

UKMHD MEETING 2017

DURHAM UNIVERSITY

THURSDAY 20TH APRIL 2017

Welcome and Registration. *Palatine Centre PCL048*

09:00 - 10:00 REGISTRATION, POSTER SETUP, AND COFFEE

10:00 - 10:05 OPENING REMARKS

Invited Talk. *PCL048*

Session chair - Anthony Yeates

10:05 - 10:45 JANE PRATT
*Magnetic islands under the influence of heating and current***Session 1 - Geophysical and Planetary.** *PCL048*

Session chair - Chris Jones

10:45 - 11:00 OLIVER BARDSLEY, Peter Davidson
*Rapidly-rotating MHD waves from localised sources in planetary cores*11:00 - 11:15 XING WEI
*Precession dynamo and dynamical tides*11:15 - 11:30 PETER DAVIDSON
*Dynamos driven by helical waves: scaling laws for numerical dynamos and for the planets*11:30 - 11:45 AVISHEK RANJAN, Peter Davidson, Ulrich Christensen, Johannes Wicht
*Internally-driven inertial waves in geodynamo simulations*11:45 - 12:00 CHEN LONG
*The ultimate lower bounds on dynamos in a sphere***Lunch.** *PCL054*

12:00 - 13:30 LUNCH

Session 2 - Solar 1. *PCL048*

Session chair - Chris Prior

13:30 - 13:45 VALERIA SHUMAYLOVA
Coarsening magnetic instability in domains of large aspect ratio: ABC and modulated flows

- 13:45 - 14:00 THOMAS HOWSON
The effects of dissipation on the development of the Kelvin-Helmholtz instability in transversely oscillating coronal loops
- 14:00 - 14:15 ALEXEI BORISSOV
Anomalous resistivity in MHD simulations of magnetic reconnection: Effects on particle scattering
- 14:15 - 14:30 TIM WHITBREAD
Parameter optimization for surface flux transport models
- 14:30 - 14:45 ROGER SCOTT, David Pontin, Gunnar Hornig
Application of the transport integral method to global estimates of the magnetic squashing factor
- 14:45 - 15:00 JUIE SHETYE
Observations of high-frequency waves in the spicules - A solution to the coronal heating paradigm

Posters and Coffee. PCL054

- 15:00 - 16:00 POSTER SESSION AND COFFEE BREAK

- RYAN EDGAR, Stephane Regnier
The topology of X-class during the SDO era
- LEWIS IRELAND
Investigating the effects of rotation and magnetism on stellar radii in 1D stellar structure models
- ANTHONY YEATES
The global distribution of magnetic helicity in the sun's corona
- HOPE THACKRAY
Fast MHD waves in cylindrical geometry
- CHRIS PRIOR
Coronal dynamics of braided flux ropes
- GERT BOTHA, Daniel Johnson, Micah Weberg, Shaun Bloomfield
Waves and turbulence in the solar wind during solar cycle 23-24 minimum
- AJAY TIWARI, Vaibhav Pant, Dipankar Banerjee
Standing waves in plume and fan-loop
- J.A. WIGGS, J.O. Thurgood, G.J.J. Botha, J.A. McLaughlin
WKB solution for fast magnetoacoustic wave behaviour around a 3D null point
- KELIG AUJOGUE, B. Sreenivasan, A. Pothrat
Experimental modeling of the Earth tangent cylinder
- JAMIE QUINN
Heating profiles in Braginskii MHD
- THOMAS REES-CROCKFORD
A study of a tornado-like quiescent solar prominence and its eruption
- ROSS PALLISTER
Modelling explosive events in the solar corona

Session 3 - Solar 2. PCL048

Session chair - David Pontin

- 16:00 - 16:15 KIRILL KUZANYAN, Nathan Kleorin, Igor Rogachevskii, Andrei Tlatov, Dmitry Sokoloff
Theoretical estimates of tilt, twist and current helicity in solar active regions versus their observational manifestations
- 16:15 - 16:30 MARION WEINZIERL, Francois Bocquet, Anthony Yeates
Effect of non-potential coronal boundary conditions on solar wind prediction
- 16:30 - 16:45 JAMES THRELFALL
Particle acceleration due to coronal non-null magnetic reconnection
- 16:45 - 17:00 MATTHEW ALLCOCK
Magneto-acoustic waves in an asymmetric magnetic slab

Conference Dinner. Hatfield College Main Dining Hall

- 18:30 - 19:00 DINNER RECEPTION
- 19:00 - 21:00 CONFERENCE DINNER

FRIDAY 21ST APRIL 2017

Morning remarks. PCL048

- 09:00 - 09:05 MORNING REMARKS

Invited Talk. PCL048

Session chair - Anthony Yeates

- 9:05 - 09:45 GHERARDO VALORI
Magnetic helicity estimations in models and observations of the solar magnetic field

Session 4 - Astrophysical. PCL048

Session chair - Graeme Sarson

- 09:45 - 10:00 AMIT SETA, Anvar Shukurov, Andrew Snodin, Paul Busby, Toby Wood
Effect of magnetic field intermittency on cosmic ray diffusion
- 10:00 - 10:15 FELIX SAINSBURY-MARTINEZ, Matthew Browning, Mark Miesch, Nick Featherstone
Anelastic models of fully-convective stars: differential rotation, meridional circulation and residual entropy
- 10:15 - 10:30 KONSTANTINOS GOURGOULIATOS
3-D simulations of relativistic astrophysical jets

Coffee & Tea. PCL050

- 10:30 - 11:00 COFFEE & TEA

Session 5 - Solar 3. PCL048

Session chair - Andrew Gilbert

- 11:00 - 11:15 CHRIS LOWDER, Anthony Yeates
Magnetic flux rope identification and characterization from observationally-driven solar coronal models
- 11:15 - 11:30 DANIELA WESTON, David Hughes, Steven Tobias
Magnetic buoyancy instability in the solar tachocline
- 11:30 - 11:45 BEN SNOW
Observational signatures of a kink-unstable coronal flux rope using Hinode/EIS
- 11:45 - 12:00 DAVID PONTIN
Energy release in braided coronal loops
- 12:00 - 12:15 DAVID MACTAGGART
Optimal energy growth in current sheets
- 12:15 - 12:30 CHRIS MCCABE, Steve Tobias
The thin shell MHD equations and the solar dynamo

Lunch. PCL054

- 12:30 - 14:00 LUNCH

Session 6 - Models and Methods. PCL048

Session chair - Lara Silvers

- 14:00 - 14:15 PETER WYPER, Spiro K. Antiochos, C. Richard DeVore
A universal model for solar eruptions from coronal mass ejections to jets
- 14:15 - 14:30 DANIEL MILLER
Alignment as an indicator of changes to modal structure within the Roberts flow
- 14:30 - 14:45 ELEANOR VICKERS
MHD surface waves in an inclined field
- 14:45 - 15:00 SIMON CANDELARESI
Magnetic field line tangling and topological entropy
- 15:00 - 15:15 MAIRI E. MCKAY, Moritz F. Linkmann, Daniel Clark, Adam A. Chalupa, Arjun Berera
A comparison of forcing functions in magnetohydrodynamics
- 15:15 - 15:30 MIHAI BARBULESCU
MHD waves and instabilities in a steady magnetic slab in an asymmetric environment

Coffee & Tea. PCL050

- 15:30 - 16:00 COFFEE & TEA

LIST OF PARTICIPANTS

- (1) Abrar Ali - City, University of London
- (2) Matthew Allcock - University of Sheffield
- (3) Mihai Barbulescu - University of Sheffield
- (4) Oliver Bardsley - University of Cambridge
- (5) Alexei Borissov - University of St Andrews
- (6) Gert Botha - Northumbria University
- (7) John Brooke - self-employed consultant
- (8) Paul Bushby - Newcastle University
- (9) Simon Candelaresi - University of Dundee
- (10) Long Chen - ETH Zurich
- (11) Grace Cox - University of Liverpool
- (12) Peter Davidson - University of Cambridge
- (13) Ryan Edgar - Northumbria University
- (14) Cetin Can Evirgen - Newcastle University
- (15) Robertus von Fay-Siebenburgen - University of Sheffield
- (16) Andrew Gilbert - University of Exeter
- (17) Konstantinos Gourgouliatos - University of Leeds
- (18) Celine Guervilly - Newcastle University
- (19) Chris Hales - Newcastle University
- (20) Gareth Hawkes - University of Exeter
- (21) Alexander Hindle - Newcastle University
- (22) James Hollins - Newcastle University
- (23) Gunnar Hornig - University of Dundee
- (24) Thomas Howson - University of St Andrews
- (25) David Hughes - University of Leeds
- (26) Lewis Ireland - University of Exeter
- (27) Dan Johnson - Northumbria University
- (28) Chris Jones - University of Leeds
- (29) Mouloud Kessar - University of Leeds
- (30) Kirill Kuzanyan - IZMIRAN, Russian Academy of Sciences
- (31) Juraj Kyselica - Geophysical Institute of the Czech Academy of Sciences
- (32) Linh Le Phuong - Northumbria University
- (33) Yufeng Lin - University of Cambridge
- (34) Chris Lowder - Durham University
- (35) Fionnlagh Mackenzie Dover - University of Sheffield
- (36) David MacTaggart - University of Glasgow
- (37) Joanne Mason - University of Exeter
- (38) Christopher McCabe - Leeds University
- (39) Mairi E McKay - University of Edinburgh
- (40) Daniel Miller - Exeter University
- (41) Ross Pallister - University of Dundee
- (42) Jamon Pennicott - University of Warwick
- (43) David Pontin - University of Dundee
- (44) Jane Pratt - University of Exeter
- (45) Christopher Prior - Durham University
- (46) Jamie Quinn - University of Glasgow
- (47) Avishek Ranjan - University of Cambridge
- (48) Thomas Rees-Crockford - Northumbria University
- (49) Stephane Regnier - Northumbria University
- (50) Jack Reid - University of St Andrews

- (51) Luiz Felipe Rodrigues - Newcastle University
- (52) Felix Sainsbury-Martinez - University of Exeter
- (53) Graeme Sarson - Newcastle University
- (54) Roger Scott - University of Dundee
- (55) Amit Seta - Newcastle University
- (56) Juie Shetye - Armagh Observatory
- (57) Anvar Shukurov - Newcastle University
- (58) Valeria Shumaylova - University of Cambridge
- (59) Lara Silvers - City, University of London
- (60) Ben Snow - University of Sheffield
- (61) Andrew Soward - Newcastle University
- (62) Robert Teed - University of Cambridge
- (63) Hope Thackray - University of Sheffield
- (64) James Threlfall - University of St Andrew's
- (65) Ajay Tiwari - Northumbria University
- (66) Gherardo Valori - University College London
- (67) Eleanor Vickers - University of Sheffield
- (68) Xing Wei - Shanghai Jiao Tong University
- (69) Marion Weinzierl - Durham University
- (70) Daniela Weston - University of Leeds
- (71) Tim Whitbread - Durham University
- (72) Josh Wiggs - Northumbria University
- (73) Fryderyk Wilczynski - University of Leeds
- (74) Toby Wood - Newcastle University
- (75) Peter Wyper - Durham University
- (76) Anthony Yeates - Durham University