Dr David MacTaggart PhD FRAS FIMA FHEA

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Research interests

magnetohydrodynamics (MHD), plasma physics, solar physics, heliospheric physics, space weather, stability theory, magnetic topology and reconnection

Education

2002-2006	University of Glasgow	MSci Mathematics (1st)
2006-2007	Oxford University	MSc Mathematical Modelling & Scientific Computing
2007-2010	University of St Andrews	PhD Solar Physics, Supervisor: Prof. A.W. Hood, Title: *Theoretical magnetic flux emergence*
2012-2013	University of Abertay	P.G. Cert. in Higher Education Teaching

Academic positions

2010-2011	Niels Bohr Institute (Univ. Copenhagen)	Postdoc. in solar fluid dynamics
2012-2014	University of Abertay	Lecturer in applied mathematics (grade 7)
2014	University of Catania	Visiting researcher
2015-2022	University of Glasgow	Lecturer in applied mathematics (grade 8)
2016	University of Catania	Visiting researcher
2019	University of Trento	Visiting professor
2022	University of Glasgow	Senior Lecturer (grade 9; associate professor)

Habilitation

02/C1 Astronomia, Astrofisica, Fisica della Terra e dei Pianeti, Fascia II (2022-2032)

Professional membership

Fellow of the Royal Astronomical Society (FRAS)

Fellow of the Institute of Mathematics and its Applications (FIMA)

Fellow of the UK Higher Education Academy (FHEA)

Member of the International Astronomical Union

Member of the European Astronomical Society

Member of the Edinburgh Mathematical Society

Member of the Project Management Board of DiRAC (STFC)

Reviewing activity

Editorship: Editor of Discover Space (Springer), guest editor (in 2021, invited by Professor Andrew Soward) of Geophysical and Astrophysical Fluid Dynamics (Taylor & Francis Group) for Special Issue: "Recent developments in magnetohydrodynamics and dynamo theory"), Topic Editor (2020-) for Fluids (MDPI)

Ad hoc referee: Journal of Fluid Mechanics, Geophysical & Astrophysical Fluid Dynamics, Astronomy & Astrophysics, Physics of Plasmas, Monthly Notices of the Royal Astronomical Society, Astrophysical Journal, Europhysics Letters, Nature Scientific Reports, European Physics

Journal Plus, Frontiers in Applied Mathematics and Statistics and Frontiers in Physics (Review Editor for Mathematical Physics), Bulletin of the London Mathematical Society, Fluids, Annales Geophysicae, Nature Communications.

Grant application bodies: UK Science and Technology Facilities Council (STFC), Carnegie Trust.

Book reviews: CRC Press (Taylor & Francis Group), The Aeronautical Journal (The Royal Aeronautical Society), Springer

Conference organization

Organizer of Trento Space Weather Workshop: From the Sun to the Heliosphere (Inst. Artigianelli, Trento, 2024, 10 participants - invitation only)

Organizer of BAMC mini symposium: Recent developments in magnetohydrodynamics and dynamo theory (Univ. Glasgow, 2021, 41 participants)

Organizer of CISM Advanced Summer School (CISM, Udine, 2018): Advanced topics in MHD (28 participants; a book based on the school has been published by Springer)

Organizer of UKMHD 2016 (Univ. Glasgow, 2016, 63 participants)

Organizer of RAS Specialist Meeting: Flux emergence and its consequences in the solar atmosphere (Burlingtion House, London, 2016, 20 participants)

Organizer of NAM parallel session: Solar and Stellar Eruptions: Theory & Observations (Univ. Portsmouth, 2014, 25 participants)

Teaching experience

Tutorials in linear algebra, mathematical modelling and complex analysis at St Andrews (2008-2010).

Lecturing 1st to 4th year students at Abertay (2012-2014). Topics range from linear algebra and Newtonian mechanics to fluid dynamics and the numerical solution of PDEs.

Lecturing/tutoring 1st to 5th year students at Glasgow (2015-now). 1st year: calculus, linear algebra; 2nd year: Newtonian mechanics; 3rd Year: rigid body mechanics and basic deformations, dynamical systems, ordinary differential equations; 4th year: numerical analysis, continuum mechanics, partial differential equations; 5th year: magnetohydrodynamics.

Undergraduate project supervision: I have supervised 22 4th year projects and 3 5th year projects (multigrid methods, MHD stability theory and shock waves).

Head of Level 5/MSc (5th year/Masters year, $\sim$20 students *per annum*) at Glasgow from 2015-2019; Head of Level 2 (2nd year, $\sim$450 students *per annum*) at Glasgow from 2020-2023.

Postgraduate teaching: A 2018 summer school for PhD students and postdoctoral researchers, entitled "Advanced topics in MHD", at the International Centre for Mechanical Sciences (CISM) in Udine. A 2019 course for PhD students at the University of Trento entitled "Numerical Modelling", with course topics: continuum mechanics, fluid stability theory, pseudospectral methods. MHD lectures for the MSc in Astrophysics at the University of Glasgow, 2016-now.

Postgraduate supervision (* indicates that I am first/leading supervisor for PhD)

PDRA: Breno Raphaldini (Developing photospheric magnetic winding inputs as a flare forecasting diagnostic; 2020-2022)

Muhammed Aslam Ottupara (The robust prediction of solar flares; 2023-)

Daining Xiao (Hybrid solar dynamos; 2024-)

PhD: James Quinn* (Modelling anisotropic viscosity with applications in the solar corona; 2016-2020)

Ifeanyi Sunday Onah (Shock wave propagation along retinal blood vessels; 2019-2024)

Parag Gupta (Modelling the effects of differential rotation and meridional flows on solar and stellar dynamos; 2020-2024)

Emma Hunter (The annulus model of rotating magnetoconvection; 2021-)

Sage Stanish* (Modelling turbulent reconnection; 2022-)

Bethel Agozie* (Nonlinear waves in networks; 2023-)

MSc: Manuel Santos (Pseudospectra and Hartmann flow; 2017)

Nicole Huggins (On the tearing instability; 2018)

Pheeyidi Samuel (Topological invariants in magnetohydrodynamics; 2020)

Postgraduate viva examination

As internal examiner:

PhD: Nan Qi, Finite element-immersed boundary method and its application to mitrial valves (External: Prof. Michel Destrade, Supervisor: Prof. Xiaoyu Luo)

PhD: Andrey Melnikov, Bifurcation of thick-walled electroelastic cylindrical and spherical shells at finite deformation (External: Prof. Graham Rogerson, Supervisor: Prof. Ray Ogden)

PhD: Jay Mackenzie, A 1D model for the pulmonary and coronary circulation accounting for time-varying external pressure (External: Dr Bindi Brook, Supervisor: Prof. Nick Hill)

As external examiner:

PhD: Gareth Hawkes (University of Exeter), Magnetic helicity flow in the Sun and Heliosphere (Internal: Prof. Andrew Gilbert, Supervisor: Prof. Mitch Berger)

PhD: Georgios Chouliaras (University of St Andrews), The effects of partial ionization on magnetic flux emergence and solar eruptive events (Internal: Prof. Alan Hood, Supervisor: Dr Vasilis Archontis)

Invited talks (seminars and conferences)

2008: University of St Andrews: "Lagrangian-remap schemes in fluid dynamics" **2009**: University of St Andrews: "Theoretical flux emergence" **2011**: Bern (ISSI): "Straight/toroidal flux tubes and the 'sliding-doors' effect" **2012**: University of Central Lancashire: "Theoretical Flux Emergence: Context and Connections" **2013**: University of Durham: "Solar Flux Emergence" **2014**: University of Warwick: "Excursions in MHD"; University of Hull: "On magnetic reconnection and flux rope formation in emerging active regions "; University of St Andrews: "On magnetic reconnection and flux rope formation in emerging active regions"; University of Dundee: "Topological flux emergence" **2015**: University of Plymouth: "How to make a flux rope - applications of topological fluid dynamics" **2016**: University of Durham: "Transverse isotropy in magnetohydrodynamics" **2017**: University of Cambridge: "Optimal energy growth in current sheets"; University of St Andrews (SPDE17): "Optimal energy growth in

current sheets" **2018**: University of Dundee: "The non-modal onset of the tearing instability"; University of St Andrews: "Interpreting magnetic helicity flux in solar flux emergence" **2019**: University of Trento: "Magnetic helicity flux: a topological measure of solar storms"; University of Durham: "Magnetic helicity in multiply connected domains" **2020**: 9th International Conference on Mathematical Modeling in Physical Sciences (Topological Methods in Physical Sciences): "Magnetic winding - understanding field line topology in flux emergence"; London Mathematical Society Durham-Oxford-Strathclyde network on Anisotropic Materials: "Anisotropy in magnetohydrodynamics - effects on nonlinear instabilities" **2021**: Astronomy and Astrophysics Seminar (Glasgow): "Direct evidence that twisted flux tube emergence creates solar active regions." **2022**: MSSL Seminar (UCL): "Magnetic winding as an indicator of flare activity in solar active regions"; Topological Methods in Mathematical Physics (Erice): "Magnetic helicity in multiply connected domains and the proof of Taylor's conjecture" (keynote talk) **2023**: University of St Andrews: "Magnetic helicity in multiply connected domains and the proof of Taylor's conjecture"; AGAPI Workshop on Magnetohydrodynamics, Instituto de Ciencias Matemáticas (Madrid): "The topology of relative magnetic helicity"; Flux Emergence Workshop (Santorini): "Magnetic winding and the structure of emerging active regions"; University of Dundee: "Magnetic helicity: the influence of physics, topology and geometry" **2024** FBK WebValley Summer School (Trento): "How to access solar data with Python"; ARCHIE-WeSt Showcase 2024, University of Strathclyde (Glasgow): "Solar plasma physics and space weather"

Contributed talks

2008: Flux Emergence Workshop (Kyoto): "Breakout from multiple flux emergence" **2009**: 2nd Solaire Network Meeting (Catania): "Breakout from multiple flux emergence; UKMHD (Coventry): "The emergence of toroidal flux tubes"; Flux Emergence Workshop (Puerto della Cruz): "Toroidal flux emergence" **2010**: Flux Emergence Workshop (UCL): "The 'sliding doors' effect in flux emergence"; National Astronomy Meeting (Glasgow): "Simulations of magnetic flux emergence with an overlying field" **2011**: 4th Solaire Network Meeting (MPS, Teistungen): "Flux emergence within mature solar active regions" **2013** UKMHD (Glasgow): "Finite deformation in Ideal MHD: analytical twisted current layers" **2015**: UKMHD (Northumbria): "Topological flux emergence"; Flux Emergence Workshop (HAO, Boulder): "Topological flux emergence" **2016**: RAS Special Meeting (London): "The pre-penumbral magnetic canopy in the solar atmosphere" **2017**: UKMHD (Durham): "Optimal energy growth in current sheets" **2018**: BAMC/UKMHD (St Andrews): "The emergence of braided magnetic fields" **2019**: ISMP Seminar (Glasgow): "Magnetic helicity in multiply connected domains" **2020** Applied Mathematics Seminar (Glasgow): "Magnetic winding: what is it and what is it good for?"; Helicity 2020 (online international conference): "Magnetic winding – a key to unlocking topological complexity in flux emergence" **2021**: UKMHD (Newcastle): "Magnetic winding: what is it and what is it good for?"; ESWW17: "Direct evidence that twisted flux tube emergence creates solar active regions." **2023** National Astronomy Meeting (Cardiff): "ARTop: an open-source package for measuring Active Region Topology at the solar photosphere"; SOLARNET: Sun in Science and Society (Venice): "Going to the source: using topological measures to find early-warning signatures of flares" **2024** Trento Space Weather Workshop (Trento): "Some comments on modelling field line resonance at low latitudes"; European Astrophysical Meeting (Padua): "Photospheric signatures of CME onset" **2025** Particle Acceleration and Transport: from the Sun to Extragalactic Sources (Calabria): "The source of the 2017 cosmic ray half-year modulation event, a solar solution to a cosmic problem"

Computing skills

C++, Fortran, Matlab, Python, VisIt, LaTeX, Git, standard office packages

Linux and Windows operating systems

Experience of running parallel codes on supercomputers in the UK and Denmark

Outreach

Formerly on the advisory committee for the Mills Observatory, Dundee (2013-2014)

Solar plasma display and presentations at the Dundee Science Centre

Mathematics activities with primary school children in Glasgow

Participated in STEM for Britain 2016 at the Houses of Parliament

Curator of an exhibition on the history of mathematics at the University of Glasgow (2017)

Grants awarded

2024 Royal Society of Edinburgh Personal Fellowship (Forecasting the strongest solar flares with physics-informed deep learning): £44110
2023 STFC Astronomy Small Award (Hybrid dynamo models of magnetic cycles in the solar convection zone): £80750 (grant total £403750)
2023 Leverhulme Trust (The robust prediction of solar flares with magnetic winding): £224935
2021 DiRAC Innovation Placement: £16000
2021 STFC DiRAC high-performance supercomputing facility (shared with two colleagues at Glasgow), 4.5M CPU-hours
2020 AFOSR Space Science Program (Developing photospheric magnetic winding inputs as a flare forecasting diagnostic, co-I with Univ. Durham): £12716 (grant total $170766)
2019 University of Trento, Visiting Professor: €6000
2018 Quarterly Journal of Mechanics and Applied Mathematics Trust (support for CISM School): £2000
2018 Edinburgh Mathematical Society (support for CISM School): £500
2017 Edinburgh Mathematical Society (support for research): £625
2016 STFC Consolidated Grant (co-I with Astronomy & Astrophysics Group): £36407 (grant total £910175)
2016 Carnegie Trust Research Incentive Grant (Helicity in the dynamic solar atmosphere): £4900
2016 STFC conference support (support for UKMHD): £2000
2016 Edinburgh Mathematical Society (support for UKMHD): £1600
2016 Glasgow Mathematical Journal Trust (support for UKMHD): £1015
2016 SOLARNET Mobility Grant (Univ. Catania, Sicily from June to July): €1800
2014 SFC Innovation Voucher (support for research): £5000
2014 SOLARNET Mobility Grant (Univ. Catania, Sicily from June to August): €1800
2014 Carnegie Trust Grant (Flux Rope Topology): £1000
2013 RAS grant (for conference travel): £170

Publications

All publications are available on request or via the links below.

Homepage

ORCID

Google Scholar

Books

MacTaggart, D., Hillier, A. (eds), Topics in magnetohydrodynamic topology, reconnection and stability theory 2020, CISM International Centre for Mechanical Sciences, 591, Springer

MacTaggart, D., Magnetic winding: theory and applications, chapter in Helicities in Geophysics, Astrophysics and Beyond 2023, Kuzanyan, K., Yokoi, N., Georgoulis, M. (eds), Wiley

Mainline research papers (* indicates corresponding author):

46. Aslam, O.P.M, MacTaggart*, D., Battiston, R., Potgieter, M.S., Ngobeni, M.D., Fletcher, L., The 2017 cosmic ray half-year modulation event: numerical modelling of different particle species 2025, in prep.

45. Lindberg*, S., MacTaggart, D., Relative magnetic helicity under turbulent relaxation 2025, Journal of Mathematical Physics, 66, 043102

44. MacTaggart*, D., On field line slippage in the solar corona 2025, Solar Physics, 300, 48

43. Aslam, O.P.M, MacTaggart*, D., Battiston, R., Potgieter, M.S., Ngobeni, M.D., The source of the 2017 cosmic ray half-year modulation event 2025, Astrophysical Journal, 981, 174

42. MacTaggart*, D., Williams, T., Aslam, O.P.M., The magnetic topology of AR13664 leading to its first halo CME 2025, Journal of Geophysical Research: Space Physics, 130, e2024JA033462

41. Stanish*, S., MacTaggart, D., On turbulent magnetic reconnection: fast and slow mean steady-states 2025, Journal of Plasma Physics, 91, E49

40. Williams*, T., Prior, C., MacTaggart, D., Investigating the efficacy of topologically derived time-series for flare forecasting. I. Dataset preparation 2025, Astrophysical Journal, 980, 102

39. Aslam, O.P.M., MacTaggart*, D., Williams, T., Fletcher, L., Romano, P., Photospheric signatures of CME onset 2024, MNRAS, 534, 444.

38. Spelman, T.A., Onah, I.S., MacTaggart, D., Stewart*, P.S., Elastic jump propagation across a blood vessel junction 2024, Royal Society Open Science, 11, 32000.

37. Gupta, P., MacTaggart*, D., Simitev, R.D., Effects of radial variation of viscosity and entropy diffusivity on convection and dynamo action in rotating spherical shells 2023, Fluids, 8, 288.

36. Raphaldini*, B., Dikpati, M., Norton, A., Teruya, A.S.W., McIntosh, S.W., Prior, C., MacTaggart, D., Deciphering pre-solar-storm features of September-2017 storm from global and local dynamics 2023, Astrophysical Journal, 958, 175

35. MacTaggart*, D, Valli, A., Relative magnetic helicity in multiply connected domains 2023, Journal of Physics A: Mathematical and Theoretical, 56,435701

34. Alielden, K., MacTaggart*, D., Ming, Q., Prior, C., Raphaldini, B., ARTop: an open-source tool for measuring active region topology at the solar photosphere 2023, Royal Astronomical Society Techniques and Instruments, 2, 398

33. Gupta, P., Simitev, R.D., MacTaggart*, D., A study of global magnetic helicity in self-consistent spherical dynamos 2022, Geophysical and Astrophysical Fluid Dynamics, 116, 521

32. Raphaldini, B., Prior*, C., MacTaggart, D., Winding as an indicator of flaring in solar active regions 2022, Astrophysical Journal, 927, 156

31. Faraco, D., Lindberg, S., MacTaggart*, D., Valli, A., On the proof of Taylor's conjecture in multiply connected domains 2022, Applied Mathematics Letters, 124, 107654

30. MacTaggart*, D., Prior, C., Raphaldini, B., Romano, P., Guglielmino, S.L., Direct evidence that twisted flux tube emergence creates solar active regions 2021, Nature Communications, 12, 6621

29. Candelaresi, S., Hornig, G., MacTaggart*, D., Simitev, R., On self and mutual winding helicity 2021, Communications in Nonlinear Science and Numerical Simulation, 103, 106015

28. Quinn*, J., MacTaggart, D., Simitev, R., Kelvin-Helmholtz instability and collapse of a twisted magnetic null point with anisotropic viscosity 2021, Astronomy and Astrophysics, 650, A143

27. MacTaggart*, D., Prior, C., Helicity and winding fluxes as indicators of twisted flux emergence 2020, Geophysical and Astrophysical Fluid Dynamics, 115, 85

26. Silva, L., Gupta, P., MacTaggart, D., Simitev*, R., Effects of shell thickness on cross-helicity generation in convection-driven dynamos 2020, Fluids, 5, 245

25. MacTaggart*, D., Prior, C., Magnetic winding – a key to unlocking topological complexity in flux emergence 2020, Journal of Physics Conference Series, 1730

24. Prior, C., MacTaggart*, D., Magnetic winding - what is it and what is it good for? 2020, Proceedings of the Royal Society A, 476, 20200483

23. Quinn*, J., MacTaggart, D., Simitev, R., The effect of anisotropic viscosity on the non-linear MHD kink instability 2020, Communications in Nonlinear Science and Numerical Simulation, 83, 105131

22. MacTaggart*, D., Valli, A., Magnetic helicity in multiply connected domains 2019, Journal of Plasma Physics, 85, 775850501

21. MacTaggart*, D., Fletcher, L., The plasmoid instability in a confined solar flare 2019, MNRAS, 486, L96

20. Prior*, C., MacTaggart, D., Interpreting magnetic helicity flux in solar flux emergence 2019, Journal of Plasma Physics, 85, 775850201

19. MacTaggart*, D., The non-modal onset of the tearing instability 2018, Journal of Plasma Physics, 84, 905840501

18. MacTaggart*, D., Stewart, P., Optimal energy growth in current sheets 2017, Solar Physics, 292, 148

17. Dacie*, S., van Driel-Gesztelyi, L., Démoulin, P., Linton, M.G., Leake, J.E., MacTaggart, D., Cheung, M.C.M., The Field Distribution of Magnetograms from Simulations of Active Region Formation 2017, Astronomy and Astrophysics, 606, A34

16. MacTaggart*, D., Vergori, L., Quinn, J., Braginskii MHD for arbitrary magnetic topologies: coronal applications 2017, Journal of Fluid Mechanics, 826, 615

15. MacTaggart*, D., Guglielmino, S.L. Zuccarello, F., The pre-penumbral magnetic canopy in the solar atmosphere 2016, Astrophysical Journal Letters, 831, L4

14. Prior, C., MacTaggart*, D., The emergence of braided magnetic fields 2016, Geophysical & Astrophysical Fluid Dynamics, 110, 432

13. MacTaggart*, D., Gregory, S.G., Neukirch, T., Donati, J.-F., Magnetohydrostatic modelling of stellar coronae 2016, MNRAS, 456, 767

12. MacTaggart*, D., Guglielmino, S.L., Haynes, A.L., Simitev, R., Zuccarello, F., The magnetic structure of surges in small-scale emerging flux regions 2015, Astronomy and Astrophysics, 576, A4

11. MacTaggart*, D., Haynes, A.L., On magnetic reconnection and flux rope topology in solar flux emergence 2014, Monthly Notices of the Royal Astronomical Society, 438, 1500

10. MacTaggart*, D., Elsheikh, A., McLaughlin, J.A., Simitev, R., Non-symmetric magnetohydrostatic equilibria: a multigrid approach 2013, Astronomy and Astrophysics, 556, A40

9. McLaughlin*, J.A., Thurgood, J.O., MacTaggart, D., On the periodicity of oscillatory reconnection 2012, Astronomy and Astrophysics, 548, A98

8. MacTaggart*, D., Finite deformation in ideal magnetohydrodynamics 2012, Astronomy and Astrophysics, 542, A97

7. Vargas Domínguez, S., MacTaggart*, D., Green, L., van Driel-Gesztelyi, L., Hood, A.W., On signatures of twisted magnetic flux tube emergence 2012, Solar Physics, 278, 33

6. Hood*, A.W., Archontis, V., MacTaggart, D., 3D MHD Flux Emergence Experiments: Idealized models and coronal interactions 2012, Solar Physics, 278, 3

5. MacTaggart*, D., Flux emergence within mature solar active regions 2011, Astronomy and Astrophysics, 531, A108

4. MacTaggart*, D., Hood, A.W., Simulating the 'sliding doors' effect through magnetic flux emergence 2010, Astrophysical Journal Letters, 716, L219

3. MacTaggart*, D., Hood, A.W., Multiple eruptions from flux emergence 2009, Astronomy and Astrophysics, 508, 445

2. MacTaggart*, D., Hood, A.W., On the emergence of toroidal flux tubes: general dynamics and comparisons with the cylinder model 2009, Astronomy and Astrophysics, 507, 995

1. MacTaggart*, D., Hood, A.W., Can magnetic breakout be achieved from multiple flux emergence? 2009, Astronomy and Astrophysics, 501, 761

Others:

8. Purgato, M., Tedeschi, F., Riello, M., Zaccoletti, D., Mediavilla, R., Ayuso-Mateos, J. L., MacTaggart, D. , Barbui, C. and Rusconi*, E., Effectiveness of Self-Help Plus (SH+) in reducing anxiety and post-traumatic symptomatology among nursing and care home workers during the COVID-19 pandemic: secondary analysis of randomized controlled trial data 2025, accepted for BMJ Mental Health

   (Enlighten ID: 349369)

7. MacTaggart*, D., Prior, C., Raphaldini, B., Romano, P., Guglielmino, S., Direct evidence that twisted flux tube emergence creates solar active regions 2022, UKSP Nugget, http://www.uksolphys.org/uksp-nuggets/

6. Riello, M., Purgato, M., Bove, C., Tedeschi, F., MacTaggart, D., Barbui, C., Rusconi*, E. 2021, Effectiveness of self-help plus (SH+) in reducing anxiety and post-traumatic symptomatology among care home workers during the COVID-19 pandemic: a randomized controlled trial, Royal Society Open Science, 8, 210219

5. MacTaggart, D., Review of *Aerospace Dynamics for Aerospace Engineering* by J.J.S. Shang and S.T. Surzhikov 2020, The Aeronautical Journal, 124, 2046

4. Riello, M., Purgato, M., Bove, C., MacTaggart, D., Rusconi*, E., Prevalence of post-traumatic symptomatology and anxiety among residential nursing and care home workers following the first COVID-19 outbreak in Northern Italy 2020, Royal Society Open Science, 7, 200880

3. Bowness*, J., Labrosse, N., Forrest, D., MacTaggart, D., et al., Supporting Students in the Transition to Postgraduate Taught Study in STEM Subjects 2017, Journal of Perspectives in Applied Academic Practice, 5, 3

2. MacTaggart, D., Twisted flux tube emergence: rigid rise or nonlinear deformation? 2013, Invited UKSP Nugget, http://www.uksolphys.org/uksp-nuggets/

1. Simitev*, R., MacTaggart, D., The mathematics of fluid dynamos 2012, The Commutator, 3, 36