Raffaele Ferrari

Cecil and Ida Green Professor of Physical Oceanography
Director of the MIT Program in Atmospheres, Ocean and Climate

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Degrees

2000	PhD in Oceanography, Scripps Institution of Oceanography
1999	PhD in Fluid Dynamics, Politecnico di Torino
1994	MS and BS in Physics, Università di Torino

Employment

2009–present	Full Professor, Massachusetts Institute of Technology
2006–2009	Associate Professor, Massachusetts Institute of Technology
2002–2006	Assistant Professor, Massachusetts Institute of Technology
2000-2002	Postdoctoral Scholar, Woods Hole Oceanographic Institution
1995–2000	Graduate Research Assistant, Scripps Institution of Oceanography
1994–1999	Visiting Scholar, Politecnico di Torino

Honors

Cody Award, Scripps Institution of Oceanography, 2016
Cecil and Ida Green Chair, MIT, 2016-present
Moore Distinguished Scholar, Caltech, 2013
Breene M. Kerr Chair, MIT, 2011-2016
Editors Citation for Excellence in Refereeing, Geophysical Research Letters, 2010
Cecil and Ida Green Chair, MIT, 2007-2011
Nicholas P. Fofonoff Award, American Meteorological Society, 2007
Killian and Lee Scholar Award, MIT, 2004
Victor P. Starr Career Development Chair, MIT, 2003
Woods Hole Postdoctoral Scholarship, Woods Hole Oceanographic Institution, 2000
Woods Hole Geophysical Fluid Dynamics Fellowship, Woods Hole Oceanographic Institution, 1999
Fulbright Fellowship, U.S. Department of State, 1995

Undergraduate Students Supervised

Solomon Hsiang, Valerie Wong, Amitra Masurkar, Erin Munsell, Elizabeth Maroon, Todd Mooring
Freshmen advisor, 2009-2010, 2015-1216, 2016-2017, 2017-2018, 2018-2019

Master and PhD Students Supervised

Maxim Nikurashin	2002-2008, PhD Thesis: "Radiation and Generation of Internal Waves Generated by Geostrophic Motions Impinging on Small-scale Topography," now Lecturer at the University of Tasmania, Australia
Jessica Benthuysen	2004-2006, master student, now Associate Investigator at the University of Tasmania, Australia
Malte Jansen	2007-2012, PhD Thesis: "Macroturbulent Equilibration of the Extratropical Atmosphere," now Assistant Professor at the University of Chicago
Sophia Merrifield	2010-2015, master student, now Postdoctoral Fellow at Scripps Institution of Oceanography, La Jolla
Jörn Callies	2011-2015, PhD Thesis: "Submesoscale turbulence in the upper ocean", now Assistant Professor, Caltech
Marianna Linz	2012-2013, master student, now postdoc at UCLA
Maike Sonnewald	2014 (three months), visiting PhD student from University of Southampton, UK
Luca Filippi	2015 (three months), visiting Ph.D. student from University of Torino, Italy
Oceane Richet	2015 (four months), visiting Ph.D. student from Ecole Doctorale de L'Ecole Polytechnique, France
Madeleine Youngs	2015-present, Ph.D student, NDSEG Fellowship
Henri Drake	2016-present, Ph.D student, NSF Fellowship

Postdoctoral Researchers Supervised

Giulio Boccaletti	2003-2005, Global Managing Director for Water, The Nature Conservancy, New York
Ivana Cerovecki	2004-2005, Project Scientist at the Scripps Institution of Oceanography, La Jolla
Baylor Fox-Kemper	2004-2007, Professor, Brown University, Providence
Yu Zhang	2009-2010, Associate Professor, Ocean University of China, Qingdao, China
John Taylor	2008-2011, Reader, University of Cambridge, Cambridge, UK
Andreas Klocker	2009-2011, ARC Fellow, University of Tasmania, Hobart, Australia
Louis-Philippe Nadeau	2013-2014, Assistant Professor, Université du Qubec Rimouski, Canada
Alexandre Mignot	2012-2016, Postdoctoral Fellow, Laboratoire D'Océanographie de Villefranche, France
Alireza Mashayek	2013-2016, Assistant Professor, Imperial College, London, UK
Jörn Callies	2015-2017, Assistant Professor, Caltech
Kelly Ogden	2017-2018, Assistant Professor, University of Ontario Institute of Technology, Canada
Gregory Wagner	2016-present, CliMA Postdoctoral Fellow
Andre Souza	2019-present, CliMA Postdoctoral Fellow

Recent Academic Service

Chair of the EAPS Committee on Computing
Chair of the Computing in Earth, Atmospheric, and Planetary Sciences PhD degree program
Director of the Program in Atmospheres, Oceans and Climate, 2012-present
Chair of the Houghton Fund Committee, 2012-present
Served on the PhD thesis committees of Ryan Abernathey, Daniel Amrhein, Cael Barry, Jessica Benthuysen, Sophie Clayton, Rebecca Dell, Daniel Enderton, Thomas Farrar, Ian Fenty, Gregory Gerbi, Hristina Hristova, Jason Hyatt, Gualtiero Spiro Jaeger, Brian Kaiser, Shin Kida, Kelly Klima, Matthew Mazloff, Sophia Merrifield, Andrew Mosdale, David Stuebe, Cimarron Wortham, Shaoyu Yuan, Yu Zhang

Recent External Service

Organizer of the Bottom Boundary Layer Workshop held at MIT in December 2018
Member of the Academic Review Panel for the Schmidt Science Fellows Program
Editor for the Annual Reviews of Marine Sciences
Member of the NASA Science Team for the Surface Water Ocean Topography Mission
Keynote speaker at the KAVLI Program on Boundary Layer Turbulence in Santa Barbara, May 2018
Reviewer for the National Academy of Sciences, the National Science Foundation and the journals Chaos, Deep Sea Research, Geophysical Research Letters, Journal of Climate, Journal of Geophysical Research, Journal of Fluid Mechanics, Journal of Marine Research, Journal of Physical Oceanography, Journal of the Atmospheric Sciences, Ocean Modeling, Nature, Nature Communications and Science

Graduate and Postgraduate Advisors

Postgraduate Advisor: Joseph Pedlosky, Woods Hole Oceanographic Institution
Graduate Advisor: Daniel L. Rudnick and William R. Young, Scripps Institution of Oceanography

Publications

Refereed Journals

92. Wagner, G. L., G. Flierl, R. Ferrari, G. Voet, G. Carter, M. Alford, J. Girton, Squeeze dispersion: modulation of diapycnal mixing by diapycnal strain, *Geophys. Res. Lett.*, under review

91. Nadeau, L. P., R. Ferrari, and M. Jansen, Antarctic sea ice control on the depth of North Atlantic Deep Water, *J. Climate*, under review, 2018.

90. McDougall, T. J., and R. Ferrari, Reply to "Comment on 'Abyssal Upwelling and Downwelling Driven by Near-Boundary Mixing"', **48**, 749–753, 2018.

89. Wunsch, C. and R. Ferrari, 100 Years of the Ocean General Circulation, *Meteorological Monographs*, **59**, 7.1-7.32, 2018.

88. Omta, A. W., R. Ferrari, and D. McGee, An analytical framework for the impact of carbonate compensation on atmospheric CO_2, *Global Geochemical Cycles*, **32**, 720-735, 2018.

87. Callies, J., and R. Ferrari, Dynamics of an abyssal circulation driven by bottom-intensified mixing on slopes, *J. Phys. Oceanogr.*, **48**, 1257-1282, 2018.

86. Mignot, A., R. Ferrari, and H. Claustre, Floats with bio-optical sensors reveal what processes trigger the North Atlantic Bloom, *Nature Comm.*, **9**, 190, 2018.

85. Callies, J., and R. Ferrari, Note on the rate of restratification in the baroclinic spindown of Fronts, *J. Phys. Oceanogr.*, **48**, 1543-1553, 2018.

84. Callies, J., and R. Ferrari, Baroclinic instability in the presence of convection, *J. Phys. Oceanogr.*, **48**, 45-60, 2018.

83. R. Ferrari, R., L.-P. Nadeau, D. Marshall, and L. Allison, A model of the ocean overturning circulation with two closed basins and a reentrant channel, *J. Phys. Oceanogr.*, **47**, 2887-2906, 2017.

82. B. B. Cael, and R. Ferrari, The ocean's saltiness and its overturning, *Geophys. Res. Lett.*, **44**, 1886–1891, 2017.

81. Mashayek, A., H. Salehipour, D. Bouffard, C. P. Caulfield, R. Ferrari, M. Nikurashin, W. R. Peltier, and W. D. Smyth, Efficiency of turbulent mixing in the abyssal ocean circulation, *Geophys. Res. Lett.*, **44**, 6296–6306, 2017.

80. Mashayek, A., R. Ferrari, S. Merrifield, J. Ledwell, L. St. Laurent, and A. Naveira Garabato, Topographic enhancement of vertical turbulent mixing in the Southern Ocean, *Nature Comm.*, **8**, 1–12, 2017.

79. McDougall, T., and R. Ferrari, Abyssal upwelling and downwelling driven by near–boundary mixing, *J. Phys. Oceanogr.*, **47**, 261–283,, 2017.

78. Callies, J., O. Bühler, and R. Ferrari, The dynamics of mesoscale winds in the upper troposphere and lower stratosphere, *J. Atmos. Sci.*, **73**, 4853–4872, 2016.

77. Balwada, D., K.G. Speer, J.H. LaCasce, W.Brechner Owens, J. Marshall, and R. Ferrari, Circulation and Stirring in the Southeast Pacific Ocean and the Scotia Sea Sectors of the Antarctic Circumpolar Current, *J. Phys. Oceanogr.*, **46**, 2005–2027, 2016.

76. Mignot, A., R. Ferrari, and K. A. Mork, Spring bloom onset in the Nordic Seas, *Biogeosciences*, **13**, 1–18, 2016.

75. Ferrari, R., A. Mashayek, T. McDougall, M. Nikurashin, and J. M. Campin, Turning ocean mixing upside down, *J. Phys. Oceanogr.*, **46**, 2239–2261, 2016.

74. Callies, J., G. Flierl, R. Ferrari, B. Fox-Kemper, The role of mixed layer instabilities in submesoscale turbulence, *J. Fluid Mech.*, **788**, 5–41, 2016.

73. Naveira-Garabato, A., C., K. L. Polzin, R. Ferrari, J. D. Zika, A. Forryan, A microscale view of mixing and overturning across the Antarctic Circumpolar Current, *J. Phys. Oceanogr.*, **46**, 233–254, 2016.

72. Burke, A., A. L. Stewart, J. F. Adkins, R. M. Ferrari, M. F. Jansen, and A. F. Thompson, The glacial mid-depth radiocarbon bulge and its implications for the overturning circulation, *Paleoceanogr.*, **30**, 1021–1039, 2015.

71. Mashayek, A., R. Ferrari, M. Nikurashin, and W. R. Peltier, Influence of enhanced abyssal diapycnal mixing on stratification and the ocean overturning circulation, *J. Phys. Oceanogr.*, **45**, 2580–2597, 2015.

70. Shcherbina A. Y., and the Latmix group, The LatMix Summer Campaign: Submesoscale Stirring in the Upper Ocean, *Bull. Am. Meteor. Soc.*, **96**, 1257–1279, 2015.

69. Nadeau, L.-P., and R. Ferrari, The role of closed gyres in setting the zonal transport of the Antarctic Circumpolar Current, *J. Phys. Oceanogr.*, **45**, 1491–1509, 2015.

68. Callies, J., R. Ferrari, J. Klymak, and J. Gula, Seasonality in submesoscale turbulence, *Nature Comm.*, **6**, doi: 10.1038/ncomms7862, 2015.

67. Kunze, E., J. M. Klymak, R.-C. Lien, R. Ferrari, C. M. Lee and L. Goodman, Submesoscale Water-Mass Spectra in the Sargasso Sea, *J. Phys. Oceanogr.*, **45**, 1325–1338, 2015.

66. Jansen, M. and R. Ferrari, Diagnosing the vertical structure of the eddy diffusivity in real and idealized atmospheres, *Quart. J. R. Met. Soc.*, **141**, 631–641, 2015.

65. Ferrari, R., S. Merrifield and J. Taylor, Shutdown of convection triggers increase of surface chlorophyll, *J. Marine Systems*, **147**, 116–122, 2015.

64. Nikurashin, M., R. Ferrari, N. Grisouard and K. Polzin, The impact of finite amplitude bottom topography on internal wave generation in the Southern Ocean, *J. Phys. Oceanogr.*, **44**, 2938–2950, 2014.

63. Ferrari, R., What goes down must come up, *Nature*, **513**, 179–180, 2014.

62. Callies, J., R. Ferrari, and O. Bühler, Transition from geostrophic turbulence to inertia-gravity waves in the atmospheric energy spectrum, *Proc. Nat. Acad. Sciences*, **11**, 17033–17038, 2014.

61. Bühler, O., J. Callies and R. Ferrari, Wave-vortex decomposition of one-dimensional ship track data, *J. Fluid Mech.*, **756**, 1007–1026, 2014.

60. Tulloch, R., R. Ferrari, O. Jahn, A. Klocker, J. LaCasce, J. Ledwell, J. Marshall, M.-J. Messias, K. Sperr, and A. Watson, Direct estimate of lateral eddy diffusivity upstream of Drake Passage, *J. Phys. Oceanogr.*, **44**, 2593–2616, 2014.

59. Ferrari, R., M. Jansen, J. Adkins, A. Burke, A. Stewart and A. Thompson, Antarctic sea ice control on ocean circulation in present and glacial climates, *Proc. Nat. Acad. Sciences*, **111**, 8753–8758, 2014.

58. Bates, M., R. Tulloch, J. Marshall and R. Ferrari, Rationalizing the spatial distribution of mesoscale eddy diffusivity in terms of mixing length theory, *J. Phys. Oceanogr.*, **44**, 1523–1540, 2014.

57. Stewart, A. L., Ferrari, R., A. F. Thompson, On the Importance of Surface Forcing in Conceptual Models of the Deep Ocean, *J. Phys. Oceanogr.*, **44**, 891–899, 2014.

56. LaCasce, J., R. Ferrari, R. Tulloch, D. Balwada, and K. Speer, Float-derived isopycnal diffusivities in the DIMES experiment, *J. Phys. Oceanogr.*, **44**, 764–780, 2014.

55. Callies, J. and R. Ferrari, Interpreting energy and tracer spectra of submesoscale turbulence, *J. Phys. Oceanogr.*, **43**, 2456-2474, 2013.

54. Mashayek, A., R. Ferrari, G. Vettoretti and W. R. Peltier, The role of the geothermal heat flux in driving the abyssal ocean circulation, *Geophys. Res. Lett.*, **40**, 3144–3149, 2013.

53. Jansen, M. and R. Ferrari, Equilibration of an Atmosphere by Adiabatic Eddy Fluxes, *J. Atmos. Sci.*, **70**, 2948–2962, 2013.

52. Nikurashin, M. and R. Ferrari, Overturning circulation driven by breaking internal waves in the deep ocean, *Geophys. Res. Lett.*, **12**, 3133–3137, 2013.

51. Thomas, L., J. Taylor, R. Ferrari, and T. Joyce, Symmetric Instability in the Gulf Stream, *Deep-Sea Res.*, **91**, 96–110, 2013.

50. Mazloff, M. R., R. Ferrari and T. Schneider, The force balance of the Southern Ocean meridional overturning circulation, *J. Phys. Oceanogr.*, **43**, 1193–1208, 2013.

49. Jansen, M. and R. Ferrari, The Vertical Structure of the Eddy Diffusivity and the Equilibration of the Extra-Tropical Atmosphere, *J. Atmos. Sci.*, **70**, 1456–1469, 2013.

48. Haney, S., S. Bachman, B. Cooper, S. Kupper, K. McCaffrey, L. Van Roekel, S. Stevenson. B. Fox-Kemper and R. Ferrari, Hurricane wake restratification rates of 1, 2 and 3-dimensional processes, *J. Mar. Res.*, **70**, 824–850, 2012.

47. Klocher A., R. Ferrari, and J. LaCasce, Estimating suppression of eddy mixing by mean flows, *J. Phys. Oceanogr.*, **42**, 1566–1576, 2012.

46. Klocher A., R. Ferrari, J. LaCasce and S. Merrifield, Reconciling float-based and tracer-based estimates of eddy diffusivities, *J. Mar. Res.*, **70**, 569–602, 2012.

45. Lévy, M., R. Ferrari, P. Franks, A. Martin and P. Riviére, Bringing physics to life at the submesoscale, *Geophys. Res. Lett.*, **39**, L14602, 2012.

44. Jansen, M. and R. Ferrari, Macroturbulent Equilibration in a Thermally Forced Primitive Equation System, *J. Atmos. Sci.*, **69**, 695–713, 2012.

43. Taylor, J., and R. Ferrari, The role of density fronts in the onset of phytoplankton blooms, *Geophys. Res. Lett.*, **38**, L23601, 2011.

42. Taylor, J., and R. Ferrari, A shutdown of turbulent convection can trigger the spring phytoplankton bloom, *Limnology & Oceanography*, **56**, 2293–2307, 2011.

41. Naveira-Garabato, A., R. Ferrari, and K. Polzin, Eddy Mixing in the Southern Ocean, *J. Geophys. Res.*, **116**, C09019, 2011.

40. Ferrari, R., Oceanic fronts: a challenge for climate models, *Science*, **332**, 316–317, 2011.

39. Nikurashin, M., and R. Ferrari: Global energy conversion from geostrophic flow into internal lee waves in the deep ocean, *Geophys. Res. Lett.*, **38**, L08610, 2011.

38. Fox-Kemper, B.,, G. Danabasoglu, R. Ferrari, S. M. Griffies, R. W. Hallberg, M. M. Holland, M. E. Maltrud, S. Peacock and B. L. Samuels, Parameterization of Mixed Layer Eddies. III: Implementation and Impact in Global Ocean Climate Simulations, *Ocean Modelling*, **39**, 61–78, 2011.

37. Ferrari, R. and D. Ferreira, What processes drive the ocean heat transport?, *Ocean Modelling*, **38**, 171–186, 2011.

36. Lund, D., J. Adkins and R. Ferrari: Abyssal Atlantic Circulation during the Last Glacial Maximum, *Paloeoceanography*, **26**, PA1213, 2011.

35. Holmes-Cefron, M., O. Buhler, and R. Ferrari, Particle dispersion by random waves in the rotating Boussinesq system, *J. Fluid Mech.*, **670**, 150–175, 2011.

34. Taylor, J., and R. Ferrari, Buoyancy and wind-driven convection at mixed layer density fronts, *J. Phys. Oceanogr.*, **40**, 1222–1242, 2010.

33. Ferrari, R. and M. Nikurashin, Suppression of eddy mixing across jets in the Southern Ocean, *J. Phys. Oceanogr.*, **40**, 1501–1519, 2010.

32. Nikurashin, M., and R. Ferrari, Radiation and dissipation of internal waves generated by geostrophic motions impinging on small-scale topography: Application to the Southern Ocean, *J. Phys. Oceanogr.*, **40**, 2025–2042, 2010.

31. Nikurashin, M., and R. Ferrari, Radiation and dissipation of internal waves generated by geostrophic motions impinging on small-scale topography: Theory, *J. Phys. Oceanogr.*, **40**, 1055–1074, 2010.

30. Jansen, M., R. Ferrari, and T. Mooring, The effect of the seasonal cycle on heat anomalies generated in the wake of tropical cyclones, *Geophys. Res. Lett.*, **37**, L03602, 2010.

29. Ferrari, R., S. M. Griffies, and G. K. Vallis, A Boundary Value Problem for the Parameterized Mesoscale Eddy Transport, *Ocean Modelling*, **32**,143–156, 2010.

28. Ferrari, R., and C. Wunsch, The distribution of eddy kinetic and potential energies in the global ocean, *Tellus A*, **62**, 92–108, 2010.

27. Mahadevan, A., A. Tandon, and R. Ferrari, Rapid Restratification of the Mixed Layer by Submesoscale Eddies in the presence of Wind, *J. Geophys. Res.*, **115**, C03017, 2010.

26. Marshall, J. and the CLIMODE group, Observing the cycle of convection and restratification over the Gulf Stream System and the subtropical gyre of the North Atlantic ocean: preliminary results from the CLIMODE campaign, *Bull. Am. Meteor. Soc.*, **90**, 1337–1350, 2009.

25. Fox-Kemper, B. and R. Ferrari, An Edifying Parsons Model, *J. Phys. Oceanogr.*, **39**, 3216–3227, 2009.

24. Smith, S., and R. Ferrari, Production of compensated T-S variance by mesoscale stirring in the NATRE region, *J. Phys. Oceanogr.*, **39**, 2477–2501, 2009.

23. Jansen, M., and R. Ferrari, The latitudinal distribution of tropical cyclones and ocean heat transport, *Geophys. Res. Lett.*, **36**, L06604, 2009.

22. Taylor, J., and R. Ferrari, The role of secondary shear instabilities in the equilibration of symmetric instability, *J. Fluid Mech.*, **622**, 103–113, 2009.

21. Ferrari, R. and C. Wunsch, Ocean Circulation Kinetic Energy–Reservoirs, Sources and Sinks, *Ann. Rev. Fuid Mech.*, **41**, 253–282, 2009.

20. Thomas, L. and R. Ferrari, Friction, frontogenesis, frontal instabilities and the stratification of the ocean surface mixed layer, *J. Phys. Oceanogr.*, **38**, 2501–2518, 2008.

19. Fox-Kemper, B., R. Ferrari, and R. W. Hallberg, Parameterization of Mixed Layer Eddies. I: Theory and Diagnosis, *J. Phys. Oceanogr.*, **38**, 1145–1165, 2008.

18. Fox-Kemper, B. , and R. Ferrari, Parameterization of Mixed Layer Eddies. II: Prognosis and Impact. *J. Phys. Oceanogr.*, **38**, 1166–1179, 2008.

17. Ferrari, R., J. C. McWilliams, V. Canuto, and D. Dubovikov, Parameterization of eddy fluxes at the ocean boundaries, *J. Climate*, **31**, 2770–2789, 2008.

16. Danabasoglu G., R. Ferrari and J. C. McWilliams, Sensitivity of an Ocean General Circulation Model to a Parameterization of Near-Surface Eddy Fluxes, *J. Climate*, **21**, 1192–1208, 2008.

15. Boccaletti G., R. Ferrari, and B. Fox-Kemper, Mixed Layer Instabilities and Restratification, *J. Phys. Oceanogr.*, **37**, 2228–2250, 2007.

14. Ferrari, R., and K. L. Polzin, Temperature and salinity finestructure in NATRE, *J. Phys. Oceanogr.*, **35**, 1437–1454, 2005.

13. Boccaletti G., R. Ferrari, D. Ferreira, A. Adcroft, and J. Marshall, The vertical structure of the oceanic heat transport, *Geophys. Res. Lett.*, **32**, L10603, 1–4, 2005.

12. Jochum M., R. Murtugudde, R. Ferrari, and P. Rizzoli, The impact of horizontal resolution on the equatorial mixed layer heat budget in ocean general circulation models, *J. Climate*, **18**, 841–851, 2005.

11. Plumb, R., and R. Ferrari, Transformed Eulerian-mean theory. I: Non-quasigeostrophic theory for eddies on a zonal mean flow, *J. Phys. Oceanogr.*, **35**, 165–174, 2005.

10. Ferrari, R., and G. Boccaletti, Eddy Mixed-Layer Interaction in the Ocean, *Oceanography*, **17**, 12–21, 2004.

9. Wunsch, C., and R. Ferrari, Vertical Mixing, Energy, and the General Circulation of the Oceans, *Ann. Rev. Fluid Mech.*, **36**, 281–314, 2004.

8. Polzin, K. L., and R. Ferrari, Lateral dispersion in NATRE, *J. Phys. Oceanogr.*, **34**, 247–257, 2004.

7. Ferrari, R. and F. Paparella, Thermohaline alignment and compensation in the ocean mixed layer, *J. Phys. Oceanogr.*, **33**, 2214–2223, 2003.

6. Fox-Kemper, B., R. Ferrari, and J. Pedlosky, A Note on Determination of Rotational and Divergent Eddy Fluxes, *J. Phys. Oceanogr.*, **16**, 875–881, 2003.

5. Ferrari, R., and P. Cessi, Seasonal synchronization in a chaotic ocean–atmosphere model, *J. Climate*, **33**, 478–483, 2003.

4. Ferrari, R., A. J. Manfroi, and W. R. Young, Weakly and strongly self-similar diffusion, *Physica D*, **154**, 111–137, 2001.

3. Ferrari, R., and Rudnick, D.L., Thermohaline structure of the upper ocean, *J. Geophys. Res.*, **105**, 16857–16883, 2000.

2. Rudnick, D.L., and R. Ferrari, Compensation of horizontal temperature and salinity gradients in the ocean mixed layer, *Science*, **283**, 526–529, 1999.

1. Ferrari, R., and W. R. Young, On the development of thermohaline correlations as a result of nonlinear diffusive parameterizations, *J. Mar. Res.*, **55**, 1069–1101, 1997.

Non-Refereed Journals

15. Scott, R.B., M. Bourassa, D. Chelton, P. Cipollini, R. Ferrari, L.L. Fu, B. Galperin, S. Gille, H.-P. Huang, P. Klein, N. Maximenko, R. Morrow, B. Qiu, E. Rodriguez, D. Stammer, R. Tailleux, C. Wunsch (2010): Integrating satellite altimetry and key observations: what weve learned, and whats possible with new technologies, in Proceedings of the "OceanObs09: 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.

14. Fu, L.-L., and R. Ferrari, Observing oceanic submesoscale processes from space, *EOS*, **89**, 2008.

13. Fox-Kemper, B., G. Danabasoglu, R. Ferrari, and R. W. Hallberg, Parameterizing Submesoscale Physics in Global Climate Models, *CLIVAR Exchanges*, **13**, 3–5, 2008.

12. Ferrari, R., Statistics of dispersion in flows with coherent structures, *Proceedings of the 'Aha Huliko'a Winter Workshop*, Honolulu, Hawaii, 2007.

11. Ferrari, A., and R. Ferrari, Il mutamento climatico: fatti e miti, Quaderni - Mercoled dell'Accademia XI, Accademia delle Scienze di Torino, **13**, 25–46, 2006.

10. Ferrari, R., The US CPT Clivar Program, *U.S. CLIVAR Variations*, **4**, 1–2, 2006.

9. Ferrari, R., Eddy-mixed layer interactions in the ocean, *U.S. CLIVAR Variations*, **4**, 3, 2006.

8. Ferrari, R., Ocean Mixing, BASC report entitled "Improving the Scientific Foundation for Atmosphere-Land-Ocean Simulations: Report of a Workshop", National Academy of Sciences, 2005.

7. Bretherton, C. S., R. Ferrari, and S. Legg, Climate Process Teams: A new approach to improving climate models, *U.S. CLIVAR Variations*, **2**, No. 1, 1–6, 2004.

6. Ferrari, R., and A. Plumb, Mesoscale eddy fluxes at the boundaries in ocean circulation models. *Proceedings of the 'Aha Huliko'a Winter Workshop*, Honolulu, Hawaii, 2003.

5. Ferrari, R., D.L. Rudnick, W. R. Young, and F. Paparella, The temperature-salinity relationship of the surface mixed-layer, *Proceedings of the 'Aha Huliko'a Winter Workshop*, Honolulu, Hawaii, 2001.

4. Ferrari, R., Dispersion of active and passive scalars in the upper ocean. Doctoral Dissertation. Scripps institution of Oceanography, La Jolla, 2000.

3. Ferrari, R., The temperature-salinity relationship in the mixed layer, *Proceedings of the Geophysical Fluid Dynamics Program*, 1999.

2. Ferrari, R., Distribuzioni di temperatura e salinitá negli strati piú superficiali degli oceani. Doctoral dissertation. Politecnico di Torino, 1999.

1. Ferrari, R., Integrazione numerica di equazioni solitioniche multidimensionali. Master thesis. Universitá di Torino, 1994.