Centre for Doctoral Training
Mathematics of Random Systems

Andrew Wiles Building
Mathematical Institute
Woodstock Road
Oxford OX2 6GG
United Kingdom

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www.randomsystems-cdt.ac.uk

University of Oxford
Mathematical Institute

Spring Retreat 2024

Monday 8 April to Thursday 11 April 2024

Monday 8 April 2024

Faculty attending: Dr Ajay Chandra, Professor Massimiliano Gubinelli, Professor Ben Hambly, Dr Pietro Siorpaes and Professor Matthias Winkel

12:00	Welcome	
12:30	Lunch	
1:30	Faculty Talk: Dr Ajay Chandra, Rough Geometric Integration	
2:30	Break	
3:00	Robert Boyce	Unwinding Stochastic Order Flow with Partial Information
3:25	Peter Paulovics	Martingale observables and stochastic factorization algebras
3:50	Wen Zhang	Percolation near the critical point
4:15	Break	
4:30	Vlad Tuchilus	Optimal Transport with Causal Structures
4:55	Sturmius Tuschmann	Optimal Portfolio Choice with Cross-Impact
7:30	Dinner	

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Tuesday 9 April 2024

Faculty attending: Professor Massimiliano Gubinelli, Professor Christoph Reisinger and Professor Matthias Winkel

9:30	Zihan Guo	Modelling spreads of option LOBs
9:55	David Fox	Learning Dynamics from Data with Reservoir Computing
10:20	Wen Su	Credit Spread Forecast
10:45	Break	
11:00	Matthieu Meunier	Neural network approximation of BSDE schemes
11:25	Konrad Muller	Approximate Curvature Methods for Deep Stochastic Control
11:50	Break	
12:00	Liam Hill	Fragmentations from Random Trees
12:30	Lunch	
1:30	Faculty Talk: Professor Matthias Winkel, Combinatorial up-down chains and their diffusive continuum limits	
2:30	Break	
3:00	Mie Kano Glückstad	An introduction to random trees with a view towards mass erasure
3:25	Edward Tansley	Sketching for High-Dimensional Optimization
3:50	Chek Hang Lau	Learning flow map with reversible network
7:30	Dinner	

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Wednesday 10 April 2024
Faculty attending: Professor Massimiliano Gubinelli and Professor Ben Hambly

9:30	Alif Aqsha	Broker and Informed Trader: A Filtering Game
9:55	Emilia Gibson	Learning random dynamical systems from data
10:20	Thomas Blore	Particle systems with aggregation on a boundary
10:45	Break	
11:00	Luca Bonengel	Computational Methods for Surface Holonomy
11:35	Francesco Piatti	A journey through Signature Kernels
11:50	Break	
12:00	Tassilo Schwarz	Denoising Diffusion Models
12:30	Lunch	
2:00	Local walk for 2-3 hours at leisurely pace.	
7:30	Dinner	

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Thursday 11 April 2024
Faculty attending: Professor Ben Hambly

9:30	Danilo Dela Cruz Jr.	Changepoint Detection
9:55	Yuantao Shi	Predicting Order Flow Imbalance using Vector Autoregressive Models
10:20	Christopher Chalhoub	Delocalization of the discrete Gaussian chain
10:45	Break	
11:00	Riya Danait	Data-Driven Modeling of Limit Order Books
11:25	Sergio A Calvo Ordoñez	Spectral SCL: A Robust Contrastive Learning Framework for Noisy Time Series Classification
11:50	Faculty Talk: Professor Ben Hambly, Order Books and SPDEs	
12:30	Lunch	
2:00	Departure	