# 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 Atmospheric 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 review*

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

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

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

***EGU 2022* - Presentation (Invited)**
*How does the spatial pattern of absorbing aerosol affect its radiative forcing, and why?*

## 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.