute of Technology, USA	Designing Interacting Particle Systems for Sampling

Name and Affiliation	Talk Title
Hung Minh Tan Nguyen National University of Singapore, Singapore	Steering Large Language Models: Control-Theoretic, Geometric, and Learning-Theoretic Foundations
Atsushi Nitanda Nanyang Technological University, Singapore	Propagation of Chaos for Mean-Field Langevin Dynamics
Sebastian Reich University of Potsdam, Germany	Interacting Particle Formulations for Stochastic Optimal Control
Domènec Ruiz-Balet Universitat de Barcelona, Spain	A Total Variation Flow Scheme for Ergodic Mean Field Games
Daniel Sanz-Alonso The University of Chicago, USA	Long-Time Accuracy of Ensemble Kalman Filters: Chaotic Dynamics, Learned Models, and Localization
Jakub Skrzeczkowski University of Oxford, UK	The Stein-log-Sobolev Inequality and the Exponential Rate of Convergence for the Continuous Stein Variational Gradient Descent Method
Xin Tong National University of Singapore, Singapore	Optimal Probability Measure Decomposition
Bao Wang University of Utah, USA	Monte Carlo Methods for Steering Generative Models
Li Wang University of Minnesota, USA	Learning-enhanced Structure Preserving Methods for Kinetic Plasma Models
Lihan Wang National University of Singapore, Singapore	Wasserstein Gradient Flow of Maximum Mean Discrepancy with Energy Kernel
Zhongjian Wang Nanyang Technological University, Singapore	Stochastic Interacting Particle Field Method in the Computation of Keller-Segel Systems
Jethro Warnett University of Oxford, UK	Stein Variational Gradient Descent dynamics for Highly Concentrated Kernels
Marko Hans Weber National University of Singapore, Singapore	Incomplete Market Equilibrium under Social Comparisons
Liu Yang National University of Singapore, Singapore	Evolving Ensemble of Agents

Name and Affiliation	Talk Title
Jiacheng Zhang The Chinese University of Hong Kong, Hong Kong SAR	Continuous-time Mean Field Games: a Primal-dual Characterization
Mo Zhou University of California, Los Angeles, USA	Learning Mean-Field Games through Mean-Field Actor-Critic Flow
Yuhua Zhu University of California, Los Angeles, USA	A New Framework for Mean-field Reinforcement Learning in the Physical World
Enrique Zuazua Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany	Score-Based Diffusion Models: Dynamics, Geometry, and Learning