Curriculum Vitae
Dr Matthew Henry

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Education:	2016-19	**PhD:** Polar amplification: what does the temperature feedback have to do with it? With Prof Tim Merlis. Dept of Atmospheric and Oceanic Sciences. McGill University, Canada.
	2013-15	**MSc:** Climate Science and Applied Mathematics. Paris-Saclay University, France.
	2010-13	**BSc:** Mathematics Major. GPA: 3.73/4 Department of Mathematics. McGill University, Canada.
Employment History:	2025-pres	**Senior Research Fellow** Sunlight Reflection Methods (SRM) modelling, with Prof Jim Haywood. Department of Mathematics, University of Exeter, UK
	2020-2025	**Postdoctoral Research Fellow** Sunlight Reflection Methods (SRM) modelling, with Prof Jim Haywood. Idealised modelling of past warm climates, with Prof Geoff Vallis. Department of Mathematics, University of Exeter, UK

Selected Peer-Reviewed Publications:

- **Chapter lead** for “Solar radiation modification: Policy briefing” by the Royal Society.
- **Henry, M.** and Duffey, A., Commentary:" Safeguarding the polar regions from dangerous geoengineering: a critical assessment of proposed concepts and future prospects". *Frontiers in Earth Science*, *13*, p.1709127
- Duffey, A., **Henry, M.**, Smith, W., Tsamados, M., & Irvine, P. J. (2025). Low‐altitude high‐latitude stratospheric aerosol injection is feasible with existing aircraft. *Earth's Future*, *13*(4), e2024EF005567
- **Henry, M.**, Bednarz, E. M., & Haywood, J. (2024). How does the latitude of stratospheric aerosol injection affect the climate in UKESM1?. *Atmospheric Chemistry and Physics*, *24*(23), 13253-13268
- Jordan, G., & **Henry, M**. (2024). IMO2020 Regulations accelerate global warming by up to 3 Years in UKESM1. *Earth's Future*, *12*(8), e2024EF005011
- Byrne, M. P., Hegerl, G. C., Scheff, J., Adam, O., Berg, A., Biasutti, M., **Henry, M.**, ... & Zhang, Y. (2024). Theory and the future of land-climate science. *Nature Geoscience*, *17*(11), 1079-1086
- Visioni, D., Robock, A., Haywood, J., **Henry, M.**, Tilmes, S., MacMartin, D. G., ... & Quaglia, I. (2024). G6-1.5 K-SAI: a new Geoengineering Model Intercomparison Project (GeoMIP) experiment integrating recent advances in solar radiation modification studies. *Geoscientific Model Development*, *17*(7), 2583-2596
- **Henry, M**., Haywood, J., Jones, A., Dalvi, M., Wells, A., Visioni, D., ... & Tye, M. R. (2023). Comparison of UKESM1 and CESM2 simulations using the same multi-target stratospheric aerosol injection strategy. *Atmospheric Chemistry and Physics*, *23*(20), 13369-13385. https://doi.org/10.5194/acp-23-13369-2023
- **Henry, M.**, Vallis, G.K., Lutsko, N., Seeley, J.T. and McKim, B.A., 2023. State-dependence of the equilibrium climate sensitivity in a clear-sky GCM. *Geophysical Research Letters.* 2023. https://doi.org/10.1029/2023GL104413
- Visioni, D., Robock, A., Haywood, J., **Henry, M.** and Wells, A., 2023. A new era for the Geoengineering Model Intercomparison Project (GeoMIP). *Bulletin of the American Meteorological Society*. https://doi.org/10.1175/BAMS-D-23-0232.1
- **Henry, M.** and Vallis, G.K., 2022. Variations on a pathway to an early Eocene climate. *Paleoceanography and Paleoclimatology*, *37*(8), p.e2021PA004375. https://doi.org/10.1029/2021PA004375
- **Henry, M.** and Vallis, G.K., 2021. Reduced high-latitude land seasonality in climates with very high carbon dioxide. *Journal of Climate*, *34*(17), pp.7325-7336. https://doi.org/10.1175/JCLI-D-21-0131.1

- Henry, M., Merlis, T.M., Lutsko, N.J. and Rose, B.E., 2021. Decomposing the drivers of polar amplification with a single-column model. *Journal of Climate*, *34*(6), pp.2355-2365. https://doi.org/10.1175/JCLI-D-20-0178.1
- Henry, M. and Merlis, T.M., 2020. Forcing dependence of atmospheric lapse rate changes dominates residual polar warming in solar radiation management climate scenarios. *Geophysical Research Letters*, *47*(15), p.e2020GL087929. https://doi.org/10.1029/2020GL087929
- Henry, M. and Merlis, T.M., 2019. The role of the nonlinearity of the Stefan–Boltzmann law on the structure of radiatively forced temperature change. *Journal of Climate*, *32*(2), pp.335-348. https://doi.org/10.1175/JCLI-D-17-0603.1

Selected Upcoming Work:
- **Henry, M.**, H. Hirasawa, J. Haywood, and P. Rasch : Marine Cloud Brightening to Cool the Arctic : an Earth System Model Comparison. https://doi.org/10.22541/essoar.174690860.07133973/v1. Accepted in Earth's Future.
- Hirasawa H., **M. Henry**, A. Mason, P. Rasch, S. Doherty, R. Wood, J. Haywood, and K. von Salzen : Cloud Susceptibility and Climate Sensitivity to Midlatitude Marine Cloud Brightening. Submitted to Journal of Climate.

Funding and Awards:
2024: I wrote one of 5 successful grants for postdoctoral research fellow positions at the University of Exeter working on SRM funded by the Quadrature Climate Foundation and another anonymous philanthropic donor. Worth £300k.
2019: Eben Hopson Fellowship for Study at McGill University.
2015: Masters scholarship from Fondation Mathématiques Jacques Hadamard Excellence Program.

Selected Presentations:
May 2025: Degrees Global Forum in Cape Town (S Africa): one talk and roundtable on global marine cloud brightening modelling, and one talk on Arctic MCB. GeoMIP 2025 (S Africa): update on global marine cloud brightening modelling.
August 2023: Invited presentation introducing stratospheric aerosol injection at the Arctic Momentum event in Helsinki (Finland) organised by Operaatio Arktis.
June 2022: Reduced High-Latitude Land Seasonality in Climates with Very High Carbon Dioxide, invited talk at Carnegie Research Workshop on Continental Climate Change, *St Andrews (UK).*
May 2022: Different Pathways to an Early Eocene Climate, invited seminar at the *Weizmann Institute for Earth and Planetary Sciences, Israel (remote).*
March 2021: Reduced High-Latitude Land Seasonality in Climates with Very High Carbon Dioxide, invited talk at *McGill University, Canada (remote)*.

Selected Public Outreach:
April 2025: Long interview on 'How to model SRM?' by Rémi Noyon in his substack '420ppm'. https://420ppm.substack.com/p/comment-modelise-t-on-le-voile-solaire
March 2025 : Guardian letter on why 'Climate research into cloud barriers and Arctic refreezing is worth funding'. (Editor's choice of title.)
Dec 2024: UN Scientific Advisory Board Expert Roundtable on SRM to provide independent advice on key scientific and technological developments to the UN Secretary-General.
Sept 2024: On Radio France Culture (Avec sciences) to talk about Jordan & Henry 2024.
April 2024: Main convener for the first EGU session focused on SRM, Vienna (Austria).
March 2024: Talk about marine cloud brightening at an event organised by the Humanity Project in Brian Eno's studio in Notting Hill (London, UK).
July 2023: Geoengineering Modelling Intercomparison Project 2023 meeting, Exeter (UK). Member of the local organising committee.
Feb 2023 - now: Climate Intervention Symposia, organised with Simone Tilmes and Ilaria Quaglia. Monthly online 1 hour sessions with 2 talks on climate interventions with international speakers. Recordings made available on YouTube, 21 sessions so far.
Feb 2022: Carbon Brief guest post on Arctic amplification.
April 2021: CMIP6 Hackathon team lead on extremes in solar geoengineering scenarios.
May 2019: Pint of Science Montreal presentation on Arctic amplification and climate modelling.