Shane Elipot

Contact Information

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Research Interests

Atmosphere-ocean interactions and energy pathways, ocean surface boundary layer, dynamics of the meridional overturning circulation, Agulhas Current System, Oceanic observations, time series analysis, covariance analysis.

Professional Appointments

- **The Rosenstiel School of Marine and Atmospheric Science**, **University of Miami**, Miami, USA
  Associate Scientist, since April 2014; Assistant Scientist, April 2013 - March 2014.
- **National Oceanography Centre**, Natural Environment Research Council, Liverpool, UK
  Physical Oceanographer, 2009–2012.
- **University of Liverpool**, School of Environmental Sciences, Liverpool, UK
  Honorary Research Fellow, 2009–2012.
- **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

Education

- **Scripps Institution of Oceanography**, **University of California, San Diego**, La Jolla, California, USA.
  Ph.D., Oceanography, December 2006, supervisor Prof Sarah Gille.
- **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*), 2001, Oceanography and Hydrography.
- **Lycée Henri Poincaré**, Nancy, France.
  Undergraduate preparation in advanced mathematics, physics and chemistry for the competition entrance examination to French graduate engineering schools, 1995-1998.

Visiting Appointments

- Invited visiting scientist at NorthWest Research Associates, Redmond, Washington, USA, February 2011 (visit funded by NSF as an international collaborator).
- Invited visiting scientist at Atlantic Oceanographic and Meteorological Laboratory, Miami, Florida, USA, January 2011.
- Visiting scientist at Scripps Institution of Oceanography, University of California, San Diego, La Jolla, California, USA, March to June 2001.
- Visiting scientist at Institute of Arctic and Alpine Research, University of Colorado, Boulder, Colorado, USA, June to August 2000.

Grants and grant writing

- National Science Foundation Physical Oceanography Program Award, Current 2015/2018. *Global Observational Constraints on Oceanic Response to Wind Forcing*, $275,880 budget for 3-year project, lead PI S. Elipot, co-PIs J. Lilly (NWRA), R. Harcourt (UW/APL).
- 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.
- Cooperative Institute for Marine and Atmospheric Science (NOAA/UM) Current. *High-frequency variability of near-surface oceanic velocity from surface drifters*, 2-month project for 2015/2016, lead principal investigator S. Elipot.
- National Science Foundation Physical Oceanography Program Award, 2010/2014, *Global Impact of Eddies on Inertial Oscillations of the Mixed Layer*,lead principal investigator Dr. J. M. Lilly, NWRA, collaborator S. Elipot.
- U.S. National Research Council Postdoctoral Research Award. *What is the polarization of ocean currents?* 2007, tenure at NOAA/AOML.

Teaching experience

- Guest lecture on *Forcing of the Ocean* for graduate course *Introduction to Physical Oceanography* at UM/RSMAS, September 2014.
- Guest lecture on *Eigen mode analyses* for graduate course *Applied Data Analysis* at UM/RSMAS, March 2014.
- Guest lecturer for Natural Environment Research Council Earth System Science Spring School, Scarborough, UK, Apr. 2010. Lecture title: *Global Ocean Circulation: observations and models.*
- Guest lecturer for Semester at Sea leg from Salvador, Brazil to Walvis Bay, Namibia, Sep. 2008. Lectures: *Climate studies*,*Ocean currents*, *Oceanographic research aboard the MV Explorer.*

Synergistic Activities

- Co-advisor of a Masters candidate at the University of Cape Town, South Africa.
- External examiner for Ph.D. thesis awarded at the University of Tasmania, Hobart.
- 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.*
- Member of the *American Geophysical Union.*
- Reviewer for *J. of Physical Oceanography, J. of Geophysical Research, J. of Marine Research, Geophysical Research Letters.*
- Reviewer for American National Science Foundation.

Sea Experience:

- April 2016: Oceanographic mooring deployment coordination, CTD operations, *RV Algoa*, Agulhas System Climate Array cruise 2016, Indian Ocean, 14 days, Chief Scientist: Prof. Lisa Beal.
- Feb. 2012: CTD watch, *Ronald H. Brown*, Western Boundary Time Series cruise, North Atlantic, 20 days, Chief Scientist: Dr. Molly Baringer.
- May 2009 : Microstructure profiler operation, *RV Prince Madog*, PHiXT cruise, Irish Sea, 6 days, Chief Scientist: Dr. Matthew Palmer.
- Sep. 2008 : Semester at Sea leg from Salvador, Brazil to Walvis Bay, Namibia, *MV Explorer*, Argo floats deployments and educational activities, 7 days.
- Feb.-Mar. 2004 : CTD watch and satellite data analyses, *ARSV Laurence M. Gould*, Blue Water Zone cruise, Southern Drake Passage, 40 days, Chief Scientist: Dr. Greg Mitchell.
- Feb.-Mar. 2003 : LADCP/CTD watch, *R/V Melville*, AUCE cruise: Agulhas Current, 30 days, Chief Scientist: Dr. Lisa Beal.

- Jun.-Aug. 1999 : Scientific assistant, *R/V Marion Dufresne*, *IMAGES* V paleoceanographic campaign, legs 2 & 3 Québec-Reykjavik-Tromsø, 42 days.

Invited Talks

- *Basin-wide response of the North Atlantic Meridional Overturning Circulation to wind stress forcing*, AOML, Miami, USA, Sept. 2012.
- *What is the link between measurements of the Atlantic Meridional Overturning Circulation at 4 different latitudes?*, School of Ocean Sciences, Bangor University, UK, Nov. 2011.
- *Estimation and dynamics of the North Atlantic meridional overturning circulation from the Rapid-WAVE array*, University of East Anglia, Norwich, U.K., Jul. 2010.
- *Inertial Oscillations Modification by Mesoscale Vorticity*, IFREMER, Brest, France, Dec. 2009.
- *The transfer function for wind-driven oceanic currents*, Capstone Conference Mini-Symposium on Lagrangian Structure, Lagrangian Data, Warwick University, U.K., Jul. 2009.
- *Ekman velocities and vertical viscosities from surface drifter data in the Southern Ocean*, LOCEAN, Paris, France, Dec. 2006.
- *Wind energy input into Ekman motions in the Southern Ocean*, CISECE, Ensenada, Mexico, Jul. 2005

Publications

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*, JGR-Oceans, 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., 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 Atlantic Meridional Overturning Circulation, its Meridional Coherence and Ocean Bottom Pressure*, 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 Measurements*, 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., 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., 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., 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.

Other publications:

a. MacKinnon, J.A., Alford, M., Bouruet-Aubertot, P., Bindoff, N., **Elipot, S.**, Gille, S., Girton, J., Gregg, M.C., Hallberg, R., Kunze, E., Naveira Garabato, A., Phillips, H., Pinkel, R., Polzin, K., Sanford, T., Simmons, H., and Speer, K., (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.

b. **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.

Selected Abstracts

- **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.**, 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 coherence 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.

References

- Prof. Lisa Beal, The Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, FL, 33149, U.S.A.
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- Prof. Chris Hughes, National Oceanography Centre, 6 Brownlow Street, L35DA, Liverpool, U.K.
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- Dr. Rick Lumpkin, NOAA/AOML, 4301 Rickenbacker Causeway, Miami, FL, 33149, U.S.A.,
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- Prof. Sarah Gille, UCSD/SIO, 9500 Gilman Drive, La Jolla, CA, 92093, U.S.A.,
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