Matthew HENRY

Curriculum Vitae

✉ *m.henry@exeter.ac.uk*
https://matthewjhenry.github.io/
Twitter: @mattjohenry

Postdoctoral Research Fellow at the University of Exeter working on idealized modelling of past warm climates under the supervision of Geoff Vallis.

Education

2016–2019 **Ph.D. in Atmospheric and Oceanic Sciences**.
Under the supervision of Timothy Merlis.
McGill University, Montreal, Canada
Recipient of the Eben Hopson Fellowship for Study at McGill

2014–2015 **Master's (2nd year) in Mathematical Modelling (Master M2S Modelisation et Simulation)**.
Master scholarship from Fondation Mathematique Jacques Hadamard Excellence Program
Program managed by Universite Paris-Saclay in Paris, France

2013–2014 **Master's (1st year) in Ocean, Atmosphere and Climate Dynamics (OACOS)**.
Universite Pierre et Marie Curie, Paris, France

2010–2013 **Bachelor of Science, Mathematics Major**.
GPA : 3.73
McGill University, Montreal, Canada

Publications

2020 **Seasonality of polar warming in very high CO2 climates.**, *Matthew Henry and Geoff Vallis*.
In prep.

2020 **Decomposing the Drivers of Polar Amplification with a Single Column Model**, *Matthew Henry, Timothy M. Merlis, Nicholas J. Lutsko, and Brian E.J. Rose*, In review at Journal of Climate.
Preprint: https://eartharxiv.org/repository/view/168/

2020 **Lapse rate changes dominate residual polar warming in solar radiation management experiments.**, *Matthew Henry and Timothy M. Merlis*, Geophysical Research Letters, 2020.
doi:10.1029/2020GL087929.

2018 **The role of the nonlinearity of the Stefan-Boltzmann law on the structure of radiatively forced temperature change**, *Matthew Henry and Timothy M. Merlis*, Journal of Climate, 2018.
doi:10.1175/JCLI-D-17-0603.1.

2018 **Simple estimates of polar amplification in moist diffusive energy balance models**, *Timothy M. Merlis and Matthew Henry*, Journal of Climate, 2018. doi:10.1175/JCLI-D-17-0578.1.

Public outreach

2020 **Research posts and threads**.
Research posts at https://matthewjhenry.github.io/year-archive/ and list of twitter threads at https://matthewjhenry.github.io/.

May 2019 **Pint of Science Montreal**.
Discussed Arctic amplification and how we know what we know in climate science.
Write-up of my talk at https://matthewjhenry.github.io/posts/2019/05/PoS-Talk/.

June 2018 **"Mon Projet Nordique" competition in Quebec City**.
Discussed the role of the Planck feedback in polar amplification.

Invited talks, conferences, and poster presentations

July 2020 **Invited talk at Scripps Institute of Oceanography (remote)**.
On Decomposing the Drivers of Polar Amplification with a Single Column Model.
Work done in collaboration with Timothy M. Merlis, Nicholas J. Lutsko, and Brian E.J. Rose.

June 2020 **Poster presentation at UK climate dynamics workshop**.
On idealized modelling of past warm climates.
Work done in collaboration with Geoff Vallis

Dec 2019 **Poster presentation at the American Geophysical Union meeting in San Francisco**.
On Decomposing the Drivers of Polar Amplification with a Single Column Model.
Work done in collaboration with Timothy M. Merlis, Nicholas J. Lutsko, and Brian E.J. Rose.

July 2019 **Talk at the 27th IUGG General Assembly in Montreal**.
On Lapse Rate Changes Dominate Residual Polar Warming in Solar Radiation Management Experiments.
Work done in collaboration with Timothy M. Merlis.

June 2019 **Talk at the Atmospheric and Oceanic Fluid Dynamics Conference (AOFD) in Portland, Maine**.
On Lapse Rate Changes Dominate Residual Polar Warming in Solar Radiation Management Experiments.
Work done in collaboration with Timothy M. Merlis.

March 2019 **Talk at the Advanced Climate Dynamics Course 10 years anniversary conference in Rondane, Norway**.
On Lapse Rate Changes Dominate Residual Polar Warming in Solar Radiation Management Experiments.
Work done in collaboration with Timothy M. Merlis.

October 2018 **Poster at "Heldfest" : Understanding and modeling the Earth's climate. A symposium in honor of Isaac Held in Princeton, New Jersey**.
On Lapse Rate Changes Dominate Residual Polar Warming in Solar Radiation Management Experiments.
Work done in collaboration with Timothy M. Merlis.

July 2017 **Poster at 2017 Connaught Summer Institute in Arctic Science: Atmosphere, Cryosphere and Climate in Alliston, Ontario**.
On The role of the nonlinearity of the Stefan-Boltzmann law on the structure of radiatively forced temperature change.
Work done in collaboration with Timothy M. Merlis.

June 2017 **Poster at 21st Conference on Atmospheric and Oceanic Fluid Dynamics (AOFD) in Portland, Oregon**.
On The role of the nonlinearity of the Stefan-Boltzmann law on the structure of radiatively forced temperature change.
Work done in collaboration with Timothy M. Merlis.

Research Experience

2015 **Machine Learning internship**, *Big Datext, Grenoble, France*.
Work on the prediction of the number of views for a given news article. Access to a large database with more than 100k articles and the corresponding number of views.
Acquired skills in machine learning, python, scikit-learn and natural language processing.
(2 months)

2015 **Master's internship**, *Paris 6 Computer Science Laboratory (LIP6), France*.
Under the supervision of Julien Tierny and Julie Delon
Work on the parallel and multi-scale computation of a transport plan between two distributions in order to generate a suitable time interpolation between them.
Acquired skills in C++ and algorithm design.
(6 months)

2014 **Master's internship**, *LOCEAN (part of the Institut Pierre Simon Laplace), Paris, France*.
Under the supervision of Guillaume Gastineau
Work on the radiative signature of upper tropospheric moistening.
Acquired skills in Matlab and climate science.
(2 months)

2011 **Research Assistant to PhD Student**, *McGill University, Montreal, Canada*.
Helped to conduct meta-analysis to compare the yields of organic agriculture to conventional agriculture by gathering data. Used to publish a paper in Nature.
"Comparing the yields of organic and conventional agriculture", by Seufert, Ramankutty and Foley in Nature 489, 229-232 (10 May 2012)
(2 months)

Employment History

2016-now **Teaching Assistant in Atmospheric and Oceanic Sciences department**.
McGill University, Montreal, Canada

2013 **Grader for linear algebra (MATH 223) with Professor Wilbur Jonsson**, *Montreal, Canada*.
(1 year)

2012 **Grader for linear algebra (MATH 318) with Professor Loveys**, *Montreal, Canada*.
(6 months)

2012 **Food Service at the Y Country Camp**, *Montreal, Canada*.
Setting up, serving food and cleaning at a summer camp for children.
(2 months)

2010 **Internship at Yejj Solar Tech**, *Phnom Penh, Cambodia*.
Marketing and setting up solar systems for clients.
(4 months)

2009-2010 **English Tutor**, *Beijing, China*.

Computer skills

Coding Python, Fortran90, C++, C, Java (in order of familiarity)
Software Matlab, Paraview

Languages

English Native
French Native