ANDREW I.L. WILLIAMS

Atmospheric, Oceanic and Planetary Physics, Department of Physics, University of Oxford, UK
andrew.williams@physics.ox.ac.uk

EDUCATION

University of Oxford — *October 2019 - 2023 (expected)*
DPhil (PhD) in Climate Physics — Advisor: Philip Stier

University of Oxford — *October 2015 - June 2019*
Masters degree in Physics — Classification: 1st
Major options: Atmospheric Physics and Astrophysics

EXPERIENCE

TU Delft — June 2022 - August 2022
Visiting Researcher — *Host: Louise Nuijens*

Max Planck Institute for Meteorology — April 2022 - May 2022
Visiting Researcher — *Host: Cathy Hohenegger*

Massachusetts Institute of Technology — June 2019 - January 2020
Research Associate — *Host: Paul O'Gorman*

California Institute of Technology — Summer 2018
Summer Undergraduate Research Fellow — *Hosts: Yair Cohen, Tapio Schneider*

PUBLICATIONS

in preparation

- **Williams, A. I. L.**, Watson-Parris, D., Dagan, G. & Stier, P.: Dependence of fast changes in global and local precipitation on the geographical location of aerosol absorption
- Bloch-Johnson, J. and co-authors including **Williams, A. I. L.**: The Green's Function Model Intercomparison Project (GFMIP) Protocol
- Herbert, R. J., **Williams, A. I. L.**, Weiss, P., Klocke, D. & Stier, P.: Isolating aerosol-climate interactions in global storm-resolving simulations

submitted/in review

- **Williams, A. I. L.**, Jeevanjee, N. & Bloch-Johnson, J.: Circus tents, convective thresholds and the nonlinear climate response to tropical SST changes
  Geophysical Research Letters (in revision)
  10.1002/essoar.10512543.1

2022

- **Williams, A. I. L.**, Stier, P., Dagan, G. & Watson-Parris, D.: Strong control of effective radiative forcing by the spatial pattern of absorbing aerosol
  Nature Climate Change
  (Press coverage)
  10.1038/s41558-022-01415-4
- Dagan, G., Stier, P., Dingley, B. & **Williams, A. I. L.**: Examining the regional co-variability of the atmospheric water and energy imbalances in different model configurations - linking clouds and circulation
  Journal of Advances in Modeling Earth Systems
  10.1029/2021MS002951
- **Williams, A. I. L.** & O'Gorman, P. A.: Summer-Winter Contrast in the Response of Precipitation Extremes to Climate Change over Northern Hemisphere Land
  Geophysical Research Letters
  10.1029/2021GL096531

2021

· Watson-Parris, D., **Williams, A. I. L.**, Deaconou, L. & Stier, P.: Model calibration using ESEm v1.0.0 - an open, scalable Earth System Emulator
Geoscientific Model Development
10.5194/gmd-14-7659-2021

AWARDS

Outstanding Student and PhD candidate Presentation (OSPP) Award 2022
EGU

Outstanding Student Presentation Award (OSPA) 2022
AGU Fall Meeting

NERC Studentship 2019-2023
Awarded fully funded place on NERC Environmental Research Doctoral Programme at the University of Oxford, covering tuition, stipend and research grant (Approx. £100,000).

Laidlaw Research and Leadership Scholarship 2019
Awarded £10,000 to fund research at MIT with Prof. Paul O'Gorman.

Caltech Summer Undergraduate Research Fellowship 2018
Awarded $8,000 to fund research at Caltech with Prof. Tapio Schneider.

Moritz-Heyman Scholarship 2015-2019
Scholarship for low-income students who won a place at Oxford University (£16,000 total).

St. Hilda's College, 125th Anniversary Scholarship 2019
Academic scholarship for high grade in first year examinations at Oxford (£1,250 total)

INVITED TALKS

AGU Fall Meeting Dec 2022 (upcoming)
Internal variability delays the robust detection of climatic trends in extreme precipitation

NOAA GFDL Dec 2022
Strong control of effective radiative forcing by the spatial pattern of absorbing aerosol

Princeton University Dec 2022
Circus tents, convective thresholds and the non-linear climate response to tropical SSTs

Yale University Nov 2022
Non-linearities in the pattern effect explained by a convective threshold

TU Delft June 2022
Clouds, aerosol and the global circulation

EGU General Assembly Meeting May 2022
Strong control of effective radiative forcing and precipitation by the spatial pattern of absorbing aerosol
(Winner of an Outstanding Student Presentation Award)

PRESENTATIONS (*** talk // * poster)

AGU Fall Meeting * ** Dec 2022 (upcoming)
Non-linear climate response to tropical sea-surface temperature changes explained by a convective threshold

3rd Pan-GASS Meeting, Monterey * July 2022
Impact of warm-rain suppression on the climate of a mock-Walker circulation

2nd Workshop on Cloud Organization, Utrecht * May 2022
Aerosol-cloud-circulations in high-resolution, cloud-resolving simulations with an imposed SST gradient

CLIVAR Pattern Effect Workshop * May 2022
SST Green's functions for regional precipitation

AGU Fall Meeting *** Dec 2021
Contrasting Seasonal Response of Northern Hemisphere Precipitation Extremes to Climate Change
(Winner of an Outstanding Student Presentation Award)

AGU Fall Meeting * Dec 2021
Understanding the "pattern effect" of absorbing aerosol

EGU General Assembly Meeting * April 2019
Optimizing the number of convective plumes in EDMF cloud parameterization schemes using high-resolution LES simulations

SERVICE

Peer reviewer for *Scientific Reports.*

Session chair 2022
Chair of session on "Absorbing Aerosols: Experiments, Observations, and Modelling" at the EGU General Assembly Meeting 2022

AOPP Working Group on EDI 2020-present
Helping lead efforts to monitor and improve EDI within the Atmospheric, Oceanic and Planetary Physics (AOPP) department.

DPhil mentoring scheme 2021-present
Initiated a mentoring scheme which matches incoming DPhil (PhD) students with a postdoc or more senior DPhil student who can provide advice on adjusting to graduate study at Oxford.

Policy briefing Nov-Dec 2020
Commissioned by Shadow Secretary for Health and Social Care to research the intersection between 'Pandemics and Climate Change'. Findings were written in a white paper and presented to the Government.

OUTREACH

Oxford Sparks 2020-present
Recorded an outreach video about clouds which has reached over 150,000 people across social media.

Seren Hub 2016-present
Provided interview practice and entrance exam help for Welsh students from disadvantaged backgrounds who want to study Physics or Mathematics at university.

TEACHING

Co-supervising a Master's project 2022-present
Day-to-day supervision of a Master's student studying the response of precipitation to SSTs

TA: Atmospheric Physics Master's Course 2020-present

Workshop lead 2020-present
Leader of a yearly workshop for first year PhD students on modelling the global-mean climate using energy balance models.

HOBBIES

Music

Self-taught, grade eight-level guitarist with a speciality in rock and blues.

Sports

Captain of the St. Hilda′s College Men′s Squash team. 2017-2018.

Completed the Oxford Half Marathon at the beginning of my second year in 1:32:29.

Spent two weeks hiking through the Slovenian Alps - Summer 2016.

Completed a three-week long cycle tour from Toulouse, through the French Pyrenees and up the Atlantic coast, ending in Bordeaux - Summer 2017.

Cycled the North Coast 500 route around the north coast of Scotland in seven days - Summer 2021.