

M.Sc Mathematical Modelling and Scientific Computing

Dissertation Titles 2020–21

- Bayesian Multiwell Deconvolution
- Modelling the Dynamics of Political Repression and Protest
- On Matrix Estimation
- Modelling Magnetohydrodynamics
- A Reaction-Diffusion System in the Tubular Reactor Model
- Mathematical Modelling of Cancer Cell Invasion: Non-Local Model with Nonlinear Diffusion Coefficient
- Mathematical Model for Tin Bath Flow in the Float Glass Process
- Dynamical Models for Social Balance on Hypergraphs
- Generating Synthetic Data using Entropic Marginal Matching
- A Network-Based Approach to the Dynamic Optimisation of the Meal Delivery Problem
- Active Subspace Methods for Global Optimization
- Thermal Modelling of Lithium-Ion Batteries using Asymptotic Homogenisation
- The Dynamics of Alliance and Hostility in Social Structures
- Identifying Unbiased Meso-scale Structures in Spatial Networks
- A Clustering Approach to One-Shot Learning
- Mixed-Precision Strong Stability Preserving Runge-Kutta Methods for Hyperbolic Conservation Laws
- Gene Expression Time Delays in Reaction-Diffusion Systems
- Slippery Slopes: The Impact of Peristome Morphology on the Pitfall Trap of Carnivorous *Nepenthes* Pitcher Plants
- Disentangling Intrinsic Stochasticity and Measurement Noise
- Training GANs Using Adaptive Learning Rate ODE Solvers
- Spatial Heterogeneity in Reaction-Chemotaxis Systems
- Inverse Design Problems for a Magneto-Elastic Rod
- Accelerated First Order Methods for Nonconvex Optimization
- Reconstructing Gene Regulatory Networks from Snapshot Data with RNA Velocity
- Multivariate Least-Squares Approximations in Irregular Domains via Vandermonde with Arnoldi