

Curriculum Vitae

Dr. Rick Lumpkin
Deputy Director, Physical Oceanography Division
Atlantic Oceanographic and Meteorological Laboratory
National Oceanic and Atmospheric Administration
4301 Rickenbacker Cswy.
Miami, FL 33149-1097
e-mail: Rick.Lumpkin@noaa.gov
phone: (305) 361-4513

Research Interests: Upper ocean dynamics, observations of submesoscale to basin-scale circulation; pathways and physics of the global thermohaline circulation; interannual to decadal variations in ocean climate.

Current projects: Principal Investigator, Surface Drifter Program (AOML's component of NOAA's Global Drifter Program); Principal Investigator, Evaluating the Ocean Observing System: Sea Surface Velocity. Co-PI or collaborator in projects investigating ocean transport of floating objects including *Sargassum*, the global distribution of tides and submesoscale motion, and processes affecting near-surface heat and salinity budgets.

Committees, panels and memberships: United States focal point for Data Buoy Cooperation Panel (DBCP). Chair, DBCP Global Drifter Program. Co-chair, DBCP task team on instrument best practices. OAR Representative, NWS Office of Science and Technology Integration (OSTI) Marine Working Group. Member: Standing Committee on Measurements, Instrumentation and Traceability (SC-MINT); Climate.gov Science Advisory Panel; CLIVAR Tropical Atlantic Climate Experiment working group on observations; GlobCurrent Science Team; American Geophysical Union.

Education:

December 1998	Ph.D. in Oceanography, Univ. of Hawaii at Manoa
August 1995	M.S. in Oceanography, Univ. of Hawaii at Manoa
May 1991	B.S. in Physics (Mathematics minor), North Carolina State Univ.

Positions held:

2021-	Acting Director, Phys. Oceanogr. Division, NOAA/AOML
2015-2021	Deputy Director, Phys. Oceanogr. Division, NOAA/AOML
2004-2015	Oceanographer, NOAA/AOML
2002-2004	Assistant scientist, CIMAS (Univ. Miami)
2000-2002	Assistant in research, Dept. Oceanogr., Fl. State Univ.

1998-2000 Postdoctorate, Laboratoire de Physique des Océans, IFREMER/CNRS
1996-1998 Graduate Assistant, Dept. Oceanogr., Univ. of Hawaii
1995-1996 Teaching Assistant, Dept. Oceanogr, Univ. of Hawaii
1991-1995 Graduate Assistant, Dept. Oceanogr, Univ. of Hawaii

Awards:

NOAA/OAR (NOAA research) Employee of the Year, 2013.
Three 2009 NOAA Bronze Medals, for (1) developing the research-to-operation transition of Climate Sea Surface Temperature Observing System monitoring, (2) exceptional service as author of the NOAA/Smithsonian publication "Hidden Depths: Atlas of the Ocean", and (3) remarkable contributions and original concepts in the design and leverage of the Smithsonian's Sant Ocean Hall.
Recipient of Ministère des Affaires Etrangères fellowship from French government, 1998–1999.

Sea-going experience:

Chief scientist, 2014 PIRATA Northeast Extension cruise, R/V *Endeavor*, 29 Dec 2014 – 11 February 2015.
Chief scientist, 2011 PIRATA Northeast Extension cruise, NOAA ship *Ronald H. Brown*, 19 July – 22 August 2011.
Chief scientist, 2009 PIRATA Northeast Extension cruise, NOAA ship *Ronald H. Brown*, 11 July – 11 August 2009.
Chief scientist, 2007 PIRATA Northeast Extension cruise, NOAA ship *Ronald H. Brown*, 2–31 May 2007.
Watch leader, CLIMODE-4 leg 1, R/V Knorr, 7–27 February 2007.
Chief scientist, 2006 PIRATA Northeast Extension cruise, NOAA ship *Ronald H. Brown*, 27 May – 18 June 2006.
Watch leader, Western Boundary Time Series cruise, NOAA ship *Ronald H. Brown*, 3–16 February 2003.
Designed, assembled, deployed and recovered current meter moorings off Maui and Oahu; chief scientist of recovery cruise.
Participant, WOCE section P18 leg 3, 29 March – 27 April 1994.

Teaching experience:

Past member of Ph.D. committees for Tania Casal, Greta Leber, Matt Archer, Thania Papapostolou, Lucas Laurindo, and Rafael Gonçalves (Univ. Miami).
Invited lecture, University of South Florida School of Marine Science, 25 September 2015.
Invited panelist, 21 February 2013 "Climate Science Café" hosted by the CLEO institute, Pinecrest, FL.
Invited lecture, 2011 Fritz Schott memorial lecture series, IFM-GEOMAR (Kiel, Germany).

Designed and taught data analysis exercises to Nigerian researchers and operational forecasters as part of the US Navy's Africa Partnership Station, March 2009 (Legos, Nigeria).

Presented lectures for undergraduates on M/V *Explorer* (Semester At Sea Program) and at City College of New York, lectures for the general public on Royal Caribbean's *Explorer of the Seas*, and lectures for school children at Shake-A-Leg Miami and AOML.

Invited lecturer, 2005 Lagrangian Summer School at the University of Rhode Island (Tom Rossby and Andrew Bennett, organizers).

Assisted teaching and grading two courses during graduate studies. Led instruction during waves portion of Introduction to Geophysical Fluid Dynamics class.

Peer-reviewed publications: 118 published, 37 as lead author;
ResearcherID h-index: 39

FY2021

- Chidichimo, M. P., A. R. Piola, C. S. Meinen, R. C. Perez, E. J. D. Campos, S. Dong, R. Lumpkin, and S. L. Garzoli, 2021: Brazil Current volume transport variability during 2009-2015 from a long-term moored array. *Journal of Geophysical Research – Oceans*, **126**, e2020JC017146, <https://doi.org/10.1029/2020JC017146>.
- Johnson, G. C. and R. Lumpkin, 2021: Overview [in "State of the Climate in 2020"]. *Bull. Amer. Meteor. Soc.*, **102** (8), Chapter 3, <https://doi.org/10.1175/BAMS-D-21-0083.1>.
- Lumpkin, R., R. Domingues, and G. Goni, 2021: Surface Currents [in "State of the Climate in 2020"]. *Bull. Amer. Meteor. Soc.*, **102** (8), Chapter 3, <https://doi.org/10.1175/BAMS-D-21-0083.1>.
- Miron, P., M. J. Olascoaga, F.J. Beron-Vera, N.F. Putman, J. Triñanes, R. Lumpkin, and G. J. Goni, 2020: Clustering of marine-debris- and *Sargassum*-like drifters explained by inertial particle dynamics. *Geophys. Res. Lett.*, **47**, e2020GL089874. <https://doi.org/10.1029/2020GL089874>.
- van Sebille, E., E. Zettler, N. Wienders, L. Amaral-Zettler, S. Elipot, and R. Lumpkin, 2021: Dispersion of surface drifters in the Tropical Atlantic. *Frontiers in Marine Science*, 15 January 2021, <https://doi.org/10.3389/fmars.2020.607426>.
- Zhao, M., R. M. Ponte, O. Wang, and R. Lumpkin, 2021: Using Drifter Velocity Measurements to Assess and Constrain Coarse-Resolution Ocean Models. *J. Atm. Ocean. Techn.*, 38(4), 909-919, <https://doi.org/10.1175/JTECH-D-20-0159.1>.

FY2020

- Beal, L. M., J. Vialard, M.K. Roxy, J. Li, M. Andres, H. Annamalai, M. Feng, W. Han, R. Hood, T. Lee, M. Lengaigne, R. Lumpkin, Y. Masumoto, M.J. McPhaden, M. Ravichandran, T. Shinoda, B.M. Sloyan, P. Strutton, A.C. Subramanian, T. Tozuka, C.C. Ummenhofer, A.S. Unnikrishnan, J. Wiggert, L.Yu, L. Cheng, D. Desbruyeres, and V. Parvathi, 2020: A roadmap to IndOOS-2: better observations of the rapidly-warming Indian Ocean. *Bull. Am. Met. Soc.*, <https://doi.org/10.1175/BAMS-D-19-0209.1>.

- Johns, L., R. Lumpkin, N. Putman, R. Smith, F. Muller-Karger, D. Rueda-Roa, C. Hu, M. Wang, M. Brooks, L. Gramer, and F. Werner, 2020: The establishment of a pelagic Sargassum population in the tropical Atlantic: biological consequences of a basin-scale long distance dispersal event. *Progress in Oceanography* **182**, 102269, <https://doi.org/10.1016/j.pocean.2020.102269>.
- Kersalé, M., C. S. Meinen, R. C. Perez, M. Le Henaff, D. Valla, T. Lamont O. T. Sato, S. Dong, T. Terre, M. van Caspel, M. P. Chidichimo, M. van den Berg, S. Speich, A. R. Piola, E. J. D. Campos, I. Ansoorge, D. L. Volkov, R. Lumpkin, and S. Garzoli, 2020: Science Advances 6 (32), eaba7573, <https://doi.org/10.1126/sciadv.aba7573>.
- Lumpkin R., 2020: Overview [in "State of the Climate in 2019"]. *Bull. Amer. Meteor. Soc.*, **101** (8), S129–S183, <https://doi.org/10.1175/BAMS-D-20-0105.1>.
- Lumpkin R. and G. Goni, 2020: Surface Currents [in "State of the Climate in 2019"]. *Bull. Amer. Meteor. Soc.*, **101** (8), S129–S183, <https://doi.org/10.1175/BAMS-D-20-0105.1>.
- Olascoaga, M. J., F. J. Beron-Vera, P. Miron, J. Trinanes, N. F. Putman, R. Lumpkin, and G. Goni, 2020: Observation and quantification of inertial effects on the drift of floating objects at the ocean surface. *Physics of Fluids*, **32**, 026601, <https://doi.org/10.1063/1.5139045>.
- Putman, N., R. Lumpkin, M. Olascoaga, J. Trinanes, and G. Goni: Improving transport predictions of pelagic Sargassum. *J. Experimental Marine Biology and Ecology*, **529**, <https://doi.org/10.1016/j.jembe.2020.151398>.

FY2019

- Bourles, B., et al., 2019: PIRATA: a sustained observing system for tropical Atlantic climate research and forecasting. *Earth and Space Science*, <https://doi.org/10.1029/2018EA000428>.
- Centurioni, L. et al., 2019: Global In-Situ Observations of Essential Climate and Ocean Variables at the Air-Sea Interface in Support of Climate Variability and Change Studies and to Improve Weather Forecasting, Pollution, Hazard and Maritime Safety Assessments. *Frontiers in Marine Science*, 28 Aug 2019, <https://doi.org/10.3389/fmars.2019.00419>.
- d'Hotman, J., N. Malan, C. Collins, M. de Vos, R. Lumpkin, T. Morris, and J. Hermes, 2019: The Use of a Jet Reference Frame to Analyze Drifter Trajectories in the Agulhas Current. *J. Geophys. Res. Oceans.*, 124, 4238–4247, <https://doi.org/10.1029/2018JC014850>.
- Foltz, G. et al., 2019: The Tropical Atlantic Observing System. *Frontiers in Marine Science*, 10 May 2019, <http://doi.org/10.3389/fmars.2019.00206>.
- Hermes, J. C., et al., 2019: A sustained ocean observing system in the Indian Ocean for climate related scientific knowledge and societal needs. *Frontiers in Marine Science*, *Frontiers in Marine Science*, 6:355, <https://doi.org/10.3389/fmars.2019.00355>.
- Lee, S.-K., R. Lumpkin, M. Goes, M. Baringer, C. Meinen, S. Dong, H. Lopez, and S. Yeager, 2018: Global meridional overturning circulation inferred from a data-constrained ocean and sea-ice model. *Geophys. Res. Letters*. **46**, 1521–1530, <https://doi.org/10.1029/2018GL080940>.
- Lumpkin R., 2019: State of the Ocean in 2018: Overview. In "State of the Climate in 2018", J. Blunden and D.S. Arndt (eds.), *Bull. Am. Meteorol. Soc.*, **100** (9).
- Lumpkin R., G. Goni and K. Dohan, 2019: State of the Ocean in 2018: Surface Currents. In "State of the Climate in 2018", J. Blunden and D.S. Arndt (eds.), *Bull. Am. Meteorol. Soc.*, **100** (9).
- Lumpkin, R. and L. Centurioni, 2019: Surface Drifter Observations in the Indian Ocean. Chapter 4 of "IndOOS-2: An Indian Ocean Observing System for the

- next Decade”, ed. L. Beal, J. Vialard, and and M. Roxy, International CLIVAR Project Office, pp 23-26.
- Majumder, S., M. Goes, P. Polito, R. Lumpkin, C. Schmid, and H. Lopez, 2019: Propagating modes of variability and their impact on the western boundary current in the South Atlantic. *J. Geophys. Res. Oceans*, <https://doi.org/10.1029/2018JC014812>.
- Maximenko, N., et al., 2019: Towards the Integrated Marine Debris Observing System. *Frontiers in Marine Science*, 28 Aug 2019, <https://doi.org/10.3389/fmars.2019.00447>.
- Moltmann, T., H.-M. Zhang, J. D. Turton, G. Nolan, C. C Gouldman, L. Griesbauer, Z. Willis, A. M. Piniella, E. Charpentier, P. Poli, E. F. Burger, R. Lumpkin, C. Meinig, K. M. O'Brien, A. J. Sutton, D. Zhang and Y. Zhang, 2019: A Global Ocean Observing System (GOOS), delivered through enhanced collaboration across regions, communities, and new technologies. *Frontiers in Marine Science*, *Frontiers in Marine Science*, 6:291, <http://doi.org/10.3389/fmars.2019.00291>.
- Perez, R., G. Foltz, R. Lumpkin, and C. Schmid, 2019: Direct measurements of upper ocean horizontal velocity and vertical shear in the tropical North Atlantic at 4N, 23W. *J. Geophys. Res. Oceans*, **124**, 4133-4151, <https://doi.org/10.1029/2019JC015064>.
- Semba, M., R. Lumpkin, I. A. Kimirei, Y. Shaghide, and N. Nyandwi, 2019: Seasonal and spatial variation of surface current in the Pemba Channel, Tanzania. *PLOS One* **14**(1), e0210303, <https://doi.org/10.1371/journal.pone.0210303>.
- Szuts, Z. B., A. S. Bower, K. A Donohue, J. B. Girton, J. M Hummon, K. Katsumata, R. Lumpkin, P. B Ortner, H. E. Phillips, T. Rossby, L. K Shay and R. E Todd, 2019: The scientific and societal uses of global measurements of subsurface velocity. *Frontiers in Marine Science*, <https://doi.org/10.3389/fmars.2019.00358>.

FY2018

- Archer, M., S. R. Keating, M. Roughan, W. E. Johns, R. Lumpkin, F. Beron-Vera, and L. K. Shay, 2018: The kinematic similarity of two western boundary currents revealed by sustained high-resolution observations. *Geophys. Res. Lett.* **45**, 6176–6185, <https://doi.org/10.1029/2018GL078429>.
- Foltz, G., C. Schmid, and R. Lumpkin, 2018: An enhanced PIRATA data set for tropical Atlantic ocean-atmosphere research. *J. Climate*, **31**, 1499-1524, <http://doi.org/10.1175/JCLI-D-16-0816.1>.
- Lumpkin R., G. Goni and K. Dohan, 2018: State of the Ocean in 2017: Surface Currents. In "State of the Climate in 2017", J. Blunden, D.S. Arndt, and G. Hartfield (eds.), *Bull. Am. Meteorol. Soc.*, **99** (8), S87-S91, <http://doi.org/10.1175/2018BAMSStateoftheClimate.1>.

FY2017

- Beron-Vera, J., J. Olascoaga, and R. Lumpkin, 2017: Inertia-induced accumulation of flotsam in the subtropical gyres. *Geophys. Res. Lett.*, **43** (23), 12228–12233, <http://dx.doi.org/10.1002/2016GL071443>.
- Centurioni, L., A. Horanyi, C. Cardinali, E. Charpentier and R. Lumpkin, 2017: A Global Observing System for Measuring Sea Level Atmospheric Pressure: Effects and Impacts on Numerical Weather Prediction. *Bull. Am. Meteorol. Soc.*, **98** (2), 231–238, <http://dx.doi.org/10.1175/BAMS-D-15-00080.1>.
- Dong, S., D. Volkov, G. Goni, R. Lumpkin, and G. Foltz, 2017: Near-surface salinity and temperature structure observed with dual-sensor drifters in the

- subtropical South Pacific. *J. Geophys. Res.*, **122**, <http://dx.doi.org/10.1002/2017JC012894>.
- Kourafalou, V. H., Y. S. Androulidakis, G. Halliwell, H. Kang, M. Mehari, M. Le Hénaff, R. Atlas, and R. Lumpkin, 2016: North Atlantic Ocean OSSE system development: Nature Run evaluation and application to hurricane interaction with the Gulf Stream. *Progress in Oceanography*, **148**, 1–25, <https://doi.org/10.1016/j.pocean.2016.09.001>.
- Laurindo, L. C., A. Mariano, and R. Lumpkin, 2017: An improved surface velocity climatology for the global ocean from drifter observations. *Deep-Sea Res. I*, **124**, 73–92, <http://dx.doi.org/10.1016/j.dsr.2017.04.009>.
- Lumpkin R., T. Özgökmen, and L. Centurioni, 2016: Advances in the applications of surface drifters. *Annu. Rev. Mar. Sci.*, **9**, 59–81, <http://dx.doi.org/10.1146/annurev-marine-010816-060641>.
- Lumpkin R., G. Goni and K. Dohan, 2017: State of the Ocean in 2016: Surface Currents. In "State of the Climate in 2016", *Bull. Am. Meteorol. Soc.*, **98** (8), S93–S128, <http://dx.doi.org/10.1175/2017BAMSStateoftheClimate.1>.
- Putman, N. F., R. Lumpkin, A. E. Sacco, and K. L. Mansfield, 2016: Passive drift or active swimming in marine organisms? *Proceedings R. Soc. B.*, **283**, 20161689, <http://dx.doi.org/10.1098/rspb.2016.1689>.
- Volkov, D., S.-K. Lee, F. W. Landerer, and R. Lumpkin, 2017: Decade-long deep-ocean warming detected in the subtropical South Pacific. *Geophys. Res. Lett.*, **44**, 927–936, <http://dx.doi.org/10.1002/2016GL071661>.

FY2016

- Elipot, S., R. Lumpkin, R. Perez, J. Lilly, J. Early, and A. Sykulski, 2016: A global surface drifter data set at hourly resolution. *J. Geophys. Res.-Oceans*, **121** (5), 2937–2966, <http://dx.doi.org/10.1002/2016JC011716>.
- Legler, D., H. J. Freeland, R. Lumpkin, G. Ball, M. J. McPhaden, S. North, R. Cowley, G. Goni, U. Send and M. Merrifield, 2015: The current status of the real-time in situ global ocean observing system for operational oceanography. *J. Operational Oceanography*, **8** (S2), 189–200, <http://dx.doi.org/10.1080/1755876X.2015.1049883>.
- Lumpkin, R., 2016: Global Characteristics of Coherent Vortices from Surface Drifter Trajectories. *J. Geophys. Res.-Oceans*, **121**, 1306–1321, <http://dx.doi.org/10.1002/2015JC011435>.
- Lumpkin, R., L. Centurioni and R. C. Perez, 2016: Fulfilling Observing System Implementation Requirements with the Global Drifter Array. *J. Atmos. Oceanic Technol.*, **33**, 685–695, <http://dx.doi.org/10.1175/JTECH-D-15-0255.1>.
- Lumpkin R., G. Goni and K. Dohan, 2016: State of the Ocean in 2015: Surface Currents. In "State of the Climate in 2015", *Bull. Am. Meteorol. Soc.*, 97 (8): S82–S84, ed. G. C. Johnson and A. R. Parsons.
- van Sebille, E., S. Waterman, A. Barthel, R. Lumpkin, S. Keating, C. Fogwill and C. Turney, 2015: Pairwise surface drifter separation in the Western Pacific Sector of the Southern Ocean. *J. Geophys. Res.-Oceans*, **120**, 6769–6781, <http://dx.doi.org/10.1002/2015JC010972>.
- Volkov, D., A. A. Kubryakov and R. Lumpkin, 2015: Formation and variability of the Lofoten Basin vortex in a high-resolution ocean model. *Deep-Sea Res. I*, **105**, 142–157, <http://dx.doi.org/10.1016/j.dsr.2015.09.001>.

FY2015

- Dohan, K., G. Goni and R. Lumpkin, 2015: State of the Ocean in 2014: Surface Currents. In "State of the Climate in 2014", *Bull. Am. Meteorol. Soc.*, ed. G. Johnson and R. Parsons.
- Dong, S., G. Goni and R. Lumpkin, 2015: Mixed-layer salinity budget in the SPURS region on seasonal to interannual time scales and its link to large-scale dynamics. *Oceanography*, **28** (1), 28–35, <http://dx.doi.org/10.5670/oceanog.2015.05>.
- Foltz, G., C. Schmid and R. Lumpkin, 2015: Transport of surface freshwater from the equatorial to the subtropical North Atlantic Ocean. *J. Phys. Oceanogr.*, **45** (4), 1086–1102, <http://dx.doi.org/10.1175/JPO-D-14-0189.1>.
- Peng, S., Y.-K. Qian, R. Lumpkin, Y. Du, D. Wang and P. Li, 2015: Characteristics of the Near-Surface Currents in the Indian Ocean as deduced from Satellite-Tracked Surface Drifters. Part I: Pseudo-Eulerian Statistics. *J. Phys. Oceanogr.*, **45** (2), 441-458, <http://dx.doi.org/10.1175/JPO-D-14-0050.1>.
- Peng, S., Y.-K. Qian, R. Lumpkin, Y. Du, D. Wang and P. Li, 2015: Characteristics of the Near-Surface Currents in the Indian Ocean as deduced from Satellite-Tracked Surface Drifters. Part II: Lagrangian Statistics. *J. Phys. Oceanogr.*, **45** (2), 459-477, <http://dx.doi.org/10.1175/JPO-D-14-0049.1>.
- Perez, R. C., M. O. Baringer, S. Dong, S. L. Garzoli, M. Goes, G. J. Goni, R. Lumpkin, C. S. Meinen, R. Msadek and U. Rivero, 2015: Measuring the Atlantic Meridional Overturning Circulation. *Marine Technology Science Journal*, **49** (2), 167-177, <http://dx.doi.org/10.4031/MTSJ.49.2.14>.
- Perez, R., V. Hormann, R. Lumpkin, P. Brandt, W. E. Johns, F. Hernandez, C. Schmid and B. Bourlès, 2014: Mean meridional currents in the central and eastern equatorial Atlantic. *Climate Dynamics*, **14** (11), 2943–2962, <http://dx.doi.org/10.1007/s00382-013-1968-5>.
- Qian, Y.-K., S. Peng, R. Lumpkin, Y. Du, D. Wang and P. Li, 2014: On the Estimation of Lagrangian Diffusivity: Influence of Nonstationary Mean Flow. *J. Phys. Oceanogr.*, **44**, 2796–2811, <http://dx.doi.org/10.1175/JPO-D-14-0058.1>.
- Reverdin, G. et al., 2015: Surface Salinity in the North Atlantic Subtropical Gyre during the STRASSE/SPURS Summer 2012 Cruise. *Oceanography*, **28** (1), 114–123, <http://dx.doi.org/10.5670/oceanog.2015.09>.

FY2014

- Foltz, G. R., C. Schmid and R. Lumpkin, 2013: Seasonal Cycle of the Mixed Layer Heat Budget in the Northeastern Tropical Atlantic Ocean. *J. Climate*, **26**, 8169–8188, <http://dx.doi.org/10.1175/JCLI-D-13-00037.1>.
- Fox-Kemper, B., R. Lumpkin and F. Bryan, 2013: Lateral Transport in the Ocean. Chapter 8 of "Ocean Circulation and Climate, 2nd Ed. A 21st century perspective", ed. G. Siedler, S. Griffies, J. Gould and J. Church, Academic Press, pp. 185-205, <http://dx.doi.org/10.1016/B978-0-12-391851-2.00008-8>.
- Lumpkin R., G. Goni and K. Dohan, 2014: State of the Ocean in 2013: Surface Currents. In "State of the Climate in 2013", *Bull. Am. Meteorol. Soc.*, **95**, S1–S279, ed. J. Blunden and D. S. Arndt, <http://dx.doi.org/10.1175/2014BAMSStateoftheClimate.1>.
- Le Hénaff, M., V. H. Kourafalou, R. Dussurget and R. Lumpkin, 2014: Cyclonic activity in the eastern Gulf of Mexico: characterization from along-track altimetry and in situ drifter trajectories. *Progress in Oceanogr.*, **120**, 120-138, <http://dx.doi.org/10.1016/j.pocean.2013.08.002>.

- Maximenko, N., R. Lumpkin and L. Centurioni, 2013: Ocean Surface Circulation. Chapter 12 of "Ocean Circulation and Climate, 2nd Ed. A 21st century perspective", ed. G. Siedler, S. Griffies, J. Gould and J. Church, Academic Press, pp. 283-300, <http://dx.doi.org/10.1016/B978-0-12-391851-2.000012-X>.
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FY2013

- Beal, L., V. Hormann, R. Lumpkin and G. R. Foltz, 2013: The response of the surface circulation of the Arabian Sea to monsoonal forcing. *J. Phys. Oceanogr.*, **43** (9), 2008-2022, <http://dx.doi.org/10.1175/JPO-D-13-033.1>.
- Hormann, V., R. Lumpkin and R. C. Perez, 2013: A generalized method for estimating the structure of the equatorial Atlantic cold tongue: application to drifter observations. *J. Atmos. Oceanic Techn.*, **30**, 1884-1895, <http://dx.doi.org/10.1175/JTECH-D-12-00173.1>.
- Howard, J. et al., 2013: Oceans and Marine Resources in a Changing Climate. *Oceanography and Marine Biology: An Annual Review*, **51**, 71-192.
- Letscher, R. T., D. A. Hansell, C. A. Carlson and R. Lumpkin, 2013: Dissolved organic nitrogen in the global surface ocean: distribution and fate. *Global Biogeochem. Cycles*, **21** (1), 141–153, <http://dx.doi.org/10.1029/2012GB004449>.
- Lumpkin, R. and G. Johnson, 2013: Global Ocean Surface Velocities from Drifters: Mean, Variance, ENSO Response, and Seasonal Cycle. *J. Geophys. Res. - Oceans*, **118** (6), 2992-3006, <http://dx.doi.org/10.1002/jgrc.20210>.
- Lumpkin R., G. Goni and K. Dohan, 2013: State of the Ocean in 2012: Surface Currents. In "State of the Climate in 2012", *Bull. Am. Meteorol. Soc.*, **94** (8), August 2013.
- Lumpkin, R., S. Grodsky, M.-H. Rio, L. Centurioni, J. Carton and D. Lee, 2013: Removing spurious low-frequency variability in surface drifter velocities. *J. Atmos. Oceanic Techn.*, **30** (2), 353–360, <http://dx.doi.org/10.1175/JTECH-D-12-00139.1>.
- Lumpkin, R. and P. Flament, 2013: On the extent and energetics of the Hawaiian Lee Countercurrent. *Oceanography*, **26** (1), 58–65, <http://dx.doi.org/10.5670/oceanog.2013.05>.

FY2012

- Foltz, G. R., M. J. McPhaden and R. Lumpkin, 2012: A strong Atlantic Meridional Mode event in 2009: the role of mixed layer dynamics. *J. Climate*, **25**, 363–380, <http://dx.doi.org/10.1175/JCLI-D-11-00150.1>.
- Hormann, V., R. Lumpkin and G. Foltz, 2012: Interannual North Equatorial Countercurrent Variability and its Relation to Tropical Atlantic Climate Modes. *J. Geophys. Res.*, **117**, C04035, <http://dx.doi.org/10.1029/2011JC007697>.
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