

## Curriculum Vitae: J. E. Jack Reeves Eyre

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Full name (last, first): Reeves Eyre, James Edward Jack

### EDUCATION

**Ph.D.**, Hydrometeorology, University of Arizona, Tucson, AZ May 2020  
Dissertation: Understanding atmosphere-ocean-land-ice interactions in the Earth system.

**M.S.**, Hydrometeorology, University of Arizona, Tucson, AZ December 2016  
Thesis: Evaluation of Greenland near surface air temperature datasets.

**B.A.**, Astrophysics, University of Cambridge, U.K. June 2008

### EMPLOYMENT AND RESEARCH EXPERIENCE

*Ocean monitoring and data assimilation scientist* April 2022 – present  
ERT Inc. at NOAA Climate Prediction Center

- Creating tools and databases for comparing operational climate model output with in situ observations in near real time.
- Using climate model experiments to better understand the physics of the upper ocean and air-sea exchange.

*Postdoctoral scholar* September 2020 – April 2022  
Cooperative Institute for Climate, Ocean and Ecosystem Studies  
University of Washington, Seattle, WA

- Analyzing Saildrone ocean surface observations to improve understanding of ocean-atmosphere interactions near abrupt fronts.
- Leading meetings and webinars for the OASIS best practices and interoperability theme team.

*Postdoctoral research associate* June 2020 – August 2020  
University of Arizona, Tucson, AZ

- Analyzed atmosphere and ocean observational data and model simulations to improve understanding of surface-atmosphere interactions in the Earth system.
- Collaborated with colleagues to develop, write and publish peer-reviewed journal articles.

*Graduate research assistant* January 2015 – May 2020  
Advisor: Xubin Zeng, Department of Hydrology and Atmospheric Sciences, University of Arizona

- Implemented and tested alternative ocean surface flux parameterizations in the Department of Energy's Energy Exascale Earth System Model.
- Provided a unified observation-based view of the Amazon water cycle, combining atmosphere, land and ocean data to enable holistic model assessment.

- Performed first global analysis of model ocean barrier layers, including comparison with observations and attribution of model biases.
- Used in situ observations over the Greenland ice sheet to assess near-surface air temperature from satellite, reanalysis, model and gridded climate monitoring data sets.

*Climate scientist*

May 2011 – May 2014

Met Office Hadley Centre, Exeter, UK

- Climate Monitoring and Attribution group: analysis, quality control and management of real-time climate data; effects of atmospheric circulation on UK temperature and precipitation variability; interpolation methods for relative humidity observations; consultancy reports for construction, energy and government sectors.
- Sabbatical project with Atmospheric Processes and Parameterizations group (May - November 2012): Analyzed high resolution (100 m horizontal grid spacing) modeling of stratocumulus cloud, focusing on the effects of improved turbulence representation on cloud and precipitation.

*Weather forecaster*

March 2009 – May 2011

Met Office, Exeter and RAF Lossiemouth, UK

- Provided bespoke weather forecasts for military fast jet missions and associated airfield operations.
- Interacted with customers face-to-face on a daily basis in a fast-paced, weather-sensitive operational environment.

**PROFESSIONAL SERVICE**

Peer reviews for: Journal of Geophysical Research Atmospheres, Journal of Climate, Nature Scientific Reports, Journal of Advances in Modeling Earth Systems.

Co-chair, Best Practice and Interoperability Experiments theme team, Observing Air-Sea Interactions Strategy (OASIS) program. 2022

Group coordinator, Zeng research group. 2018–2020

Social chair, University of Arizona Hydrology and Atmospheric Sciences Student Association. 2016

Co-organizer, Met Office Hadley Centre weekly seminar series. 2012–2014

Co-organizer, 8th European Climate Support Network Data Management Workshop, Edinburgh, UK. 2011

**AWARDS AND HONORS**

Krider Endowed Scholarship in Atmospheric Sciences 2018

College of Science Graduate Student Award for Scholarship 2018

Outstanding Poster Award, *98th American Meteorological Society Annual Meeting, 31st Conference on Climate Variability and Change*, Austin, Texas, USA 2018

College of Science Galileo Circle Scholarship 2016

Outstanding Poster Award, *12th European Meteorological Society Annual Meeting and 9th European Conference on Applied Climatology*, Łódź, Poland 2012

## PUBLICATIONS

Reeves Eyre, J. E. J., J. Zhu, A. Kumar, W. Wang, 2023: Diurnal variability of the upper ocean simulated by a climate model. *Submitted*.

Reeves Eyre, J. E. J., M. F. Cronin, D. Zhang, E. J. Thompson, C. W. Fairall, and J. B. Edson, 2023: Saildrone Direct Covariance Wind Stress in Various Wind and Current Regimes of the Tropical Pacific. *Journal of Atmospheric and Oceanic Technology*, 40, 503–517.

Hsu, C.-W., C. A. DeMott, M. D. Branson, J. E. J. Reeves Eyre and X. Zeng, 2022: Ocean Surface Flux Algorithm Effects on Tropical Indo-Pacific Intraseasonal Precipitation. *Geophysical Research Letters*, 49, e2021GL096968.

Zeng, X., J. E. J. Reeves Eyre, R. D. Dixon, and J. Arevalo, 2021: Quantifying the Occurrence of Record Hot Years Through Normalized Warming Trends. *Geophysical Research Letters*, 48, e2020GL091626.

Reeves Eyre, J. E. J., X. Zeng, and K. Zhang, 2021: Ocean Surface Flux Algorithm Effects on Earth System Model Energy and Water Cycles. *Frontiers in Marine Science*, 8.

Reeves Eyre, J. E. J., and X. Zeng, 2021: The Amazon Water Cycle: Perspectives from Water Budget Closure and Ocean Salinity. *Journal of Climate*, 34, 1439–1451.

Brunke, M. A., Ma, P.-L., Reeves Eyre, J. E. J., Rasch, P. J., Sorooshian, A., and Zeng, X., 2019: Subtropical marine low stratiform cloud deck spatial errors in the E3SMv1 Atmosphere Model. *Geophysical Research Letters*, 46, 12598–12607.

Reeves Eyre, J. E. J., L. Van Roekel, X. Zeng, M.A. Brunke, and J.-C. Golaz, 2019: Ocean barrier layers in the Energy Exascale Earth System Model. *Geophysical Research Letters*, 46, 8234–8243.

Golaz, J.-C., et al., 2019: The DOE E3SM coupled model version 1: Overview and evaluation at standard resolution. *Journal of Advances in Modeling Earth Systems*, 11.

Brunke, M.A., et al., 2018: Evaluating the Atmosphere-Land-Ocean-Sea Ice Interface Processes in the Regional Arctic System Model Version 1 (RASv1) Using Local and Globally Gridded Observations, *Geoscientific Model Development*, 11, 4817–4841.

Reeves Eyre, J. E. J. and Zeng, X., 2017: Evaluation of Greenland near surface air temperature

datasets, *The Cryosphere*, 11, 1591-1605.

Kendon, M., J. Eyre and J. Penman, 2015: Absence of cold spells during the UK's stormy winter of 2013/2014. *Weather*, 70, 51–52.

Boutle, I.A., J. E. J. Eyre, and A. P. Lock, 2014: Seamless Stratocumulus Simulation across the Turbulent Gray Zone. *Monthly Weather Review*, 142, 1655–1668.

## CONFERENCE AND WORKSHOP PRESENTATIONS

(as presenting author only)

Reeves Eyre, J. E. J., J. Zhu, A. Kumar, W. Wang, 2022: The upper ocean diurnal cycle in CFS. *47th NOAA Climate Diagnostics and Prediction Workshop*, Logan UT, USA.

Reeves Eyre, J. E. J., M.F. Cronin and D. Zhang, 2022: Wind stress in the presence of current and swell from Saildrone observations in the tropical Pacific . *Ocean Sciences Meeting 2022*, online.

Reeves Eyre, J. E. J., M.F. Cronin and D. Zhang, 2021: Atmospheric Response to Arbut Ocean Fronts from Saildrone Direct Covariance Measurements. *US-CLIVAR Tropical Pacific Observing Needs workshop*, online (poster).

Reeves Eyre, J. E. J., X. Zeng and K. Zhang, 2021: Ocean Surface Flux Algorithm Effects on Earth System Model Energy and Water Cycles. *US-CLIVAR Process Study and Model Improvement Panel seminar*, online.

Reeves Eyre, J. E. J., X. Zeng and K. Zhang, 2021: Ocean Surface Flux Algorithm Effects on Earth System Model Energy and Water Cycles. *101st American Meteorological Society Annual Meeting*, online.

Reeves Eyre, J. E. J. and X. Zeng, 2021: Remote Sensing of the Amazon Water Cycle: Perspectives from Water Budget Closure and Ocean Salinity. *101st American Meteorological Society Annual Meeting*, online (poster).

Reeves Eyre, J. E. J., X. Zeng and K. Zhang, 2020: Sensitivity of E3SM Energy and Water Cycles to Ocean Surface Flux Algorithm Design. *Department of Energy Earth System Model Development all-hands meeting*, online (poster).

Reeves Eyre, J. E. J. and X. Zeng, 2019: Quantifying the Amazon Water Cycle Using Atmosphere, Land and Ocean Data. *100th American Geophysical Union Annual Meeting*, San Francisco, CA, USA (poster).

Reeves Eyre, J. E. J., L. Van Roekel, X. Zeng, M.A. Brunke, and J.-C. Golaz, 2019: Barrier Layers in E3SMv1. *99th American Meteorological Society Annual Meeting*, Phoenix, AZ, USA.

Reeves Eyre, J. E. J., L. Van Roekel, M.A. Brunke and X. Zeng, 2018: Impacts of atmosphere model biases on ocean barrier layers in E3SMv1. *E3SM all-hands meeting*, Potomac, MD, USA

(poster).

Reeves Eyre, J. E. J. and X. Zeng, 2018: Greenland Near-Surface Air Temperature Datasets: What Should We Use to Evaluate CMIP6? *98th American Meteorological Society Annual Meeting*, Austin, TX, USA (poster).

Reeves Eyre, J. E. J. and Zeng, X., 2016: Surface air temperature over Greenland: assessment and intercomparison of multiple products. *Greenland Surface Mass Balance Workshop*, Palisades, NY, USA (poster).

Kendon, M.C., T.P. Legg, J. E. J. Eyre, M. McCarthy, 2013: Are UK rainfall patterns changing? *13th European Meteorological Society Annual Meeting*, Reading, UK.

Eyre, J. E. J., D.M. Hollis, M.C. Kendon, T.P. Legg, M.J. Prior, 2012: UK climate trends, as revealed by statistics for 1981-2010. *12th European Meteorological Society Annual Meeting*, Łódź, Poland (poster).

Eyre, J. E. J., 2011: Improvements to the quality control process for global CLIMAT messages. *8th European Climate Support Network Data Management Workshop*, Edinburgh, UK.

## MEMBERSHIPS

American Geophysical Union  
American Meteorological Society