

Western Boundary Time Series (WBTS)

Peer Reviewed Publications

Updated January 2021

2020

Meinen, C.S., Smith, R.H., and Garcia, R. F., 2020: Evaluating pressure gauges as a potential future replacement for electromagnetic cable observations of the Florida Current transport at 27°N. *Journal of Operational Oceanography*, (<https://doi.org/10.1080/1755876X.2020.1780757>).

Moat B.I., D.A. Smeed, E. Frajka-Williams, D.G. Desbryères, C. Beaulieu, W.E. Johns, D. Rayner, A. Sanchez-Franks, M.O. Baringer, D.L. Volkov, L.C. Jackson, H.L. Bryden (2020), Pending recovery in the strength of the meridional overturning circulation at 26° N, *Ocean Sciences*, 16, 863–874, (<https://doi.org/10.5194/os-16-863-2020>).

Volkov, D.L., Domingues, R., Meinen, C. S., Garcia, R., Baringer, M., Goni, G., & Smith, R. H.. 2020. Inferring Florida Current volume transport from satellite altimetry. *Journal of Geophysical Research: Oceans*, 125, e2020JC016763. (<https://doi.org/10.1029/2020JC016763>). [PDF](#).

Volkov D.L. , C.S. Meinen, C. Schmid, B. Moat, M. Lankhorst, S. Dong, F. Li, W. Johns, S. Lozier, R. Perez, G. Goni, M. Kersale, E. Frajka-Williams, M. Baringer, D. Smeed, D. Rayner, A. Sanchez-Franks, U. Send (2020), Atlantic meridional overturning circulation and associated heat transport, [In: *State of the Climate 2019*], *Bull. Am. Met. Soc.*, 101(8), S159-S163, (<https://doi.org/10.1175/BAMS-D-20-0105.1>). [PDF](#).

2019

Frajka-Williams, E., I.J. Ansorge, J. Baehr, H.L. Bryden, [...], D. Volkov, C. Wilson (2019), Atlantic Meridional Overturning Circulation: Observed transports and variability, *Front. Mar. Sci.*, Vol. 6, (<https://doi.org/10.3389/fmars.2019.00260>). [PDF](#).

Todd, R.E., Chavez, F.P., Clayton, S., Cravatte, S.E., Goes, M.P., Graco, M.I., Lin, X., Sprintall, J., Zilberman, N.V., Archer, M., Aristegui, J., Balmaseda, M.A., Bane, J.M., Baringer, M.O., Barth, J.A., Beal, L.M., Brandt, P., Calil, P.H.R., Campos, E., Centurioni, L.R., Chidichimo, M.P., Cirano, M., Cronin, M.F., Curchitser, E.N., Davis, R.E., Dengler, M., deYoung, B., Dong, S., Escribano, R., Fassbender, A.J., Fawcett, S.E., Feng, M., Goni, G.J., Gray, A.R., Gutierrez, D., Hebert, D., Hummels, R., Ito, S.-I., Krug, M., Lacan, F., Laurindo, L., Lazar, A., Lee, C.M., Lengaigne, M., Levine, N., Middleton, J., Montes, I., Muglia, M., Nagai, T., Palevsky, H.I., Palter, J.B., Phillips, H.E., Piola, A.R., Plueddemann, A.J., Qiu, B., Rodrigues, R.R., Rossby, T., Roughan, M., Rudnick, D.L., Rykaczewski, R.R., Saraceno, M., Seim, H., Gupta, A.S., Shannon, L., Sloyan, B.M., Sutton, A.J., Thompson, L., van der Plas, A.K., Volkov, D., Wilkin, J., Zhang, D., and Zhang, L., 2019: Global perspectives on observing ocean boundary current systems. *Frontiers in Marine Science*, (<https://doi.org/10.3389/fmars.2019.00423>).

Volkov D.L. , S.-K. Lee, R. Domingues, H. Zhang, M. Goes (2019), Interannual sea level variability along the southeastern seaboard of the United States in relation to the gyre-scale heat

divergence in the North Atlantic, *Geophys. Res. Lett.*, (<https://doi.org/10.1029/2019GL083596>). [PDF](#).

Volkov D.L. , M. Baringer, D. Smeed, W. Johns, F. Landerer (2019), Teleconnection between the Atlantic Meridional Overturning Circulation and sea level in the Mediterranean Sea, *Journal of Climate* , 32, 935-955, (<https://doi.org/10.1175/JCLI-D-18-0474.1>). [PDF](#).

2018

Domingues, R., G. Goni, M. Baringer, D.L. Volkov (2018), What caused the accelerated sea level changes along the United States East Coast during 2010-2015?, *Geophys. Res. Lett.*, 45, 13367-13376, (<https://doi.org/10.1029/2018GL081183>). [PDF](#).

2017

McCarthy, G. D., D. A. Smeed, S. A. Cunningham, and C. D. Roberts, 2017: Atlantic Meridional Overturning Circulation. *Marine Climate Change Impacts Partnership: Science Review*, ([doi:10.14465/2017.arc10.002-atl](https://doi.org/10.14465/2017.arc10.002-atl)).

2016

Andres, M. (2016) On the recent destabilization of the Gulf Stream path downstream of Cape Hatteras, *Geophys. Res. Lett.*, 43, 9836-9842, (<https://doi.org/10.1002/2016GL069966>). [PDF](#).

Domingues, R., M. Baringer, and G. Goni (2016) Remote sources for year-to-year changes in the seasonality of the Florida Current transport, *J. Geophys. Res. Oceans*, 121, 7547-7559, (<https://doi.org/10.1002/2016JC012070>). [PDF](#).

Frajka-Williams, E., C. S. Meinen, W.E. Johns, D.A. Smeed, A. Ducez, A.J. Lawrence, D.A. Cuthbertson, G.D. McCarthy, H.L. Bryden, M.O. Baringer, B.I. Moat, and D. Rayner, 2016 Compensation between meridional flow components of the AMOC at 26°N. *Ocean Sci.*, 12, 481-493, doi: [10.5194/os-12-481-2016](https://doi.org/10.5194/os-12-481-2016). [PDF](#).

Meinen, C. S., and D. S. Luther (2016). Structure, Transport, and Vertical Coherence of the Gulf Stream from the Straits of Florida to the Southeast Newfoundland Ridge, *Deep Sea Res. I*, 111, 16-33, (<https://doi.org/10.1016/j.dsr.2016.03.002>). [PDF](#).

Moat, B.I., Josey, S.A., Sinha, B., Blaker, A.T., Smeed, D.A., McCarthy, G., Johns, W.E., Hirschi, J.J.-M., Frajka-Williams, E., Rayner, D., Ducez, A., Coward, A.C. (2016). Major variations in subtropical North Atlantic heat transport at short (5 day) time scales and their causes, *JGR Oceans*, (<https://doi.org/10.1002/2016JC011660>). [PDF](#).

2015

Frajka-Williams, E. (2015). Estimating the Atlantic overturning at 2N using satellite altimetry and cable measurements, *Geophysical Research Letters*, 42, (<https://doi.org/10.1002/2015GL063220>). [PDF](#).

McCarthy, G.D., Smeed, D.A., Johns, W.E., Frajka-Williams, E., Moat, B.I., Rayner, D., Baringer, M.O., C.S. Meinen, Collins, J., Bryden, H.L.: Measuring the Atlantic Meridional

Overturning Circulation at 26N, *Progress in Oceanography*, Vol. 130, January 2015: 91-111. (<https://doi.org/10.1016/j.pocean.2014.10.006>). [PDF](#).

McDonagh, E.L., King, B.A., Bryden, H.L., Courtois P., Szuts, Z., Baringer, M.O., Cunningham, S.A., Atkinson C., McCarthy G.D. Continuous Estimate of Atlantic Oceanic Freshwater Flux at 26.5N, *Journal of Climate*, Vol. 28, No. 22, November 2015: 8888-8906. (<http://dx.doi.org/10.1175/JCLI-D-14-00519.1>). [PDF](#).

Park, J. and Sweet, W.: Accelerated sea level rise and Florida Current transport, *Ocean Sci.*, 11, 607-615, doi: [10.5194/osd-12-551-2015](https://doi.org/10.5194/osd-12-551-2015)

Wanninkhof, Rik; Barbero, Leticia; Byrne, Robert; et al. Ocean acidification along the Gulf Coast and East Coast of the USA Continental Shelf Research Volume: 98 Pages: 54-71 Published: APR 15 2015. (<https://doi.org/10.1016/j.csr.2015.02.008>). [PDF](#).

2014

Bryden, H.L., King, B.A., McCarthy, G.D., McDonagh, E.L. (2014): Impact of a 30% reduction in Atlantic meridional overturning during 2009-2010, *Ocean Sci.*, 10: 683-691. (<https://doi.org/10.5194/os-10-683-2014>). [PDF](#).

Clément, L., Frajka-Williams, E., Szuts, Z.B., Cunningham, S.A. (2014): Vertical structure of eddies and Rossby waves, and their effect on the Atlantic meridional overturning circulation at 26.5°N, *J. Geophys. Res.: Oceans*, 119 (9): 6479-6498. (<https://doi.org/10.1002/2014JC010146>). [PDF](#).

Duchez, A., J. J.-M. Hirschi, S. A. Cunningham, A. T. Blaker, H. L. Bryden, B. de Cuevas, C. P. Atkinson, G. D. McCarthy, E. Frajka-Williams, D. Rayner, D. Smeed, and M. S. Mizielinski: A New Index for the Atlantic Meridional Overturning Circulation at 26N, *Journal of Climate*, Vol. 27, No. 17, September 2014: 6439-6455. (<https://doi.org/10.1175/JCLI-D-13-00052.1>). [PDF](#).

Elipot, S., Frajka-Williams, E., Hughes, C.W., Willis, J.K. (2014): The Observed North Atlantic Meridional Overturning Circulation: Its Meridional Coherence and Ocean Bottom Pressure, *J. Phys. Oceanogr.*, 44 (2): 517-537. (<https://doi.org/10.1175/JPO-D-13-026.1>). [PDF](#).

Garcia, R.F., and C.S. Meinen: Accuracy of Florida Current volume transport measurements at 27N using multiple observational techniques. *J. Atmos. Oceanic Technol.*, 31, 1169-1180. (<https://doi.org/10.1175/JTECH-D-13-00148.1>), 2014. [PDF](#).

Rousset, C., and L. M. Beal: Closing the transport budget of the Florida Straits, *Geophys. Res. Lett.*, 41, (<https://doi.org/10.1002/2014GL059498>), 2014. [PDF](#).

Smeed, D. A., McCarthy, G. D., Cunningham, S. A., Frajka-Williams, E., Rayner, D., Johns, W. E., Meinen, C. S., Baringer, M. O., Moat, B. I., Duchez, A., and Bryden, H. L.: Observed decline of the Atlantic meridional overturning circulation 2004-2012, *Ocean Sci.*, 10, 29-38, doi: [10.5194/osd-10-1619-2013](https://doi.org/10.5194/osd-10-1619-2013). 2014. [PDF](#).

Zhao, Jian, William Johns, 2014: Wind-Driven Seasonal Cycle of the Atlantic Meridional Overturning Circulation. *J. Phys. Oceanogr.*, 44, 1541-1562. (<https://doi.org/10.1175/JPO-D-13-0144.1>), 2014. [PDF](#).

2013

Cunningham, S.A., Roberts, C.D., Frajka-Williams, E., Johns, W.E., Hobbs, W., Palmer, M.D. Rayner, D., Smeed, D.A., McCarthy, G. (2013): Atlantic Meridional Overturning Circulation slowdown cooled the subtropical ocean, *GRL*, 40: 6202-6207. (<https://doi.org/10.1002/2013GL058464>). [PDF](#).

Ezer, T.: Sea level rise, spatially uneven and temporally unsteady: Why the U.S. East Coast, the global tide gauge record, and the global altimeter data show different trends, *Geophys. Res. Lett.*, Vol. 40, 5439-5444, (<https://doi.org/10.1002/2013GL057952>), 2013. [PDF](#).

Ezer, T., L. P. Atkinson, W. B. Corlett and J. L. Blanco: Gulf Stream's induced sea level rise and variability along the U.S. mid-Atlantic coast, *J. Geophys. Res.*, (<https://doi.org/10.1002/jgrc.20091>), 2013. [PDF](#).

Frajka-Williams, E., W. E. Johns, C. S. Meinen, L. M. Beal, and S. A. Cunningham: Eddy impacts on the Florida Current, *Geophys. Res. Lett.*, Vol. 40, 349-353, (<https://doi.org/10.1002/grl.50115>), 2013. [PDF](#).

Haines, K., Stepanov, V. N., Valdivieso, M. and Zuo, H. (2013): Atlantic meridional heat transports in two ocean reanalyses evaluated against the RAPID array, *GRL*, 40 (2): 343-348. (<https://doi.org/10.1029/2012GL054581>). [PDF](#).

Macdonald, A., and M. Baringer 2013. Ocean heat transport. In *Ocean Circulation and Climate: A 21st Century Perspective*, G. Siedler, S.M. Griffies, J. Gould, and J.A. Church (eds.). International Geophysics Series, Volume 103, Academic Press, 759-785. [PDF](#).

Meinen, C. S., W. E. Johns, S. L. Garzoli, E. van Sebille, D. Rayner, T. Kanzow, and M. O. Baringer, 2013. Variability of the Deep Western Boundary Current at 26.5 N during 2004-2009. *Deep-Sea Res. II*, (<https://doi.org/10.1016/j.dsr2.2012.07.036>), Jan 2013.

Mielke1, C., Frajka-Williams, E., Baehr, J. (2013): Observed and simulated variability of the AMOC at 26°N and 41°N, *GRL*, 40 (6): 1159-1164. (<https://doi.org/10.1002/grl.50233>). [PDF](#).

Mildner, T. C., C. Eden, and L. Czeschel: Revisiting the relationship between Loop Current rings and Florida Current transport variability, *J. Geophys. Res. Oceans*, 118, 6648-6657, (<https://doi.org/10.1002/2013JC009109>), 2013. [PDF](#).

Sonneveld1, M., Hirschi1, J. J.-M. Marsh, R., McDonagh, E. L., King, B. A. (2013): Atlantic meridional ocean heat transport at 26N: impact on subtropical ocean heat content variability, *Ocean Sci.*, 9: 1057-1069. doi: [10.5194/os-9-1057-2013](https://doi.org/10.5194/os-9-1057-2013)

Srokosz, M., M. Baringer, H. Bryden, S. Cunningham, T. Delworth, S. Lozier, J. Marotzke and R. Sutton, 2012. Past, present and future change in the Atlantic meridional overturning circulation. Bull. Am. Met. Soc., (<https://doi.org/10.1175/BAMS-D-11-00151.1>), Nov 2012. [PDF](#).

Szuts, Z. B., and C. S. Meinen: Salinity transport in the Florida Straits, J. Atmos. Oceanic Tech., 30, 971-983, (<https://doi.org/10.1175/JTECH-D-12-00133.1>), 2013. [PDF](#).

2012

Czeschel, L., C. Eden, and R. Greatbatch: On the driving mechanism of the annual cycle of the Florida Current transport. J. Phys. Oceanogr., 42(5), 824-839, (<https://doi.org/10.1175/JPO-D-11-0109.1>), 2012. [PDF](#).

Kourafalou, V. H., and H. Kang, 2012: Florida Current meandering and evolution of cyclonic eddies along the Florida Keys Reef Tract: Are they interconnected? Journal of Geophysical Research-Oceans, 117. (<https://doi.org/10.1029/2011JC007383>). [PDF](#).

McCarthy, G., E. Frajka-Williams, W. E. Johns, M. O. Baringer, C. S. Meinen, H. L. Bryden, D. Rayner, A. Duchez, C. Roberts, and S. A. Cunningham, 2012. Observed Interannual Variability of the Atlantic Meridional Overturning Circulation at 26.5°N. Geophysical Research Letters, 39, L19609, 12 October 2012, (<https://doi.org/10.1029/2012GL052933>), 2012. [PDF](#).

Srokosz, M., M. Baringer, H. Bryden, S. Cunningham, T. Delworth, S. Lozier, J. Marotzke and R. Sutton, 2012. Past, present and future change in the Atlantic meridional overturning circulation. Bull. Am. Met. Soc., (<https://doi.org/10.1175/BAMS-D-11-00151.1>). [PDF](#).

Stepanov, V. N., Haines, K. and Smith, G. C. (2012): Assimilation of RAPID array observations into an ocean model, Quarterly Journal of the Royal Meteorological Society. (<https://doi.org/10.1002/qj.1945>).

2011

Balan Sarojini, B., Gregory, J. M., Tailleux, R., Bigg, G. R., Blaker, A. T., Cameron, D. R., Edwards, N. R., Megann, A. P., Shaffrey, L. C., and Sinha, B. (2011): High frequency variability of the Atlantic meridional overturning circulation, Ocean Sci., 7: 471-486. DOI: [10.5194/osd-8-219-2011](https://doi.org/10.5194/osd-8-219-2011)

Johns, W.E., Baringer, M.O., Beal, L.M., Cunningham, S.A., Kanzow, T., Bryden, H.L., Hirschi, J., Marotzke, J., Meinen, C., Shaw, B., Curry, R. Continuous, array-based estimates of Atlantic Ocean heat transport at 26.5° N. J. Clim., 24(10):2429-2449. (<https://doi.org/10.1175/2010JCLI3997.1>). [PDF](#).

Longworth, H.R., H.L. Bryden, and M.O. Baringer: Historical variability in Atlantic meridional baroclinic transport at 26.5N from boundary dynamic height observations. Deep-Sea Research, Part II, 58(17-18):1754-1767, (<https://doi.org/10.1016/j.dsr2.2010.10.057>), 2011. [PDF](#).

Meinen, C. S., William E. Johns, Silvia L. Garzoli, Erik van Sebille, Darren Rayner, Torsten Kanzow, and Molly O. Baringer, 2011. Variability of the Deep Western Boundary Current at 26.5 N during 2004-2009. *Deep-Sea Res. II*, (<https://doi.org/10.1016/j.dsr2.2012.07.036>).

Rayner, D., J. J.-M. Hirschi, T. Kanzow, W. E. Johns, S. A. Cuningham, P. G. Wright, E. Frajka-Williams, H. L. Bryden, C. S. Meinen, M. O. Baringer, J. Marotzke and L. M. Beal, 2011. Monitoring the Atlantic Meridional Overturning Circulation, *Deep-Sea Res., Part II, Topical Studies in Oceanography*, Volume 58;1744-1753, ISSN 0967-0645, (<https://doi.org/10.1016/j.dsr2.2010.10.056>). [PDF](#).

Rousset, C., and L. M. Beal, 2011: On the seasonal variability of the currents in the Straits of Florida and Yucatan Channel. *Journal of Geophysical Research-Oceans*, 116. (<https://doi.org/10.1029/2010JC006679>). [PDF](#).

Van Sebille, Erik, Molly O. Baringer, William E. Johns, Christopher S. Meinen, Lisa M. Beal, M. Femke de Jong, and Hendrik M. van Aken, 2011. Propagation pathways of classical Labrador Sea Water from its source region to 26deg N, *Journal of Geophysical Research Oceans*, 116, C12027, (<https://doi.org/10.1029/2011JC007171>). [PDF](#).

2010

Atkinson, C., Bryden, H. L., Hirschi, J. J.-M., and Kanzow, T.: On the seasonal cycles and variability of Florida Straits, Ekman and Sverdrup transports at 26N in the Atlantic Ocean, *Ocean Sci.*, 6, 837-859, (<https://doi.org/10.5194/os-6-837-2010>), 2010. [PDF](#).

Atkinson, C.P., Bryden, H.L., Hirschi, J.J.-M. and Kanzow, T. (2010): On the variability of Florida Straits and wind driven transports at 26°N in the Atlantic Ocean, *Ocean Science Discussions*, 7, (2): 919-971. doi: 10.5194/osd-7-919-2010. [PDF](#).

Baehr, J., "Influence of the 26N RAPID-MOCHA Array and Florida Current Cable Observations on the ECCO-GODAE State Estimate", *J. Phys. Oceanogr.*, 40(5), 865-879, (<https://doi.org/10.1175/2009JPO4118.1>), 2010. [PDF](#).

Baehr, J., Cunningham, S., Haak, H., Heimbach, P., Kanzow, T. and Marotzke, J. (2010): Corrigendum to 'Observed and simulated estimates of the meridional overturning circulation at 26.5N in the Atlantic' published in *Ocean Sci.*, 5, 575-589, 2009, *Ocean Science*, 6 (1): p1. (<https://doi.org/10.5194/os-6-1-2010>).

Cunningham, S., M. Baringer, W. Johns, J. Toole, S. Osterhaus, J. Fischer, A. Piola, E. McDonagah, S. Lozier, U. Send, T. Kanzow, J. Marotzke, M. Rhein, S. Garzoli, S. Rintoul, S. Speich, S. Wijffels, L. Talley, J. Baehr, C. Meinen, A-M. Treguier and P. Lhernminier, 2010. The present and future system for measuring the Atlantic meridional overturning circulation and heat transport, In *OceanObs'09: Sustained Ocean Observations and Information for Society* (Volume 2), J. Hall, D.E. Harrison, and D. Stammer (eds.). European Space Agency Publication, WPP-306, 16 pp. (2010). DOI: [10.5270/OceanObs09.cwp.21](https://doi.org/10.5270/OceanObs09.cwp.21). [PDF](#).

Cunningham, S. A., Marsh, R. (2010): Observing and modelling changes in the Atlantic MOC, Wiley Interdisciplinary Reviews: Climate Change, 1 (2): 180-191. (<https://doi.org/10.1002/wcc.22>). [PDF](#).

Kanzow, T., S. A. Cunningham, W. E. Johns, J. J-M. Hirschi, J. Marotzke, M.O. Baringer, C.S. Meinen, M. P. Chidichimo, C. Atkinson, L. M. Beal, H. L. Bryden, and J. Collins, "Seasonal variability of the Atlantic meridional overturning circulation at 26.5N", J. Clim., (<https://doi.org/10.1175/2010JCLI3389.1>), 2010. [PDF](#).

Meinen, C. S., M.O. Baringer, and R. F. Garcia, "Florida Current Transport Variability: An Analysis of Annual and Longer-Period Signals", Deep Sea Research I, 57, 835-846, (<https://doi.org/10.1016/j.dsr.2010.04.001>), 2010. [PDF](#).

Smith, G. C., Haines, K., Kanzow, T., Cunningham, S. A. (2010): Impact of hydrographic data assimilation on the modelled Atlantic meridional overturning circulation, Ocean Science, 6: 761-774. DOI: [10.5194/osd-6-2667-2009](https://doi.org/10.5194/osd-6-2667-2009). 2010.

Sturges, W., Hoffmann, N. G., Leben, R. R., "A Trigger Mechanism for Loop Current Ring Separations", J. Phys. Oceanogr., 40(5), 900-913, (<https://doi.org/10.1175/2009JPO4245.1>), 2010. [PDF](#).

2009

Baehr, J., Cunningham, S. A., Haak, H., Heimbach, P., Kanzow, T. and Marotzke, J. (2009): Observed and simulated estimates of the meridional overturning circulation at 26.5°N in the Atlantic, Ocean Science, 5: 575-589. DOI: [10.5194/osd-6-1333-2009](https://doi.org/10.5194/osd-6-1333-2009)

Bingham, R. J., Hughes, C. W. (2009): Signature of the Atlantic meridional overturning circulation in sea level along the east coast of North America, Geophysical Research Letters, 36: L02603. (<https://doi.org/10.1029/2008GL036215>), 2009. [PDF](#).

Bryden, H. L., Mujahid, A., Cunningham, S. A. and Kanzow, T. (2009): Adjustment of the Basin-Scale Circulation at 26°N to Variations in Gulf Stream, Deep Western Boundary Current and Ekman Transports as observed by the Rapid Array, Ocean Science, 5: 421-433. DOI: [10.5194/osd-6-871-2009](https://doi.org/10.5194/osd-6-871-2009)

DiNezio, P. N., L. J. Gramer, W. E. Johns, C.S. Meinen, and M.O. Baringer, "Observed Interannual Variability of the Florida Current: Wind Forcing and the North Atlantic Oscillation", J. Phys. Oceanogr., 39(3), 721-736, (<https://doi.org/10.1175/2008JPO4001.1>), 2009. [PDF](#).

Kanzow, T., H. L. Johnsons, D. P. Marshall, S.A. Cunningham, J. J-M. Hirschi, A. Mujahid, H. L. Bryden, and W. E. Johns, "Basinwide Integrated Volume Transports in an Eddy-Filled Ocean", J. Phys. Oceanogr., 39(12), 3091-3110, (<https://doi.org/10.1175/2009JPO4185.1>), 2009. [PDF](#).

Peng, G., Z. Garra, G. R. Halliwell, O. M. Smedstad, C.S. Meinen, V. Kourafalou, and P. Hogan, "Temporal variability of the Florida Current transport at 27N", in "Ocean Circulation and El

Nino: New Research", J.A. Long and D.S. Wells (ed.), Nova Science Publishers, New York, 119-137, 2009. [PDF](#).

2008

Beal, L. M., J. M. Hummon, E. Williams, O. B. Brown, W. Baringer, and E. J. Kearns, "Five years of Florida Current structure and transport from the Royal Caribbean Cruise Ship Explorer of the Seas", J. Geophys. Res., 113, C06001, (<https://doi.org/10.1029/2007JC004154>), 2008. [PDF](#).

Johns, W.E., L.M. Beal, M.O. Baringer, J.R. Molina, S.A. Cunningham, T. Kanzow, and D. Rayner, 2008: Variability of Shallow and Deep Western Boundary Currents off the Bahamas during 2004-05: Results from the 26°N RAPID-MOC Array. J. Phys. Oceanogr., 38, 605-623. (<https://doi.org/10.1175/2007JPO3791.1>). [PDF](#).

Kanzow T., J. J-M. Hirschi, C.S. Meinen, D. Rayner, S. A. Cunningham, J. Marotzke, W. E. Johns, H. L. Bryden, L. M. Beal, and M.O. Baringer, "A prototype system for observing the Atlantic Meridional Overturning Circulation - scientific basis, measurement and risk mitigation strategies, and first results", Journal of Operational Oceanography, 1 (1), 19-28, 2008. (<https://doi.org/10.1080/1755876X.2008.11020092>). [PDF](#).

2007

Beal L., Williams E., Hummon J., Brown O., Kearus E., Baringer, W. (2007): Five years of Florida Current Structure and Transport measured from the Royal Caribbean Cruise ship Explorer of the Seas, Journal of Geophysical Research, 113: C06001. (<https://doi.org/10.1029/2007JC004154>). [PDF](#).

Cunningham, S. A., T. Kanzow, D. Rayner, M.O. Baringer, W. E. Johns, J. Marotzke, H. R. Longworth, E. M. Grant, J. J-M. Hirschi, L. M. Beal, C.S. Meinen, and H. L. Bryden, "Temporal Variability of the Atlantic Meridional Overturning Circulation at 26.5N", Science, 317, 935. DOI: 10.1126/science.1141304, 2007. [PDF](#).

Kanzow, T., S. A. Cunningham, D. Rayner, J. J-M. Hirschi, W. E. Johns, M.O. Baringer, H. L. Bryden, L. M. Beal, C.S. Meinen, and J. Marotzke, "Observed flow compensation associated with the Meridional Overturning at 26.5N in the Atlantic", Science, 317, 938. DOI: 10.1126/science.1141293, 2007. [PDF](#).

2006

Meinen, C.S., M.O. Baringer, and S.L. Garzoli., 2006: Variability in Deep Western Boundary Current transports: Preliminary results from 26.5°N in the Atlantic. Geophys. Res. Letters, 33: p. (<https://doi.org/10.1029/2006GL026965>). [PDF](#).

Mourre, B., L. Crosnier, and C. Le Provost, "Real-time sea level gauge observations and operational oceanography", Philosophical Transactions of the Royal Society of London, 364(1841), 867-884, 2006. (<https://doi.org/10.1098/rsta.2006.1743>). [PDF](#).

2005

Bryden H.L., Johns W.E. and Saunders P.M., 2005: Deep Western Boundary Current East of Abaco: Mean structure and transport, *J. Mar. Research*, 63: p. 35-57. (<https://doi.org/10.1357/0022240053693806>).

Bryden H.L., Longworth H.R. and Cunningham S.A., 2005: Slowing of the Atlantic Overturning Circulation at 25°N. *Nature*, 438, pp 655-657. DOI: [10.1038/nature04385](https://doi.org/10.1038/nature04385)

Johns W.E., Kanzow T. and Zantopp R., 2005: Estimating ocean transports with dynamic height moorings: An application in the Atlantic Deep Western Boundary Current. *Deep Sea Research*, 52(8): p. 1542-1567. (<https://doi.org/10.1016/j.dsr.2005.02.002>).

Mooers, C.N.K., C.S. Meinen, M.O. Baringer, I. Bang, R. Rhodes, C.N. Barron, and F. Bub (2005): Cross-Validation of Ocean Prediction and Monitoring Systems, *EOS*, 86(29), 269,272-273. [PDF](#).

Shoosmith D. R., M.O. Baringer, W. E. Johns, "A continuous record of Florida Current temperature transport at 27N", *Geophys. Res. Lett.*, 32, L23603,,DOI: [10.1029/2005GL024075](https://doi.org/10.1029/2005GL024075), 2005. [PDF](#).

2004

Hansell, D.A., H.W. Ducklow, A.M. Macdonald, and M.O. Baringer (2004): Metabolic poise in the North Atlantic Ocean diagnosed from organic matter transports. *Limnology and Oceanography*, 49(4):1084-1094. (<https://doi.org/10.4319/lo.2004.49.4.1084>). [PDF](#).

Meinen, C.S., S.L. Garzoli, W.E. Johns, and M.O. Baringer (2004): Transport variability of the Deep Western Boundary Current and the Antilles Current off Abaco Island, Bahamas. *Deep-Sea Research, Part I*, 51(11):1397-1415. (<https://doi.org/10.1016/j.dsr.2004.07.007>). [PDF](#).

2003

Macdonald, A.M., M.O. Baringer, R. Wanninkhof, K. Lee, and D.W.R. Wallace (2003): A 1998-1992 comparison of inorganic carbon and its transport across 24.5°N in the Atlantic. *Deep-Sea Research, Part II*, 50(22-26):3041-3064. (<https://doi.org/10.1016/j.dsr2.2003.07.009>).

Molinari, R.L., R. Lusic, S.L. Garzoli, M.O. Baringer, and G.J. Goni (2002): Benchmarks for Atlantic Ocean circulation. *CLIVAR Exchanges*, 7(3/4):6-9

2001

Baringer, M.O. and J.C. Larsen (2001): Sixteen Years of Florida Current Transport at 27°N. *Geophysical Research Letters*, 28(16), 3,179-3,182. (<https://doi.org/10.1029/2001GL013246>). [PDF](#).

Macdonald, A. M., M. O. Baringer and A. Ganachaud, 2001. Heat Transport and Climate. *Encyclopedia of Ocean Sciences*, J H Steele, S A Thorpe and K K Turekian (eds), London, UK, Academic Press, 2, 1195--1206.

1999

Baringer, M.O., and R.L. Molinari (1999): Atlantic Ocean baroclinic heat flux at 24-26°N. *Geophysical Research Letters*, 26(3):353-356. (<https://doi.org/10.1029/1998GL900323>). [PDF](#).

Johns, E., W.D. Wilson, and R.L. Molinari. Direct observations of velocity and transport in the passages between the Intra-Americas Sea and the Atlantic Ocean, 1984-1996. *Journal of Geophysical Research*, 104(C11):25,805-25,820, (<https://doi.org/10.1029/1999JC900235>), 1999. [PDF](#).

1998

Molinari, R.L., R.A. Fine, W.D. Wilson, R.G. Curry, J. Abell, and M.S. McCartney. The arrival of recently formed Labrador Sea Water in the Deep Western Boundary Current at 26.5°N. *Geophysical Research Letters*, 25(13):2249-2252, (<https://doi.org/10.1029/98GL01853>), 1998. [PDF](#).

1997

Fillenbaum, E.R., T.N. Lee, W.E. Johns and R.J. Zantopp, 1997: Meridional heat transport variability at 26.5°N in the North Atlantic. *J. Phys. Oceanog.*, 27(1), 153-174. ([https://doi.org/10.1175/1520-0485\(1997\)027<0153:MHTVAN>2.0.CO;2](https://doi.org/10.1175/1520-0485(1997)027<0153:MHTVAN>2.0.CO;2)). [PDF](#).

Johns, E., R.A. Fine, and R.L. Molinari. Deep flow along the western boundary south of the Blake Bahama Outer Ridge. *Journal of Physical Oceanography*, 27(10):2187-2208, ([https://doi.org/10.1175/1520-0485\(1997\)027<2187:DFATWB>2.0.CO;2](https://doi.org/10.1175/1520-0485(1997)027<2187:DFATWB>2.0.CO;2)). [PDF](#).

Johns, W.E., T.N. Lee, R.J. Zantopp and E. Fillenbaum, 1997: Updated transatlantic heat flux at 26.5°N. *International WOCE Newsletter*, 27, 15-22.

Vaughan, S.L., and R.L. Molinari. Temperature and salinity variability in the Deep Western Boundary Current. *Journal of Physical Oceanography*, 27(5):749-761, ([https://doi.org/10.1175/1520-0485\(1997\)027<0749:TASVIT>2.0.CO;2](https://doi.org/10.1175/1520-0485(1997)027<0749:TASVIT>2.0.CO;2)).

1996

Hacker, P., E. Firing, W.D. Wilson, and R.L. Molinari. Direct observations of the current structure east of the Bahamas. *Geophysical Research Letters*, 23(10):1127-1130, (<https://doi.org/10.1029/96GL01031>), 1990.

Lee, T.N., W.E. Johns, R.J. Zantopp and E.R. Fillenbaum, 1996: Moored observations of Western Boundary Current variability and thermocline circulation at 26.5°N in the subtropical North Atlantic. *J. Phys. Oceanog.*, 26(6), 962-983. ([https://doi.org/10.1175/1520-0485\(1996\)026<0962:MOOWBC>2.0.CO;2](https://doi.org/10.1175/1520-0485(1996)026<0962:MOOWBC>2.0.CO;2)). [PDF](#).

1992

Larsen, J. C. Transport and heat flux of the Florida Current at 27N derived from cross-stream voltages and profiling data: theory and observation, Philosophical Transactions of the Royal Society of London, 338, 169-236, 1992. [PDF](#).

Molinari, R.L., R.A. Fine, and E. Johns. The Deep Western Boundary Current in the tropical North Atlantic Ocean. Deep-Sea Research, Part I, 39(11-12):1967-1984, ([https://doi.org/10.1016/0198-0149\(92\)90008-H](https://doi.org/10.1016/0198-0149(92)90008-H)), 1992.

1990

Molinari, R.L., E. Johns, and J.F. Festa. The annual cycle of meridional heat flux in the Atlantic Ocean at 26.5°N. Journal of Physical Oceanography, 20(3):476-482, ([https://doi.org/10.1175/1520-0485\(1990\)020<0476:TACOMH>2.0.CO;2](https://doi.org/10.1175/1520-0485(1990)020<0476:TACOMH>2.0.CO;2)), 1990. [PDF](#).

Roemmich, D., and B. Cornuelle, 1990: OBSERVING THE FLUCTUATIONS OF GYRE-SCALE OCEAN CIRCULATION - A STUDY OF THE SUBTROPICAL SOUTH-PACIFIC. Journal of Physical Oceanography, 20, 1919-1934. ([https://doi.org/10.1175/1520-0485\(1990\)020<1919:OTFOGS>2.0.CO;2](https://doi.org/10.1175/1520-0485(1990)020<1919:OTFOGS>2.0.CO;2)). [PDF](#).

1989

Molinari, R.L. Subtropical Atlantic Climate Studies (STACS): An update. Oceanography, 2(2):32-35, (<https://doi.org/10.5670/oceanog.1989.08>). [PDF](#).

Rosenfeld, L.K., R.L. Molinari, and K.D. Leaman. Observed and modeled annual cycle of transport in the Straits of Florida and east of Abaco Island, the Bahamas (26.5°N). Journal of Geophysical Research, 94(C4):4867-4878, (<https://doi.org/10.1029/JC094iC04p04867>).

1988

Fine, R.A., and R.L. Molinari. A continuous deep western boundary current between Abaco (26.5°N) and Barbados (13°N). Deep-Sea Research, Part A, 35(9):1441-1450, ([https://doi.org/10.1016/0198-0149\(88\)90096-9](https://doi.org/10.1016/0198-0149(88)90096-9)).

Molinari, R.L., and K.D. Leaman. Variability of Gulf Stream surface currents in the Straits of Florida. Mariners Weather Log, 31(3):10-13, 1988

1987

Leaman, K.D., and R.L. Molinari. Topographic modification of the Florida Current by Little Bahama and Great Bahama Banks. Journal of Physical Oceanography, 17(10):1724-1736, ([https://doi.org/10.1175/1520-0485\(1987\)017<1724:TMOTFC>2.0.CO;2](https://doi.org/10.1175/1520-0485(1987)017<1724:TMOTFC>2.0.CO;2)), 1987. [PDF](#).

Leaman, K.D., R.L. Molinari, and P.S. Vertes. Structure and variability of the Florida Current at 27°N: April 1982-July 1984. Journal of Physical Oceanography, 17(5):565-583, ([https://doi.org/10.1175/1520-0485\(1987\)017<0565:SAVOTF>2.0.CO;2](https://doi.org/10.1175/1520-0485(1987)017<0565:SAVOTF>2.0.CO;2)), 1987. [PDF](#).

1986

Molinari, R.L. Subtropical Atlantic Climate Studies (STACS) revisited. EOS, Transactions, American Geophysical Union, 67(5):59-60, (<https://doi.org/10.1029/EO067i005p00059>).

1985

Larsen, J. C., and T. B. Sanford, Florida Current volume transports from voltage measurements, Science, 227, 302-304, 1985. doi: [10.1126/science.227.4684.302](https://doi.org/10.1126/science.227.4684.302)

Lee, T. N., F. Schott, and R. Zantopp, Florida Current: Low-frequency variability of the Florida Current as observed with moored current meter stations during April 1982-June 1983, Science, 227, 298-301, 1985. doi: [10.1126/science.227.4684.298](https://doi.org/10.1126/science.227.4684.298)

Maul, G. A., F. Chew, M. Bushnell and D. Mayer, Sea level variation as an indicator of Florida Current volume transport: Comparisons with direct measurements, Science, 227, 304-307, 1985. doi: [10.1126/science.227.4684.304](https://doi.org/10.1126/science.227.4684.304)

Molinari, R.L., G.A. Maul, F. Chew, W.D. Wilson, M.H. Bushnell, D.A. Mayer, K. Leaman, F. Schott, T. Lee, R. Zantopp, J.C. Larsen, and T.B. Sanford. Subtropical Atlantic Climate Studies: Introduction. Science, 227(4684):292-295, doi:10.1126/science.227.4684.292

Molinari, R.L., W.D. Wilson, and K. Leaman. Volume and heat transports of the Florida Current: April 1982 through August 1983. Science, 227(4684):295-297, Vol. 227, Issue 4684, pp. 295-297, doi: [10.1126/science.227.4684.295](https://doi.org/10.1126/science.227.4684.295)

Schott, F., and R. Zantopp, Florida Current: Seasonal and interannual variability, Science, 227, 308-311, 1985. doi: [10.1126/science.227.4684.308](https://doi.org/10.1126/science.227.4684.308)

1984

Goncharov, A. P., and Y. A. Ivanov, 1984: VARIABILITY IN TIME OF AVAILABLE POTENTIAL-ENERGY IN THE POLYMODE AREA FROM THE XBT-SURVEYS. Okeanologiya, 24, 20-24.

Olson, D. B., F. A. Schott, R. J. Zantopp, and K. D. Leaman, 1984: THE MEAN CIRCULATION EAST OF THE BAHAMAS AS DETERMINED FROM A RECENT MEASUREMENT PROGRAM AND HISTORICAL XBT DATA. Journal of Physical Oceanography, 14, 1470-1487. ([https://doi.org/10.1175/1520-0485\(1984\)014<1470:TMCEOT>2.0.CO;2](https://doi.org/10.1175/1520-0485(1984)014<1470:TMCEOT>2.0.CO;2)). PDF.

1982

Sanford, T. B., Temperature transport and motional induction in the Florida Current, Journal of Marine Research, 621-639, 1982. PDF.