Bethan Harris

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Employment

Research Associate Land Atmosphere Scientist *2020-*
UK Centre for Ecology & Hydrology

I use earth observation data to research how the land surface and the atmosphere interact, with a particular focus on how the land surface modulates intraseasonal variability in the tropics.

I am also contributing to the UK Earth System Model (UKESM) project by analysing how well these land-atmosphere interactions are represented in the model.

Education

PhD Atmosphere Oceans and Climate, University of Reading, UK: *2016-2020*
Available Potential Energy in Axisymmetric Tropical Cyclones

Creating novel diagnostics based on local Available Potential Energy theory to explore the differences in the intensity of tropical cyclones between numerical models.

Supervisors: Dr Rémi Tailleux, Dr Christopher Holloway and Prof. Pier Luigi Vidale

Fully funded by NERC SCENARIO Doctoral Training Partnership

BSc MMathPhys Mathematics and Physics, University of Warwick, UK: *2012-2016*

First class honours

A-Levels, Caerleon Comprehensive School, UK: *2010-2012*

Mathematics (A*), Further Mathematics (A*), Physics (A), Chemistry (A*)**,**
German AS (A)

Peer-reviewed Publications

B.L. Harris and R. Tailleux, *Assessment of Algorithms for Computing Moist Available Potential Energy*. Q. J. Roy. Meteorol. Soc. **144**:1501–1510. *2018*

Conference Presentations

European Geosciences Union (EGU) General Assembly (oral) *2019*

33rd AMS Conference on Hurricanes and Tropical Meteorology (oral) *2018*

Joint London NERC DTP Conference (oral) *2017*

Royal Meteorological Society Conference for Students & Early Career Scientists (oral) *2017*

Awards

Quo Vadis award: Prize for the best oral presentation given by a second year PhD student in the Department of Meteorology at the University of Reading on the topic of their PhD research. *2018*

RMetS Oral Presentation Prize: For an outstanding oral presentation at the Royal Meteorological Society's Student Conference. *2017*

Excellence in the MPhys project: University of Warwick Department of Physics prize for the best final year research project. I undertook a theoretical project titled *Decoherence and the Measurement Problem* supervised by Prof. Rudolf Roemer, investigating how we can explain the appearance of well-defined outcomes to quantum measurements. *2016*

Academic Responsibilities

Student Demonstrator: Assistant for problems classes in undergraduate and Master's level Atmospheric Physics courses, teaching fundamental atmospheric thermodynamics and cloud physics. *2017-2018*

PhD Group Organiser: Joint leader of weekly departmental research group for PhD students. Responsible for scheduling speakers and chairing sessions. *2017-2018*

Postgraduate Research Forum Member: Represented PhD students on the departmental staff-student committee. Responsible for communicating issues experienced by PhD students and negotiating solutions. *2016-2019*

Research Employment

Summer research studentship, University of Reading, UK: Funded by the NERC Research Experience Placement scheme, I spent two months conducting research at the Department of Meteorology at the University of Reading, working with Dr Rémi Tailleux. My project involved the development of algorithms for computing Available Potential Energy in a moist atmosphere, which was further advanced as part of my PhD. *2015*

Summer placement, Met Office, UK: During a three month placement at the Met Office, I worked jointly with the Aviation and Defence teams to improve overnight aircraft freezing forecasts by adapting and developing existing heat flux models. *2014*

Other Experience

Work Experience, BAE Systems: I undertook two weeks of voluntary work experience at BAE Systems. Working in Engineering Analysis, I created an image processing program to enable the automation of quality control processing. *2013*

Outreach: I gave talks on the science of tropical cyclones for GCSE and A-Level Geography students at Leighton Park School, Reading. *2018*

Private Tuition: I have provided tuition for mathematics for students from primary school to Master's level. *2010-present*

Computing Skills

Operating Systems: Windows, macOS, Linux *2010-present*

Programming Languages:

Python: algorithm development, data analysis and visualisation *2014-present*
Fortran: interpreting/adapting existing programs and writing own code *2014-2020*
MATLAB: data analysis and visualisation *2012-2015*

Modelling Systems:

Met Office Unified Model: output data analysis; trained to run model	*2018-present*
ECMWF OpenIFS: basic training	*2019*

Other:

GitHub: collaborative version control	*2017-present*