Day 3 (Wednesday, 29 June) Programme

8:30 – 9:15 (29 June), Beveridge Hall
Neyman Lecture by Heping Zhang, Yale University
Genes, Brain, and Us
Chair: Clifford Lam, London School of Economics

9:20 – 10:05 (29 June), Rooms G22 & G26
Medallion Lecture by Vlada Limic, University of Strasbourg
Multiplicative Coalescent Related Processes
Chair: Adam Jakubowski, University of Torun

9:20 – 10:05 (29 June), Beveridge Hall
Medallion Lecture by Roman Vershynin, University of California, Irvine
Privacy, Probability, and Synthetic Data
Chair: Andreas Kyprianou, University of Bath

10:05 – 10:30: Tea break

10:30 – 12:30 (29 June), Room G11
IP14: Financial Mathematics
Chair: Caroline Hillairet, ENSAE Paris
Some Principles of Cooperative Pricing in Insurance
Delia Coculescu, University of Zurich
Title TBA
Roxana Dumitrescu, Kings College London
Title TBA
Mohamed Mrad, Universite Sorbonne Paris Nord
Regression-Based Simulation Schemes for a Class of Anticipated BSDEs and XVA Application
Wissal Sabbagh, Ensae Paris, CREST

10:30 – 12:30 (29 June), Room G04
IP16: Rough Path Theory, Signatures and Applications
Chair: Thomas Cass, Imperial College London
Regularity Structures and Machine Learning
Ilya Chevyrev, University of Edinburgh
Framing RNN as a Kernel Method: A Neural ODE Approach
Adeline Fermanian, Sorbonne University
Non-degeneracy of Stochastic Line Integrals
Xi Geng, University of Melbourne
Higher Order Kernel Mean Embeddings to Capture Filtrations of Stochastic Processes
Maud Lemercier, University of Warwick

10:30 – 12:30 (29 June), Room G05
IP19: Stochastic Processes, Extremes and Risk
Chair: Clement Dombry, University of Besancon
High dimensional inference for stochastic differential equations
Mark Podolskij, Universite du Luxembourg
Path diagrams for multivariate stochastic processes in continuous time
Lea Schenk, Karlsruhe Institute of Technology
Extremal Processes of Spatial Branching Structures
Bastien Mallein, Universite Sorbonne Paris Nord

Palm Theory for Extremes of Stationary Time Series
Hrvoje Planinic, University of Zagreb

10:30 – 12:30 (29 June), Room G07
IP20: Levy Processes: Recent Advances in Theory and Applications
Chair: Aleks Mijatovic, University of Warwick
When is the Convex Minorant of a Lévy Process Smooth?
Jorge Gonzlez Cazares, University of Warwick
Creeping of Lévy Processes through Curves
Loic Chaumont, Universit d'Angers
How Smooth can the Convex Hull of a Lévy Path be?
David Bang, University of Warwick
A Meyer-Ito Formula for Stable Processes via Fractional Calculus
Geronimo Uribe Bravo, Universidad Nacional Autonoma deMexico

10:30 – 12:30 (29 June), Chancellors Hall
IS5: Differential Privacy
Chair: Angelika Rohde, University of Freiburg
Near Instance-Optimality in Differential Privacy
Hilal Asi, Stanford University
Title TBA
Cristina Butucea, ENSAE, Paris
The Power of Private Likelihood-ratio Tests for Goodness-of-fit in Frequency Tables
Stefano Favaro, University of Torino
Network Change-point Detection under Local Differential Privacy
Mengchu Li, University of Warwick

10:30 – 12:30 (29 June), Room G22
IS6: Bayesian Computation
Chair: Arnaud Doucet, University of Oxford
Monotonic Alpha-divergence Minimisation for Variational Inference
Kamélia Daudel, University of Oxford
Sequential Monte Carlo Algorithms for Agent-based Models of Disease Transmission
Jeremy Heng, ESSEC Singapore
High-dimensional MCMC Analysis: from Diffusions to Dirichlet Forms
Ning Ning, University of Michigan
Accelerated Sampling on Discrete Spaces with Non-Reversible Markov Jump Processes
Samuel Power, Bristol University

10:30 – 12:30 (29 June), Room G26
IS21: Modern Approaches to Missing Data
Chair: Richard Samworth, University of Cambridge
Optimal nonparametric testing of Missing Completely at Random, and its connections to compatibility
Thomas B. Berrett, University of Warwick
Inference for Heteroskedastic PCA with Missing Data
Yuxin Chen, University of Pennsylvania
Supervised Learning with Missing Values
Julie Josse, Inria
High-dimensional Changepoint Estimation with Heterogeneous Missingness
Tengyao Wang, London School of Economics

10:30 – 12:30 (29 June), Room G03

CTS5: Bayesian Inference

Chair: Konstantinos Kalogeropoulos, London School of Economics

Stochastic Approximation techniques for Bayesian uncertainty directed trial designs

Sandra Fortini, University of Bocconi

Robust Estimation in the Regression Setting

Yannick Baraud, University of Luxembourg

Robust Estimation of a Regression Function in Exponential Families

Juntong Chen, University of Luxembourg

Sequential Bayesian Learning for Hidden Semi-Markov Models

Patrick Aschermayr, London School of Economics

Sequential Learning and Economic Benefits from Dynamic Term Structure Models

Konstantinos Kalogeropoulos, London School of Economics

10:30 – 12:30 (29 June), Room G16

CTS7: Functional data – Theory and Methods

Chair: Jongmin Lee, Seoul National University

Nonparametric Estimation of Covariance and Autocovariance Operators on the Sphere

Alessia Caponera, EPFL, alessia.caponera@epfl.ch

Equivariant Estimation of Frechet Means

Andrew McCormack, Duke University

Learning the regularity of curves in functional data analysis and applications

Valentin Patilea, CREST, Ensai

Robust spherical principal curves

Jongmin Lee, Seoul National University

12:30 – 13:30 (29 June): Lunch

13:30 – 15:30 (29 June), Room G03

IP15: Insurance Mathematics

Chair: Mogens Steffensen, University of Copenhagen

Title TBA

Corina Constantinescu, University of Liverpool

Climate Risk Management and Insurance

Enrico Bis, Imperial College London

When Insurance Gets Exciting

Roger Laeven, Amsterdam School of Economics

Equilibrium Investment with Random Risk Aversion

Mogens Steensen, University of Copenhagen

13:30 – 15:30 (29 June), Room G04

IP17: Stochastic Models in Fluid Dynamics

Chair: Oana Lang, Imperial College London

High order numerical schemes in time for stochastic models in ocean dynamics

Camilla Fiorini, Conservatoire National des Arts et Metiers, M2N Laboratory, Paris

LDP and CLT for scaling limit of SPDEs with transport noise

Lucio Galeati, University of Bonn

Numerical Data Assimilation for Stochastic Advection by Lie Transport Models

Wei Pan, Imperial College London

On Maximal Solutions for a Stochastic Shallow Water Model

Oana Lang, Imperial College London

13:30 – 15:30 (29 June), Room G05

IP18: Stochastics Interacting Systems

Chair: Daniel Valesin, University of Warwick

Slow Mixing and Cut-off in Spin Plaquette Models

Paul Chleboun, University of Warwick

Contact process on the random hyperbolic graph

Bruno Schapira, Aix-Marseille Universite

Algebraic approach to stochastic duality for Markov processes

Chiara Franceschini, Modena University

Dynamical noise sensitivity for the voter model

Rangel Baldasso, Leiden University

13:30 – 15:30 (29 June), Room G16

IP21: Regularization by Noise

Chair: Oleg Butkovsky, Weierstrass Institute Berlin

Regularisation of rough and almost critical SDEs

Mate Gerencser, TU Wien

Three applications of stochastic sewing to regularization by noise

Nicolas Perkowski, Free University Berlin

Uniqueness for nonlinear Fokker-Planck equations and for McKean-Vlasov SDEs: the degenerate case

Michael Rockner, University of Bielefeld

Non-explosion by Stratonovich noise for ODEs

Mario Maurelli, Università degli Studi di Milano

13:30 – 15:30 (29 June), Room G22

IS16: New Developments in High-Dimensional Learning and Nonparametric Inference

Organizer: Jinchi Lv, University of Southern California

Chair: Yingying Fan, University of Southern California

Optimal rates for Robust Deep Learning

Jianqing Fan, Princeton University

Optimal Subgroup Selection

Richard Samworth, University of Cambridge

Rank-constrained least-squares: Prediction and inference

Ziwei Zhu, University of Michigan

Asymptotic Properties of High-Dimensional Random Forests

Yingying Fan, University of Southern California

13:30 – 15:30 (29 June), Room G07

IS18: Quantum Computing and Statistics

Chair: Yazhen Wang, University of Wisconsin-Madison

Bell's theorem as a no-go result in classical distributed Monte-Carlo simulation

Richard Gill, Leiden University

Statistical Aspects of the Quantum Supremacy Demonstration

Yosef Rinott, Hebrew University of Jerusalem

Quantum algorithms for nonconvex optimization: Escaping from saddle points and beyond

Tongyang Li, Peking University

Quantum Annealing via Path-Integral Monte Carlo with Data Augmentation

Jianchang Hu and Yazhen Wang, University of Wisconsin-Madison

13:30 – 15:30 (29 June), Room G26

IS20: Inference Methods for Adaptively Collected Data
Organizer: Kelly Zhang, Harvard University
Chair: Susan Murphy, Harvard University
Treatment Allocation with Strategic Agents
Evan Munro, Stanford University
Post-Contextual-Bandit Inference
Nathan Kallus, Cornell University
Near-optimal Inference in Adaptive Linear Regression
Koulik Khamaru, University of California, Berkeley
Statistical Inference After Adaptive Sampling in Non-Markovian Environments
Kelly Zhang, Harvard University

13:30 – 15:30 (29 June), Room G11
IS30: Prediction and Sampling with Deep Neural Networks
Chair: Jian Huang, University of Iowa
Probabilistic Forecasting with Conditional Generative Networks via Scoring Rule Minimisation
Ritabrata Dutta, University of Warwick
Inference and Learning in Infinite Dimensions: Insights from Optimal Transport
Tengyuan Liang, University of Chicago
Bayesian Learning via Neural Schrödinger-Föllmer Flows
Francisco Vargas, Cambridge University
Causal Probabilistic Spatio-temporal Fusion Transformers in Two-sided Ride-Hailing Markets
Hongtu Zhu, University of North Carolina Chapel Hill

15:30 – 16:00 (29 June): Tea break

16:00 – 17:40 (29 June), Room G03
CTS8: Risk, Insurance and Finance
Chair: Alejandra Quintos, Columbia University
Aggregated Markov Chain Models in Life Insurance: Properties and Valuation
Jamaal Ahmad, University of Copenhagen
Multi-asset optimal execution and statistical arbitrage strategies under Ornstein-Uhlenbeck dynamics
Fayçal Drissi, Université Paris 1
Optimal make-take fees in a shared order book
Philippe Bergault, Ecole Polytechnique
Dependent Stopping Times and an Application to Credit Risk Theory
Alejandra Quintos, Columbia University

16:00 – 17:40 (29 June), Room G04
CTS9: Stochastic Analysis
Chair: Andreas Sojmark, London School of Economics, a.sojmark@lse.ac.uk
Level densities for general β-ensembles: An operator-valued free probability perspective
Andrej Srakar, IER and University of Ljubljana
Asymptotic properties of measure-valued Pólya urn processes
Hristo Sariev, Bulgarian Academy of Sciences
Robuts super-replication with transaction costs for continuous processes
Huy Chau, University of Manchester
Covering systems of congruences
Robert Hough, Stony Brook University

Continuous time random walks and convergence of their stochastic integrals
Andreas Sojmark, London School of Economics

16:00 – 17:40 (29 June), Room G05
CTS10: Time Series
Chair: Filippo Pellegrino, London School of Economics
Time Series Analysis for Interval-Valued Data
Lynne Billard, University of Georgia
Modelling and Inference for Discrete Time-series using Bayesian Context Trees
Ioannis Papageorgiou, University of Cambridge
Semi-supervised clustering of time-dependent categorical sequences under positive constraints
Igor Melnykov, University of Minnesota Duluth
Factor-augmented tree ensembles
Filippo Pellegrino, London School of Economics

16:00 – 17:40 (29 June), Room G07
CTS11: State Space Models
Chair: Thomas Hotz, TU Ilmenau
Robust estimation in finite state space hidden Markov models
Alexandre Lecestre, University of Luxembourg
On the Observability of State Space Models with Gaussian Errors and unknown Variance
Ariane Hanebeck, Technische Universität München, ariane.hanebeck@tum.de
A lagged particle filter for stable filtering of certain high-dimensional state-space models
Hamza Ruzayqat, King Abdullah University of Science and Technology
State space models as a flexible framework for monitoring epidemics
Thomas Hotz, TU Ilmenau

16:00 – 17:40 (29 June), Room G11
CTS12: Random Graph and Networks
Chair: Giorgos Minas, University of St Andrews
Fluctuations of subgraph counts in graphon based random graphs
Anirban Chatterjee, University of Pennsylvania
Community Detection with Contextual Multilayer Networks
Sagnik Nandy, University of Pennsylvania
Subsampling Based Community Detection for Large Networks
Sayan Chakrabarty, University of Illinois at Urbana Champaign
Population-level Balance in Signed Networks
Weijing Tang, University of Michigan
Stochastic simulation, analysis and inference for reaction networks
Giorgos Minas, University of St Andrews,

16:00 – 17:40 (29 June), Room G16
CTS13: Causal Inference
Chair: Nils Sturma, Technical University of Munich
Causal survival analysis from theory to practice
Imke Mayer, Charité – Universitätsmedizin Berlin
A Semiparametric Method for Evaluating Causal Effects in the Presence of Error-Prone Covariates
Jianxuan Liu, Syracuse University
Causal Regularization: On the trade-off between in-sample and out-of-sample risk guarantees

Lucas Kania, Carnegie Mellon University
Half-Trek Criterion for Identifiability of Latent Variable Models
Nils Sturma, Technical University of Munich

16:00 – 17:40 (29 June), Room G22
CTS14: Advanced Theoretical Statistics
Chair: Patrick Rebeschini, University of Oxford
Calibrating the scan statistic: finite sample performance vs. asymptotics
Guenther Walther, Stanford University
Minimax Rates for Conditional Density Estimation via Empirical Entropy
Blair Bilodeau, University of Toronto
Finite mixture models: a bridge with stochastic geometry and Choquet theory
Michele Caprio, Duke University
Robust estimation under a shape constraint
Hélène Halconruy, University of Luxembourg
Concentration without Bernstein
Patrick Rebeschini, University of Oxford

16:00 – 17:40 (29 June), Room G26
CTS15: Genetics
Chair: William Rosenberger, George Mason University
A new phylogenetic association test based on a Chinese Restaurant Process model
Julie Zhang, Stanford University
Modelling biomarker variability in joint analysis of longitudinal and time-to-event data
Chunyu Wang, University of Manchester
Data-driven design of targeted gene panels for estimating immunotherapy biomarkers
Jacob Bradley, University of Edinburgh
Two-Stage Enrichment Designs With a Continuous Biomarker
William Rosenberger, George Mason University

19:00 – 21:00 (29 June), Conference Dinner
Senior Common Room
5th Floor, Old Building
London School of Economics and Political Science
Houghton Street
London WC2A 2AE