

## Refereed Publications

### Elizabeth J. Thompson

NOAA OAR Physical Sciences Laboratory  
National Oceanic and Atmospheric Administration  
Oceanic and Atmospheric Research  
325 Broadway, Boulder, CO 80305  
[elizabeth.thompson@noaa.gov](mailto:elizabeth.thompson@noaa.gov)  
office: (720) 729-7577 (Google Voice)  
[Google Scholar Profile](#) and [Staff Page](#)

## Publications

### In Review

### Accepted

Riihimaki, L.D. and coauthors including E. J. Thompson, (2024) Ocean Surface Radiation Measurement Best Practices, accepted to *Frontiers in Marine Science*.

Chi, N. E. J. Thompson, H. Chen, A. Shcherbina, F. Bingham, L. Rainville, submitted: Spatiotemporal variability of rainfall and surface salinity in the Eastern Pacific Fresh Pool: A joint in-situ and satellite analysis during the SPURS-2 field campaign. *Journal of Geophysical Research: Oceans*, <https://doi.org/10.1029/2022JC019599>

Chen, X., J. Dias, B. Wolding, R. Pincus, C. DeMott, G. Wick, E. J. Thompson, and C. W. Fairall, 2023: Ubiquitous Sea Surface Temperature Anomalies Increase Spatial Heterogeneity of Trade-Wind Cloudiness on Daily Timescale. *J. Atmos. Sci.*, <https://doi.org/10.1175/JAS-D-23-0075.1>

Clayson, C. A., DeMott, C., De Szoeki, S., Chang, P., Foltz, G., Krishnamurthy, R., Lee, T., Moloud, A., Ortiz-Suslow, D., Pullen, J., Richter, D., Seo, H., Taylor, P., Thompson, E.J., Villas Bôas, B., Zappa, C., Zuidema, P. (2023). A New Paradigm for Observing and Modeling of Air-Sea Interactions to Advance Earth System Prediction. (S. Coakley & M. Patterson, Eds.). Washington, DC: U.S. CLIVAR Project Office  
<http://dx.doi.org/10.5065/24j7-w583>

Chen, H., C. W. Fairall, C. R. Williams and E. J. Thompson, "Vertical Air Motion Retrievals From Airborne W -Band Cloud Radar," in *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 16, pp. 9565-9572, 2023, <https://doi.org/10.1109/JSTARS.2023.3322346>

- Bytheway, J. L., E. J. Thompson, J. Yang, and H. Chen, 2023: Evaluation of the RainFARM Statistical Downscaling Technique Applied to IMERG over Global Oceans using Passive Aquatic Listener in situ rain measurements. *J. Hydrometeorol.*, <https://doi.org/10.1175/JHM-D-23-0090.1>, in press.
- Li, Z., E. J. Thompson and H. Chen, "The Uncertainty of IMERG Over the Western Edge of the Eastern Pacific Fresh Pool: An Error Model Based on SPURS-2 Field Campaign Observations," in *IEEE Transactions on Geoscience and Remote Sensing*, vol. 61, pp. 1-14, 2023, Art no. 4104914, <https://doi.org/10.1109/TGRS.2023.3306795>
- Davis, J. R., Thomson, J., Houghton, I. A., Doyle, J. D., Komaromi, W. A., Fairall, C. W., et al. (2023). Saturation of ocean surface wave slopes observed during hurricanes. *Geophysical Research Letters*, 50, e2023GL104139. <https://doi.org/10.1029/2023GL104139>
- Li, Z., Thompson, E. J., Behrangi, A., Chen, H., & Yang, J. (2023). Performance of GPCP daily products over oceans: Evaluation using Passive Aquatic Listeners. *Geophysical Research Letters*, 50, e2023GL104310. <https://doi.org/10.1029/2023GL104310>
- Brizuela, N. G., Johnston, T. M. S., Alford, M. H., Asselin, O., Rudnick, D. L., Moum, J. N., Thompson, E. J., Wang, S., Lee C.-Y. (2023). A vorticity-divergence view of internal wave generation by a fast-moving tropical cyclone: Insights from Super Typhoon Mangkhut. *Journal of Geophysical Research: Oceans*, 128, e2022JC019400. <https://doi.org/10.1029/2022JC019400>
- Bytheway, J. L., Thompson, E. J., Yang, J., & Chen, H. (2023). Evaluating satellite precipitation estimates over oceans using passive aquatic listeners. *Geophysical Research Letters*, 50, e2022GL102087. <https://doi.org/10.1029/2022GL102087>
- 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. *J. Atmos. Oceanic Technol.*, <https://doi.org/10.1175/JTECH-D-22-0077.1>
- Reid, J. S., and many coauthors including E. J. Thompson, 2023: The coupling between tropical meteorology, aerosol lifecycle, convection, and radiation, during the Cloud, Aerosol and Monsoon Processes Philippines Experiment (CAMP2Ex). *Bull. Amer. Meteor. Soc.*, <https://doi.org/10.1175/BAMS-D-21-0285.1>
- Bailey, A. J., F. Aemisegger, L. Villiger, S. A. Los, G. Reverdin, E. Q. Meléndez, C. Acquistapace, D. B. Baranowski, T. Böck, S. Bony, T. Bordsdorff, D. Coffman, S. P. de Szoeke, C. J. Diekmann, M. Dütsch, B. Ertl, J. Galewsky, D. Henze, P. Makuch, D. Noone, P. K. Quinn, M. Rösch, A. Schneider, M. Schneider, S. Speich, B. Stevens, and E. J. Thompson, 2023: Isotopic measurements in water vapor, precipitation, and sea water during EUREC4A, *Earth Syst. Sci. Data Discuss.* <https://doi.org/10.5194/essd-15-465-2023>

- Iyer, S., Drushka, K., Thompson, E. J., & Thomson, J., 2022. Small-scale spatial variations of air-sea heat, moisture, and buoyancy fluxes in the tropical trade winds. *Journal of Geophysical Research: Oceans*, 127, <https://doi.org/10.1029/2022JC018972>
- Yao, S., H. Chen, E. J. Thompson and R. Cifelli, 2022: An improved deep learning model for high-Impact weather nowcasting. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, <https://doi.org/10.1109/JSTARS.2022.3203398>
- Iyer, S., J. Thomson, K. Drushka, E. J. Thompson, 2022: Variations in wave slope and momentum flux from wave-current interactions in the tropical trade winds. *Journal of Geophysical Research, Oceans*, <http://doi.org/10.1029/2021JC018003>
- Shackelford, K., C. A. DeMott, P. J van Leeuwan, E. J. Thompson, S. Hagos, 2022: Rain-induced stratification of the tropical Indian Ocean and its potential feedbacks to the atmosphere. *Journal of Geophysical Research, Oceans*, <https://doi.org/10.1029/2021JC018025>
- Quinn, P. K., Thompson, E.J., Coffman, D. J., Baidar, S., Bariteau, L., Bates, T. S., Bigorre, S., Brewer, A., de Boer, G., de Szoeko, S. P., Drushka, K., Foltz, G. R., Intrieri, J., Iyer, S., Fairall, C. W., Gaston, C. J., Jansen, F., Johnson, J. E., Krüger, O. O., Marchbanks, R. D., Moran, K. P., Noone, D., Pezoa, S., Pincus, R., Plueddemann, A. J., Pöhlker, M. L., Pöschl, U., Quinones Melendez, E., Royer, H. M., Szczodrak, M., Thomson, J., Upchurch, L. M., Zhang, C., Zhang, D., and Zuidema, P.: 2021. Measurements from the RV Ronald H. Brown and related platforms as part of the Atlantic Tradewind Ocean-Atmosphere Mesoscale Interaction Campaign (ATOMIC), *Earth Syst. Sci. Data Discuss.*, <https://doi.org/10.5194/essd-2020-331>
- Pincus, R., Fairall, C. W., Bailey, A., Chen, H., Chuang, P. Y., de Boer, G., Feingold, G., Henze, D., Kalen, Q. T., Kazil, J., Leandro, M., Lundry, A., Moran, K., Naeher, D. A., Noone, D., Patel, A. J., Pezoa, S., PopStefanija, I., Thompson, E. J., Warnecke, J., and Zuidema, P., 2021: Observations from the NOAA P-3 aircraft during ATOMIC, *Earth Syst. Sci. Data Discuss.* <https://doi.org/10.5194/essd-2021-11>
- Stevens, B., and over 292 coauthors, 2021: EUREC4A, *Earth Syst. Sci. Data Discuss.*, <https://doi.org/10.5194/essd-2021-18>
- Jackson, R., Collis, S., Louf, V., Protat, A., Wang, D., Giangrande, S., Thompson, E.J., Dolan, B., Powell, S.W., 2021. The development of rainfall retrievals from radar at Darwin. *Atmospheric Measurement Techniques* 14, 53–69. <https://doi.org/10.5194/amt-14-53-2021>
- Reverdin, G., A. Supply, K. Drushka, E. J. Thompson, W. E. Asher, 2020. Intense and small freshwater pools from rainfall investigated during SPURS-2 on November 9 2017 in the eastern tropical Pacific. *Journal of Geophysical Research: Oceans*. 125, e2019JC015558. <https://doi.org/10.1029/2019JC015558>

- Hagos, S., G.R. Foltz, C. Zhang, E. Thompson, H. Seo, S. Chen, A. Capotondi, K.A. Reed, C. DeMott, and A. Protat, 2020: Atmospheric Convection and Air-Sea Interactions over the Tropical Oceans: Scientific Progress, Challenges and Opportunities. *Bull. Amer. Meteor. Soc.*, 101, E253–E258, <https://doi.org/10.1175/BAMS-D-19-0261.1>
- Thompson E. J., W. E. Asher, A. T. Jessup, K. Drushka, 2019: High-resolution rain maps from an X-band marine radar and their use in understanding ocean freshening. *Oceanography* 32(2):58–65, <https://doi.org/10.5670/oceanog.2019.213>
- Asher, W. E., K. Drushka, A. T. Jessup, E. J. Thompson, D. Clark, 2019: Estimating rain-generated turbulence at the ocean surface using the Active Controlled-Flux Technique. *Oceanography* 32(2):108–115, <https://doi.org/10.5670/oceanog.2019.218>
- Drushka, K., W.E. Asher, A.T. Jessup, E.J. Thompson, S. Iyer, and D. Clark, 2019: Capturing fresh layers with the Surface Salinity Profiler. *Oceanography* 32(2):76–85, <https://doi.org/10.5670/oceanog.2019.215>
- Thompson, E. J., Moum, J. N., Fairall, C. W., & Rutledge, S. A. 2019: Wind limits on rain layers and diurnal warm layers. *Journal of Geophysical Research: Oceans*, 124, 897-924. <https://doi.org/10.1029/2018JC014130>
- Dolan, B., B. Fuchs, S. A. Rutledge, E. A. Barnes, E. J. Thompson, 2018: Primary modes of global drop-size distributions. *J. Atmos. Sci.*, 75, 1453–1476, <https://doi.org/10.1175/JAS-D-17-0242.1>
- Thompson, E. J., S. A. Rutledge, B. Dolan, M. Thurai, and V. Chandrasekar, 2018: Dual-polarization radar rainfall estimation over tropical oceans. *J. Appl. Meteor. Climatol.*, 57, 755–775, <https://doi.org/10.1175/JAMC-D-17-0160.1>
- Thompson, E. J., S. A. Rutledge, B. Dolan, and M. Thurai, 2015: Drop size distributions and radar observations of convective and stratiform rain over the equatorial Indian and west Pacific Oceans. *J. Atmos. Sci.*, 72, 4091-4125. <https://doi.org/10.1175/JAS-D-14-0206.1>
- Moum, J. N., S. P. de Szoeke, W. D. Smyth, J. B. Edson, H. L. DeWitt, A. J. Moulin, E. J. Thompson, C. J. Zappa, S. A. Rutledge, R. H. Johnson, and C. W. Fairall, 2014: Air-sea interactions from MJO westerly wind bursts. *Bull. Am. Meteorol. Soc.*, 95, 1185-1199. <https://doi.org/10.1175/BAMS-D-12-00225.1>
- Thompson, E. J., S. A. Rutledge, B. Dolan, V. Chandrasekar, and B.-L. Cheong, 2014: A dual-polarization radar hydrometeor classification algorithm for winter precipitation. *J. Atmos. Oceanic Technol.*, 31, 1457-1481. <https://doi.org/10.1175/JTECH-D-13-00119.1>
- Willingham, K. M., E. J. Thompson, K. W. Howard, and C. L. Dempsey, 2010: Characteristics of Sonoran Desert microbursts. *Weather Forecast.*, 26, 94-108. <https://doi.org/10.1175/2010WAF2222388.1>