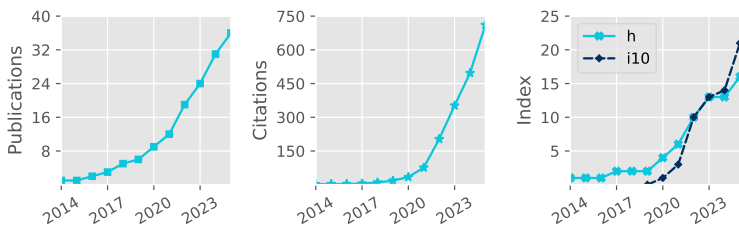


Denis Sergeev

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Total Pub. **36**
Refereed **36**
First Author **8**
Citations **711**
h-index **16**

Updated: 3 Nov 2025

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

| Direct Funding, PI | Est. Total Value |
|---|------------------|
| 2024 Above & Beyond Silver Award University of Exeter | £1000 |
| 2023 Meeting Organisation Funding (Exoclines VI and ExoSLAM) RAS | £5000 |
| 2022 Undergraduate Student Bursary (awarded; student declined) RAS | £1200 |
| 2017 Best Presentation Award CEEDA 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 | |
|---|----------|
| 2024 UKSA Studentships: Mars Exploration Science | ■ |
| 2024 Research Software Engineer Support DiRAC HPC | ~£45 000 |

Observational Facilities Resources

| | |
|---|---|
| 2023 JWST: 49.21 Primary Spacecraft Hours in Cycle 2 (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?

Extraterrestrial lightning:

- How is lightning generated on exoplanets and can we detect it?

Publications (see below):
#17, 20, 22, 24, 27, 29, 34

#8, 17, 30, 35

#19, 35

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:

#25, 28, 31, 32, 33

- How does atmospheric composition relate to the planet's history?

Model development and intercomparison:

#12, 15, 16, 17, 18, 23, 30

- How do we build robust and reproducible exoplanet models?

Publications

| # | (preprints in grey) | Citations |
|----|---|-----------|
| 36 | 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 ↗ | 1 |
| 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 ↗ | 7 |
| 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 ↗ | 20 |
| 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 ↗ | 23 |
| 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 ↗ | 8 |
| 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 ↗ | 5 |
| 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. ↗ | 10 |
| 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 ↗ | 17 |
| 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. ↗ | 12 |
| 22 | Cohen, M., Bolasina, 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. ↗ | 8 |
| 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, J. Geophys. Res.: Atmospheres ↗ | 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, Geosci. Model Dev. ↗ | 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, MNRAS [↗](#) 16
- 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, Planet. Sci. J. [↗](#) 8
- 17 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, Planet. Sci. J. [↗](#) 57
- 16 **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, Planet. Sci. J. [↗](#) 69
- 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, Planet. Sci. J. [↗](#) 49
- 14 **Sergeev, D. E.**, Lewis, N. T., Lambert, F. H., Mayne, N. J., et al., 2022, Bistability of the Atmospheric Circulation on TRAPPIST-1e, Planet. Sci. J. [↗](#) 29
- 13 Cohen, M., Bollasina, M. A., Palmer, P. I., **Sergeev, D. E.**, et al., 2022, Longitudinally Asymmetric Stratospheric Oscillation on a Tidally Locked Exoplanet, ApJ [↗](#) 14
- 12 Fauchez, T. J., Turbet, M., **Sergeev, D. E.**, Mayne, N. J., et al., 2021, TRAPPIST Habitable Atmosphere Intercomparison (THAI) Workshop Report, Planet. Sci. J. [↗](#) 37
- 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, J. Cli. [↗](#) 27
- 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, Q. J. R. Meteorol. Soc. [↗](#) 67
- 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, A&A [↗](#) 25
- 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, ApJ [↗](#) 63
- 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, ApJ [↗](#) 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, BAMS [↗](#) 27
- 5 **Sergeev, D.**, Renfrew, I. A., & Spengler, T., 2018, Modification of Polar Low Development by Orography and Sea Ice, Mon. Wea. Rev. [↗](#) 16
- 4 Shestakova, A. A., Toropov, P. A., Stepanenko, V. M., **Sergeev, D. E.**, et al., 2018, Observations and modelling of downslope windstorm in Novorossiysk, Dyn. Atm. Ocean. [↗](#) 6
- 3 **Sergeev, D. E.**, Renfrew, I. A., Spengler, T., & Dorling, S. R., 2017, Structure of a shear-line polar low, Q. J. R. Meteorol. Soc. [↗](#) 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, BAMS [↗](#) 7
- 1 Eliseev, A. V., & **Sergeev, D. E.**, 2014, Impact of subgrid-scale vegetation heterogeneity on the simulation of carbon-cycle characteristics, Izv. Atmos. Ocean. Phy. [↗](#) 8

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 [🔗](#)
Exoclines 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

| | |
|----------|---|
| 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 | <u>Martha (Mei Ting) Mak</u> (U. Exeter) Project: Hazes in Planetary Atmospheres Co-supervisors: N. J. Mayne, J. Manners, E. Hébrard |

Masters Supervision

| | |
|-------------------|--|
| Jan 2023–May 2024 | Tom Batchelor, Luke Benzing, & <u>Alex McGinty</u> Project: Mars Atmosphere Modelling Co-supervisors: M. Bate, N. J. Mayne, D. McCulloch |
| Sep 2020–Sep 2022 | <u>Danny McCulloch</u> (MSci by Research) Project: Climate Modelling of Modern-Day Mars Co-supervisors: M. Bate, N. J. Mayne |
| Apr 2021–Sep 2022 | <u>Meghan Plumridge</u> (MSci by Research) Project: Climate Modelling of Early Mars Co-supervisors: M. Bate, N. J. Mayne |
| Jan 2021–May 2022 | Jasper Chadwick & Esse Sellwood Project: Ocean Heat Transport on Rocky Exoplanets Co-supervisors: F. H. Lambert, J. Eager-Nash |
| Jan 2021–May 2022 | Isabelle Browne & <u>Oakley Young</u> Project: Greenhouse Effect on Early Mars Co-supervisors: F. H. Lambert, N. J. Mayne, J. Eager-Nash |
| Jan 2020–May 2021 | Toby Ferrison Project: Titan Climate Modelling Co-supervisor: F. H. Lambert |

Oct 2018–May 2019 Jake Eager-Nash & David Reichelt
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 Oakley Young
Project: Ekman Ocean Model
Co-supervisors: J. Eager-Nash, F. H. Lambert

Jun–Sep 2022 James McDermott & Lottie Woods
Project: Simulations of Lightning Storms on Tidally Locked Rocky Exoplanets

Jun–Aug 2021 Oakley Young
Project: Climate Modelling of Archean Earth
Co-supervisors: J. Eager-Nash, N. J. Mayne

Jun–Aug 2021 Joshua Parkin & Esse Sellwood
Project: The Impact of Host Star Spectrum on the Climate of Rocky Exoplanets
Co-supervisors: J. Eager-Nash, N. J. Mayne

Jun–Aug 2019 Isobel Parry
Project: Water Cycle on Proxima Centauri b
Co-supervisor: F. H. Lambert

Teaching and Mentoring

2025–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 Climatedmatch Academy
Mentor | Online | 3 groups of ~5 students

Jul 2023 International Sustainability Summer School
Lecturer | University of Exeter | ~10 students

Jun 2023 Exoclimates 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 (CUISINES) [🔗](#)

Jun 2023 Co-chair of Exoclimates 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 Exoclimates 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 CUISINES meeting (Chair) | Leiden, the Netherlands | ~20 attendees
Jun 2023 ExoSLAM Summer School (Co-chair) [🔗](#) | Exeter, UK | ~50 attendees
Jun 2023 Exoclimates VI (LOC) [🔗](#) | Exeter, UK | ~200 attendees
Mar 2023 Challenge of Science Leadership Short Course | Exeter, UK

Reviewing and External Activities

- 2017–now Reviewer for: Nat. Astron., MNRAS, Planet. Sci. J., Geophys. Res. Lett., ApJ, Planet. Space Sci., Q. J. R. Meteorol. Soc.
2023–now Expert reviewer for: the James Webb Space Telescope General Observer Programs (Exoplanets & Disks, Cycles 3 & 4)
2021–now Member of: the Royal Astronomical Society, Europlanet Society

Skills

| | |
|--|---|
| Languages | English (fluent), French (basic), Russian (native) |
| Numerical models | LFRic, Unified Model, SOCRATES, LAGRANTO, Isca |
| Programming languages | Python, Bash, 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 ^A T _E X, 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