

Curriculum Vitae: J. E. Jack Reeves Eyre

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

jack.reeveseyre@gmail.com

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

Scientist IV December 2024 – present
NOAA Office of Coast Survey, with Axiom Consultants Inc. (previously with ERT Inc.)

- Leading development of event-based skill assessment of storm surge models. Developing data pipelines, tools, and web-based visualizations for NOAA operational models.
- Creating custom applications of storm surge models, including a new planning tool to support flight operations that improve NOAA nautical charts.

Ocean Research Scientist October 2023 – June 2024
Running Tide

- Built python-based tools to model transport of material in the surface ocean as part of marine carbon dioxide removal quantification.
- Developed models to quantify carbon removal through novel pathways, including macroalgae growth and ocean alkalinity enhancement.

Ocean Monitoring and Data Assimilation Scientist April 2022 – October 2023
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.

Secretary, Carver Memorial Library Board of Trustees, Searsport Maine.

2023–present

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

2022–2023

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

Caggiano, J., J. E. J. Reeves Eyre, M. F. Cronin, D. Zhang, J. Zhu, A. Kumar, and W. Wang, 2025: Atmospheric tides cause semidiurnal variation of marine air temperature. *Geophysical Research Letters*, 52, e2024GL113846.

Cronin, M.F., D. Zhang, S.M. Wills, J. E. J. Reeves Eyre, L. Thompson, and N. Anderson, 2024: Diurnal warming rectification in the tropical Pacific linked to sea surface temperature front. *Nature Geosciences*, 17, 316–322.

Reeves Eyre, J. E. J., J. Zhu, A. Kumar, and W. Wang, 2024: Diurnal variability of the upper ocean simulated by a climate model. *Geophysical Research Letters*, 51, e2023GL104194.

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. Caggiano, M. F. Cronin, D. Zhang, J. Zhu, A. Kumar, and W. Wang, 2025: Atmospheric tides cause semidiurnal variation of marine air temperature. *OASIS Webinar Series: Air-Sea Flux from Space*, online.

Reeves Eyre, J. E. J., J. Zhu, A. Kumar, and 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