ANDREW I.L. WILLIAMS

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EDUCATION

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

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

EXPERIENCE

Max Planck Institute for Meteorology // TU Delft April 2022 - present
Visiting Student *Hosts: Cathy Hohenegger and Louise Nuijens*

· Conducting large-domain, high-resolution simulations using the ICON model to study the interactions between shallow and deep convection in the tropics.

University of Oxford October 2019 - present
DPhil candidate

· Combining theory with numerical simulations to study the interactions between clouds and circulation and how aerosols mediate this relationship (either through microphysical perturbations, or by altering horizontal temperature gradients in the atmosphere).

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

· Studying the seasonal response of precipitation extremes to climate change with observations and large ensembles of coupled climate models.

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

· Optimized parameters in a new convective parameterization scheme using high-resolution LES simulations.

PUBLICATIONS

in prep (email for details)

· **Williams, A. I. L.**, Watson-Parris, D., Dagan, G. & Stier, P.: Understanding the dependence of global and local precipitation on the geographical location of aerosol absorption

· **Williams, A. I. L.**, Jeevanjee, N. & Bloch-Johnson, J.: Non-linear climate response to tropical sea-surface temperature changes explained by convective quasi-equilibrium

· **Williams, A. I. L.**, Nuijens, L., Dagan, G. & Hohenegger, C.: Precipitating shallow convection weakens the large-scale tropical circulation in simulations of radiative convective equilibrium

submitted/in review

· **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 (accepted)

2022

· 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

· **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

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

INVITED PRESENTATIONS

TU Delft June 2022
Clouds, aerosol and the global circulation

EGU May 2022
Strong control of effective radiative forcing and precipitation by the spatial pattern of absorbing aerosol

PRESENTATIONS

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

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

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

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

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

AWARDS

Outstanding Student Presentation Award (OSPA) 2022
American Geophysical Union (AGU) Fall Meeting

Laidlaw Research and Leadership Scholarship 2019
University of Oxford

Moritz-Heyman Scholarship 2015-2019
University of Oxford

125th Anniversary Scholarship 2019
St. Hilda's College, University of Oxford

SERVICE

Peer reviewer for *Scientific Reports.*

AOPP Working Group on EDI 2020-present
Helped 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

Invited to research the intersection between 'Pandemics and Climate Change' for the Shadow Secretary for Health and Social Care. Findings were written in a white paper and presented to the Shadow Government.

OUTREACH

Oxford Sparks 2020-present

Recorded outreach videos about clouds which have reached over 150,000 people across social media.

Seren Hub 2016-present

Provided interview practice and entrance exam help for students from disadvantaged backgrounds who want to study Physics or Mathematics at university.

TEACHING

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 fusion, 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.