

Numerical Modelling of nonlinear Stochastic Systems

Monday 7 – Friday 11 April 2025

The programme is subject to change. All times are British Summer Time (BST).

MONDAY 7 APRIL 2025	
09.30 – 10.00	Registration and Refreshments
10.00 – 10.10	Welcome and Housekeeping
10.10 – 10.50	Annie Millet , Université Paris 1 Panthéon Sorbonne <i>On the focusing stochastic NLS equation: critical and inter-critical nonlinearities</i>
10.50 – 11.30	Joern Wichmann , Monash University <i>Reaching the equilibrium: Long-term stable numerical schemes for SPDEs</i>
11.30 – 12.10	Avi Mayorcas , University of Bath <i>Forward-Backward SDEs and Neural Networks in Heterogeneous Household Wealth Models</i>
12.10 – 14.40	Lunch
14.40 – 15.20	Martin Ondreját , Czech Academy of Sciences <i>Enriching Operators & Stochastic Total Variation Flows</i>
15.20 – 15.50	Refreshments
15.50 – 16.30	Huyen Pham , Ecole Polytechnique <i>Actor-Critic learning for mean-field control in continuous time</i>
16.30 – 18.00	Welcome Drinks Reception

TUESDAY 8 APRIL 2025	
09.15 – 09.55	Nicolai Krylov , University of Minnesota <i>Once again on de Moivre--Laplace CLT</i>
09.55 – 10.25	Refreshments
10.25 – 11.05	Mariya Ptashnyk , Heriot-Watt University <i>Strong convergence of a splitting method for the stochastic complex Ginzburg-Landau equation</i>
11.05 – 11.45	Günther Grün , Friedrich-Alexander-Universität Erlangen-Nürnberg <i>On semi-discrete finite-element schemes for energy-dissipating solutions to stochastic thin-film equations</i>
11.45 – 12.25	Aleksandra Zimmermann , TU Clausthal <i>Convergence analysis of a finite volume scheme for a stochastic Allen-Cahn problem</i>
12.25 – 14.00	Lunch
14.00 – 14.40	David Cohen , Chalmers University of Technology & University of Gothenburg <i>Analysis of a positivity-preserving splitting scheme for some semi-linear stochastic heat equations</i>
14.40 – 15.20	Sizhou Wu , Shanghai University of Finance and Economics <i>Modern numerical methods for semi-linear partial integro-differential equations using Monte Carlo and neural networks</i>
15.20 – 15.50	Refreshments
15.50 – 16.30	Aristide Ngana , University of York <i>Weak martingale solutions to stochastic Navier-Stokes-Cahn-Hilliard system with transport noise</i>
16.30 – 17.10	Sonja Cox , University of Amsterdam <i>Weak convergence rates for Galerkin approximations of the stochastic Burger's equation</i>

WEDNESDAY 9 APRIL 2025	
09.15 – 09.55	Stefan Metzger , University of Erlangen–Nuremberg <i>An augmented SAV scheme for the stochastic Allen-Cahn equation</i>
09.55 – 10.25	Refreshments
10.25 – 11.05	Sotirios Sabanis , University of Edinburgh <i>TBC</i>
11.05 – 11.45	Luca Scarpa , Politecnico di Milano <i>Analysis and simulations of a stochastic phase-field model for tumour growth</i>
11.45 – 12.25	Nathan Kutz , University of Washington <i>SHRED: SHallow REcurrent Decoder for Model Discovery</i>
12.25	Lunch and Free Afternoon

THURSDAY 10 APRIL 2025	
09.15 – 09.55	Michael Tretyakov , University of Nottingham Well-posedness and approximation of reflected McKean-Vlasov SDEs
09.55 – 10.25	Refreshments
10.25 – 11.05	Abhishek Chaudhary , University of Tübingen <i>An Efficient Discretization to Simulate the Solution of a Linear-Quadratic Stochastic Boundary Control Problem</i>
11.05 – 11.45	Annika Lang , Chalmers University of Technology & University of Gothenburg <i>Simulation of random fields and stochastic partial differential equations on hypersurfaces</i>
11.45 – 12.25	Chengcheng Ling , University of Augsburg <i>Regularization by noise and numerical approximation of stochastic Cahn-Hilliard type equations</i>
12.25 – 14.00	Lunch
14.00 – 14.40	Hannelore Lisei , Babes-Bolyai University, Cluj-Napoca <i>Stochastic Nonlinear Schrödinger Equations: Methods for Approximation and Optimal Control Results</i>
14.40 – 15.20	Zdzisław Brzezniak , University of York <i>Weak solutions of Navier-Stokes Equation with purely discontinuous Lévy Noise</i>
15.20 – 15.50	Refreshments
15.50 – 16.30	Hakima Bessaih , Florida International University <i>An overview of numerical schemes for stochastic hydrodynamics</i>
16.30 – 17.30	Terry Lyons , University of Oxford <i>The Mathematics of Complex Streamed Data</i>
19.00	Workshop Dinner at The Scholar <i>Pollock Estate, 18 Holyrood Park Rd, Edinburgh EH16 5AY</i>

FRIDAY 11 APRIL 2025	
09.15 – 09.55	Yueh-Sheng Hsu , TU Wien <i>Continuum limit of discrete Anderson Hamiltonian in dimensions 2 and 3</i>
09.55 – 10.25	Refreshments
10.25 – 11.05	Stefanie Sonner , Radboud University <i>Stabilization by boundary noise</i>
11.05 – 11.45	Eric Hall , University of Dundee <i>Persistence and Burn-in in Solar Coronal Magnetic Field Simulations</i>
11.45 – 12.25	David Siska , University of Edinburgh <i>Entropy annealing for policy mirror descent in continuous time and space</i>
12.25	Lunch and End of Workshop