

List of publications

H.K. Moffatt

February 23, 2026

Curriculum Vitae

2026

231. GOLDSTEIN, R. E., PESCI, A. & MOFFATT, H. K. 2026 Note on a controlled interconversion between two minimal surfaces. *J. Fluid Mech.* **1028**, A18. [PDF](#).

2025

230. MOFFATT, H. K. 2025 *Flow; The Twists and Turns of a Life in Turbulence*. UKBookPublishing.com. The book is available from Amazon.

2024

229. MOFFATT, H. K. 2024 The early years of the Journal of Fluid Mechanics. *J. Fluid Mech* **1000**, E2–1 – E2–11. [PDF](#).
228. DORMY, E. & MOFFATT, H. K. 2024a Flow induced by rotation of two circular cylinders in a viscous fluid. *Phys. Rev. Fluids* **9**, 044102. [PDF](#).
227. DORMY, E. & MOFFATT, H. K. 2024b Prandtl-Batchelor flow in a cylindrical domain. *SIAM J. Appl. Math.* **84** (4), 1658–1667. [PDF](#).
226. MOFFATT, H. K. & KIMURA, Y. 2024 Spiral wind-up of vortex sheets. *Geophysical and Astrophysical Fluid Dynamics* pp. 1–14. <https://doi.org/10.1080/03091929.2024.2403085>. [PDF](#).

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225. MOFFATT, H. K. & KIMURA, Y. 2023 Towards a finite-time singularity of the Navier-Stokes equations. Part 3. Maximal vorticity amplification. *J. Fluid Mech.* **967**, R1. Doi:10.1017/jfm.2023.472. [PDF](#).

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224. LISICKI, M., ADAMOWICZ, L., HERCYNski, A. & MOFFATT, H. K. 2022 Viscous thread falling on a spinning surface. *Symmetry* **14** (8), 5550. [PDF](#).

2021

223. MOFFATT, H. K., GUEST, H. & HUPPERT, H. E. 2021 Spreading or contraction of viscous drops between plates: single, multiple or annular drops. *J. Fluid Mech.* **925**, A26. DOI:<https://doi.org/10.1017/jfm.2021.668>. [PDF](#).
222. MOFFATT, H. K. 2021a Extreme events in turbulent flow. *J. Fluid Mech.* **914**, F1–1 – F1–4. [PDF](#).
221. MOFFATT, H. K. 2021b Some topological aspects of fluid dynamics. *J. Fluid Mech.* **914**, P1–1 – P1–56. Doi:10.1017/jfm.2020.230. [PDF](#).

2019

220. MOFFATT, H. K. 2019 Singularities in fluid mechanics. *Phys. Rev. Fluids* **4** (11), 110502. [PDF](#).
219. MOFFATT, H. K. & VLADIMIROV, V. A. 2019 Chiral transfer of angular momentum. *Phys. Rev. Fluids* **4** (10), 104102. <https://link.aps.org/doi/10.1103/PhysRevFluids.4.104102>. [PDF](#).
218. MOFFATT, H. K. & KIMURA, Y. 2019*b* Towards a finite-time singularity of the Navier-Stokes equations. Part 2. Vortex reconnection and singularity evasion. *J. Fluid Mech.* **870**, R1. <https://doi.org/10.1017/jfm.2019.263> (See also CORRIGENDUM, JFM, 887, 25 MAR. 2020, doi: 10.1017/jfm.2020.57). [PDF](#).
217. MOFFATT, H. K. & KIMURA, Y. 2019*a* Towards a finite-time singularity of the Navier-Stokes equations. Part 1. Derivation and analysis of dynamical system. *J. Fluid Mech.* **861**, 930–967. [PDF](#).
216. MOFFATT, H. K. & DORMY, E. 2019 *Self-Exciting Fluid Dynamos*. Cambridge University Press. Cambridge Texts in Applied Mathematics, 520+xviii pp.

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215. MIZERSKI, K. A. & MOFFATT, H. K. 2018 Dynamo generation of a magnetic field by decaying Lehnert waves in a highly conducting plasma. *Geophys. Astrophys. Fluid Dyn.* **112**, 165–174. [PDF](#).
214. KIMURA, Y. & MOFFATT, H. K. 2018*a* Scaling properties towards vortex reconnection under the Biot-Savart law. *Fluid Dyn. Res.* **50**, 011409. [PDF](#).
213. KIMURA, Y. & MOFFATT, H. K. 2018*b* A tent model of vortex reconnection under Biot-Savart evolution. *J. Fluid Mech.* **834**, R1. Doi=10.1017/jfm.2017.769. [PDF](#).
212. MOFFATT, H. K. 2018 Helicity. *Comptes Rendus Mécanique* **346** (3), 165–169. <https://doi.org/10.1016/j.crme.2017.12.002>. [PDF](#).

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211. MOFFATT, H. K. & MIZERSKI, K. 2017 Pinch dynamics in a low- β plasma. *Fluid Dyn. Res.* **50** (1), 011401. [PDF](#).
210. ILIN, K. I., MOFFATT, H. K. & VLADIMIROV, V. A. 2017 Dynamics of a rolling robot. *Proc. Nat. Acad. Sci.* **114** (49), 12858–12863. [PDF](#).
209. MOFFATT, H. K. 2017*d* Helicity, invariant even in a viscous fluid. *Science* **357** (6350), 448–449. [PDF](#).
208. MOFFATT, H. K. 2017*c* The early years of the *Journal of Fluid Mechanics*. Style and international impact. *Comptes Rendus Mécanique* **345** (7), 498–504. [PDF](#).
207. MOFFATT, H. K. 2017*b* CORRIGENDUM – The degree of knottedness of tangled vortex lines. *J. Fluid Mech.* **830**, 821–822. [PDF](#).
206. MOFFATT, H. K. 2017*a* Clerk Maxwell and the complex behaviour of an object released from rest in a fluid. *Newsletter of the James Clerk Maxwell Foundation* (9), 1–2. [PDF](#).

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205. MOFFATT, H. K. 2016*b* Helicity and celestial magnetism. *Proc. Roy. Soc. A* **472** (2190), 20160183. [PDF](#).
204. MOFFATT, H. K., GOLDSTEIN, R. E. & PESCI, A. I. 2016 Soap-film dynamics and topological transitions under continuous deformation. *Phys. Rev. Fluids* **1** (6), 060503. [PDF](#).

203. MOFFATT, H. K. 2016a Book Review – Singularities: Formation, Structure, and Propagation. Eggers J. & Fontelos M.A. Cambridge Texts in Applied Mathematics, Cambridge University Press, 2015. Paperback, 453+ xvi pp. isbn 9781107485495. £39.99. *J. Fluid Mech.* **804**, 749–750. [PDF](#).
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202. LYNDEN-BELL, D. & MOFFATT, H. K. 2015 Flashpoint. *Mon. Not. R. Astron. Soc.* **452**, 902–909. [PDF](#).
201. MOFFATT, H. K. 2015a Fluid Dynamics. In *The Princeton Companion to Applied Mathematics*, pp. 467–476. Princeton University Press.
200. MOFFATT, H. K. 2015b Magnetic relaxation and the Taylor conjecture. *J. Plasma Phys.* **81**, 905810608. [PDF](#). doi:10.1017/S0022377815001269
199. MOFFATT, H. K. 2015c The Navier-Stokes equations. In *The Princeton Companion to Applied Mathematics*, pp. 162–163. Princeton University Press.
198. PESCI, A. I., GOLDSTEIN, R., ALEXANDER, G. & MOFFATT, H. K. 2015 Instability of a Möbius strip minimal surface and a link with systolic geometry. *Phys. Rev. Lett.* **114**, 127801. [PDF](#).
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197. MOFFATT, H. K. 2014a Helicity and singular structures in fluid dynamics. *Proc. Nat. Acad. Sci.* **111**, 3663–3670. [PDF](#).
196. MOFFATT, H. K. 2014b Note on the triad interactions of homogeneous turbulence. *J. Fluid Mech.* **741**, R3. [PDF](#).
195. MOFFATT, H. K. 2014c The fluid dynamics of James Clerk Maxwell. In *James Clerk Maxwell: Perspectives on his Life and Work* (ed. R. Flood, M. McCartney & A. Whitaker), pp. 223–230. Oxford University Press. [PDF](#).
194. GOLDSTEIN, R. E., HUPPERT, H. E., MOFFATT, H. K. & PESCI, A. I. 2014a Instability of a gravity current within a soap-film. *J. Fluid Mech.* **753**, R1. [PDF](#).
193. GOLDSTEIN, R. E., MCTAVISH, J., MOFFATT, H. K. & PESCI, A. I. 2014b Boundary singularities produced by the motion of soap films. *Proc. Natl. Acad. Sci.* **111**, 8339–8344. [PDF](#).
192. KIMURA, Y. & MOFFATT, H. K. 2014 Reconnection of skewed vortices. *J. Fluid Mech* **751**, 329–345. [PDF](#).
- 2013
191. ELIMELECH, Y., KOLOMENSKIY, D., DALZIEL, S. B. & MOFFATT, H. K. 2013 Evolution of the leading-edge vortex over an accelerating rotating wing. In *Moffatt et al. (2013)*, pp. 233–242. [PDF](#).
190. MOFFATT, H. K., BAJER, K. & KIMURA, Y. (ed.) 2013 *Topological Fluid Dynamics: Theory and Applications. Procedia IUTAM 7*. Elsevier, Proceedings of the IUTAM Symposium, Isaac Newton Institute for Mathematical Sciences, 23–27 July 2012, Cambridge, UK. [URL](#)
189. SCHNEIDER, K., KOLOMENSKIY, D., ENGELS, T., MOFFATT, H. K. & FARGE, M. 2013 Numerical simulations of the clap-fling-sweep mechanism of hovering insects. In *Mining Smartness from Nature* (ed. P. Vincenzini, L. Schenato, N. C. Seeman & F. C. Simmel), *Advances in Science and Technology*, vol. 84, pp. 57–58. Trans Tech Publications. CIMTEC 2012 - 4th International Conference on Smart Materials, Structures and Systems, June 10-14, 2012, Montecatini Terme, Italy. [PDF](#). [URL](#)

188. FARGE, M., MOFFATT, H. K. & SCHNEIDER, K. 2013 Fundamental Problems of Turbulence, 50 years after the Marseille 1961 Conference, Centre International de Rencontres Mathématiques (CIRM), Marseille, 28-30 September 2011. *J. Turbul.* **14**, 39–42. [PDF](#). [URL](#)
187. BAJER, K. & MOFFATT, H. K. 2013 Magnetic relaxation, current sheets, and structure formation in an extremely tenuous fluid medium. *Astrophys. J.* **779**, 169–182. [PDF](#).
186. MOFFATT, P. G. & MOFFATT, H. K. 2013 Giffen goods and their reflexion property. *The Manchester School* <https://doi.org/10.1111/manc.12003>. [PDF](#).
185. MOFFATT, H. K. 2013*b* Three coins in a fountain. *J. Fluid Mech.* **720**, 1–4. Focus on Fluids. [PDF](#).
184. MOFFATT, H. K. 2013*a* Relaxation to steady vortical flows, and knots in the quark-gluon plasma. In *Mechanics Down Under* (ed. J. P. Denier & M. D. Finn), pp. 155–164. Springer. Proceedings of the XXII International Congress of Theoretical and Applied Mechanics (ICTAM2008), 24-29 August 2008, Adelaide, Australia. [PDF](#).
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183. MIZERSKI, K. A., BAJER, K. & MOFFATT, H. K. 2012 The mean electromotive force generated by elliptic instability. *J. Fluid Mech.* **707**, 111–128. [PDF](#).
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180. KOLOMENSKIY, D. & MOFFATT, H. K. 2012 Similarity solutions for unsteady stagnation point flow. *J. Fluid Mech.* **711**, 394–410. [PDF](#).
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177. MOFFATT, H. K. 2011*a* A brief introduction to vortex dynamics and turbulence. In [Moffatt & Shuckburgh \(2011\)](#), pp. 1–27. [PDF](#).
176. MOFFATT, H. K. & SHUCKBURGH, E. (ed.) 2011 *Environmental Hazards: The Fluid Dynamics and Geophysics of Extreme Events*. World Scientific. [URL](#)
175. MOFFATT, H. K. 2011*b* George Keith Batchelor and the post-war renaissance of research in turbulence. In [Davidson et al. \(2011\)](#), pp. 276–304. [PDF](#).
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169. KOLOMENSKIY, D., MOFFATT, H. K., FARGE, M. & SCHNEIDER, K. 2010 Vorticity generation during the clap-fling-sweep of some hovering insects. *Theor. Comp. Fluid Dyn.* **24** (1-4, SI), 209–215. [PDF](#).
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168. MOFFATT, H. K. 2009 Singularities in fluid dynamics and their resolution. In *Lectures on Topological Fluid Mechanics* (ed. R. L. Ricca, M. Berger, L. H. Kauffman, B. Khesin, K. H. Moffatt & D. W. Summers), *Lecture Notes in Mathematics*, vol. 1973, pp. 157–166. Springer. [PDF](#).
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167. MOFFATT, H. K. 2008*b* Vortex dynamics: The legacy of Helmholtz and Kelvin. In *Hamiltonian Dynamics, Vortex Structures, Turbulence* (ed. A. V. Borisov, V. V. Kozlov, I. S. Mamaev & M. A. Sokolovskiy), pp. 1–10. Springer. Proceedings of the IUTAM Symposium, Moscow, 25–30 August 2006. [PDF](#).
166. MOFFATT, H. K. & TOKIEDA, T. 2008 Celt reversals: a prototype of chiral dynamics. *Proc. Roy. Soc. Edinb. A* **138** (2), 361–368. [PDF](#).
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