

Mr. Shawn R. Smith

Senior Research Associate: Meteorologist

Center for Ocean Atmospheric Prediction Studies (COAPS)
The Florida State University, P.O. Box 3062741, Tallahassee, FL 32306-2741 USA
ph: (850) 644-6918 fax: (850) 644-4841 email: smith@coaps.fsu.edu

Education:

Master of Science: *Meteorology*, December 1991, University of Wisconsin, Madison, WI
Thesis: Antarctic Climate Anomalies Associated with the Minimum of the Southern Oscillation Index.

Advisor: Professor Charles R. Stearns

Bachelor of Science: *Earth Science*, June 1989, High Honor, Lyman Briggs School, Michigan State University, East Lansing, MI

Thesis: A Climatological and Impact Study of Heavy Rain Events in the Lower Peninsula of Michigan.

Advisor: Professor Jay Harman

Professional Experience:

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| Florida State University: Senior Research Associate | 08/2008 - present |
| Florida State University: Associate in Research | 10/2000 – 08/2008 |
| Florida State University: Assistant in Research | 07/1994 - 10/2000 |
| Ohio State University: Research Associate | 07/1992 - 06/1994 |
| University of Wisconsin: Research Assistant | 01/1992 - 06/1992 |
| University of Wisconsin: Graduate Research Asst. | 08/1989 - 12/1991 |

Field Experience:

- Byrd Polar Research Center in conjunction with the U.S. Antarctic Program and the NSF, October to December 1992. Coordinated science, logistics, and personnel for a 9-week remote field study of the Antarctic boundary layer using surface-based wind (Sodar) and temperature (RASS) profilers, surface instruments, and radiosondes.
- University of Wisconsin in conjunction with the U.S. Antarctic Program and the NSF, January 1991. Installed and repaired automated weather stations in Antarctica.

Professional Membership: American Geophysical Union

Other Professional Activities:

- Director – COAPS Marine Data Center, home of the Shipboard Automated Meteorological and Oceanographic System (SAMOS) Initiative [https://samos.coaps.fsu.edu/] - 2005-present
- JCOMM Ship Observation Team (SOT) – Vice Chairman (acting chair Mar-Oct 2017) – 2017-2020
- JCOMM Expert Team on Marine Climatology task team on the Marine Climate Data System – Member (2011-2019)
- Global Ocean Observing System SOT task team on Instrument Standards and Satellite Systems – Member (2009-present)

- Global Ocean Observing System SOT task team on Expansion of Independent Class Observations – Member (2021-present)
- Federation of Earth Science Information Partners (ESIP) – Voting Member (2015-present)
- ESIP Partnership Committee – Member (2019)

Reviewer: *Atmos. Meas. Tech. Discuss., Atmospheric Science Letters, J. Atmos. Ocean. Technol., Bull. Amer. Meteor. Soc., Climate Dynamics, J. Climate, Int. J. Climatology, Frontiers, Geoscience Data J., Mon. Wea. Rev., Oceanography, NSF, NOAA*

Professional Development Activities:

- 13-15 December 2023** – Facilitator for a short course focused on automated, underway, marine meteorological observations on research vessels. The training was held as part of MO-DATA 2023, a 3-day training session for ~45 NOAA survey technicians.
- 25 October 2023** – Facilitator for flow-through systems best practices session at RVTEC 2023 meeting in Honolulu, Hawaii. ~20 technicians participated in the session.
- 26 April 2023** – Facilitator for UNOLS What Went Wrong Wednesday virtual training session. Collaborated with Katie Watkins-Brandt (NOAA) on training and Q&A session focused on flow-through and meteorological sensors best practices for research vessels. 35 attendees.
- 13-15 December 2022** – Facilitator at Regional Class Research Vessel (RVRV) Sensor and Cyber Infrastructure Workshop. Provided introduction to meteorological sensor suite to be installed on the RCRVs, including basic science applications, sensor capabilities, deployment location, and expected maintenance. 12 marine technicians attended.
- 3 November 2022** – Facilitator for a short course focused on automated, underway, marine meteorological observations on research vessels. The training was held during the 2022UNOLS RVTEC meeting in Seattle, WA and facilitation was done via videoconference. ~20 marine technicians attended.
- 3 November 2016** – Facilitator for a short course focused on how to submit SAMOS observations using NOAA’s Scientific Computer System (SCS) software. The training was held during the 2016 UNOLS RVTEC meeting in La Jolla, CA. ~10 marine technicians attended.
- 18-19 November 2014** – Facilitator for a short course on automated, underway, marine meteorological observation. Presented three lessons and one demonstration focused on training in-service marine technicians attending INMARTECH 2014 in Corvallis, OR. ~20 marine technicians attended.
- 4-5 March 2013** – Facilitator for Ask Florida middle school teacher workshop on climate change. Presented materials and activities related to sinkholes and FL climate, participated on “Ask a Scientist Panel”, and reviewed climate change lessons prepared by teachers. 25 middle school teachers attended.
- 16-19 July 2012** – Facilitator for Ask Florida middle school teacher workshop on climate change. Presented materials and activities related to ENSO and Florida weather/climate, evaluating on-line resources, fact vs. opinion, and causes of climate change. 25 middle school teachers attended.
- 2-3 March 2012** – Facilitator for Ask Florida middle school teacher workshop on climate change. Presented materials and activities related to sinkholes and FL climate, participated on “Ask a Scientist Panel”, and reviewed climate change lessons prepared by teachers. 12 middle school teachers attended.
- 20 January 2012** – Facilitator for a short course on automated, underway, marine meteorological observation. Presented as part of the 2012 marine technicians refresher course sponsored by NOAA in Newport, Oregon. 28 marine technicians attended.

18 November 2011 – Facilitator for a short course on automated, underway, marine meteorological observation. Presented at the 2011 Research Vessel Technical Enhancement Committee (RVTEC) annual meeting in New Orleans. The training covered basics of marine meteorology, instrument exposure on vessels, common problems encountered, adjusting measurements for instrument height, and data quality assurance and quality control. 16 marine technicians attended.

18-21 July 2011 – Facilitator for Ask Florida middle school teacher workshop on climate change. Presented materials and activities related to ENSO and Florida weather/climate, evaluating on-line resources, fact vs. opinion, and causes of climate change. 16 middle school teachers attended.

Thesis/Project Committees:

- May 2024 – Mr. Marc Castells, MS thesis, meteorology, title TBD.
- May 2022 – Ms. Jordan Tweedie, BS thesis, meteorology, How can wind indices be used to identify the extent of the North Atlantic subtropical high and its impact on hurricane trajectories in the Atlantic?
https://purl.lib.fsu.edu/diginole/FSU_libsubv1_scholarship_submission_1650502173_e9bea93b
- April 2021 – Ms. Rebecca Beal, BS thesis, Meteorology. Changes in equatorial Atlantic ocean surface wind patterns associated with a climate index based on historical ship observations.
<http://fsu.digital.flvc.org/islandora/object/fsu%3A763317>
- December 2019 – Mr. Ethan Wright, MS thesis, Meteorology. Characterizing buoy wind speed error in extreme conditions through a comparison with scatterometers and ERA5 Reanalysis
- August 2019 – Mr. Camill Folsom, MS project, Computer Science. Shipboard Automated Meteorological and Oceanographic System: Merger Program Re-Write.
- August 2017 – Mr. Adam Stallard, MS thesis, Computer Science, Comparing SAMOS Document Search Performance Between Apache Solr and Neo4j.
- August 2016 – Mr. Keqiao Li, MS thesis, Meteorology. Adjustment of Visually Observed Ship Winds (Beaufort Winds) in ICOADS.
- December 2014 – Mr. Nkemderim Dockery, MS project, Computer Science. Enhanced Search and Vocabulary Access for the Shipboard Automated Meteorological and Oceanographic System (SAMOS) using the Semantic Web Stack.
- April 2014 – Ms. Alexandra Keclik, BS thesis, Meteorology. The Accuracy of the National Hurricane Center's United States Tropical Cyclone Landfall Forecasts in the Atlantic Basin (2004–2012).
- January 2012 – Mr. Geoff Montee, MS project, Computer Science, SAMOS 2.0: High resolution meteorological and oceanographic data processing.
- September 2010 – Ms. Jackie May, MS thesis, Meteorology, Quantifying variance due to temporal and spatial difference between ship and satellite winds.
- September 2009 – Mr. Jacob Rettig, MS project, Computer Science, SAMOS/NGI data management system

Refereed Publications:

Macdonald, A., L. Hiron, L. McRaven, L. Stolp, K. Strom, R. Hudak, **S. Smith**, J. Hummond, and M. Andres, 2024: A Framework for Multidisciplinary Science Observations from Commercial Ships. *ICES J. of Marine Science*, in press.

Riihimaki, L.D., M. F. Cronin, R. Acharya, N. Anderson, J. Augustine, K. A. Balmes, P. Berk, R. Bozzano, A. Bucholtz, K.J. Connell, C. J. Cox, A. G. di Sarra, J. Edson, C. W. Fairall, J. T. Farrar, K. Grissom, M. T. Guerra, V. Hormann, K. J. Joseph, C. Lanconelli, F. Melin, D. Meloni, M. Ottaviani

- S. Pensieri, K. Ramesh, D. Rutan, N. Samarinas, **S. R. Smith**, S. Swart, A. Tandon, E. J. Thompson, R. Venkatesan, R. K. Verma, V. Vitale, K. S. Watkins-Brandt, R. A. Weller, C. J. Zappa, and D. Zhang, 2024: Ocean surface radiation measurement best practices. *Front. Mar. Sci.* 11:1359149. doi: 10.3389/fmars.2024.1359149
- Smith, S. R.**, M. A. Bourassa, J. Elya, T. Huang, K. M. Gill, F. R. Greguska, N. T. Chung, V. Tsontos, B. Holt, T. Cram, and Z. Ji, 2023: The Distributed Oceanographic Match-Up Service. *Big Data Analytics in Earth, Atmospheric, and Ocean Sciences*, T. Huang, T. C. Vance, and C. Lynnes, Eds., Wiley, 189-214.
- Carbotte, S., S. O'Hara, K. Stocks, P. D. Clark, L. Stolp, **S. R. Smith**, K. Briggs, R. Hudak, E. Miller, C. J. Olson, N. Shane, R. Uribe, R. Arko, C. L. Chandler, V. Ferrini, S. P. Miller, A. Doyle and J. Holik, 2022: Rolling Deck to Repository: Supporting the Marine Science Community with Data Management Services from Academic Research Expeditions, *Frontiers in Marine Science*, 9:1012756. <https://doi.org/10.3389/fmars.2022.1012756>
- Liu, C, E. Freeman, E. C. Kent, D. I. Berry, S. J. Worley, **S. R. Smith**, B. Huang, H.-M. Zhang, T. Cram, Z. Ji, M. Ouellet, I. Gaboury, F. Oliva, A. Andersson, W. E. Angel, A. R. Sallis, and A. Adeyeye, 2022: Blending TAC and BUFR Marine in Situ Data for ICOADS Near-Real-Time Release 3.0.2. *JTech*, **39**(12), 1943-1959. <https://doi.org/10.1175/JTECH-D-21-0182.1>
- Smith, S. R.**, R. Richardson, J.P. Stow, M. A. Bourassa, and H. McMillan, 2021: Developing century-scale wind component indices. *Frontiers in Earth Science*, 9:661473. <https://doi.org/10.3389/feart.2021.661473>
- Smith, S. R.**, G. Alory, A. Andersson, W. Asher, A. Baker, D. I. Berry, K. Drushka, D. Figurskey, E. Freeman, P. Holthus, T. Jickells, H. Kleta, E. C. Kent, N. Kolodziejczyk, M. Kramp, Z. Loh, P. Poli, U. Schuster, E. Steventon, S. Swart, O. Tarasova, L. Petit de la Villéon, and N. Vinogradova-Shiffer, 2019: Ship-Based contributions to global ocean, weather, and climate observing systems. *Frontiers in Marine Science*, 6:434. <https://doi.org/10.3389/fmars.2019.00434>
- Kent, E. C., N. A. Rayner, D. I. Berry, R. Eastman, V. G. Grigorieva, B. Huang, J. J. Kennedy, **S. R. Smith**, and K. M. Willett, 2019: Observing requirements for long-term climate records at the ocean surface. *Frontiers in Marine Science*, 6:411. <https://doi.org/10.3389/fmars.2019.00441>
- Freeman, E., E. C. Kent, P. Brohan, T. Cram, L. Gates, B. Huang, C. Liu, **S. R. Smith**, S. J. Worley, H.-M. Zhang, 2019: The international comprehensive ocean-atmosphere data set – meeting user needs and future priorities. *Frontiers in Marine Science*, 6:435. <https://doi.org/10.3389/fmars.2019.00435>
- Armstrong, E. M., M. A. Bourassa, T. Cram, J. Elya, F. R. Greguska III, T. Huang, J. C. Jacob, Z. Ji, Y. Jiang, Y. Li, N. Quach, L. McGibbney, **S. R. Smith**, V. Tsontos, B. Wilson, S. J. Worley, and C. Yang, 2019: An integrated data analytics platform. *Frontiers in Marine Science*, **6**:354. <https://doi.org/10.3389/fmars.2019.00354>
- Smith, S. R.**, K. Briggs, M. A. Bourassa, J. Elya, and C. R. Paver, 2018: Shipboard automated meteorological and oceanographic system data archive: 2005–2017. *Geosci Data J.*, **5**, 73–86. <https://doi.org/10.1002/gdj3.59>
- Bentamy, A., J. F. Piollé, A. Grouazel, R. Danielson, S. Gulev, F. Paul, H. Azelmat, P. P. Mathieu, K. von Schuckmann, S. Sathyendranath, H. Evers-King, I. Esau, J. A. Johannessen, C. A. Clayson, R. T. Pinker, S. A. Grodsky, M. Bourassa, **S. R. Smith**, K. Haines, M. Valdivieso, C. J. Merchant, B. Chapron, A. Anderson, R. Hollmann, S. A. Josey, 2017: Review and Assessment of Latent and Sensible Heat Flux Accuracy over the Global Oceans. *Remote Sensing of Environment*, **201**, 196-218. Doi: 10.1016/j.rse.2017.08.016
- Freeman, E., S. D. Woodruff, S. J. Worley, S. J. Lubker, E. C. Kent, W. E. Angel, D. I. Berry, P. Brohan, R. Eastman, L. Gates, W. Gloeden, Z. Ji, J. Lawrimore, N. A. Rayner, G. Rosenhagen, and **S. R. Smith**, 2017: ICOADS Release 3.0: a major update to the historical marine climate record. *Int. J. Climatol.*, **37**, 2211–2232. doi:10.1002/joc.4775

- Smith, S. R.**, N. Lopez, and M. A. Bourassa, 2016: SAMOS air-sea fluxes: 2005-2014. *Geoscience Data Journal*. <https://doi.org/10.1002/gdj3.34>
- Smith, S. R.**, K. Briggs, N. Lopez, and V. Kourafalou, 2016: Numerical model evaluation using automated underway ship observations. *J. Atmos. Ocean. Technol.*, **33**, 409-428. doi: [10.1175/JTECH-D-15-0052.1](https://doi.org/10.1175/JTECH-D-15-0052.1)
- Rudzin, J., S. Morey, M. Bourassa, and **S. R. Smith**, 2013: The influence of loop current position on winter sea surface temperatures in the Florida Straits. *Earth Interactions*, **17**, 1-9. doi: [10.1175/2013EI000521.1](https://doi.org/10.1175/2013EI000521.1)
- Gilford, D., **S. R. Smith**, M. Griffin, and A. Arguez, 2013: Southeastern US daily temperature ranges associated with the El Nino Southern Oscillation. *J. Applied Meteor. Climatol.*, **52** (11), 2434-2449.
- Hughes, P., and M. A. Bourassa, J. Rolph, and **S. R. Smith**, 2012: Averaging-Related Biases in Monthly Averaged Latent Heat Fluxes. *J. Atmos. Oceanic Technol.*, **29**, 974-986.
- Smith, S. R.**, 2011: Ten-year vision for marine climate research. *EOS, Trans Amer. Geophys. Union*, **92**(43), 376.
- Smith, S. R.**, M. A. Bourassa, and M. Long, 2011: Pirate attacks affect Indian Ocean climate research. *EOS, Trans Amer. Geophys. Union*, **92**(27), 225-226.
- Smith, S.R.**, P.J. Hughes, and M. A. Bourassa, 2011: A comparison of nine monthly air-sea flux products. *Int. J. Climatology*, **31**, 1002-1027, doi: 10.1002/joc.2225.
- Woodruff, S., S. Worley, S. Lubker, Z. Ji, E. Freeman, D. Berry, P. Brohan, E. Kent, R. Reynolds, **S. R. Smith**, and C. Wilkinson, 2011: ICOADS Release 2.5: Extensions and Enhancements to the Surface Marine Meteorological Archive. *Int. J. Climatology*, **31**, 951-967, doi: 10.1002/joc.2103.
- Smith, S. R.**, M. A. Bourassa, E. F. Bradley, C. Cosca, C. W. Fairall, G. J. Goni, J. T. Gunn, M. Hood, D. L. Jackson, E. C. Kent, G. Lagerloef, P. McGillivray, L. Petit de la Villeon, R. T. Pinker, E. Schulz, J. Sprintall, D. Stammer, A. Weill, G. A. Wick, M. J. Yelland, 2010: Automated Underway Oceanic and Atmospheric Measurements from Ships. *Proceedings of the "OceanObs '09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09.cwp.82.
- Smith, S. R.**, J. Rettig, J. Rolph, J. Hu, E. C. Kent, E. Schulz, R. Verein, S. Rutz, and C. Paver, 2010: The Data Management System for the Shipboard Automated Meteorological and Oceanographic System (SAMOS) Initiative. *Proceedings of the "OceanObs '09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09.cwp.83.
- Fairall, C. W., B. Barnier, D. I. Berry, M. A. Bourassa, E. F. Bradley, C. A. Clayson, G. de Leeuw, W. H. Drennan, S. T. Gille, S. K. Gulev, E. C. Kent, W. R. McGillis, G. D. Quartly, V. Ryabinin, **S. R. Smith**, R. A. Weller, M. J. Yelland, H.-M. Zhang, 2010: Observations to quantify air-sea fluxes and their role in climate variability and predictability. *Proceedings of the "OceanObs '09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09.cwp.27.
- Gulev, S. K., S. A. Josey, M. A. Bourassa, L.-A. Breivik, M. F. Cronin, C. Fairall, S. Gille, E. C. Kent, C. M. Lee, M. J. McPhaden, P. M. S. Monteiro, U. Schuster, **S. R. Smith**, K. E. Trenberth, D. Wallace, and S. D. Woodruff, 2010: Surface fluxes and processes including sea ice. In *Proceedings of the "OceanObs '09: Sustained Ocean Observations and Information for Society" Conference (Vol. 1)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09.pp.19.
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- Worley, S. J., S. D. Woodruff, S. J. Lubker, Z. Ji, E. Freeman, E. C. Kent, P. Brohan, D. I. Berry, **S. R. Smith**, C. Wilkinson, and R. W. Reynolds, 2010: The role of ICOADS in the sustained ocean observing system. *Proceedings of the "OceanObs'09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09.cwp.94.
- Arguez, A., J. J. O'Brien, and **S. R. Smith**, 2009: Air temperature impacts over Eastern North America and Europe associated with low-frequency North Atlantic SST variability. *Int. J. Climatol.*, **29**, 1-10.
- Kennedy, A. J., M. L. Griffin, S. L. Morey, **S. R. Smith**, and J. J. O'Brien, 2007: Effects of El Niño-Southern Oscillation on sea-level anomalies along the Gulf of Mexico coast. *J. Geophys. Res.*, **112**, C05047, doi:10.1029/2006JC003904.
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- Gould, W. J. and **S. R. Smith**, 2006: Research vessels: Underutilized assets for climate observations. *EOS, Trans Amer. Geophys. Union*, **87**, 214-215.
- Bourassa, M. A., R. Romero, **S. R. Smith**, and J. J. O'Brien, 2005: A new FSU wind climatology. *J. Climate*, **18**, 3692-3704.
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- Curry, J. A., A. Bentamy, M. A. Bourassa, D. Bourras, E. F. Bradley, M. Brunke, S. Castro, S. H. Chou, C. A. Clayson, W. J. Emery, L. Eymard, C. W. Fairall, M. Kubota, B. Lin, W. Perrie, R. A. Reeder, I. A. Renfrew, W. B. Rossow, J. Schulz, **S. R. Smith**, P. J. Webster, G. A. Wick, X. Zeng. 2004: SEAFLUX. *Bull. Amer. Meteor. Soc.*, **85**, 409-424.
- Patten, J. M., **S. R. Smith**, and J. J. O'Brien, 2003: Impacts of ENSO on United States snowfall frequencies. *Weather and Forecasting*, **18**, 965-980.
- Tartaglione, C., **S. R. Smith**, and J. J. O'Brien, 2003: ENSO impact on hurricane landfall probabilities for the Caribbean. *J. Climate*, **16**, 2925-2931.
- Hanley, D. E., M. A. Bourassa, J. J. O'Brien, **S. R. Smith**, and E. R. Spade, 2003: A quantitative evaluation of ENSO indices. *J. Climate*, **16**, 1249-1258.
- Bourassa, M. A., D. M. Legler, J. J. O'Brien, and **S. R. Smith**, 2003: SeaWinds Validation with Research Vessels. *J. Geophys. Res.*, **108**, DOI 10.1029/2001JC001028.
- Smith, S. R.**, M. A. Bourassa, and R. J. Sharp, 2003: Establishing more truth in true winds. Reprinted with permission of AMS in: *WMO Guide to the Applications of Marine Climatology*, JCOMM Tech. Rep. 13, WMO TD 1081, WMO, Geneva, Switzerland, CDROM.

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- Smith, S. R.**, and J. J. O'Brien, 2001: Regional snowfall distributions associated with ENSO: Implications for seasonal forecasting. *Bull. Amer. Meteor. Soc.*, **82**, 1179-1191.
- Smith, S. R.**, D. M. Legler, M. J. Remigio, and J. J. O'Brien, 1999: Comparison of 1997-1998 U.S. temperature and precipitation anomalies to historical ENSO warm phases. *J. Climate*, **12**, 3507-3515.
- Smith, S. R.**, M. A. Bourassa, and R. J. Sharp, 1999: Establishing more truth in true winds. *J. Atmos. Oceanic Technol.*, **16**, 939-952.
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Other Publications:

- Peng, G., R. R. Downs, H. K. Ramapriyan, M. A. Parsons, D. F. Moroni, Z. Liu, S. J. S. Khalsa, C. Mears, Y. Wei, B. Ramachandran, **S. Smith** and NASA O'FAIR WG, 2023: An Overview of Community FAIR Practices – NASA O'FAIR WG Inception Report. Document ID: NASAOFAIR-ESDSWG-DOC-0001. CC-BY-4.0 International. Version: v01r00-20230508. DOI: <https://doi.org/10.5067/DOC/ESCO/ESDSWG-0001V1>
- Briggs, K., and **S. R. Smith**, 2023: *2022 SAMOS Data Quality Report*. COAPS, Tallahassee, FL, USA, 178 pp. Available from Center for Ocean-Atmospheric Prediction Studies, Florida State University, Tallahassee, Florida, 32306-2840, USA. https://samos.coaps.fsu.edu/html/docs/2022SAMOSAnnualReport_final.pdf
- Chung, N., T. Cram, **S. Smith**, V. Tsontos, T. Huang, K. Sparling, S. Perez, W. Phyo, Z. Ji, and R. Kuttruff, 2022: Development of a Cloud-based Data Match-Up Service (CDMS) in Support of Ocean Science Applications. Conference paper, OCEANS 2022, *IEEE*, DOI: 10.1109/OCEANS47191.2022.9977163
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