

Kinetic and Related Models in the Natural Sciences

Talks will take place in Van Vleck Hall Room 911, except for the Tutorial (room TBA)

Sunday, April 29 (morning):

8:50: Welcome

9:00 - 9:45: Alan Newell

A brief overview of why and when the wave turbulence closure works

9:45 - 10:30: Yuri Lvov

Internal Waves in the Ocean – what we know, and what we don't

10:30 - 11:00: Coffee Break

11:00 - 11:45: Enrique Zuazua

Long time horizons and turnpike properties

Lunch Break: 11:45 - 1:30

Sunday, April 29 (afternoon):

1:30 - 2:15: George Craciun

Chemical reaction networks, mass-action kinetics, and the Boltzmann equation

2:15 - 3:00: David Anderson

Stochastic reaction networks and their qualitative behavior

3:00 - 3:45: Massimiliano Esposito

Thermodynamics of open chemical reaction networks: Energy and Information transduction in biology

3:45 - 4:15: Coffee Break

4:30 - 5:15: Tutorial by Alan Newell (room TBA)

Monday, April 30 (morning):

9:00 - 9:45: Sergey Nazarenko

Evolving turbulence spectra en route to the Kolmogorov spectrum

9:45 - 10:30: Luca Biferale

Energy Transfer and Energy Dissipation in Turbulent Flows

10:30 - 11:00: Coffee Break

11:00 - 11:45: Sebastien Galtier

Turbulence of weak gravitational waves and cosmology

Lunch Break: 11:45 - 2:00

Monday, April 30 (afternoon):

2:00 - 2:45: Irene Gamba

The Cauchy problem & BEC stability for the quantum Boltzmann-Gross-Pitaevskii's system

2:45 - 3:30: Chun Liu
General Diffusion in Biological Environments
3:30 - 4:00: Coffee Break
4:00 - 5:00: Panel Discussion
6:00 - 8:00: All Conference Dinner

Tuesday, May 1 (morning):

9:00 - 9:45: Anne Shiu
Bistability and oscillations in mass-action kinetics systems arising in biology
9:45 - 10:30: Adrian Tudorascu
Chemical reaction-diffusion networks: convergence of the method of lines
10:30 - 11:00: Coffee Break
11:00 - 11:45: Stas Boldyrev
TBA

Lunch Break 11:30 - 2:00

Tuesday, May 1 (afternoon): Session for Early Career Researchers - 40 minutes each

2:00 - 2:40: Qin Li
Low rankness in forward and inverse kinetic theory
2:40 - 3:10: Chanwoo Kim
Field-Boundary Interactions in the Kinetic Theory
3:10 - 3:50: Minh Binh Tran
On the wave turbulence theory for stratified flows in the ocean
3:50 - 4:10: Coffee Break
4:10 - 4:50: Liu Liu
Sensitivity Analysis and Spectral Convergence of the Stochastic Galerkin Approximation to Collisional Kinetic Equations with Multiple Scales and Random Inputs
4:50 - 5:30: Casian Pantea
Effective deficiency, and parametrizations of positive equilibria for generalized mass action systems

Wednesday, May 2 (morning):

9:00 - 9:45: Petr Plechac
Approximation of quantum observables by ab initio molecular dynamics
9:45 - 10:30: Markos Katsoulakis
Model-Form Uncertainty Quantification for Probabilistic Graphical Models
10:30 - 11:00: Coffee Break
11:00 - 11:45: Shi Jin
On kinetic equations with random uncertainties