# MREP 2017 Programme

Listed below are presenting authors and presentation titles. Co-authors and abstracts can be found in the book of abstracts. Invited speakers are shown in boldface.

## Day 1 (September 11)

- 09:00 - Registration + Coffee (Central Core, Pavilion A)
- 10:20 - Welcome (MR9)
- 10:30 - Session 1.1 (MR9). Chair: Lara Silvers
    - **10:30 Keith Moffatt (University of Cambridge)**

      **Some Non-Mirror-Symmetric Reflections on Dynamo Theory**
    - 11:10 Nathanael Schaeffer (CNRS)

      Subcritical thermal convection of liquid metals in a rapidly rotating sphere
    - 11:30 Priya Subramanian (University of Leeds)

      Spatio-temporal Patterns in Inclined Layer Convection
    - 11:50 Ferran Garcia-Gonzale (University of Amsterdam)

      The onset of low Prandtl number thermal convection in thin spherical shells
    - 12:10 Adrian Barker (University of Leeds)

      Rotating convection with inclined gravity and rotation
- 12:30 - Lunch (Central Core, Pavilion A)
- 14:00 - Session 1.2 (MR9). Chair: Alastair Rucklidge
    - 14:00 Geoff Vasil (University of Sydney)

      Strong-field magnetoconvection
    - 14:20 Benjamin Favier (CNRS/IRPHE)

      Large-scale dynamo and inverse cascade in rapidly-rotating Rayleigh-Bénard convection
    - 14:40 Laurène Jouve (Université fédérale de Toulouse Midi-Pyrénées/CNRS)

      Investigating the magnetic dichotomy of A-type stars
    - 15:00 François Pétrélis (ENS)

      Fluctuations of Electrical Conductivity: A New Source for Astrophysical Magnetic Fields
    - 15:20  Jennifer Schober (EPFL)

      Chiral dynamos in the Early Universe
- 15:40 - Coffee break and Posters (Central Core, Pavilion A)

- 16:10 - Session 1.3 (MR9). Chair: Michael Proctor
    - 16:10 Grant Lythe (University of Leeds)

      Astronomical Immunology
    - 16:30 Jonathan Dawes (University of Bath)

      Mathematical research explaining patterns: from Trinity to King's
    - 16:50 Alastair Rucklidge (University of Leeds)

      Spirals and heteroclinic cycles in a spatially extended Rock-Paper-Scissors model of cyclic dominance
    - 17:10 Frank Stefani (Helmholtz-Zentrum Dresden-Rossendorf)

      Of Mikes and Butterflies
- 18:30 - Drinks reception (Provost's Lodge, King's College)
- 19:30 - Conference dinner (King's College)

## Day 2 (September 12)

- 09:00 - Session 2.1 (MR3). Chair: Emmanuel Dormy
    - 09:00 Henri-Claude Nataf (Université Grenoble Alpes/CNRS)

      Torsional Alfvén waves in a dipolar magnetic field
    - 09:20 Irina Klementyeva (Joint Institute for High Temperatures of RAS)

      Electrovortex Flow in External Magnetic Field
    - 09:40 Caroline Nore (LIMSI/Université Paris-Sud)

      Numerical simulation of the VKS dynamo experiment
    - 10:00 Anthony Yeates (University of Durham)

      The impact of magnetic topology on plasma dynamics
- 10:20 - Coffee break and Posters (Central Core, Pavilion A)
- 10:50 - Session 2.2 (MR3). Chair: Laurène Jouve
    - **10:50 David Hughes (University of Leeds)**

      **Mean Responses to Symmetry Breaking Perturbations in Disordered Systems**
    - 11:30 Wietze Herreman (LIMSI/Université Paris-Sud)

      Optimization of the kinematic dynamo in cubes and spheres
    - 11:50 Dmitry Sokoloff (Moscow State University)

      A scenario for dynamo bursts

- 12:10 Chris Jones (University of Leeds)

  Rotating magnetic waves in stably stratified layers

- 12:30 - Lunch (Central Core, Pavilion A)
- 14:00 - Session 2.3 (MR3). Chair: Robert Teed
  - 14:00 Jonathan Mestel (Imperial College London)

    An unforced dynamo in an annulus

  - 14:20 Eun-jin Kim (University of Sheffield)

    Dynamo quenching by shear flows

  - 14:40 Vassilios Dallas (University of Leeds)

    The onset of rotating dynamos at the low Pm limit

- 15:00 - Coffee break and Posters (Central Core, Pavilion A)
- 15:30 - Session 2.4 (MR3). Chair: David Hughes
  - 15:30 Steven Tobias (University of Leeds)

    What can Galloway and Proctor of various sizes teach us about dynamos at high Rm?

  - **15:50 Michael Proctor (University of Cambridge)**

    **Reflections on 40 years of research: successes, disappointments and open questions**

## Poster Presentations

Posters will be displayed for the duration of the meeting with viewing times during coffee breaks and lunch.

1. Abrar Ali (City, University of London)

   The dynamics of buoyant magnetic structures at the base of the solar convection zone

2. Jozef Brestenský (Comenius University)

   Effects of Anisotropic Diffusivities on Onset of Rotating Magnetoconvection

3. Fabian Burmann (ETH Zürich)

   On the effects of topography in rotating flows

4. Janosz Dewberry (University of Cambridge)

   Trapped inertial waves in vertically stratified, relativistic accretion disks

5. Leonardo Echeverria (ETH Zürich)

   Precessional-convectional instabilities in a spherical system

6. Andre Giesecke (Helmholtz-Zentrum Dresden-Rossendorf)

   Dynamo action from a laminar non-linear flow in a precessing cylinder

7. Loren Held (University of Cambridge)

   Hydrodynamic Convection in Astrophysical Disks

8. Andy Jackson (ETH Zürich)

   Taylor state dynamos found by optimal control: axisymmetric examples

9. Nicolò Lardelli (ETH Zürich)

   Fluid instabilities due to Inner Core nutation

10. Elliot Lynch (University of Cambridge)

    Solving Secular 2D Eccentric Discs Exactly Using a Hamiltonian Formalism

11. Ben McDermott (University of Cambridge)

    Transitional dynamics in rotating low-Rm MHD turbulence

12. Melissa Menu (CNRS)

    Rotating turbulent dynamos

13. Evgeny Mikhailov (Moscow State University)

    Model with z-dependence for magnetic fields in the outer rings of galaxies

14. Daniel Miller (University of Exeter)

    Alignment within dynamo theory

15. Sargam Mulay (University of Cambridge)

    Active region jets in the Solar atmosphere

16. Amit Seta (Newcastle University)

    Nonlinear State of the Fluctuation Dynamo

17. Jean Teyssandier (University of Cambridge)

    Growth of eccentricity in planet-disc interactions

18. Daniela Weston (University of Leeds)

    The Influence of Turbulent Pumping and Turbulent Diffusion on Magnetic Buoyancy Instability

19. Tim Whitbread (University of Durham)

    Parameter optimization for surface flux transport models

20. Veronika Witzke (Max Planck Institute for Solar System Research)

    Forced Shear Flows in Polytropic Atmospheres: Large and Small Péclet Number Regimes