

## CONTACT

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ACADEMIC  
CAREER**Postdoctoral Research Fellow**

Aug 2025-now

Department of Physics and Astronomy, University of Exeter | Exeter, UK  
*Maternity leave (9 months)*

**Postdoctoral Research Fellow**

Apr 2022-Jul 2025

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

**Postdoctoral Research Fellow**

Sep 2019-Mar 2022

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

## 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  
 Thesis: Impacts of C<sub>1</sub>-C<sub>3</sub> 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

14. Meech, A., Claringbold, A. B., Ahner, E.-M., Kirk, J. et al. (incl. **Zamyatina, M.**) (accepted). [BOWIE-ALIGN: Sub-stellar metallicity and carbon depletion in the aligned TrES-4b with JWST NIRSpec transmission spectroscopy.](#) MNRAS.
13. Kirk, J., Ahner, E.-M., Claringbold, A. B., **Zamyatina, M.**, Fisher C. et al. (2025). [BOWIE-ALIGN: JWST reveals hints of planetesimal accretion and complex sulphur chemistry in the atmosphere of the misaligned hot Jupiter WASP-15b.](#) MNRAS.
12. Kirk, J., Ahner, E.-M., Penzlin, A. B. T., Owen, J. E. et al. (incl. **Zamyatina, M.**) (2024). [BOWIE-ALIGN: A JWST comparative survey of aligned versus misaligned hot Jupiters to test the dependence of atmospheric composition on migration history.](#) RAS Techniques and Instruments.
11. Penzlin, A. B. T., Booth, R. A., Kirk, J., Owen, J. E. et al. (incl. **Zamyatina, M.**) (2024). [BOWIE-ALIGN: how formation and migration histories of giant planets impact atmospheric compositions.](#) MNRAS.
10. Espinoza, N., Steinrueck, M., Kirk, J., MacDonald, R. J. et al. (incl. **Zamyatina, M.**) (2024). [Inhomogeneous terminators on the exoplanet WASP-39 b.](#) Nature.
9. Christie, D. A., Mayne, N. J., **Zamyatina, M.**, Baskett, H., Evans-Soma, T. M., et al. (2024). [Longitudinal filtering, sponge layers, and equatorial jet formation in a general circulation model of gaseous exoplanets.](#) MNRAS.
8. **Zamyatina, M.**, Christie, D. A., Hébrard, E., Mayne, N. J., Radica, M. et al. (2024). [Quenching-driven equatorial depletion and limb asymmetries in hot Jupiter atmospheres: WASP-96b example.](#) MNRAS.
7. Taylor, J., Radica, M., Welbanks, L., MacDonald, R. J. et al. (incl. **Zamyatina, M.**) (2023). [Awesome SOSS: atmospheric characterisation of WASP-96b using the JWST early release observations.](#) MNRAS.
6. Radica, M., Welbanks, L., Espinoza, N., Taylor, J. et al. (incl. **Zamyatina, M.**) (2023). [Awesome SOSS: transmission spectroscopy of WASP-96b with NIRISS/SOSS.](#) MNRAS.
5. **Zamyatina, M.**, Hébrard, E., Drummond, B., Mayne, N. J., Manners, J. et al. (2023). [Observability of signatures of transport-induced chemistry in clear atmospheres of hot gas giant exoplanets.](#) MNRAS.
4. Ridgway, R. J., **Zamyatina, M.**, Mayne, N. J., Manners, J., Lambert, F. H. et al. (2023). [3D modelling of the impact of stellar activity on tidally locked terrestrial exoplanets: atmospheric composition and habitability.](#) MNRAS.
3. Christie, D. A., Lee, E. K. H., Innes, H., Noti, P. A. et al. (incl. **Zamyatina, M.**) (2022). [CAMEMBER: A Mini-Neptunes GCM Intercomparison, Protocol Version 1.0. A CUISINES Model Intercomparison Project.](#) Planet. Sci. J.

2. Braam, M., Palmer, P. I., Decin, L., Ridgway, R. J., **Zamyatina, M.** et al. (2022). [Lightning-induced chemistry on tidally-locked Earth-like exoplanets](#). MNRAS.
1. 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.

INVITED TALKS	Jul 2025	Atmospheric chemistry in the Solar System and beyond (review talk) <a href="#">Exoclimes VII conference</a>   Montreal, Canada		
	Mar 2024	Overview of the Met Office Unified Model configuration for hot Jupiter atmospheres International Space Science Institute (ISSI) workshop   Bern, Switzerland		
	Feb 2024	Quenching-driven equatorial depletion and limb asymmetries in WASP-96b's atmosphere University of Bristol (astronomy seminar)   Bristol, UK		
	Feb 2023	Atmospheric dynamics and chemistry on exoplanets University of Queensland (astronomy seminar)   Brisbane, Australia University of Southern Queensland (exoplanet seminar)   Brisbane, Australia University of New South Wales (astronomy seminar)   Sydney, Australia		
	Nov 2022	Observability of signatures of wind-driven chemistry in atmospheres of hot gas giants Ludwig Maximilian University (exoplanet group seminar)   Munich, Germany <a href="#">Celebrating JWST's first six months of exoplanet data</a> workshop   Ringberg castle, Germany		
	Oct 2022	Modelling chemistry of hot Jupiter atmospheres with the Met Office Unified Model Met Office   Exeter, UK		
	Feb 2022	Transport-induced quenching shapes transmission spectra of warm and hot Jupiters University of Warwick (astronomy seminar)   virtual		
	CONTRIBUTED TALKS	Sep 2023	Metallicity masquerade: how to use quenching to distinguish between different planet metallicities University of Bristol (BOWIE meeting)   Bristol, UK	
		June 2021	Overview of the Met Office Unified Model adapted to simulate exoplanetary atmospheres Ariel consortium meeting   virtual	
		Apr, Sep 2021	<a href="#">3D simulations of warm and hot Jupiter atmospheres: the role of 3D mixing in shaping CH<sub>4</sub>-to-CO conversion pathways</a> EPSC conference   virtual UKEXOM conference   virtual University of Exeter (astronomy seminar)   Exeter, UK	
Mar, Apr, Jun 2019		<a href="#">Impact of C<sub>1</sub>-C<sub>3</sub> alkyl nitrate chemistry on tropospheric ozone: box and global model perspectives</a> University of Exeter (XCS seminar)   Exeter, UK EGU conference   Vienna, Austria University of East Anglia (AMB seminar)   Norwich, UK		
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 <a href="#">Air quality management at urban, regional and global scales 4th international symposium/IUAPPA regional conference</a>   Istanbul, Turkey		
POSTERS		Jul 2025	Spatial variability in CH <sub>4</sub> -CO interconversion pathways in hot Jupiter atmospheres <a href="#">Exoclimes VII conference</a>   Montreal, Canada	
		Apr, Jun 2024	Quenching-driven equatorial depletion and limb asymmetries in WASP-96b's atmosphere UKEXOM conference   Birmingham, UK <a href="#">Exoplanets 5 conference</a>   Leiden, Netherlands	
	Sep 2022	Applying known chemical kinetics data to model atmospheres of extrasolar planets iCACGP-IGAC conference   Manchester, UK		
	Sep 2021	Local and global impacts of C <sub>1</sub> -C <sub>3</sub> 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 <sub>1</sub> -C <sub>5</sub> alkyl nitrate chemistry on tropospheric ozone - a box modelling study Cambridge-EnvEast doctoral alliance symposium   Cambridge, UK EGU conference   Vienna, Austria		
AWARDS	2023	<a href="#">Above &amp; Beyond Award</a>		
	2022	<a href="#">EPSRC vacation internship</a> (for 3 interns)	12893.55£	
	2022	<a href="#">Jackson-Grime-Davies (JGD) research internship</a> (for 1 intern)	2428.71£	

	2021	<b>IGAC Early Career Scientist poster prize &amp; travel grant</b>	1227.70£
	2015-2019	<b>Lord Zuckerman studentship</b>	112269.50£
	2014-2015	<b>Simon Wharmby postgraduate scholarship</b>	3000.00£
	2012	<b>World Meteorological Organization travel grant</b>	1154.10£
AWARDED	Feb 2024	JWST's exoplanet grand tour spectroscopic survey	
OBSERVING		<ul style="list-style-type: none"> <li>▪ Co-I <a href="#">HST GO-17612</a> (PI: David Sing)</li> <li>▪ Co-I <a href="#">JWST GO-5924</a> (PI: David Sing)</li> </ul>	24 orbits 125.70 hours
TIME	Feb 2024	Starspots, hazes, and disequilibrium chemistry: a deep dive into the atmosphere of HAT-P-18b	
		<ul style="list-style-type: none"> <li>▪ Co-I <a href="#">JWST GO-5844</a> (PI: Michael Radica)</li> </ul>	16.40 hours
	May 2023	Putting it all together: Dynamics and chemistry probed through transmission spectroscopy of a cloud-free exoplanet	
		<ul style="list-style-type: none"> <li>▪ Co-I <a href="#">JWST GO-4082</a> (PI: Michael Radica, Co-PI: Jake Taylor)</li> </ul>	6.69 hours
	May 2023	Hot Jupiter atmospheric forecast: are mornings cloudier than evenings in other worlds?	
		<ul style="list-style-type: none"> <li>▪ Co-I <a href="#">JWST GO-3969</a> (PI: Nestor Espinoza, Co-PI: Diana Powell)</li> </ul>	61.53 hours
	May 2023	Does atmospheric composition actually trace formation? Observing aligned vs misaligned hot Jupiters as a testbed	
		<ul style="list-style-type: none"> <li>▪ Co-I <a href="#">JWST GO-3838</a> (PI: James Kirk Co-PI: Eva-Maria Ahrer)</li> </ul>	49.21 hours
	May 2023	Testing the C/O ratio prediction for hot Jupiters from disk-free migration	
		<ul style="list-style-type: none"> <li>▪ Co-I <a href="#">JWST GO-3154</a> (PI: Eva-Maria Ahrer)</li> </ul>	10.36 hours
SUPERVISION		Primary supervisor and co-supervisor. Students who went on to do a PhD are marked with *.	
		<b>PhD supervision (2)</b>	
	Sep 2024-now	Harry Baskett Thesis: TBD Co-supervisors: Dr. E. Hebrard, Prof. N. J. Mayne	
	Nov 2020-May 2023	<a href="#">Robert J. Ridgway</a> Thesis: <a href="#">Simulating the impact of stellar flares on the climate and habitability of terrestrial Earth-like exoplanets</a> Co-supervisors: Prof. N. J. Mayne, Prof. F. H. Lambert, Dr. J. Manners	
		<b>Undergraduate and summer internship supervision (4)</b>	
	Jun-Aug 2022	EPSRC-funded: <a href="#">Harry Baskett*</a> , <a href="#">Ben Moore*</a> , <a href="#">James McDermott*</a> ; JGD-funded: <a href="#">Graig Lils</a> Project: 3D modelling of hot Saturn atmospheric chemistry	
TEACHING	Jul 2023	<b>Module leader</b> Module: No place like home: placing Earth in its geological and astronomical contexts <a href="#">International sustainability summer school</a>   University of Exeter, Exeter, UK	
	Jul 2022, Jul 2023	<b>Lecturer</b> Module: No place like home: placing Earth in its geological and astronomical contexts International sustainability summer school   University of Exeter, Exeter, UK	
	Sep 2021-Feb 2022	<b>Associate Tutor</b> Modules: Experimental science, Frontiers in science University of Exeter   Exeter, UK	
	Jan 2018	<b>Instructor</b> Module: <a href="#">Introduction to Python in Environmental Sciences</a> University of East Anglia   Norwich, UK	
	2015-2018	<b>Associate Tutor</b> Modules: Numerical skills for scientists, Atmospheric chemistry and global change, Atmospheric composition (measurements and modelling), Atmosphere & oceans I University of East Anglia   Norwich, UK	
ACADEMIC		<b>Organisation of scientific meetings</b>	
COMMUNITY	26-30 Jun 2023	Exoclines VI conference (LOC member, session chair) University of Exeter   Exeter, UK	~200 attendees
	22-24 Jun 2023	ExoSLAM school (LOC member) University of Exeter   Exeter, UK	~50 attendees
	5-6 Dec 2022	BOWIE meeting (co-organiser) University of Exeter   Exeter, UK	17 attendees
	Sep 2017-Jun 2018	Atmospheric and Marine Biogeochemistry (AMB) seminars (co-organiser) University of East Anglia   Norwich, UK	~20 attendees
		<b>Reviewing</b> Journals: The Astrophysical Journal, Monthly Notices of the Royal Astronomical Society	

OUTREACH Jul 2024 Joint press release about [Espinoza et al. \(2024\)](#) paper:  
[Research confirms that distant world's eternal sunrise and sunset are not alike](#)  
Sep 2023 Expert scientist at the [Climate Exhibition](#) (part of the British Science Festival)  
Nov 2015-Jun 2019 Maintainer of [@AtmosChemUEA](#) Twitter account

VOCATIONAL EXPERIENCE Aug-Sep 2013 **Weather Forecaster**  
Sheremetyevo International Airport | Moscow, Russia  
Jun-Jul 2013 **Technician**  
Department of Actinometry, [Meteorological Observatory](#)  
Lomonosov Moscow State University | Moscow, Russia

VOCATIONAL TRAINING Sep 2023 [Belbin training](#)  
Mar 2023 Leadership training  
Dec 2022 Interview training  
Sep 2021 Learning and Teaching in Higher Education (LTHE) Unit 1  
Mar 2020 [JWST proposal planning workshop](#)  
Apr 2016 [NAME workshop](#)  
Jan 2016 [Introduction to UKCA](#)  
Dec 2015 Introduction to Unified Model  
Nov 2015 [Introduction to Atmospheric Science](#)  
2015-2019 [EnvEast Doctoral Training Programme](#)