

Day 1

09:00-09:05	Opening Remarks
09:05-10.00	Plenary
10:00-11:00	BMC Morning Talks/BAMC Plenary
11.00-11:30	Coffee (Sococo)
11.30-12:30	BMC Sessions/BAMC Mini-symposium
12:30-14:00	Lunch/Poster Session/Outreach Videos
14.00-15:30	BMC Sessions/BAMC Mini-symposium ctd
15:30-16:00	Coffee (Sococo)
16:00-17:00	Plenary
17:00-18:00	Happy Hour (Sococo)
18:00	End of Day 1

09:00-09:05 Opening Remarks

09:05-10.00 Plenary

PLENARY

Venue: **via all main Sococo Rooms**

- 09:05-10:00 **Catharina Stroppel** (Bonn)
Tensor products and branching - changes of perspective

10:00-11:00 BMC Morning Talks/BAMC Plenary

BMC Morning Talk

Venue: **Bute 1-5**

- 10:00-11:00 **Ailsa Keating** (Cambridge)
An invitation to symplectic mapping class groups

BMC Morning Talk

Venue: **Clyde 1-5**

- 10:00-11:00 **Colva Roney-Dougal** (St Andrews) ,
Finite simple groups and computational complexity

BAMC Plenary – Lighthill Lecture

Venue: **Hillhead 1-5**

- 10:00-11:00 **David Rand** (Warwick)
Geometry, information and genetics

11.00-11:30	Coffee (Sococo Social Space)
11.30-12:30	BMC Sessions/BAMC Mini-symposium
12:30-14:00	Lunch Poster Session Outreach Videos

Additional Lunchtime activities

Maplesoft Demo

Venue: **Glasgow 1**

- 13:30-14:00 **Maple:**
Maths Software for Teaching, Learning and Research

Not used Maple before and interested in finding out what it can do for you? Are you a long time Maple user but curious about the many new features we've added in the past few years? Come and join us for demo to get a look at the capabilities of the latest version, plus a tour of the Maple Calculator app, and the newly released Maple Learn, a dynamic online environment designed specifically for teaching and learning maths from secondary school to early university. join the discussion.

14.00-15:30	BMC Sessions/BAMC Mini-symposium ctd
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BMCo1 : **Algebra and Representation Theory**

Session Chairs **Iain Gordon (Edinburgh)**
Gwyn Bellamy (Glasgow)

Venue: **Bute 1**

- 11:30-12:25 **Sue Sierra** (Edinburgh)
Poisson geometry of the Virasoro algebra
- 14:00-14:40 **Lewis Topley** (Birmingham)
Finite W-algebras and the orbit method
- 14:45-15:25 **Daniel Tubbenauer** (Zurich)
2-representations of Soergel bimodules

BMCo2 : **Number Theory**

Session Chairs **Alex Bartel (Glasgow)**
Henri Johnston (Exeter)

Venue: **Bute 2**

- 11:30-11:55 **Nirvana Coppola** (Bristol)
Wild Galois representations of hyperelliptic curves
- 12:00-12:25 **Andre Macedo** (Reading)
Local-global principles for norms
- 14:00-14:40 **Andrew Sutherland** (MIT)
Stronger arithmetic equivalence
- 14:45-15:25 **Efthymios Sofos** (Glasgow)
Prime values of integer polynomials and random
Diophantine equations

BMC03 :**Topology****Session Chairs****Irakli Patchkoria (Aberdeen)**
Andy Wand (Glasgow)**Venue:****Clyde 1**

- 11:30-11:55 **Steven Sivek** (Imperial)
Framed instanton homology and Dehn surgery
- 12:00-12:25 **Jonny Evans** (Lancaster)
Contact and symplectic geometry of compound Du Val singularities
- 14:00-14:40 **Angela Wu** (UCL)
Weinstein handlebodies for complements of smoother toric divisors
- 14:45-15:25 **Ciprian Manolescu** (Stanford)
Relative genus bounds in indefinite four-manifolds

BMC04 :**Operator Algebras****Session Chairs****Christian Voigt (Glasgow)**
Stuart White (Oxford)**Venue:****Clyde 2**

- 11:30-12:05 **Matt Daws** (UCLAN)
An introduction to (quantum) symmetries of (quantum) graphs
- 12:05-12:30 **Simon Schmidt** (Saarbruecken)
On the quantum symmetry of distance-transitive graphs
- 14:00-14:35 **Alina Vdovina** (Newcastle)
Buildings, C^* -algebras and new higher-dimensional analogues of the Thompson groups
- 14:40-15:15 **Yemon Choi** (Lancaster)
Completely almost periodic elements of group von Neumann algebras

Further details on this session are available [here](#)

BMCo5 : **Mathematical Physics**

Session Chairs **Claire Gilson (Glasgow)**
Chris Athorne (Glasgow)

Venue: **Hillhead 1**

- 11:30-11:55 **Jonathan Eckhardt** (Loughborough)
The peakon resolution conjecture for the conservative Camassa-Holm flow
- 12:00-12:25 **Martin Hallnäs** (Gothenburg)
Soliton scattering in the hyperbolic relativistic Calogero-Moser system
- 14:00-14:40 **Rod Halburd** (UCL)
Finding exact special solutions to non-integrable equations
- 14:45-15:25 **Sara Lombardo** (Loughborough)
Integrability and continuous wave instabilities: an algebraic-geometric approach

BMCo6 : **Combinatorics**

Session Chairs **Peter Cameron (St Andrews)**
Kitty Meeks (Glasgow)

Venue: **Hillhead 2**

- 11:30-12:25 **Konrad Dabrowski** (Leeds)
Well-Quasi-Orderability on Graphs
- 14:00-14:40 **Anthony Nixon** (Lancaster)
Graph rigidity and flexible circuits
- 14:45-15:25 **Rachel Kirsch** (LSE)
Universal partial words

MS09: **Integrating dynamical systems with data driven methods**

Organisers: **Vladimir Krajnak (Bristol)**
Shibabrat Naik (Bristol)

Venue: **Clyde 4**

- 14:00-14:20 **Peter Ashwin** (Exeter)
Plant ER networks and the dynamics of anchored 2D foams subject to viscous flow
- 14:20-14:40 **Stefan Klus** (Surrey)
Kernel methods for detecting coherent structures
- 14:40-15:00 **Kamyar Azizzadenesheli** (Purdue)
A Crash Course on Neural Operators
- 15:00-15:20 **Cecilia Clementi** (Freie Universität Berlin)
Designing molecular models by machine learning and experimental data
- 15.20-15:30 **Discussion**

MS10: Ultrasonic Waves

Organisers: **Artur Gower (Sheffield)**
Guoyang Li (Harvard)

Venue: **Hillhead 5**

- 11:30-11:50 **Anthony Mulholland** (Bristol)
Ultrasonic Waves in Stochastic Layered Elastic Media
- 11:50-12:10 **William Parnell** (Manchester)
Elastostatic cloaking, low frequency elastic wave transparency and neutral inclusions
- 12:10-12:30 **Paul Wilcox** (Bristol)
Turning Ultrasonic Array Data into Structural Integrity Information
- 14:00-14:20 **Kathryn Nightingale** (Duke)
3D Shearwave Elasticity Imaging
- 14.20-14:40 **Andrew Norris** (Rutgers)
Stress based elastic waves
- 14:40-15:00 **Guoyang Li** (Harvard)
Probing mechanical stress in soft materials with shear wave elastography
- 15:00-15:30 **Discussion Time**

MS14:

Variational Methods in Geophysical Fluid Dynamics

Organisers:

**Hamid Alemi Ardakani (Exeter)
Anna Kalogirou (Nottingham)**

Venue:

Bute 4

- 11:30-11:50 **Emilian Parau** (East Anglia)
Hydraulic falls and trapped waves over topography
- 11:50-12:10 **Erwin Luesink** (Imperial College)
Stochastic variational principles for geophysical fluid dynamics
- 12:10-12:30 **Onno Bokhove** (Leeds)
Variational principle for novel wave-energy device
- 14:00-14:20 **Paul Dellar** (Oxford)
A discrete Hamiltonian scheme for the multi-layer shallow water equations with complete Coriolis force
- 14.20-14:40 **Hamid Alemi Ardakani** (Exeter)
An alternative view on the Bateman-Luke variational principle for wave-structure-fluid interactions
- 14:40-15:00 **Golo Wimmer** (Imperial College)
Upwind stabilised finite element schemes in a Poisson bracket framework
- 15:00-15:30 **Discussion Time**

MS22:

Theory and modelling of liquid crystalline fluids

Organisers:

**Nigel Mottram (Glasgow)
Apala Majumdar (Strathclyde)**

Venue:

Hillhead 4

- 11:30-11:50 **Nigel Mottram** (Glasgow)
Current research in liquid crystalline materials
- 11:50-12:10 **Elsen Tjhung** (Durham)
Splay-bend phases in 2d liquid crystals: long-range order and beam-splitter
- 12:10-12:30 **Francesco Giglio** (Glasgow)
Exact equations of state for thermotropic nematics
- 14:00-14:20 **Joseph Cousins** (Strathclyde)
A static thin ridge of nematic liquid crystal
- 14:20-14:40 **Cassandra Khan** (Edinburgh)
Temperature control of nematic trajectories
- 14:40-15:00 **Josh Walton** (Strathclyde)
Spontaneous flow transitions in active nematic liquid crystals
- 15:00-15:30 **Discussion Time**

MS24: The mathematics of gas-liquid foams

Organisers: Peter Stewart (Glasgow)

Venue: Kelvin 4

- 11:30-11:50 **Denis Weaire** (Trinity College Dublin)
Kelvin wakes up in Largs: progress since then
- 11:50-12:10 **Paul Grassia** (Strathclyde)
Fractional Flow with Flow Reversal: Towards a Model for Flow-Reversed Pressure-Driven Growth
- 12:10-12:30 **Elaheh Esmaeili** (Strathclyde)
Comparison between squeeze film flow of Newtonian and non-Newtonian fluids with applications to foam-formed papermaking process
- 14:00-14:20 **Carlos Torres-Ulloa** (Strathclyde)
Viscous froth model applied to the motion of three bubbles in a channel
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- 14.20-14:40 **Isabelle Cantat** (Rennes)
Marginal pinch stability in foam films
- 14:40-15:00 **Simon Cox** (Aberystwyth)
Bubble entrainment by a sphere falling through a horizontal soap foam
- 15:00-15:30 **Discussion Time**

MS27: Mathematical and Computational Modelling of Blood Flow

Organisers: **Nicholas Hill (Glasgow)**
Mette Olufsen (North Carolina)

Venue: **Clyde 5**

- 11:30-11:50 **Christian Vergara** (Milano)
Modeling blood flow: numerical methods and clinical applications
- 11:50-12:10 **Mette Olufsen** (North Carolina)
Uncertainty in Patient-Specific Network Models for Pulmonary Hypertension
- 12:10-12:30 **Raul van Loon** (Swansea)
Personalising circulatory models in pregnancy
- 14:00-14:20 **Scott Richardson** (Glasgow)
Modelling the coronary circulation
- 14.20-14:40 **Francesco Migliavacca** (Milano)
The thrombectomy procedure: towards patient-specific modelling
- 14:40-15:00 **Marina Chugunova** (Claremont)
Mathematical modeling of pressure regimes in Fontan blood flow circulation
- 15:00-15:30 **Discussion Time**

MS29: IMA Lighthill Thwaites Prize

Organisers: Editors of the IMA Journal of Applied Mathematics

Venue: Kelvin 5

Please note: the timings in this mini-symposium differ

- 11.30-12:00 **Ellen Luckins** (Oxford)
Chemical reaction and counter-current flow in a silicon furnace
- 12:00-12:30 **Kristian Kiradjiev** (Oxford)
Modelling removal of toxic gases using reactive filters
- 12:30-13:00 **Matthew Colbrook** (Cambridge)
Diagonalising the infinite: How to compute spectra with error control
- 14:00-14:30 **Joshua Moore** (Cardiff)
Morphology driven bifurcations: graphical approaches to pattern formation via lateral feedback dynamics in bilayer geometries
- 14:30-15:00 **Daniel Hill** (Surrey)
On the existence of localised radial patterns on the surface of a ferrofluid
- 15:00-15:30 **Eleanor Johnstone** (Manchester)
Free-stream coherent structures in parallel compressible boundary-layer flows at subsonic Mach numbers

15:30-16:00

COFFEE BREAK (Sococo)

16:00-17:00

Plenary

PLENARY

Venue:

via all main Sococo Rooms

• 16:00-17:00

Bernd Sturmfels (Berkeley)
Linear PDE with Constant Coefficients

17:00-18:00

Happy Hour (Sococo)

18:00

End of Day 1

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