{BECMC}²⁵ — Thursday 10th July 2025

09:00	**Registration** Room: Foyer		
09:45	**Welcome and introductions** Room: LTA		

Plenary talks

	Room: LTA		Room: LTC
10:00	**MATHEMATICAL MODELLING** *How does a plant grow and respond to its environment? A story across the scales!* Euan Smithers, University of Cambridge		**ALGEBRA** *Introduction to twisted conjugacy in groups* Gemma Crowe, University of Manchester

11:00	**Comfort Break**		

Contributed talks

	Room: LTA	Room: LTC	Room: 310
11:15	**Character degrees in blocks of symmetric groups** Bim Gustavsson, University of Birmingham	**Eliciting Some generalisations of Dirichlet distributions as priors for Multinomial models** Nayana Unnipillai, Open University	**A Novel Mathematical Model of the SLC25A10 Transporter Indicates Operation via a Ping-Pong Mechanism** Ramin Nashebi, University of Birmingham
11:45	**Reductive pairs arising from representations** Shuo Feng, University of Essex	**Assessing the Impact of Anti-Seizure Treatments in Network Models of the Brain** Peter Kissack, University of Birmingham	**Modeling and simulation of viscoelastic liquid crystal elastomers,** Rabin Poudel, Cardiff University
12:15	**Commuting Involution Graphs for Finite Simple Groups ,** James Bryden, University of Manchester	**Mathematical modelling of a mass-conserving electrolytic cell** Georgina Ryan, University of Oxford	**Dynamical models for evaluating long-term epilepsy surgery outcomes** Gwen Harrington, University of Birmingham

12:45	**Lunch** Room: Basement		

Plenary Talk

	Room: LTA		Room: LTC
13:30	**FLUID MECHANICS** *Models of cerebrospinal fluid flow and solute transport around the brain* Mariia Dvoriashyna, University of Edinburgh		**ANALYSIS** *Quasicrystals, aperiodic order and substitutions* Andrew Mitchell, Open University

14:30	**Comfort Break**		

Rapid Fire
Room: LTA

14:45	**Modelling & Control of Human Brain Disorders** Aran Dabbaghchi, University of Exeter
14:55	**Random Homology – Exposing the Structure Beneath the Chaos** Ali Aziz, University of Southampton
15:05	**The Piscopia Initiative: Building Community and Allyship in Mathematics** Piscopia Committee, University of Birmingham
15:15	**K-moduli of exceptional del Pezzo hypersurfaces** Charlotte Satchwell, University of Essex
15:25	**Bridging Perspectives on the Transition to University: Enhancing the Student Experience in Mathematics HE** Niamh Brereton, University of Birmingham
15:35	**Mathematical modelling of a mass-conserving electrolytic cell** Georgina Ryan, University of Oxford

15:45	**Comfort Break**		

Contributed talks

	Room: LTA	Room: LTC	Room: 310
16:00	**Generalizing vulnerability in estimating Modern Slavery prevalence** Albert Nyarko-Agyei, University of Nottingham	**Decomposition Classes** Joel Summerfield, University of Birmingham	**Tangential convergence and related results for elliptic boundary value problems** Arnaud Dumont, University of Birmingham
16:30	**A Variational Derivation of Shallow Water Equations with Full Rotation Vector** James Arthur, University of Exeter	**Abelian Ideals of Borel Subalgebras of Lie Superalgebras** Samuel Renforth, University of Birmingham	**On the convergence of two-dimensional Fourier series** Hrit Roy, University of Edinburgh

Poster Session
Room: Physics Bridge

17:00	**Poster Session and Refreshments can be found on the Physics Bridge** Join over 20 posters and presenters to discuss their work

18:00	**End of day: Closing Remarks**

Friday 11th July 2025

	Plenary talks	
	Room: LTA	**Room: LTC**
09:30	**STATISTICS** *Scale of Harm: Estimating the Prevalence of Trafficking to Facilitate Online Child Sexual Exploitation in the Philippines* Rowland Seymour, University of Birmingham	**COMBINATORICS** *Double-jump phase transition for the reverse Littlewood-Offord problem* Victor Souza, University of Cambridge
10:30	**Comfort Break**	

	Contributed talks		
	Room: LTA	**Room: LTC**	**Room: 310**
10:45	**High order homoclinic tangencies and universal dynamics for multidimensional diffeomorphisms** Dmitrii Mints, Imperial College London	**Challenges Faced by Specialist Mathematics Students at the Transition to University: Insights from across the UK.** Niamh Brereton, University of Birmingham	**A Vine Copula–Embedded Spatio-Temporal Framework for Stochastic Multisite Precipitation Modelling Across Local and Regional Scales** Edward Chida, University of Greenwich
11:15	**Dichotomies respect to growth rates and their spectra** Néstor Jara, University of Chile (visiting Imperial College London)	**From Individuals to Institutions: Agent-Based Insights into Cooperation and Collective Dynamics** Jacob Asmat, University of Birmingham	**Feature selection and parameter inference with sparsely sampled data via an L1-penalty and global optimization** Rahma Adbulahi, University of Birmingham
11:45	**Cut and Project Sets in Hyperbolic Space** Richard Alasdair Howat, University of Birmingham	**Big-steps in mathematical operational semantics** Pouya Partow, University of Birmingham (School of Computer Science)	**Data-driven Mathematical Modelling of the HPA Axis in Humans** Belinda Lomdard, University of Birmingham
12:15	**Lunch** Room: Basement		

	Plenary talks
	Room: LTA
13:00	**MATHEMATICS EDUCATION** *"Somebody needs to tell them…don't be afraid, nobody will judge you" – My journey into a career in mathematics education* Holly Gilbert, Coventry University
14:00	**Comfort Break**

	Contributed talks		
	Room: LTA	**Room: LTC**	**Room:310**
14:15	**Pricing Asian option under mean reversion and jumps, based on Fast Fourier Transform, Artificial Neural Networks and Deep Learning methods** Kimaro Kiaruntu, University of Essex	**Discrete Morse Theory - the Art of Reduction** Ali Aziz, University of Southampton	**Maximal Intersecting Families: A Simple Double Exponential Bound** Allan Flower, University of Birmingham
14:45	**Modelling & Control of Human Brain Disorders** Aran Dabbaghchi, University of Exeter	**K-moduli of exceptional del Pezzo hypersurfaces** Charlotte Satchwell, University of Essex	**Positive codegree thresholds for Hamilton cycles** Camila Zárate-Guerén, University of Birmingham
15:15	**Asymptotic and Numerical Analysis of Cortisol Infusion Protocols for Adrenal Insufficiency** Ariba Shakeel, University of Birmingham	**The spherical Mukai conjecture** Heath Pearson, University of Nottingham	**Every Graph is Essential to Large Treewidth** Pedro Buero Villafana, University of Leeds
15:45	**Comfort Break**		

	Plenary Talk
	Room: LTA
16:00	**HISTORY OF MATHEMATICS** *On meeting the challenge (or not). English responses to Fermat's questions on number theory in the later seventeenth-century* Philip Beeley, University of Oxford
17:00	**End of conference**