

Samuel Edward Hatfield

Jesus College, Turl Street, Oxford, OX1 3DW, UK
samuel.hatfield@physics.ox.ac.uk | samhatfield.co.uk

- EDUCATION**
- DPhil Environmental Research, University of Oxford** 2015 - PRESENT
- Advisors: Prof. Tim Palmer and Dr. Peter Düben
 - Expected date of completion: August 2019
 - Thesis title: *Numerical precision and ensemble data assimilation*
 - Thesis topics: Data assimilation, numerical weather prediction, model error, observation error
- MSci Physics, University of Bristol** 2010 - 2014
- First-class honours, average mark 78%
 - Final year project advisor: Dr. Simon Hanna
 - Final year project title: *Knots in geometrically-confined polymers: nanochannels and other geometries*, mark 82%
- PEER-REVIEWED PUBLICATIONS**
- 2018: **Choosing the optimal numerical precision for data assimilation in the presence of model error**, Sam Hatfield, Peter Düben, Matthew Chantry, Keiichi Kondo, Takemasa Miyoshi and Tim Palmer, *Journal of Advances in Modeling Earth Systems* (accepted)
 - 2018: **Improving weather forecast skill through reduced precision data assimilation**, Sam Hatfield, Aneesh Subramanian, Peter Düben and Tim Palmer, *Monthly Weather Review*, **146**, 49-62, doi: 10.1175/MWR-D-17-0132.1
- DEPARTMENTAL SEMINAR TALKS**
- Marine Meteorology Division, Naval Research Laboratory, Monterey, USA
APRIL 2018
 - Scripps Institution of Oceanography, San Diego, USA APRIL 2018
 - RIKEN Advanced Institute for Computational Science (AICS), JULY 2017
Kobe, Japan
 - Atmosphere and Ocean Research Institute (AORI), JULY 2017
University of Tokyo
 - Japan Meteorological Agency (JMA) JULY 2017
 - The Japan Agency for Marine-Earth Science and JULY 2017
Technology (JAMSTEC, Yokohama Institute for Earth Sciences, Japan)

CONFERENCES

- APRIL 2018: **SIAM Uncertainty Quantification (oral presentation)**, Los Angeles, USA
Reducing Precision in Ensemble Data Assimilation to Improve Forecast Skill
Samuel Hatfield, Peter D. Düben, Matthew Chantry, Tim Palmer
- MARCH 2018: **The 6th Annual International Symposium on Data Assimilation (poster presentation, €500 travel support)**, Munich, Germany
Lowering precision in an atmospheric ensemble data assimilation system
S. Hatfield, T. Palmer, P. Düben
- APRIL 2017: **EGU General Assembly (oral presentation)**, Vienna, Austria
Improving Weather Forecasts Through Reduced Precision Data Assimilation
Sam Hatfield, Peter Düben and Tim Palmer
- FEBRUARY 2017: **RIKEN International Symposium on Data Assimilation (oral presentation)**, Kobe, Japan
Improving Weather Forecasts Through Reduced Precision Data Assimilation
Sam Hatfield, Peter Düben and Tim Palmer
- JULY 2016: **The 5th Annual International Symposium on Data Assimilation (poster presentation)**, Reading, UK
The use of inexact hardware in data assimilation for improved weather and climate prediction
Sam Hatfield, Peter Düben, Aneesh Subramanian and Tim Palmer

AWARDS AND SCHOLARSHIPS

- OCTOBER 2018 - JUNE 2019: **Jesus College Graduate Scholarship**, £900
- JUNE - AUGUST 2017: **Japan Society for the Promotion of Science (JSPS) Summer Programme**
Fully funded 2 month research stay at the RIKEN Advanced Institute for Computational Science (AICS), Kobe, Japan hosted by Dr. Takemasa Miyoshi
- NOVEMBER 2016: **Elsevier travel grant**
Awarded for poster and presentation at Oxford Environmental Research student conference, £1000 cash prize
- JULY 2014: **Undergraduate Awards Highly Commended** Awarded for MSci thesis, *Knots in geometrically-confined polymers: nanochannels and other geometries*

TEACHING

- AUTUMN 2017: Python demonstrator for Environmental Research 1st year students
- OCTOBER 2016 - PRESENT: MATLAB demonstrator for Oxford undergraduate students in Physics

TRAINING

- MARCH - MAY 2016: Training courses on data assimilation, predictability of weather and climate and numerical methods, ECMWF
- JUNE 2016: E2SCMS Summer School (Earth-System modelling), Helsinki
- JULY 2018: CUDA Programming on NVIDIA GPUs, Mathematical Institute, University of Oxford

**OTHER
EXPERIENCE**

Microcosm Ltd., Bristol

AUGUST 2014 - AUGUST 2015

- Worked on the front- and back-ends of a two-factor authentication system, SmartSign
- Learned PHP, JavaScript, CSS and HTML

Surrey Space Centre, University of Surrey

SUMMER 2013

- Designed and built a Cherenkov radiation detector
- Developed MATLAB scripts for processing data from geostationary satellites on the radiation belts

Earth Sciences Department, University of Bristol

SUMMER 2012

- Studied exploration geophysics, specialising in gravity surveys
- Analysed data from geophysical surveys of Lamb Leer cave in Somerset, using MATLAB

**SUPERVISORS'
CONTACT
INFORMATION**

Professor Tim Palmer

Atmospheric, Oceanic and Planetary
Physics
University of Oxford
Oxford, UK
tim.palmer@physics.ox.ac.uk

Dr. Peter Düben

European Centre for Medium-Range
Weather Forecasts

Reading, UK
peter.dueben@ecmwf.int