

U K M H D M E E T I N G

Department of Mathematics, University of Newcastle, 22-23 May 1997

Room L401, Seminar Room, Merz Court

P R O G R A M M E

THURSDAY, 22 May

Opening of the Meeting 14:00-14:10

MHD flows and instabilities 14:10-15:15

David R. Fearn (Glasgow): Nonlinear magnetic instability in rapidly rotating systems

Douglas R. McLean (Glasgow): The geostrophic nonlinearity and magnetic instability

Sergei Molokov (Coventry): Electromagnetic-inertia interaction in strong-field MHD

Andrew Soward (Exeter): MHD flow between differentially rotating spheres

Philip Tucker (Exeter): Nonlinear magnetic instabilities in a plane layer

Coffee Break 15:15-15:45

Geodynamo 15:45-17:00

Chris Jones (Exeter): The geodynamo

David Gubbins (Leeds): Effects of differential rotation and meridian circulation on 3d kinematic dynamo action

Steve Gibbons (Leeds): The Parker - Levy reversal mechanism

Graeme Sarson (Exeter): Magnetoconvection dynamos and the magnetic fields of Io and Ganymede

Maslan Haji Osman (Newcastle): Convection with ohmic heating

Mat Walker (Newcastle): Nonlinear magnetoconvection in the rapidly rotating limit

Magnetoconvection and flux tubes 17:00-18:25

David Hughes (Leeds): The instability of twisted buoyant flux tubes

Jan Wissink (Nottingham): Buoyant magnetic flux tubes

Jean-Claude Thelen (Leeds): A spherical shell dynamo driven by magnetic buoyancy

Nigel Weiss (Cambridge): Patterns in nonlinear magnetoconvection [with video]

Sean Blanchflower (Cambridge): Effect of boundary conditions on models of magnetoconvection

Paul Matthews (Nottingham): Dynamo action in simple convective flows

Eun-jin Kim (Leeds): Flow helicity in turbulent fast dynamo action

Jan Maksymczuk (Exeter): Fast dynamo action in a simplified model

19:00. Conference Dinner: Restaurant Pierre Victoir, 2 Queen Street, Quayside, phone (0191) 245 5500

FRIDAY, 23 May

Solar and stellar activity 9:00-10:25

Reza Tavakol (QMW): Fragility in dynamo models?
 Ilkka Tuominen (Oulu/Finland): Magnetic structures in late type stars from
 astronomical observations
 Chris Turpin (Newcastle): Relation between the cycle period of a star and
 its parameters
 John Brooke (Manchester): Symmetry breaking and intermittency in
 axisymmetric dynamos
 Eurico Covas (QMW): Dynamics of truncated dynamo models
 Andrew Tworkowski (QMW): Axisymmetric mean field dynamo models with
 algebraic and dynamic alpha quenches
 Kirill Kuzanyan (Exeter): Asymptotic study of a nonlinear dynamo wave

Coffee Break 10:25-10:55

Solar Atmosphere 10:55-11:45

Alan Hood (St Andrews): The heating of coronal loops by phase-mixing
 Aaron Longbottom (St Andrews): Magnetic flux braiding, force-free equilibria
 & current sheets
 Klaus Galsgaard (St Andrews): Prominence formation by flux convergence
 R. v. Fay-Siebenburgen (St Andrews): Explosive events in the solar
 atmosphere

MHD turbulence and dynamos 11:45-12:30

Axel Brandenburg (Newcastle): Origin and nature of the alpha effect
 Sean Oughton (London): Anisotropy scaling in MHD turbulence
 Kandaswamy Subramanian (Sussex): Can the turbulent galactic dynamo generate
 large scale galactic fields?

Lunch 12:30-14:00

MHD turbulence and dynamos (continued) 14:00-14:55

David Moss (Manchester): Magnetic fields in barred spiral galaxies
 Franz Kahn (Manchester): Magnetic reconnection in high velocity clouds
 Maarit Korpi (Oulu/Finland): Stirring galactic turbulence by supernovae
 Anvar Shukurov (Newcastle): Magnetic fields in the early turbulent Universe

Coffee Break 14:55-15:25

Magnetised accretion discs 15:25-16:20

Gordon Ogilvie (Cambridge): On the spectrum of waves and instabilities in a
 magnetised accretion disc
 Paul Dellar (Cambridge): Force-free magnetic fields and accretion discs
 Ulf Torkelsson (Cambridge): The nonlinear evolution of the
 magnetorotational instability
 Chris Campbell (Newcastle): Dynamo laws and magnetic braking in binary
 stars

Numerical schemes and relativistic MHD 16:20-16:50

S.A.E.G Falle (Leeds): Upwind schemes and numerical monopoles
 Serguei Komissarov (Leeds): On the properties of Alfvén waves in
 relativistic MHD

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