



RMetsS Virtual Student & Early Career Scientists Conference Programme 28 & 29 June 2021

Sunday 27th June – 7pm – 8pm BST

Pre-conference Networking Event – An event created by the Committee to encourage a sociable aspect of the Conference with a chance to meet other delegates on the Conferences networking platform, Wonder.me. This is an informal and fun event, not to be missed.

Monday 28th June

09.30 Opening and Welcome Address

Parallel Oral Sessions

	Session 1 – Dynamics Chair: Lisa Degenhardt	Session 2 – Flooding Chair: Katie Hodge
09.35	The Relative Contribution of Non-Local and Local Moisture Sources to Extratropical Cyclone Precipitation	Using Projections from UKCP18's Convection Permitting Model to Increase Understanding of Future Surface Water Flood Risk in Leeds
	Sophie Cuckow, PhD Student, University of Reading	Molly Asher, PhD Researcher, University of Leeds
09.50	Comparing Different Methods for Detecting Atmospheric Blocking	Improving Design Storm Hyetographs to Better Represent the Risks from Intense (Convective) Storms in Great Britain
	Charlie Sutters, PhD Student, University of Reading	Roberto Villalobos-Herrera, PhD Candidate, Newcastle University and University of Costa Rica
10.05	Symmetries and Asymmetries of the Southern Annular Mode	Extreme Precipitation Events and Large-Scale Patterns over the Mediterranean: Connections & Predictability
	Elio Campitelli, PhD Student, University of Buenos Aires	Nikolaos Mastrantonas, PhD Student, Early-Stage Researcher, ECMWF, TU Bergakademie Freiberg
10.20	Lagrangian Coherent Structures: Kinematical Skeletons of Moisture and Rainfall Bands	Improving Radar Rainfall Estimation for Urban Flood Risk Using Monte Carlo Ensemble Simulation
	Gabriel M. P. Perez, PhD Student, Department of Meteorology, University of Reading	Amy C. Green, PhD Student, Newcastle University

10.35 Refreshment Break



11.00 Parallel Oral Sessions

	Session 3 – Extreme Weather & Forecasting Chair: Tim Banyard	Session 4 – Chemistry Chair: Shaun Dempsey
11.00	Robust Seasonal Forecast Skill for Frequency and Intensity of Winter Windstorms over Europe Using Different Skill Measures	The Impact of Acute Diesel Exhaust Exposure on Executive Brain Function
	Lisa Degenhardt, PhD Student, University of Birmingham	Tom Faherty, PhD Student, University of Birmingham
11.15	Using Weather Patterns to Help the Energy Industry Prepare for Extreme Weather Events	Investigating the Occurrence, Likelihood and Regional Variability of Extreme Ozone Pollution Episodes Across the UK
	Eleanor Armstrong, Graduate Trainee, Met Office	Lily Gouldsbrough, PhD Student, Lancaster University
11.30	Climate Model Evaluation of 3 Hourly Compound Precipitation and Wind Extremes over Europe	Smarter Analysis of Satellite Data for Air Quality Regulators
	Laura E. Owen, PhD Student, University of Exeter	Daniel Potts, PhD Research Student, University of Leicester
11.45	Facilitating Relief from Extreme Weather Events Using Deep Learning-based Remote Sensing	Forecasting UK Site Level Air Quality with a Kalman Filtering Approach
	Thomas Chen, Student, Academy for Mathematics, Science, and Engineering	Rachel Duncan, PhD Student, Lancaster University

12.00 Lunch Break

13.00 Keynote Speakers - Forecasting

Chair: Prof Liz Bentley, CEO, Royal Meteorological Society

Speakers:

A Leap into the Unknown? Making and Scrutinising Climate Projections for the 21st Century

Dr Amanda Maycock, Director of Institute for Climate and Atmospheric Science and IPCC AR6 WGI Lead Author, University of Leeds

Long Range Forecasts: Bridging the gap between weather forecasts and climate projections

Prof Adam Scaife, Met Office Hadley Centre & Department of Mathematics, University of Exeter

Nowcasting for the UK: Challenges and Opportunities

Katie Norman, Nowcasting R&D Manager, Met Office



Panel Session

14.30 Poster Session 1

15.30 Refreshment Break

16.00 Parallel Oral Sessions

	Session 5 – Climate Change Chair: Clare Lewis	Session 6 – Convection Chair: Isabel Smith
16.00	Reduced El Niño Variability in the Mid-Pliocene according to the PlioMIP2	Effects of Vertical Wind Shear on the Intensities of Mesoscale Convective Systems over West Africa
	Arthur Oldeman, PhD Candidate, Institute for Marine and Atmospheric Research, Utrecht University, the Netherlands	Michael Baidu, PhD Researcher, ICAS, University of Leeds
16.15	Climate Extremes Recorded in Playa Lakes Across Continental Australia Over the Last Millennia	An Analysis of the Diurnal Cycle of Rainfall Over the Maritime Continent using GPM-IMERG Data
	Lea Sophie Grunau, PhD Candidate, University of Wollongong, Australia	Jack Mustafa, Postgraduate Researcher, University of East Anglia (UEA)
16.30	Development of an Empirical-Statistical Framework for Attributing Fire Weather Extremes to Anthropogenic Climate Change	Convection and Circulation in Convection-Permitting Models over West Africa
	Zhongwei Liu, PhD Researcher, Centre for Agroecology, Water and Resilience, Coventry University	Fran Morris, PhD Student, University of Leeds
16.45		Thermodynamic Vs Dynamic Control on Radar-Observed Diurnal Transition of Congestus into Deep and Overshooting Convection: A Reanalysis Based Time-Metric Analysis
		Abhishek Jha, PhD Research Scholar, Indian Institute of Tropical Meteorology Pune

17.00 - Social



Tuesday 29th June

09.00 Welcome from Dave Griggs, President, Royal Meteorological Society

09.05 Parallel Oral Sessions

	Session 7 – Convection Chair: Michael Baidu	Session 8 – Data Analysis Chair: Lisa Degenhardt
09.05	Evaluation of Cloud Resolving Simulations in the Arctic Focusing on Cloud Properties	Improving Regional Rainfall Forecasting using Video-Based Neural Networks
	Theresa Kiszler, PhD Student, University of Cologne	Andrew Barnes, PhD Student, University of Bath
09.20	Measuring Extinction in the Lower Troposphere with Raman Lidar (Pre-recorded)	Where Will We Holiday in Europe in the Future? An Application of UKCP18 to the Tourism Climatic Index
	Katharina Stolla	Megan Pearce, Scientific Consultant, Met Office
09.35	The Interaction Between Cold Fronts and Convection in Germany	Machine Learning Applications. Numerical Weather Prediction and Dynamic Line Ratings for Overhead Power Lines – A Review
	George Pacey, PhD Student, Free University of Berlin	Katie Hodge, Graduate Trainee Scientist, Met Office
09.50	A Simple Harmonic Oscillator Model for Madden Julian Oscillation with Moisture Feedback	Beyond Probabilities: A Possibilistic Framework to Interpret Ensemble Predictions and Fuse Imperfect Sources of Information
	Kartheek Mamidi, PhD Student, Department of Physics, Central University of Kerala	Noémie Le Carrer, Post-Doctoral Researcher, Università Ca'Foscari Venezia, Italy

10.05 Poster Session 2

11.05 Refreshments

11.30 Parallel Oral Sessions

	Session 9 – Chemistry Chair: Michael Baidu	Session 10 – Climate Change Chair: Isabel Smith & Clare Lewis
11.30	The Impact of Climate Change on Surface Ozone Concentrations in South America and Africa in 2100	Statistical Modelling of Surface Solar Radiation for the Identification of Surplus Energy Generation Events to



		Test the Resilience of a Highly Renewable Future Energy System
	Flossie Brown, PhD Student, University of Exeter	Isabel Rushby, Foundation Scientist, Met Office
11.45	A Modelling Investigation of Atmospheric Hydrogen Cyanide	Combined Effects of Global Warming and Ozone Depletion/Recovery on Southern Hemisphere Atmospheric Circulation and Regional Precipitation
	Antonio Giovanni Bruno, PhD Student, University of Leicester & NCAS	Julia Mindlin, PhD Student, University of Buenos Aires
12.00	Micrometeorological Observations in Complex Mountainous Terrain and Modelling with High-Resolution WRF	What Would Happen if Anthropogenic Methane Emissions Ceased? Exploring a Net-Zero Methane Emissions Future in a Chemistry-Climate Model
	Dr Alessio Golzio, Department of Physics, University of Turin (Italy)	Zosia Staniaszek, PhD Student, University of Cambridge
12.15		A Methodology for Attributing the Role of Climate Change in Extreme Events: A Global Spectrally Nudged Storyline
		Linda van Garderen, PhD Student, Helmholtz-Zentrum Hereon

12.30 Lunch

13.30 Parallel Oral Sessions

	Session 11 – Dynamics Chair: Tim & Shaun Dempsey	Session 12 – Hot Weather Topics Chair: Katie Hodge
13.30	Will Coupling of the Met Office Forecast Model to an Ocean Model Improve Weather Predictions in the Tropics?	The Influence of Stratospheric Meteorology on Forecasting the Movement of Volcanic Ash
	Eliza Karlowska, PhD Student, University of East Anglia & Met Office	Nicola Stebbing, Foundation Scientist, Met Office
13.45	Can Shooting Stars Can Help Validate Atmospheric Models? – A Study of Long-Term Winds in the Antarctic Mesosphere and Lower Thermosphere	Improved Satellite Detection of Volcanic Ash
	Phoebe Noble, PhD Student, University of Bath & British Antarctic Survey	Cameron Saint, Foundation Scientist, Met Office
14.00	Investigating Boundary Layer Processes in the Met Office Unified Model for Hurricane Maria (2017)	The Urban Heat Island and the Influence of Climate



	Amethyst A. Johnson, PhD Student, University of Leeds	Sarah Berk, PhD Student, The University of East Anglia
14.15	Meteotsunamis in a changing climate	Detecting and Analysing Early Heatwave Extremes
	Clare Lewis, PhD Student, University of Reading & Plymouth Marine Laboratory	Emma L Yule, PhD Researcher, The University of Edinburgh

14.30 Refreshments

15.00 **Keynote Speakers Session: Science Communication in Covid 19 Times**

Chair: Prof Liz Bentley, CEO, Royal Meteorological Society

Speakers:

Communicating Climate Change - A Journalist's Perspective

Leo Hickman, Editor, Carbon Brief

Engaging the Public with Climate Change - Lessons from COVID-19

Prof Lorraine Whitmarsh, Director - Centre for Climate Change & Social Transformations (CAST), Department of Psychology, University of Bath

From Science to Society: Creating Stories about Clean Air

Dr Harriett Richardson, Communications Manager, National Centre for Atmospheric Science

Panel Session

16.30 Awards

16.45 Close of Conference

Thursday 1st July

15.00pm-16.00pm

Careers Clinic

A one-off event for conference delegates. This is a unique opportunity for those with an interest in journalism or who want to learn more about science careers outside of academia. Hear from the team at Carbon Brief about their career paths and get the opportunity to ask questions.



Speakers:



Leo Hickman ([@LeoHickman](https://twitter.com/LeoHickman)) is the director and editor. Leo previously worked for 16 years as a journalist, editor and author at the Guardian newspaper. Before joining Carbon Brief, he was WWF-UK's chief advisor on climate change. In 2013, he was awarded an honorary doctorate by the University of Exeter in



recognition of his journalism. His books include *A Life Stripped Bare*, *The Final Call* and *Will Jellyfish Rule the World?*



Robert McSweeney ([@rtmcswee](#)) is the science editor. Robert holds an MEng in mechanical engineering from the University of Warwick and an MSc in climate change from the University of East Anglia. He previously spent eight years working on climate change projects at the consultancy firm Atkins.



Ayesha Tandon ([@AyeshaTandon](#)) is the science journalist. Ayesha holds an MSci in natural sciences, specialising in climate science, from the University of Exeter. She previously worked at the UK Met Office as a climate science communicator.



Dr Giuliana Viglione ([@GAViglione](#)) is the food systems journalist. Giuliana has a PhD in environmental science, specialising in oceanography, from the California Institute of Technology. She previously worked at Nature and Chemical & Engineering News and freelanced for several scientific publications.

Carbon Brief is providing financial support for 10 people from disadvantaged backgrounds who are engaged in climate and weather research to attend this year's conference. If you would like to apply for assistance in paying your fees, please [download the application form](#).