

ANDREW I.L. WILLIAMS

Atmospheric, Oceanic and Planetary Physics, Department of Physics, University of Oxford, UK

Email: andrew.williams@physics.ox.ac.uk // **Citizenship:** UK and USA

EDUCATION

University of Oxford DPhil (PhD) in Climate Physics	October 2019 - July 2023 Advisor: Philip Stier
University of Oxford Masters degree in Physics	October 2015 - June 2019 Classification: 1 st

EMPLOYMENT / RESEARCH EXPERIENCE

NOAA GFDL <i>Postdoctoral Research Associate / AOS Fellowship</i>	August 2023 - present <i>Host: Nadir Jeevanjee</i>
TU Delft <i>Visiting Researcher</i>	June 2022 - July 2022 <i>Host: Louise Nuijens</i>
Max Planck Institute for Meteorology <i>Visiting Researcher</i>	April 2022 - May 2022 <i>Host: Cathy Hohenegger</i>
Massachusetts Institute of Technology <i>Research Associate</i>	June 2019 - January 2020 <i>Host: Paul O’Gorman</i>
California Institute of Technology <i>Summer Undergraduate Research Fellow</i>	Summer 2018 <i>Hosts: Yair Cohen, Tapio Schneider</i>

AWARDS

AOS Postdoctoral Fellowship <i>Atmospheric and Oceanic Sciences Program, Princeton University</i>	2023
NOAA Climate & Global Change Postdoctoral Fellowship (declined) <i>Department of Earth and Planetary Science, Yale University</i>	2023
Outstanding Student and PhD candidate Presentation (OSPP) Award <i>EGU</i>	2022
Outstanding Student Presentation Award (OSPA) <i>AGU Fall Meeting</i>	2022
NERC Studentship <i>Awarded fully funded place on NERC Environmental Research Doctoral Programme at the University of Oxford, covering tuition, stipend and research grant (Approx. £100,000).</i>	2019-2023
Laidlaw Research and Leadership Scholarship <i>Awarded £10,000 to fund research at MIT with Prof. Paul O’Gorman.</i>	2019
Caltech Summer Undergraduate Research Fellowship <i>Awarded \$8,000 to fund research at Caltech with Prof. Tapio Schneider.</i>	2018
Moritz-Heyman Scholarship <i>Scholarship for low-income students who won a place at Oxford University (£16,000 total).</i>	2015-2019
St. Hilda’s College, 125th Anniversary Scholarship <i>Academic scholarship for high grade in first year examinations at Oxford (£1,250 total)</i>	2019

PUBLICATIONS

in preparation

- Bloch-Johnson, J. and co-authors including **Williams, A. I. L.**: The Green's Function Model Intercomparison Project (GFMIIP) 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.**, Watson-Parris, D., Dagan, G. & Stier, P.: Dependence of fast changes in global and local precipitation on the geographical location of absorbing aerosol
Journal of Climate (in revision)
[10.22541/au.167364749.93845737/v1](https://doi.org/10.22541/au.167364749.93845737/v1)

2023

- **Williams, A. I. L.**, Jeevanjee, N. & Bloch-Johnson, J.: Circus Tents, Convective Thresholds and the Non-Linear Climate Response to Tropical SSTs
Geophysical Research Letters
[10.1029/2022GL101499](https://doi.org/10.1029/2022GL101499)

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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/10.5194/gmd-14-7659-2021)

INVITED TALKS

AGU Fall Meeting <i>Internal variability delays the robust detection of climatic trends in extreme precipitation</i>	Dec 2022
NOAA GFDL <i>Strong control of effective radiative forcing by the spatial pattern of absorbing aerosol</i>	Dec 2022
Princeton University <i>Circus tents, convective thresholds and the non-linear climate response to tropical SSTs</i>	Dec 2022
Yale University <i>Non-linearities in the pattern effect explained by a convective threshold</i>	Nov 2022
TU Delft <i>Clouds, aerosol and the global circulation</i>	June 2022

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

ECS & cloud feedback virtual symposium

March 2023

Circus tents, convective thresholds and the non-linear climate response to tropical SSTs

(Talk)

4th biennial workshop on the regional climate response to aerosol

March 2023

Understanding the dependence of fast changes in global and local precipitation on the geographical location of absorbing aerosol

(Talk)

AGU Fall Meeting

Dec 2022

Non-linear climate response to tropical SST changes explained by a convective threshold

(Talk)

3rd Pan-GASS Meeting, Monterey

July 2022

Impact of warm-rain suppression on the climate of a mock-Walker circulation

(Poster)

2nd Workshop on Cloud Organization, Utrecht

May 2022

Aerosol-cloud-circulations in cloud-resolving simulations with an imposed SST gradient

(Poster)

CLIVAR Pattern Effect Workshop

May 2022

SST Green's functions for regional precipitation

(Poster)

AGU Fall Meeting

Dec 2021

Contrasting Seasonal Response of Northern Hemisphere Precipitation Extremes to Climate Change

(Talk)

(Winner of an Outstanding Student Presentation Award)

AGU Fall Meeting

Dec 2021

Understanding the “pattern effect” of absorbing aerosol

(Poster)

EGU General Assembly Meeting

April 2019

Optimizing the number of convective plumes in EDMF cloud parameterization schemes using high-resolution LES simulations

(Poster)

SERVICE

Peer reviewer for *Scientific Reports, Atmospheric Chemistry and Physics, Geophysical Research Letters*.**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 Masters Thesis

2022-2023

Day-to-day supervision of a Master's student studying the response of regional precipitation to SST anomalies

TA: Atmospheric Physics Master's Course

2020-2023

Workshop lead

2020-2023

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.