PERSONAL INFORMATION

m.zamyatina@exeter.ac.uk m.zamyatina mzamyatina mzamyatina.github.io

Professional Experience

#### Postdoctoral Research Fellow

Apr 2022-now

Department of Physics and Astronomy, University of Exeter | Exeter, UK

Adapting LFRic to model atmospheres of hot Jupiters

### Postdoctoral Research Fellow

Sep 2019-Apr 2022

Department of Physics and Astronomy, University of Exeter | Exeter, UK

• Modelling hot Jupiter atmospheric chemistry with the Met Office Unified Model

**EDUCATION** 

#### PhD in Environmental Sciences

2015-2020

School of Environmental Sciences, University of East Anglia | Norwich, UK Supervisors: Prof. Claire Reeves, Dr Paul Griffiths, Dr Marcus Köhler, Dr Mike Newland

The sis: Impacts of  $\mathrm{C}_1\text{-}\mathrm{C}_3$  alkyl nitrates on tropospheric ozone chemistry

### MSc in Climate Change with Distinction

2014-2015

School of Environmental Sciences, University of East Anglia | Norwich, UK

Supervisor: Prof. Claire Reeves

Thesis: Investigation of the relationship between tropospheric ozone production efficiency and carbon bond emissions

## Specialist Diploma in Meteorology

2009-2014

Faculty of Geography, Lomonosov Moscow State University | Moscow, Russia

Supervisor: Prof. Alexander V. Kislov

Thesis: Climatically-induced variations of the Caspian Sea level over the last Millennium

Publications

- Maria Zamyatina, Eric Hébrard, Benjamin Drummond, Nathan J. Mayne, James Manners, Duncan A. Christie, Pascal Tremblin, David K. Sing, Krisztian Kohary.
   Observability of signatures of transport-induced chemistry in clear atmospheres of hot gas giant exoplanets (under review in MNRAS).
- R. J. Ridgway, Maria Zamyatina, N. J. Mayne, J. Manners, F. H. Lambert, M. Braam, B. Drummond, E. Hébrard, P. I. Palmer, K. Kohary. 3D modelling of the impact of stellar activity on tidally-locked terrestrial exoplanets: atmospheric composition & habitability (under review in MNRAS).
- Marrick Braam, Paul I. Palmer, Leen Decin, Robert J. Ridgway, Maria Zamyatina, Nathan J. Mayne, Denis Sergeev, N. Luke Abraham. Lightning-induced chemistry on tidally-locked Earth-like exoplanets (under review in MNRAS).
- Duncan A. Christie, Elspeth K. H. Lee, Hamish Innes, Pascal A. Noti, Benjamin Charnay, Thomas J. Fauchez, Nathan J. Mayne, Russell Deitrick, Feng Ding, Jennifer J. Greco, Mark Hammond, Isaac Malsky, Avi Mandell, Emily Rauscher, Michael T. Roman, Denis E. Sergeev, Linda Sohl, Maria E. Steinrueck, Martin Turbet, Eric T. Wolf, Maria Zamyatina, Ludmila Carone. CAMEMBERT: A Mini-Neptunes GCM Intercomparison, Protocol Version 1.0. A CUISINES Model Intercomparison Project (under review in PSJ).

Talks

- Feb 2022 Transport-induced quenching shapes transmission spectra of warm and hot Jupiters Astronomy seminar | University of Warwick, virtual (invited)
- June 2021 Overview of the Met Office Unified Model adapted to simulate exoplanetary atmospheres Ariel consortium meeting | virtual

Apr, Sep 2021 3D simulations of warm and hot Jupiter atmospheres:

the role of 3D mixing in shaping CH<sub>4</sub>-to-CO conversion pathways

Astronomy seminar | University of Exeter; UKEXOM | virtual; EPSC | virtual

Mar, Apr, Jun 2019 Impact of  $C_1$ - $C_3$  alkyl nitrate chemistry on tropospheric ozone: box and global model perspectives

AMB | University of East Anglia; EGU | Vienna, Austria; XCS | University of Exeter

Apr 2017 Adding new chemistry into UM-UKCA

Cambridge-EnvEast doctoral alliance symposium | Cambridge, UK

Sep 2012 Assessment of climatological potential of transboundary air pollution transport in Eastern Siberia and the Russian Far East

Air quality management at urban regional and global scales 4th international

Air quality management at urban, regional and global scales 4th international symposium/IUAPPA regional conference | Istanbul, Turkey

#### Posters

- Sep 2022 Applying known chemical kinetics data to model atmospheres of extrasolar planets iCACGP-IGAC conference  $\mid$  Manchester, UK
- Sep 2021 Local and global impacts of  $\mathrm{C}_1\text{-}\mathrm{C}_3$  alkyl nitrate photochemistry and emissions on tropospheric ozone

IGAC conference | virtual

Sep 2018 Impact of alkyl nitrate chemistry on tropospheric ozone iCACGP-IGAC conference | Takamatsu, Japan

Mar, Apr 2018 Impact of  $C_1$ - $C_5$  alkyl nitrate chemistry on tropospheric ozone - a box modelling study Cambridge-EnvEast doctoral alliance symposium | Cambridge, UK; EGU | Vienna, Austria

### PROCEEDINGS

- Gromov S.A., Gromov S.S., **Zamyatina M.**, Trifonova-Yakovleva A.M. 2013. First-order evaluation of transboundary pollution fluxes in areas of EANET stations in Eastern Siberia and the Russian Far East. EANET Science Bulletin, 3:195-203.
- Sergeev D., Zamyatina M., Stepanenko V. 2013. Thermal regime features of Kronotsky lake (in Russian). Kronotsky State Natural Biosphere Reserve Proceedings, 3: 29-41.

#### AWARDS

2022 EPSRC vacation internship (for 3 interns)	$12893.55 \pounds$
2022 Jackson-Grime-Davies (JGD) research internship (for 1 intern)	$2428.71 \pounds$
2021 Early Career Scientist poster prize & travel grant	$1227.70 \pounds$
IGAC conference   virtual	
2015-2019 Lord Zuckerman studentship	$112269.50 \pounds$
School of Environmental Sciences, University of East Anglia   Norwich, UK	
2014-2015 Simon Wharmby postgraduate scholarship	3000.00£
School of Environmental Sciences, University of East Anglia   Norwich, UK	

 $1154.10 \pounds$ 

## Teaching Nov 2020-Dec 2022 Co-supervisor of a PhD student

- Robert J. Ridgway

### Jun-Aug 2022 Primary supervisor of summer interns

- Harry Baskett, Ben Moore, James McDermott (EPSRC-funded)
- Graig Lils (JGD-funded)

### Jul 2022 Lecturer

International sustainability summer school | University of Exeter, Exeter, UK

## Sep 2021-Feb 2022 Associate Tutor

Modules: Experimental science, Frontiers in science

2012 World Meteorological Organization travel grant

University of Exeter | Exeter, UK

## Jan 2018 Instructor

Training course "Introduction to Python in Environmental Sciences" University of East Anglia | Norwich, UK

## 2015-2018 Associate Tutor

Modules: Numerical skills for scientists, Atmospheric chemistry and global change, Atmospheric composition (measurements and modelling), Atmosphere & oceans I University of East Anglia | Norwich, UK

#### VOCATIONAL

2-4 Mar 2020 JWST proposal planning workshop

## Training

21-22 Apr 2016 NAME workshop

• introduction to the Met Office Numerical Atmospheric dispersion Modelling Environment (NAME), installing and running the model locally or on JASMIN super-computer

# 4-8 Jan 2016 Introduction to UKCA

• introduction to the main components of the Met Office United Kingdom Chemistry and Aerosols (UKCA) model, including exercises on adaptation of the model to various research purposes, running it and solving common problems

## 16-18 Dec 2015 Introduction to Unified Model

• introduction to the Met Office Unified Model (UM), providing theoretical and practical experience of setting up experiments and running the model

#### 23-27 Nov 2015 Introduction to Atmospheric Science

 introduction to key concepts in atmospheric science, covering such topics as atmospheric dynamics, composition of the atmosphere and climate change

### 2015-2019 EnvEast Doctoral Training Programme

Sep-Nov 2011 Global Climate Change course

VOCATIONAL Aug-Sep 2013 **Weather Forecaster**EXPERIENCE Sheremetyevo Internati

Sheremetyevo International Airport | Moscow, Russia

Jun-Jul 2013 **Technician** 

Department of Actinometry, Meteorological Observatory Lomonosov Moscow State University | Moscow, Russia

Internships

Jun-Jul 2013 Department of Actinometry, Meteorological Observatory

Lomonosov Moscow State University | Moscow, Russia Supervisor: Senior Research Scientist Olga A. Shilovtseva

• indoor solar radiation measurements

Jun-Jul 2012 Institute of Global Climate and Ecology | Moscow, Russia

Supervisor: Head of laboratory Sergey A. Gromov

• analysis of the Acid Deposition Monitoring Network in East Asia (EANET) data

Admin

2015-2019 Maintainer of @AtmosChemUEA Twitter account

Sep 2017-Jun 2018 Co-organiser of Atmospheric and Marine Biogeochemistry (AMB) seminars

University of East Anglia | Norwich, UK