Curriculum Vitae
Dr Matthew Henry

Work address	Department of Mathematics and Statistics, Harrison Building, University of Exeter, EX4 4QF, UK.
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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. Department of Mathematics. McGill University, Canada.
Employment History:	2022-pres	**Postdoctoral Research Fellow:** Solar climate intervention modelling, with Prof Jim Haywood. Department of Mathematics and Statistics, University of Exeter, UK
	2020-2022	**Postdoctoral Research Fellow:** Idealised modelling of past warm climates, with Prof Geoff Vallis. College of Engineering, Mathematics & Physical Sciences, University of Exeter, UK

Peer-Reviewed Publications:

- **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. Accepted for publication at *Geophysical Research Letters.*
- 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
- Mitchell, D.M., Stone, E.J., Andrews, O.D., Bamber, J.L., Bingham, R.J., Browse, J., **Henry, M.**, MacLeod, D.M., Morten, J.M., Sauter, C.A. and Smith, C.J., 2022. The Bristol CMIP6 data hackathon. *Weather*, *77*(6), pp.218-221.https://doi.org/10.1002/wea.4161
- Jones, A., Haywood, J.M., Scaife, A.A., Boucher, O., **Henry, M.**, Kravitz, B., Lurton, T., Nabat, P., Niemeier, U., Séférian, R. and Tilmes, S., 2022. The impact of stratospheric aerosol intervention on the North Atlantic and quasi-biennial oscillations in the geoengineering model intercomparison project (GeoMIP) G6sulfur experiment. *Atmospheric Chemistry and Physics*, *22*(5), pp.2999-3016. https://doi.org/10.5194/acp-22-2999-2022
- Taylor, P.C., Boeke, R.C., Boisvert, L.N., Feldl, N., **Henry, M.**, Huang, Y., Langen, P.L., Liu, W., Pithan, F., Sejas, S.A. and Tan, I., 2022. Process drivers, inter-model spread, and the path forward: A review of amplified Arctic warming. *Frontiers in Earth Science*, *9*, p.758361. https://doi.org/10.3389/feart.2021.758361
- **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
- Merlis, T.M. and **Henry, M.**, 2018. Simple estimates of polar amplification in moist diffusive energy balance models. *Journal of Climate*, *31*(15), pp.5811-5824. https://doi.org/10.1175/JCLI-D-17-0578.1

Preprints:
- Visioni, D., Robock, A., Haywood, J.M., **Henry, M.**, et al., 2023. G6-1.5K-SAI: a new Geoengineering Model Intercomparison Project (GeoMIP) experiment integrating recent advances in solar radiation modification studies. EGUsphere (egusphere-2023-2406). https://doi.org/10.5194/egusphere-2023-2406

Awards:
2019: Eben Hopson Fellowship for Study at McGill University.
2015: Masters scholarship from Fondation Mathématiques Jacques Hadamard Excellence Program.

Selected talks and poster presentations:
August 2023: Invited presentation introducing stratospheric aerosol injection at the Arctic Momentum event in Helsinki (Finland) organised by Operaatio Arktis.
April 2023: Towards a better understanding of the physical risks and tradeoffs of solar geoengineering at EGU 2023 in *Vienna, Austria.*
June 2022: Poster on solar geoengineering and discussion leader at the 2022 Climate Engineering Gordon Research Conference in *Newry (ME, USA)*.
June 2022: State Dependence of the Clear-Sky Longwave Feedback in a Clear-Sky GCM, talk at the Atmospheric and Oceanic Fluid Dynamics conference in *Breckenridge (CO, USA).*
June 2022: Reduced High-Latitude Land Seasonality in Climates with Very High Carbon Dioxide, invited talk at the 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)*.
July 2020: Decomposing the Drivers of Polar Amplification with a Single Column Model, invited talk at *Scripps Institute of Oceanography, USA (remote).*
June 2020: Idealised modelling of past warm climates. UK Climate Dynamics Workshop (remote).
Dec 2019: Decomposing the Drivers of Polar Amplification with a Single Column Model, poster presentation at *AGU 2019*, San Francisco, USA.
June 2019: Lapse rate changes dominate residual polar warming in solar radiation management experiments, talk at *Atmospheric and Oceanic Fluid Dynamics*, Portland (Maine), USA.
March 2019: Lapse rate changes dominate residual polar warming in solar radiation management experiments, talk at *Advanced Climate Dynamics Course 10 year anniversary*, Rondane, Norway.

Selected Public Outreach:
July 2023: Geoengineering Modelling Intercomparison Project 2023 meeting, Exeter (UK). Member of the local organising committee.
February 2023 - now: Solar Climate Intervention Symposia, organised with Simone Tilmes. Monthly online 1 hour sessions with 2 talks on solar climate interventions, with speakers from all over the world. Recordings made available on youtube (6 videos and 340 views to date).
February 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.
June 2018: “Mon Projet Nordique” competition in Quebec City, Canada, on Arctic amplification.