University of Miami
Curriculum Vitae

1. November 12, 2021

PERSONAL

2. Name: Shane Elipot
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5. Home Address: 1045 Lenox Ave, Apt 10, Miami Beach, FL 33139
6. Current Academic Rank: Research Assistant Professor
7. Primary Department: Ocean Sciences (OCE), Rosenstiel School of Marine and Atmospheric Science
8. Secondary or Joint Appointments: NA
9. Citizenship: US citizen
10. Visa Type: NA

HIGHER EDUCATION

11. Institutional:
    - Scripps Institution of Oceanography, University of California, San Diego, La Jolla, California, USA; Ph.D., Oceanography; 2006.
    - Université de Bretagne Occidentale, Brest, France; Master of Advanced Studies (*Diplôme d'Études Approfondies*) in Meteorology, Oceanology and Environment; 2001.
    - ENSTA Bretagne, graduate school in electrical and mechanical engineering, Brest, France; Master (*Diplôme d'Ingénieur*), Oceanography and Hydrography; 2001
    - Lycée Henri Poincaré, Nancy, France; Undergraduate preparation in advanced mathematics, physics and chemistry for the competition entrance examination to French graduate engineering schools; 1998.
12. Non-Institutional: NA
13. Certification, licensure: NA

EXPERIENCE:

14. Academic:
    - University of Miami, Rosenstiel School of Marine and Atmospheric Science; Research Assistant Professor; since August 2019.
    - Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA; Research Associate; since October 2016.

- University of Miami, Rosenstiel School of Marine and Atmospheric Science; Associate Scientist; April 2014 - July 2019.
- University of Miami, Rosenstiel School of Marine and Atmospheric Science; Assistant Scientist; April 2013 – March 2014.
- National Oceanography Centre, Natural Environment Research Council, Liverpool, UK; Physical Oceanographer; 2009-2013
- University of Liverpool, School of Environmental Sciences, Liverpool, UK; Honorary Research Fellow; 2009-2013.
- Cooperative Institute for Marine and Atmospheric Studies, University of Miami, Miami, Florida, USA; Postdoctoral Associate; 2008.
- Atlantic Oceanographic and Meteorological Laboratory, Miami, FL, USA; National Research Council Postdoctoral Research Fellow; 2007.

15. Non-Academic: NA.
16. Military: NA.

PUBLICATIONS:

17. Books and monographs published: NA.
18. Juried or refereed journal articles and exhibitions:
    - 28. Jonathan M. Lilly and Elipot, S. (2021), *A Unifying Perspective on Transfer Function Solutions to the Unsteady Ekman Problem*, Fluids, 6(2), 85, dpoi:10.3390/fluids6020085.
    - 27. Erik van Sebille, Erik Zettler, Nicolas Wienders, Linda Amaral-Zettler, Shane Elipot, and Rick Lumpkin (2021), *Dispersion of surface drifters in the Tropical Atlantic*, Frontiers in Marine Science, 7, doi:10.3389/fmars.2020.607426.
    - 26. Edward Zaron and Elipot, S. (2021), *An Assessment of Global Ocean Barotropic Tide Models Using Geodetic Mission Altimetry and Surface Drifters*, Journal of Physical Oceanography, doi:10.1175/JPO-D-20-0089.1.
    - 25. Elipot, S**.** (2020), *Measuring global mean sea level changes with surface drifting buoys*, Geophysical Research Letters, 47, e2020GL091078, doi:10.1029/2020GL091078.
    - 24**.** Kathryn L. Gunn, Lisa M. Beal, Shane Elipot, K. McMonigal, and Adam Houk (2020), *Mixing of Subtropical, Central and Intermediate Waters Driven by Shifting and Pulsing of the Agulhas Current*, Journal of Physical Oceanography, doi:10.1175/JPO-D-20-0093.1.
    - 23. K. McMonigal, Lisa M. Beal, Shane Elipot, and Kathryn L. Gunn (2020), *The Impact of Meanders, Deepening and Broadening, and Seasonality on Agulhas Current Temperature Variability*, Journal of Physical Oceanography, doi:10.1175/JPO-D-20-0018.1
    - 22. Yu, X. A. L. Ponte, S. Elipot, D. Menemenlis, E. D. Zaron, R. Abernathey (2019), Surface kinetic energy distributions in the global oceans from a high-resolution

numerical model and surface drifter observations, Geophys. Res. Lett., in press, doi:10.1029/2019GL083074.

- 21. Frajka-Williams, E. [. . .], Elipot, S., [. . .] (2019), Atlantic Meridional Overturning Circulation: Observed Transport and Variability, Front. Mar. Sci., 6:260. doi:10.3389/fmars.2019.00260.
- 20. Howe, B. M., [...], Elipot, S., [...] (2019), SMART Cables for Observing the Global Ocean: Science and Implementation, Front. Mar. Sci., 6:424, doi:10.3389/fmars.2019.00424.
- 19. Vermeulen E., B. Backeberg, J. Hermes, and S. Elipot (2019), Investigating the relation- ship between volume transport and sea surface height in a numerical ocean model, Ocean Sci., 15, 513-526, doi:10.5194/os-15-513-2019.
- 18. L'Hégaret, P., L. M. Beal, S. Elipot, and L. Laurindo (2018), Shallow cross-equatorial gyres of the Indian Ocean driven by seasonally reversing monsoon winds, J. Geophys. Res.- Oceans, 123, doi:10.1029/2018JC014553.
- 17. Elipot, S., and L. M. Beal (2018), Observed Agulhas Current sensitivity to interannual and long-term trend atmospheric forcings, J. Clim., 31, 3077-3098, doi: 10.1175/JCLI-D-17- 0597.1. This publication is a Research Highlights item for the March 2018 issue of Nature Climate Change.
- 16. Elipot, S., E. Frajka-Williams, C. Hughes, S. Olhede, and M. Lankhorst (2017), Observed basin-scale response of the Atlantic Meridional Overturning Circulation to wind stress forcing, J. Climate, 30, 2029-2054, doi:10.1175/JCLI-D-16-0664.1.
- 15. Beal, L. M., and S. Elipot (2016), Broadening not strengthening of the Agulhas Current since the 1990s, Nature, 540, 570–573, doi:10.1038/nature19853.
- 14. Leber, G. M, L. M. Beal, and S. Elipot (2016), Wind and current forcing combine to drive strong upwelling in the Agulhas Current, J. Phys. Oceanogr., 47, 123-134, doi:10.1175/JPO-D- 16-0079.1.
- 13. Elipot, S., R. Lumpkin, R. C. Perez, J. M. Lilly, J. J. Early, A. M. Sykulski (2016), A global surface drifter dataset at hourly resolution, J. Geophys. Res. Oceans, 121, doi: 10.1002/2016JC011716
- 12. Elipot, S., and L. M. Beal (2015), Characteristics, Energetics, and Origins of Agulhas Current Meanders and their Limited Influence on Ring Shedding, J. Phys. Oceanogr., 45, 2294–2314, doi:10.1175/JPO-D-14-0254.1
- 11. Beal, L. M., S. Elipot, A. Houk, and G. Leber (2015), Capturing the Transport Variability of a Western Boundary Jet: Results from the Agulhas Current Time-series experiment (ACT), J. Phys. Oceanogr., 45, 1302-1324 doi:10.1175/JPO-D-14-0119.1
- 10. Elipot, S., E. Frajka-Williams, C. Hughes, and J. Willis (2014), The Observed North At- lantic Meridional Overturning Circulation, its Meridional Coherence and Ocean Bottom Pres- sure, J. Phys. Oceanogr., 44, 517-537, doi:10.1175/JPO-D-13-026.1
- 9. Polton, J., Y.-D. Lenn, S. Elipot, T. K. Chereskin, and J. Sprintall (2013), Can Drake Passage observations match Ekman's classic theory? J. Phys. Oceanogr., 43, 1733-1740, doi:10.1175/JPO-D-13-034.1

- 8. Elipot, S., C. Hughes, S. Olhede, and J. Toole (2013), Coherence of western boundary pressure at the RAPID WAVE array: boundary wave adjustements or deep western boundary current advection?, J. Phys. Oceanogr., 43, 744-765, doi:10.1175/JPO-D-12-067.1
- 7. Hughes, C., S. Elipot, M.A. Morales Maqueda, and J. Loder (2013) Test of a Method for Monitoring the Geostrophic Meridional Overturning Circulation Using Only Boundary Mea- surements, J. Atmosph. Ocean. Techn., 30,789–809, doi:10.1175/JTECH-D-12-00149.1
- 6. Lumpkin, R., and S. Elipot, (2010), Surface Drifter Pair Spreading in the North Atlantic, J. Geophys. Res. Oceans, 115, C12017, doi:10.1029/2010JC006338.
- 5. Elipot, S., R. Lumpkin, and G. A. Prieto (2010), Modification of inertial oscillations by the mesoscale eddy field, J. Geophys. Res. Oceans, 115, C09010, doi:10.1029/2009JC005679.
- 4. Elipot, S., and S. T. Gille (2009), Estimates of wind energy input to the Ekman layer in the Southern Ocean from surface drifter data, J. Geophys. Res. Oceans, 114, C06003, doi:10.1029/2008JC-005170.
- 3. Elipot, S., and S. T. Gille (2009), Ekman layers in the Southern Ocean: spectral models and observations, vertical viscosity and boundary layer depth, Ocean Sci., 5, 115-139, doi:10.5194/os- 5-115-2009.
- 2. Elipot, S., and R. Lumpkin (2008), Spectral description of oceanic near-surface variability, Geophys. Res. Lett., 35, L05606, doi:10.1029/2007GL032589.
- 1. Beal, L. M. , T. K. Chereskin, Y.-D. Lenn , and S. Elipot (2006), The sources and mixing characteristics of the Agulhas Current, J. Phys. Oceanogr., 36, 2060-2074, doi:10.1175/JPO2964.1.

19. Other works, publications and abstracts:

- Elipot, S. and Wenegrat, J., (2021) Vertical structure of near-surface currents – Importance, state of knowledge, and measurement challenges, in Drushka, K. and Bourassa, M. (Eds.). (2021), New frontiers for ocean surface currents. Variations, 19, 44 pp., doi:10.5065/ybca-0s03.
- Nielsen-Gammon, J., K. A. Reed, S. Elipot, and M. Patterson, (2021), Research Challenge on Climate at the Coasts: US CLIVAR Report, 2021-2, 20pp, doi:10.5065/0g4s-5w68.
- Elipot, S., Centurioni, L., Haines, B. J., Lumpkin, R., Willis, J. K. (2021), Measuring Global-Mean Sea-Level Rise With Surface Drifting Buoys, Marine Technology Society Journal, Volume 55, Number 3, May/June 2021, pp. 66-67(2), doi:10.4031/MTSJ.55.3.12.
- MacKinnon, J.A., and co-authors, (2010), Using global arrays to investigate internal-waves and mixing, in Proceedings of the OceanObs09: 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.

- Elipot, S. (2006), Spectral characterization of Ekman velocities in the Southern Ocean based on surface drifter trajectories, Ph.D. dissertation, University of California, San Diego.
- Shane Elipot, Luca Centurioni, Bruce Haines, Rick Lumpkin, and Josh Willis, (2021) *Measuring Global-Mean Sea-Level Rise With Surface Drifting Buoys*, *Ocean Decade: U.S. Launch Meeting*, NASEM.
- Elipot S. (2019), Measuring global mean sea level with surface drifters, OceanObs19, Sept. 2019.
- Elipot S. and J. M. Lilly (2018), Global Observational constraints to wind forcing, AGU Fall meeting, Dec. 2018.
- Elipot S. and L. M. Beal (2017), Observed Agulhas Current sensitivity to interannual climate forcings, keynote presentation, IAPSO General Assembly, Cape Town, South Africa, Aug. 2017.
- Elipot S., R. Lumpkin, R. C. Perez, J. M. Lilly, J. J. Early, A. M. Sykulski (2016), A new global surface drifter dataset at hourly resolution, AGU Ocean Sciences meeting, New Orleans, USA., Feb. 2016.
- Elipot S., R. Lumpkin, R. C. Perez, J. M. Lilly, A. M. Sykulski (2016), A new hourly global surface drifter dataset: methods and applications, 2015 Lagrangian Analysis and Prediction of Coastal and Ocean Dynamics (LAPCOD), Winter Harbor, USA., Jul. 2015.
- Elipot, S., Lisa M. Beal, Origins and impacts of mesoscale meanders in the Agulhas Current, AGU Fall meeting, San Francisco, USA., Dec. 2014.
- Elipot, S., Lisa M. Beal, Adam Houk, Two-dimensional structure and transport of the Agulhas Current during the Agulhas Current Time-series experiment (ACT), AGU Ocean, Sciences meeting, Honolulu, USA., Feb. 2014.
- Elipot, S., E. Frajka-Williams, C. Hughes, S. Olhede, M. Lankhorst, Basin-wide response of
- the North Atlantic Meridional Overturning Circulation to wind stress forcing, North Atlantic Climate Variability International Joint Conference EU-THOR, Hamburg, Germany, Sept. 2012.
- Elipot, S., E. Frajka-Williams, C. Hughes, S. Olhede, M. Lankhorst, Basin-wide response of the North Atlantic Meridional Overturning Circulation to wind stress forcing, EGU General Assembly, Vienna, Austria, Apr. 2012.
- Elipot, S., E. Frajka-Williams, and C. W. Hughes and co-authors: Observations of the latitudinal coherence of the Atlantic Meridional Overturning Circulation from deep moored arrays, IUGG General Assembly, Melbourne, Australia, Jul. 2011.
- Elipot, S., E. Frajka-Williams, and C. W. Hughes and co-authors: Observed latitudinal co- herence of the North Atlantic Meridional Overturning Circulation, EGU General Assembly, Vienna, Austria, Apr. 2011.
- Elipot, S., C. W. Hughes, M. A. M. Maqueda, and R. Williams: Meridional transport estimates from the Rapid WAVE array, Challenger Society meeting, Southampton, U.K., Sep. 2010.

- Elipot, S., C. W. Hughes, and M. A. M. Maqueda: Meridional transport estimates from the Rapid WAVE array, US AMOC annual meeting, Miami, USA, Jun. 2010.
- Elipot, S., R. Lumpkin, and G. Prieto: Inertial Oscillations Modification by Mesoscale Vorticity, invited talk, AGU Ocean Sciences meeting, Portland, USA., Feb. 2010.
- Elipot, S. and R. Lumpkin: Global observations of inertial waves from Lagrangian drifters, Ocean Sciences meeting, Orlando, Florida, Mar. 2008.
- Elipot, S., S. Gille and R. Lumpkin: Polarizations of the oceanic surface flow, International Union of Geodesy and Geophysics XXIV General Assembly, Perugia, Italy, Jul. 2007.
- Elipot, S. and S. Gille: Wind energy input and vertical viscosity in the Southern Ocean, AGU Ocean Sciences meeting, Honolulu, Hawaii, Feb. 2006.
- Elipot, S.: How to obtain estimates of vertical viscosity from surface drifter data, Physical Oceanography Dissertation Symposium IV, Honolulu, Hawaii, Oct. 2006.
- Elipot, S. and S. Gille: Evidence of frequency dependent Ekman currents from drifters in the Southern Ocean, Ocean Sciences meeting, Portland, Oregon, Jan. 2004.
- Elipot, S. and S. Gille: Spectral response of the Southern Surface Circulation to Wind, Invited student to WOCE and Beyond Conference, San Antonio, Texas, Nov 2002.

PROFESSIONAL

20. Funded Research Performed (last 5 years):
    - National Science Foundation Physical Oceanography Program Award, 10/01/2021 to 09/30/2027*, Collaborative Research: FOCUS: Florida Current and Sea Level*. Lead PI Lisa Beal (RSMAS), co-PI Shane Elipot (RSMAS) and Christopher Piecuch (WHOI), $3,277,722.
    - National Science Foundation EarthCube Program Award, 09/01/2021 to 08/31/2024, *EarthCube Capabilities: CloudDrift: a platform for accelerating research with Lagrangian climate data*. Lead PI Shane Elipot (RSMAS), $476,876.
    - Jet Propulsion Laboratory, research contract, current 2020/2021. Measuring mean sea level with surface drifting buoys, $135,859, lead PI S. Elipot with duties of managing the project and analyzing sea level data.
    - National Science Foundation Physical Oceanography Program Award, current 2019/2022. Mapping the Kinematics and Dynamics of Tidal Ocean Currents with Surface Drifters, $335,520, co-PIs Edward Zaron (PSU) and Rick Lumpkin (NOAA/AOML), lead PI S. Elipot with duties of managing the project and analyzing of Lagrangian and numerical data.
    - Cooperative Institute for Marine and Atmospheric Science (NOAA/UM) 2018/2019. Hourly drifter sea surface temperature, $35,481, lead PI S. Elipot with duties of managing the project and leading all scientific investigations.

- National Science Foundation Physical Oceanography Program Award, current 2015/2020. Agulhas System Climate Array, $2,480,730 budget for 5-year project, lead principal investigator L. Beal, co-PI S. Elipot with duties including but not limited to scientific investigations, co-supervising of University of Miami and South African students, operations at sea, instrumentations, and contributing to capacity building/teaching program.
- National Science Foundation Physical Oceanography Program Award, 2015/2019. Global Observational Constraints on Oceanic Response to Wind Forcing, $275,880 budget for 3-year project, co-PIs J. Lilly (NWRA), R. Harcourt (UW/APL), lead PI S. Elipot with duties of managing the project and analyzing of Lagrangian, Eulerian and numerical data.
- Office of Naval Research DRI, Northern Arabian Sea Circulation - autonomous research (NASCar); Rectified circulation of the Arabian Sea and its Seasonal Internal Wave Field, Current 2015/2019, Lead PI Lisa Beal, research staff S. Elipot with duties including scientific investigations and co-advising of postdoctoral researcher.
- Cooperative Institute for Marine and Atmospheric Science (NOAA/UM) 2015/2018. High-frequency variability of near-surface oceanic velocity from surface drifters, lead PI S. Elipot with duties of managing the project and leading all scientific investigations.

21. Editorial responsibilities: NA
22. Professional and Honorary Organizations:
    - Member of the *American Geophysical Union.*
23. Honors and Awards: NA
24. Post-Doctoral Fellowships: National Research Council Postdoctoral Research Fellow; 2007
25. Other Professional Activities:
    - Co-chair Oceanobs'19 breakout session on *Ocean Uncertainty Quantification*, Honolulu, Hawaii, USA, 2019.
    - Co-Convener, AGU Ocean Sciences meeting 2010, session entitled *Patchy Mixing and the geography of the Ocean's energy cascade.*
    - Co-Convener, AGU Ocean Sciences meeting 2014, session entitled *Frontiers of oceanographic data and methods.*

TEACHING

26. Teaching Awards Received: NA.
27. Teaching Specialization: NA.
28. Thesis and Dissertation Advising/Post-doctoral student supervision:
    - Ph.D. committee member, University of Miami; *Estimating a time series of South Indian Ocean heat transport*; Kay McMonigal; 2020.

- Co-advisor of a Masters candidate at the University of Cape Town, South Africa; *Investigating the relationship between volume transport and sea surface height in the Agulhas Current System*; Estee Vermeulen; 2017.

SERVICE

29. University Committee and Administrative Responsibilities: NA.
30. Community Activities:
    - Co-chair (2020-2021) of Phenomena, Observations, and Synthesis panel of U.S. Climate Variability and Predictability Program (CLIVAR), 2017-2022.
    - Co-chair (2020-2023) of U.S. Climate Variability and Predictability Program (CLIVAR) Working Group on Ocean Uncertainty Quantification.