ANDREW I.L. WILLIAMS

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

University of Oxford *October 2019 - 2023 (expected)*
DPhil (PhD) in Climate Physics
Aerosol-cloud-circulation interactions: implications for radiative forcing and regional climate
Advisor: Prof. Philip Stier

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

WORK EXPERIENCE

University of Oxford October 2019 - Present
DPhil candidate

· Combining theory with numerical simulations of the atmosphere (from GCM to cloud-resolving) to study the interactions between clouds and circulation in the tropics and how aerosols mediate this relationship.

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

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

University of Oxford November 2018 - March 2019
Master's Research Project *Supervisors: Dr. Luke Jackson, Prof. Myles Allen*

· Combined observations of the total mass balance of the Greenland ice sheet with the output of a regional climate model to estimate the dynamical response of the ice sheet to changes in temperature.

California Institute of Technology Summer 2018
Summer Undergraduate Research Fellow *Supervisors: Dr. Yair Cohen, Prof. Tapio Schneider*

· Project focused on optimizing parameters in a new convective parameterization scheme using data from high-resolution Large-Eddy simulations (LES).

PUBLICATIONS

In preparation:

· **Williams, A. I. L.**, Dagan, G. Watson-Parris, D. & Stier, P.: Dependence of fast changes in local and global precipitation on the geographical location of absorbing aerosol
Geophysical Research Letters, in prep

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, submitted
- **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, in revision
- **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, in revision

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

PRESENTATIONS

***EGU 2022* - Presentation (Invited)**
Strong control of effective radiative forcing and precipitation by the spatial pattern of absorbing aerosol

***AGU 2021* - Presentation**
Contrasting Seasonal Response of Northern Hemisphere Precipitation Extremes to Climate Change

***AGU 2021* - Poster**
Understanding the "pattern effect" of absorbing aerosol

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

AWARDS

Moritz-Heyman Scholar 2015-2019
University of Oxford

- Scholarship awarded to students from low-income backgrounds who have demonstrated considerable intellectual ability, a strong awareness for social issues and a drive to enact positive change in their communities.

Laidlaw Scholar 2019
University of Oxford

- Distinguished international scholarship aimed at ambitious and self-motivated individuals who have the capacity to design and carry out an original research project. Funded a summer of research at MIT with Prof. Paul O'Gorman.

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

- £1250 scholarship awarded to celebrate high-levels of academic achievement.

Participant, *Oxford School of Climate Change* 2018
University of Oxford

· Selected to take part in the prestigious Oxford School of Climate Change, which brings together a select group of Oxfords students and provides them with rigorous training in environmental economics, law and science over the two-month programme.

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.