



## 8<sup>th</sup> UK National Climate Dynamics Workshop

**Monday 26<sup>th</sup> June**

*Location: Biosciences building – Lecture theatre NG08*

14:00-14:10 **Ruth Geen** Welcome

### ***Seasonal prediction and predictability***

Chair: Doug Smith

14:10-14:30 **Kristian Strommen** (University of Oxford) Predictable Decadal Forcing of the North Atlantic Jet Stream by Sub-Polar North Atlantic Sea Surface Temperatures

14:30-14:50 **Lisa Degenhardt** (University of Birmingham) Assessing dynamical factors on their influence on seasonal forecast skill of severe winter windstorms over Europe

14:50-15:10 **Jeff Knight** (Met Office) An extratropical contribution to the signal-to-noise paradox in seasonal climate prediction

15:10-15:30 **Leo Saffin** (University of Leeds) Eddy Feedbacks in CMIP6 Models

15:30-16:00 *Coffee break in the Undercroft*

16:00-16:20 **Nick Dunstone** (Met Office) Windows of opportunity for predicting seasonal climate extremes: Pakistan floods of 2022

16:20-16:40 **Ben Maybee** (University of Leeds) Predictability of the East African Long Rains: importance of the Madden-Julian Oscillation and Congo zonal winds

16:40-17:00 **Nicky Stringer** (Met Office) Predictability of European Winter 2022/3

*Location: The Undercroft*

17:00-19:00

### ***Poster Session***

**Marwa Almowafy** (University of Bath) Unusual Temporal Variations in Gravity Wave Parameters over North Africa

**Timothy Banyard** (University of Bath) The 2019/2020 Quasi-Biennial Oscillation Disruption Observed by Aeolus Wind Lidar

**Chris Brierley** (University College London) Indian Ocean variability changes in the Paleoclimate Modelling Intercomparison Project

**Eswyn Chen** (University of Leeds) Resolution dependence of surface forcing within North Atlantic extratropical cyclones and possible role for the signal-to-noise paradox

**Matt Davison** (University of Cambridge) Zonal Transport of Moisture in a Simple Model of the Tropical Troposphere

**Gregory Dritschel** (University of Leeds) Basic State Analysis of the Rainy-Bénard model

**Josh Duffield** (University of St. Andrews) Temperature extremes over a wide range of climates

**Shi-Wei Jian** (University of Cambridge) The dynamics of oceanic alternating zonal jets

**Arundhati Kalyan** (University of Leeds) Decadal Modulation of El Niño-Southern Oscillation by Atlantic Multidecadal Variability

**Emily Lear** (University of Bath) Comparing gravity waves sampled from a kilometre-scale IFS run to AIRS satellite observations

**Julia Lockwood** (Met Office) Investigating the skill of seasonal forecast models in simulating the teleconnection between the tropics and North Atlantic/Europe via Rossby waves

**Tim Marino** (University of St. Andrews) Impacts of equatorial superrotation on the climate

**Chris O'Reilly** (University of Reading) Challenges with interpreting the impact of Atlantic Multidecadal Variability using SST-restoring experiments

**Charles Powell** (University of Cambridge) Diagnosing tracer transport in convective penetration of a buoyant plume into a stably stratified layer

**James Screen** (University of Exeter) Signal-to-noise errors in seasonal forecasts also occur in the absence of SST bias

**Ian Simpson** (University of Lincoln) North Atlantic atmospheric circulation and jet stream variability: links with summer and winter temperature and precipitation in north-west Europe and the UK, including persistence and variability

**Doug Smith** (Met Office) Naturally forced multidecadal changes in the Arctic Oscillation

## Tuesday 27<sup>th</sup> June

*Location: Biosciences building – Lecture theatre NG08*

### ***Modelling – bias, skill and new approaches***

Chair: Melissa Seabrook

9:00-9:20 **Ruth Geen** (University of Birmingham) Land evaporation biases link to East Asian rainfall shifts across AMIP simulations

9:20-9:40 **Dan Williams** (University of Exeter) Planetary Rotation and Seasonality of Clouds

9:40-10:00 **Amanda Maycock** (University of Leeds) Model biases in multidecadal NAO variability linked to stratospheric polar vortex

10:00-10:20 **Martin Widmann** (University of Birmingham) Long-duration dry and hot spells over Europe in CMIP5

10:20-10:40 *Coffee break in the Undercroft*

Chair: Hemant Khatri

10:40-11:00 **Steven Hardiman** (Met Office) Machine learning for non-orographic gravity waves in a climate model

11:00-11:20 **Tim Palmer** (University of Oxford) AI and Quantum Computing to Accelerate the Development of High-Resolution Climate Models

### ***Climate change***

- 11:20-11:40 **Robin Chadwick** (Met Office/University of Exeter) Processes controlling the South American Monsoon response to Climate Change
- 11:40-12:00 **Antje Weisheimer** (University of Oxford) Attributing the extreme 2022 Pakistan rainfall to climate change using seasonal forecasts
- 12:00-12:20 **David Fereday** (Met Office) Tropical teleconnections to the winter North Atlantic Oscillation under climate change
- 12:30-13:30 *Buffet lunch in the Undercroft*

### ***Stratospheric dynamics & stratosphere-troposphere coupling***

Chair: Steven Hardiman

- 13:30-13:50 **Christopher Kent** (Met Office) An Atlantic tipping point for a sudden stratospheric warming
- 13:50-14:10 **Corwin Wright** (University of Bath) How well do global km-scale models simulate convective gravity waves?
- 14:10-14:30 **Martin Andrews** (Met Office) Influence of the QBO on tropical convection and its extratropical teleconnections in boreal winter
- 14:30-14:50 **Xiaocen Shen** (University of Reading) The Dominant Intraseasonal Coupling Mode between the Stratosphere and Troposphere: Stratosphere-Troposphere Oscillation
- 14:50-15:10 **Sarah Ineson** (Met Office) Revisiting the ENSO / SSW relationship – a view from large ensemble resampling
- 15:10-15:40 *Coffee break in the Undercroft*

### ***Air-sea interactions***

Chair: Ned Williams

- 15:40-16:00 **Soumi Chakravorty** (Imperial College London) How does Gulf Stream intrinsic variability influence regional precipitation?
- 16:00-16:20 **Matthew Patterson** (University of Oxford) Disentangling North Atlantic ocean-atmosphere coupling using circulation analogues
- 16:20-16:40 **Richard Hall** (Imperial College London) Dataset dependence of air-sea interactions associated with variability of the Oyashio Extension Frontal Zone
- 16:40-17:00 **Hemant Khatri** (University of Liverpool) Can we predict North Atlantic upper ocean heat content variability from North Atlantic Oscillation index?

## **Wednesday 28<sup>th</sup> June**

*Location: Biosciences building – Lecture theatre NG08*

### ***Ocean dynamics & atmosphere-ocean interactions***

Chair: Matt Patterson

- 9:00-9:20 **Ned Williams** (University of Exeter) Effect of Increased Ocean Resolution on Model Errors in ENSO and Its Teleconnections

- 9:20-9:40 **Jon Robson** (University of Reading) North Atlantic Response to North Atlantic Oscillation Surface Heat flux forcing in Three Climate Models
- 9:40-10:00 **Ameé Gollop** (University of East Anglia) Modelling the Eastern Equatorial Pacific (ImPOse Project)
- 10:00-10:20 **Jamie Matthews** (Imperial College London) Oceanic Maintenance of Atmospheric Blocking
- 10:20-10:50 *Coffee break in the Undercroft*

***Midlatitude trends and variability***

Chair: Julia Lockwood

- 10:50-11:10 **Tim Woollings** (University of Oxford) Revisiting observed jet stream trends and the link to tropical warming
- 11:10-11:30 **Thomas Keel** (University College London) Exploring trends in the eddy-driven jet stream in the North Pacific between 1980-2100.
- 11:30-11:50 **Jacob Perez** (University of Leeds) Feature Based Analysis of the north Atlantic eddy driven jet stream
- 11:50-12:10 **Adam Scaife** (Met Office/University of Exeter) A new view of ENSO teleconnections to the Atlantic.
- 12:10-12:30 **Kunhui Ye** (University of Oxford) European Winter Climate Response to Projected Arctic Sea-Ice Loss Strongly Shaped by Change in the North Atlantic Jet
- 12:30 *Workshop end*