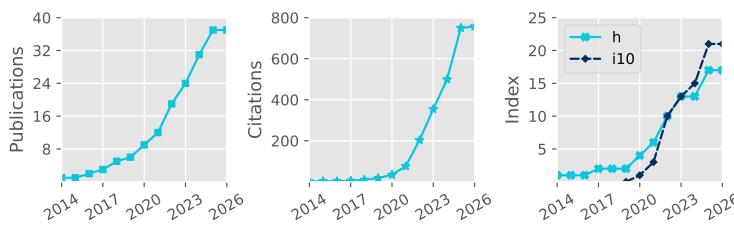


Denis Sergeev

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Total Pub.	37
Refereed	36
First Author	8
Citations	757
h-index	17

Updated: 14 Jan 2026

Career history

- Jan 2025–now **Lecturer in Astrophysics**
School of Physics, University of Bristol
- Sep 2021–Dec 2024 **Postdoctoral Researcher**
Project: Exascale Exoplanet Modelling
Department of Physics & Astronomy, University of Exeter
- Sep 2018–Aug 2021 **Postdoctoral Researcher**
Project: Climate Modelling of Rocky Exoplanets
Department of Mathematics & Statistics, University of Exeter

Academic Qualifications

- Oct 2014–Aug 2018 **PhD in Meteorology**
Thesis title (shortened): 'Characteristics of Polar Lows in the Nordic Seas' [🔗](#)
School of Environmental Sciences, University of East Anglia
Supervisors: Ian A. Renfrew, Thomas Spengler, Stephen Dorling
- Sep 2009–May 2014 **Specialist Diploma (1st class)**
Thesis title: 'Idealised Numerical Modelling of Polar Mesocyclone Dynamics' [🔗](#)
Department of Meteorology and Climatology, Moscow State University
Supervisor: Victor Stepanenko

Funding and Awards

		Est. Total Value
2024	Above & Beyond Silver Award University of Exeter	£1000
2023	Meeting Organisation Funding (Exoclimes VI and ExoSLAM) RAS	£5000
2022	Undergraduate Student Bursary (awarded; student declined) RAS	£1200
2017	Best Presentation Award CEEADA Symposium	~£100
2016	Travel Bursary Polar Prediction School	~£1000
2015	Travel Award High-Latitude Dynamics workshop	~£1000
2014	Lord Zuckerman PhD scholarship School of Environmental Sciences, UEA	~£112 000
2014	Young Scientist Travel Award EGU General Assembly	~£200
2014	Russian Academy of Sciences Young Scientist Medal	~£1000
	Direct Funding, co-I	
2025	Meeting Organisation Funding (UKExoM 2026) RAS	£2500
2025	Isambard 3 Allocation (30,000 node-hours; PI: N.J. Mayne) UKRI (Isambard 3)	▪
2024	UKSA Studentships: Mars Exploration Science	~£100 000
2024	Research Software Engineer Support DiRAC HPC	~£45 000
	Observational Facilities Resources, co-I	
2023	JWST Cycle 2, 49.21 hours (GO 3838, PI: J. Kirk)	▪

Research Interests

Atmospheric aerosols:

- How do clouds, hazes and dust shape planetary climates?

Atmospheric convection on exoplanets:

- How does convection shape global energy redistribution?

Publications (see below):

#17, 20, 22, 24, 27, 29, 34

#8, 17, 30, 35

Extraterrestrial lightning:	#19, 35
▪ How is lightning generated on exoplanets and can we detect it?	
Atmospheric dynamics on Earth and other planets:	#2, 3, 4, 5, 7, 10, 11, 13, 14, 16
▪ How do wind jets and cyclones form in planetary atmospheres?	
Planet formation and atmospheric evolution:	#25, 28, 31, 32, 33, 36, 37
▪ How does atmospheric composition relate to the planet's history?	
Model development and intercomparison:	#12, 15, 16, 17, 18, 23, 30, 36
▪ How do we build robust and reproducible exoplanet models?	

Publications

#	(preprints in grey)	Citations
37	Ahrer, E., Fairman, C., Kirk, J., Wakeford, H. R., et al. (incl. Sergeev, D. E.), 2025, BOWIE-ALIGN: weak spectral features in KELT-7b's JWST NIRSpec/G395H transmission spectrum imply a high cloud deck or a low-metallicity atmosphere, MNRAS 🔗	2
36	Lichtenberg, T., Schaefer, L., Krissansen-Totton, J., Miguel, Y., et al. (incl. Sergeev, D. E.), 2025, Coupled atmospHere Interior modelL Intercomparison (CHILI) Protocol Version 1.0: A CUISINES Intercomparison Project of Magma Ocean Models, arXiv:2511.16142 🔗	▪
35	Mak, M. T., Sergeev, D. E. , Mayne, N. J., Zamyatina, M., et al., 2025, The impact of different haze types on the atmospheres and observations of hot Jupiters: 3D simulations of HD 189733b, HD 209458b, and WASP-39b, MNRAS 🔗	▪
34	Sergeev, D. E. , McDermott, J. W., Woods, L., Braam, M., et al., 2025, Lightning activity on a tidally locked terrestrial exoplanet in storm-resolving simulations for a range of surface pressures, MNRAS 🔗	▪
33	Meech, A., Claringbold, A. B., Ahrer, E., Kirk, J., et al. (incl. Sergeev, D. E.), 2025, BOWIE-ALIGN: substellar metallicity and carbon depletion in the aligned TrES-4b with JWST NIRSpec transmission spectroscopy, MNRAS 🔗	8
32	Kirk, J., Ahrer, E., Claringbold, A. B., Zamyatina, M., et al. (incl. Sergeev, D. E.), 2025, BOWIE-ALIGN: JWST reveals hints of planetesimal accretion and complex sulphur chemistry in the atmosphere of the misaligned hot Jupiter WASP-15b, MNRAS 🔗	22
31	Penzlin, A. B. T., Booth, R. A., Kirk, J., Owen, J. E., et al. (incl. Sergeev, D. E.), 2024, BOWIE-ALIGN: how formation and migration histories of giant planets impact atmospheric compositions, MNRAS 🔗	25
30	Sergeev, D. E. , Boutle, I. A., Lambert, F. H., Mayne, N. J., et al., 2024, The Impact of the Explicit Representation of Convection on the Climate of a Tidally Locked Planet in Global Stretched-mesh Simulations, ApJ 🔗	9
29	Natchiar, S. R. M., Webb, M. J., Lambert, F. H., Vallis, G. K., et al. (incl. Sergeev, D. E.), 2024, Reduction in the Tropical High Cloud Fraction in Response to an Indirect Weakening of the Hadley Cell, JAMES 🔗	1
28	Zamyatina, M., Christie, D. A., Hébrard, E., Mayne, N. J., et al. (incl. Sergeev, D. E.), 2024, Quenching-driven equatorial depletion and limb asymmetries in hot Jupiter atmospheres: WASP-96b example, MNRAS 🔗	14
27	Mak, M. T., Sergeev, D. E. , Mayne, N., Banks, N., et al., 2024, 3D simulations of TRAPPIST-1e with varying CO ₂ , CH ₄ , and haze profiles, MNRAS 🔗	7
26	Villanueva, G. L., Fauchez, T. J., Kofman, V., Alei, E., et al. (incl. Sergeev, D. E.), 2024, Modeling Atmospheric Lines by the Exoplanet Community (MALBEC) Version 1.0: A CUISINES Radiative Transfer Intercomparison Project, Planet. Sci. J. 🔗	11
25	Kirk, J., Ahrer, E., Penzlin, A. B. T., Owen, J. E., et al. (incl. Sergeev, D. E.), 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 🔗	18
24	Mak, M. T., Mayne, N. J., Sergeev, D. E. , Manners, J., et al., 2023, 3D Simulations of the Archean Earth Including Photochemical Haze Profiles, J. Geophys. Res.: Atmospheres 🔗	7
23	Sergeev, D. E. , Mayne, N. J., Bendall, T., Boutle, I. A., et al., 2023, Simulations of idealised 3D atmospheric flows on terrestrial planets using LFRic-Atmosphere, Geosci. Model Dev. 🔗	14
22	Cohen, M., Bollasina, M. A., Sergeev, D. E. , Palmer, P. I., et al., 2023, Traveling Planetary-scale Waves Cause Cloud Variability on Tidally Locked Aquaplanets, Planet. Sci. J. 🔗	9

21	Eager-Nash, J. K., Mayne, N. J., Nicholson, A. E., Prins, J. E., et al. (incl. Sergeev, D. E.), 2023, 3D Climate Simulations of the Archean Find That Methane has a Strong Cooling Effect at High Concentrations, <i>J. Geophys. Res.: Atmospheres</i> 🔗	6
20	McCulloch, D., Sergeev, D. E. , Mayne, N., Bate, M., et al., 2023, A modern-day Mars climate in the Met Office Unified Model: dry simulations, <i>Geosci. Model Dev.</i> 🔗	6
19	Braam, M., Palmer, P. I., Decin, L., Ridgway, R. J., et al. (incl. Sergeev, D. E.), 2022, Lightning-induced chemistry on tidally-locked Earth-like exoplanets, <i>MNRAS</i> 🔗	19
18	Christie, D. A., Lee, E. K. H., Innes, H., Noti, P. A., et al. (incl. Sergeev, D. E.), 2022, CAMEMBERT: A Mini-Neptunes General Circulation Model Intercomparison, Protocol Version 1.0.A CUISINES Model Intercomparison Project, <i>Planet. Sci. J.</i> 🔗	9
17	Sergeev, D. E. , Fauchez, T. J., Turbet, M., Boutle, I. A., et al., 2022, The TRAPPIST-1 Habitable Atmosphere Intercomparison (THAI). II. Moist Cases-The Two Waterworlds, <i>Planet. Sci. J.</i> 🔗	72
16	Turbet, M., Fauchez, T. J., Sergeev, D. E. , Boutle, I. A., et al., 2022, The TRAPPIST-1 Habitable Atmosphere Intercomparison (THAI). I. Dry Cases-The Fellowship of the GCMs, <i>Planet. Sci. J.</i> 🔗	60
15	Fauchez, T. J., Villanueva, G. L., Sergeev, D. E. , Turbet, M., et al., 2022, The TRAPPIST-1 Habitable Atmosphere Intercomparison (THAI). III. Simulated Observables-the Return of the Spectrum, <i>Planet. Sci. J.</i> 🔗	54
14	Sergeev, D. E. , Lewis, N. T., Lambert, F. H., Mayne, N. J., et al., 2022, Bistability of the Atmospheric Circulation on TRAPPIST-1e, <i>Planet. Sci. J.</i> 🔗	31
13	Cohen, M., Bollasina, M. A., Palmer, P. I., Sergeev, D. E. , et al., 2022, Longitudinally Asymmetric Stratospheric Oscillation on a Tidally Locked Exoplanet, <i>ApJ</i> 🔗	15
12	Fauchez, T. J., Turbet, M., Sergeev, D. E. , Mayne, N. J., et al., 2021, TRAPPIST Habitable Atmosphere Intercomparison (THAI) Workshop Report, <i>Planet. Sci. J.</i> 🔗	38
11	Terpstra, A., Renfrew, I. A., & Sergeev, D. E. , 2021, Characteristics of Cold-Air Outbreak Events and Associated Polar Mesoscale Cyclogenesis over the North Atlantic Region, <i>J. Cli.</i> 🔗	29
10	Renfrew, I. A., Barrell, C., Elvidge, A. D., Brooke, J. K., et al. (incl. Sergeev, D.), 2021, An evaluation of surface meteorology and fluxes over the Iceland and Greenland Seas in ERA5 reanalysis: The impact of sea ice distribution, <i>Q. J. R. Meteorol. Soc.</i> 🔗	72
9	Eager-Nash, J. K., Reichelt, D. J., Mayne, N. J., Hugo Lambert, F., et al. (incl. Sergeev, D. E.), 2020, Implications of different stellar spectra for the climate of tidally locked Earth-like exoplanets, <i>A&A</i> 🔗	27
8	Sergeev, D. E. , Lambert, F. H., Mayne, N. J., Boutle, I. A., et al., 2020, Atmospheric Convection Plays a Key Role in the Climate of Tidally Locked Terrestrial Exoplanets: Insights from High-resolution Simulations, <i>ApJ</i> 🔗	65
7	Joshi, M. M., Elvidge, A. D., Wordsworth, R., & Sergeev, D. , 2020, Earth's Polar Night Boundary Layer as an Analog for Dark Side Inversions on Synchronously Rotating Terrestrial Exoplanets, <i>ApJ</i> 🔗	18
6	Renfrew, I. A., Pickart, R. S., Våge, K., Moore, G. W. K., et al. (incl. Sergeev, D.), 2019, The Iceland Greenland Seas Project, <i>BAMS</i> 🔗	27
5	Sergeev, D. , Renfrew, I. A., & Spengler, T., 2018, Modification of Polar Low Development by Orography and Sea Ice, <i>Mon. Wea. Rev.</i> 🔗	18
4	Shestakova, A. A., Toropov, P. A., Stepanenko, V. M., Sergeev, D. E. , et al., 2018, Observations and modelling of downslope windstorm in Novorossiysk, <i>Dyn. Atm. Ocean.</i> 🔗	6
3	Sergeev, D. E. , Renfrew, I. A., Spengler, T., & Dorling, S. R., 2017, Structure of a shear-line polar low, <i>Q. J. R. Meteorol. Soc.</i> 🔗	22
2	Spengler, T., Renfrew, I. A., Terpstra, A., Tjernström, M., et al. (incl. Sergeev, D.), 2016, High-Latitude Dynamics of Atmosphere-Ice-Ocean Interactions, <i>BAMS</i> 🔗	7
1	Eliseev, A. V., & Sergeev, D. E. , 2014, Impact of subgrid-scale vegetation heterogeneity on the simulation of carbon-cycle characteristics, <i>Izv. Atmos. Ocean. Phys.</i> 🔗	9

Conferences and Seminars

Invited Talks

Oct 2025 CUISINES — a framework for exoplanet model intercomparison projects

Atmospheric and interior evolution of planetary magma oceans | Leiden, the Netherlands

- Jun 2025 Atmospheric dynamics on other planets [↗](#)
Durham HPC Days | Durham, UK
- Feb 2025 Exoplanet climate modelling with LFRic
University of East Anglia | Norwich, UK
- May 2024 3D simulations of exoplanet atmospheres with the next-generation Met Office model
University of Leicester | Leicester, UK
- Apr 2024 Shall I compare thee to a distant world? Inter-planet and inter-model comparative studies
EGU General Assembly | Vienna, Austria
- Jul 2023 Simulations of idealised 3D atmospheric flows on terrestrial planets using LFRic-Atmosphere
NASA GISS Seminar | Online
- Mar 2023 First results of using LFRic for exoplanet climate modelling
NIWA Seminar | Wellington, New Zealand
- Feb 2023 Atmospheric dynamics and chemistry on exoplanets
UQ Astro Group Meeting | Brisbane, Australia
- Feb 2023 Atmospheric dynamics and chemistry on exoplanets [↗](#)
UniSQ Exoplanet Group Seminar | Brisbane, Australia
- Feb 2023 Atmospheric dynamics and chemistry on exoplanets
UNSW AstroSeminar | Sydney, Australia
- Apr 2022 Dichotomy of the atmospheric circulation on TRAPPIST-1e [↗](#)
NASA GISS Seminar | Online
- Jan 2022 Dichotomy of the atmospheric circulation on TRAPPIST-1e
NASA GSFC Extrasolar Planets Seminar | Online
- Nov 2021 TRAPPIST-1 Habitable Atmosphere Intercomparison (THAI)
MPIA APEx Exocoffee | Online
- May 2021 Overcast on TRAPPIST-1e [↗](#)
RCC MSU Geophysical Seminar | Online
- Sep 2020 Simulations of convection over a range of atmospheric conditions on TRAPPIST-1e [↗](#)
THAI Workshop | Online
- Apr 2020 Atmospheric convection plays a key role in the climate of tidally locked exoplanets [↗](#)
University of Reading Meteorology Seminar | Online
- Apr 2020 Atmospheric convection plays a key role in the climate of tidally locked exoplanets [↗](#)
NASA GISS Seminar | Online

Contributed Talks

- Sep 2023 Introducing GeoVista - Cartographic rendering and mesh analytics powered by PyVista (joint talk)
Met Office Seminar | Exeter, UK
- Jul 2022 Bistability of the atmospheric circulation on TRAPPIST-1e
Rocky Worlds II | Oxford, UK
- Apr 2022 Dichotomy of the atmospheric circulation on TRAPPIST-1e
Exoplanet Modelling in the James Webb Era II: Terrestrial planets and sub-Neptunes | Online
- Nov 2020 Explicit convection on tidally locked rocky exoplanets simulated with the UM nesting suite [↗](#)
Unified Model users workshop | Online
- Aug 2019 Simulations of moist convection on tidally-locked rocky exoplanets [↗](#)
Exoclimes V | Oxford, UK
- Jun 2019 North Atlantic polar mesoscale cyclones in ERA5 and ERA-Interim reanalyses [↗](#)
IGP workshop | Norwich, UK
- Apr 2019 Atmospheric convection on tidally-locked Earth-like exoplanets
UK Exoplanet Community Meeting | London, UK
- Jun 2018 Modification of Polar Low Development by Sea Ice and Svalbard Orography [↗](#)
POLAR2018 | Davos, Switzerland
- Oct 2017 The influence of Svalbard orography and sea ice on polar low development [↗](#)
18th Cyclone Workshop | Sainte-Adèle, Canada
- Apr 2017 Polar lows and how background environment can influence their development [↗](#)
Cambridge Earth Systems Science EnvEast Doctoral Alliance Symposium | Cambridge, UK

- May 2016 Structure of the shear-line polar low south of Svalbard
NORPAN meeting | Tokyo, Japan
- Apr 2016 Structure of the shear-line polar low south of Svalbard ↗
13th European Polar Lows Working Group Workshop | Paris, France

Poster Presentations

- Nov 2025 Lightning climatology on rocky exoplanets in a global storm-resolving model
CTR Wilson Meeting on Atmospheric Electricity | Bath, UK
- Jun 2024 The impact of convection on the climate of a tidally locked planet in stretched-mesh simulations
Exoplanets 5 | Leiden, Netherlands
- Apr 2024 The impact of convection on the climate of TRAPPIST-1e in global stretched-mesh simulations
EGU General Assembly | Vienna, Austria
- Apr 2024 The impact of convection on the climate of a tidally locked planet in stretched-mesh simulations
UK Exoplanet Community Meeting | Birmingham, UK
- Nov 2022 Dry Modern-Day Mars Climate in the Met Office Unified Model
UK Solar System Planetary Atmospheres | London, UK
- Sep 2022 Bistability of the Atmospheric Circulation on TRAPPIST-1e
UK Exoplanet Community Meeting | Edinburgh, UK
- Jul 2015 Structure and dynamics of a shear-line polar low during a cold-air outbreak over the Norwegian Sea
Royal Meteorological Society Student Conference | Birmingham, UK
- Mar 2015 Structure and dynamics of a shear-line polar low during a cold-air outbreak over the Norwegian Sea
Dynamics of Atmosphere-Ice-Ocean Interactions in the High Latitudes workshop | Rosendal, Norway
- May 2014 Numerical modelling of polar mesocyclones dynamics diagnosed by the energy budget
EGU General Assembly | Vienna, Austria
- Apr 2013 Impact of subgrid-scale vegetation heterogeneity on the carbon cycle
EGU General Assembly | Vienna, Austria
- Apr 2013 Numerical modelling of polar mesocyclones generation mechanisms
EGU General Assembly | Vienna, Austria

Supervision

(Projects with me as the lead supervisor are in **bold**. Students who continued their academic career are underlined.)

PhD Supervision

- Sep 2025–Sep 2029 **Alex Corbett** (U. Bristol)
Project: Convection on Sub-Neptunes
Co-supervisors: B. Shipway, Z. Leinhardt
- Sep 2025–Sep 2029 Will Luscombe
Project: Forecasting Martian dust storms
Co-supervisors: N. J. Mayne, M. Bate, B. Drummond
- Sep 2021–Apr 2025 Mei Ting (Martha) Mak (U. Exeter)
Project: Hazes in Planetary Atmospheres
Co-supervisors: N. J. Mayne, J. Manners, E. Hébrard

MSc Supervision

- Sep 2025–May 2026 **Freya Evans & Daisy Green**
Project: **Atmospheric Dynamics on Ice Giants**
- Sep 2025–May 2026 **Catherine Kerr & Lily Odhuba**
Project: Lightning Storms on Earth-like Exoplanets
- Jan 2023–May 2024 Tom Batchelor, Luke Benzing, & Alex McGinty
Project: Mars Atmosphere Modelling
Co-supervisors: M. Bate, N. J. Mayne, D. McCulloch
- Sep 2020–Sep 2022 Danny McCulloch (MSci by Research)
Project: Climate Modelling of Modern-Day Mars

Apr 2021–Sep 2022	Co-supervisors: M. Bate, N. J. Mayne <u>Meghan Plumridge</u> (MSci by Research) Project: Climate Modelling of Early Mars
Jan 2021–May 2022	Co-supervisors: M. Bate, N. J. Mayne Jasper Chadwick & Esse Sellwood Project: Ocean Heat Transport on Rocky Exoplanets
Jan 2021–May 2022	Co-supervisors: F. H. Lambert, J. Eager-Nash <u>Isabelle Browne & Oakley Young</u> Project: Greenhouse Effect on Early Mars
Jan 2020–May 2021	Co-supervisors: F. H. Lambert, N. J. Mayne, J. Eager-Nash Toby Ferrison Project: Titan Climate Modelling
Oct 2018–May 2019	Co-supervisor: F. H. Lambert <u>Jake Eager-Nash & David Reichelt</u> Project: Implications of Stellar Type on the Climate of Tidally Locked Terrestrial Exoplanets Co-supervisors: F. H. Lambert, N. J. Mayne

Undergraduate and Summer Internship Supervision

Jul–Sep 2022	<u>Oakley Young</u> Project: Ekman Ocean Model Co-supervisors: J. Eager-Nash, F. H. Lambert
Jun–Sep 2022	<u>James McDermott & Lottie Woods</u> Project: Simulations of Lightning Storms on Tidally Locked Rocky Exoplanets
Jun–Aug 2021	<u>Oakley Young</u> Project: Climate Modelling of Archean Earth Co-supervisors: J. Eager-Nash, N. J. Mayne
Jun–Aug 2021	<u>Joshua Parkin & Esse Sellwood</u> Project: The Impact of Host Star Spectrum on the Climate of Rocky Exoplanets Co-supervisors: J. Eager-Nash, N. J. Mayne
Jun–Aug 2019	<u>Isobel Parry</u> Project: Water Cycle on Proxima Centauri b Co-supervisor: F. H. Lambert

Teaching and Mentoring

2026–now	Environmental Physics Lecturer University of Bristol ~40 students
2025–now	Practical Physics III: Research Skills and Group Project Tutor University of Bristol 2 groups of ~7 students
2025–now	Research Project in Physics Supervisor & assessor University of Bristol ~10 students
Jul 2024	Algorithms For Exascale Summer School ↗ Invited lecturer University of Exeter ~20 students
Feb 2024	Physics of Climate Change Workshop lead University of Exeter ~30 students
Jul 2023	Climatematch Academy Mentor Online 3 groups of ~5 students
Jul 2023	International Sustainability Summer School Lecturer University of Exeter ~10 students
Jun 2023	Exoclimes Summer School in Atmospheres and Modelling (ExoSLAM) ↗ Lecturer University of Exeter ~50 students
2016–2018	Introduction to Python in Environmental Sciences ↗ Course creator & lead University of East Anglia ~50 students
2015–2017	Modelling Environmental Processes; Meteorology; Numerical Skills Teaching assistant University of East Anglia

Research Leadership and Impact

- 2024–now Co-lead of Climates Using Interactive Suites of Intercomparisons Nested for Exoplanet Studies (CUISES) [↗](#)
- Jun 2023 Co-chair of Exoclimes Summer School in Atmospheres and Modelling (ExoSLAM) [↗](#)
- 2023 Interview by the University of Exeter about my research [↗](#)
- 2023 Interview by UKRI/STFC about my outreach [↗](#)
- 2023 Expert Scientist at the British Science Festival Climate Exhibition [↗](#)
- 2022 Press releases: University of Exeter [↗](#), American University [↗](#), & INSU CNRS [↗](#)
- 2020–now 3D visualisations of exoplanet simulations:
‘Cloudy Skies of Distant Exoplanets’ [↗](#) | University of Exeter Images of Research 2023
‘A refined look at tidally locked exoplanets’ [↗](#) | DiRAC HPC Research Image Competition 2023
‘Exoplanetary Atmospheres’ [↗](#) | Exeter Science Centre, Science as Art Gallery 2020
‘Dusty exoplanet atmospheres’ [↗](#) | Nature Press Release
‘Virtual Reality Exploration of Exoplanets’ [↗](#) | 360 VR video (contributor)
- 2019 Science consulting on the ‘Exoplanet Explorers’ videogame
- 2015 Blogging:
Disastrous Disaster Movies [↗](#)
Polar Lows: What Fuels Arctic Hurricanes? [↗](#)
Worldwide Weird Weather Words [↗](#)

Organisation of Scientific Meetings

- Mar 2026 UK Exoplanet Community Meeting (SOC) [↗](#) | Bristol, UK
- Oct 2025 Atmospheric and interior evolution of planetary magma oceans (SOC) [↗](#) | Leiden, the Netherlands
- Sep 2025 BUFFET-5 (Co-chair) [↗](#) | Bordeaux, France
- Jul 2025 Exoclimes VII (SOC) [↗](#) | Montreal, Canada
- Jun 2025 Idealised modelling with LFRic (Chair) [↗](#) | Exeter, UK | ~50 attendees
- Oct 2024 BUFFET-4: Building a Unified Framework For Exoplanet Treatments (Co-chair) [↗](#) | Online
- Jun 2024 What’s Cookin’ Doc? A CUISES meeting (Chair) [↗](#) | Leiden, the Netherlands | ~20 attendees
- Jun 2023 ExoSLAM Summer School (Co-chair) [↗](#) | Exeter, UK | ~50 attendees
- Jun 2023 Exoclimes VI (LOC) [↗](#) | Exeter, UK | ~200 attendees
- Mar 2023 Challenge of Science Leadership Short Course | Exeter, UK

Reviewing and Academic Service

- Journals Nat. Astron., MNRAS, Planet. Sci. J., Geophys. Res. Lett., ApJ, Planet. Space Sci., Q. J. R. Meteorol. Soc.
- Funding STFC Consolidated Grant, STFC ERF
- Observations James Webb Space Telescope General Observer Programs (Exoplanets & Disks, Cycles 3 & 4)
- Membership Royal Astronomical Society, Europlanet Society

Technical Skills

- Numerical models LFRic, Unified Model, SOCRATES, LAGRANTO, Isca
- Programming languages Python, FORTRAN, MATLAB, NCL
- Python libraries (user) cartopy, cython, iris, matplotlib, numpy, pandas, pyvista, xarray
- Python libraries (creator/contributor) aeolus, cartopy, pyvista, geovista
- Parallel computing Dask, MPI, OpenMP
- Version control Git, Subversion
- Document preparation L^AT_EX, Quarto, Jupyter Notebooks, Markdown, HTML, CSS, reST

Vocational Training

- Sep 2023 Belbin Training [↗](#)

- Mar 2023 Challenge of Science Leadership ↗
- Dec 2022 Interview Training
- Jul 2020 Writing Workshop for Climate Scientists
- Mar 2020 ESA JWST Master Class ↗
- Jul 2019 ICTP Summer School on Convective Organization and Climate Sensitivity ↗
- Apr 2018 Fortran Modernisation Workshop ↗
- Jan 2018 Helicopter Underwater Escape Training Course (CA-EBS) ↗
- Dec 2017 Sea Survival Course
- Jun 2017 Weather Presenting
- Feb 2017 Level 1 First Aid for Field Work Course
- Jan 2017 Raspberry Pi Basics
- Apr 2016 WWRP/WCRP/Bolin Center Polar Prediction School
- Dec 2014 UK Met Office Unified Model Training

Vocational Experience

- Apr–Jun 2018 Data Technician
Processing of meteorological data collected in the IGP field campaign ↗ | University of East Anglia
- 2015–2018 Founder and Leader
Python Users Group ↗ | University of East Anglia
- Feb–Mar 2018 Member of the Meteorology Team
The Iceland-Greenland Seas Project (IGP) field campaign | Akureyri, Iceland
- Mar 2015 Rapporteur
Dynamics of Atmosphere-Ice-Ocean Interactions in the High-Latitudes ↗ | Rosendal, Norway
- Oct 2013 Research Intern
Geophysical Institute | University of Bergen, Norway
- Aug–Sep 2013 Trainee Forecaster
Forecast and Briefing Service | Main Aviation Meteorological Centre, Vnukovo Airport
- Jul 2012 Research Intern
A.M. Obukhov Institute of Atmospheric Physics | Moscow, Russia