

## STEPHEN MATTHEW GRIFFIES



NOAA GEOPHYSICAL FLUID DYNAMICS LABORATORY • PRINCETON USA  
Stephen.Griffies at noaa.gov • [www.gfdl.noaa.gov/stephen-griffies-homepage](http://www.gfdl.noaa.gov/stephen-griffies-homepage)

### RESEARCH STATEMENT

My research and teaching interests include (1) understanding the ocean's role in the global climate system, with special emphasis on Atlantic and Southern Ocean dynamics, sea level, and tracer transport; (2) formulating subgrid-scale parameterizations for ocean stirring and mixing processes; (3) identifying novel analysis methods of use for comprehending the ocean as a turbulent hydro-thermodynamic system; (4) developing consistent numerical algorithms for ocean circulation models; and (5) teaching and writing about the fundamentals of ocean fluid dynamics and ocean climate models.

### EDUCATION

1993	Ph.D in Theoretical Physics	University of Pennsylvania
1988	Physics undergraduate studies	University of Washington
1987	Masters in Engineering Sciences & Applied Mathematics	Northwestern University
1986	Bachelor of Science in Chemical Engineering	Louisiana State University

### EMPLOYMENT AND APPOINTMENTS

2016–present	Partner Investigator, Australian Research Council Centre of Excellence for Climate Extremes
2015–present	Lecturer, Princeton University Atmospheric and Oceanic Sciences Program
2013–present	NOAA/GFDL Model Development Team Steering Committee
Jun-Aug 2012	Visiting Scientist, National Center for Atmospheric Research, Boulder, USA
2011–present	Partner Investigator, Australian Research Council Centre of Excellence for Climate System Science
1996-present	NOAA/GFDL Physical Scientist (senior scientist as of 2011)
Jan-Jun 2011	CSIRO Distinguished Visiting Scientist Fellow, Hobart, Australia
Mar 2009	Visiting Professor, Universite catholique de Louvain, Belgium
Jan-Nov 2005	Visiting Scientist, CSIRO Marine and Atmospheric Research, Hobart, Australia
2001–2005	NOAA/GFDL Oceans and Climate Group Leader
2000–2011	NOAA/GFDL Ocean Model and Climate Model Development Team co-Leader
1995–1996	NOAA/GFDL Visiting Research Scientist
1993–1995	UCAR Global & Climate Change Fellow at Princeton University
1988–1993	University of Pennsylvania Physics Graduate Research Fellow
1986–1987	Northwestern University Engineering Sciences and Applied Mathematics Fellow
1984–1986	Louisiana State University Chemical Engineering Research Technician

### OCEANOGRAPHIC CRUISES

1993 **Technical Assistant:** WOCE Line AR7W / Atlantic Circulation Experiment, Labrador Sea, CCGS Hudson (John Lazier, Chief Scientist)

**AWARDS AND HONORS**

- 2014 European Geosciences Union Fridtjof Nansen Medal for oceanographic research
- 2013 Department of Commerce Silver Medal Award (with nine other GFDL staff scientists):  
For development and application of NOAA's first comprehensive Earth System Model  
that couples the carbon cycle and climate for projection of changes
- 2012 NOAA Administrator's Award for scientific vision, leadership and development of  
the Modular Ocean Model (MOM) for climate modeling, research and predictions
- 2011 CSIRO Distinguished Visiting Scientist Fellow, Australia
- 2009 Visiting Professor, Universite catholique de Louvain, Belgium
- 2001 NOAA/Oceanic and Atmospheric Research Outstanding Scientific Review Paper
- 1999 NOAA/Oceanic and Atmospheric Research Outstanding Scientific Paper
- 1998 NOAA/Oceanic and Atmospheric Research Employee of the Year
- 1997 NOAA/Environmental Research Laboratories Outstanding Scientific Paper

**PROFESSIONAL SERVICES AND MEMBERSHIPS**

- 2014-present NCEP Climate Model Development Task Force (co-lead)
- 2014-present CLIVAR Scientific Steering Group
- 2012-2014 CLIVAR/CliC/SCAR Southern Ocean Region Implementation Panel
- 2010-present European Geosciences Union
- 2009-2015 Scientific Advisory Board for the Catalan Climate Institute *IC3*, Barcelona, Spain
- 2007-present Editor of the journal **Ocean Modelling**
- 2006-2009 CLIVAR Scientific Steering Group
- 2004-2009 CLIVAR Working Group on Coupled Modeling (ex officio)
- 2004-2007 Editorial Board of the journal **Ocean Science**
- 1999-2012 CLIVAR Working Group on Ocean Model Development (co-chair 2004-2009)
- 1993-present American Geophysical Union
- 1993-present American Meteorological Society

**MENTORING**

- |              |                    |   |
|--------------|--------------------|---|
| 2016-present | Brandon Reichl     | Princeton University post-doc researcher                                  |
| 2016-present | Nathaniel Tarshish | Princeton University pre-doc researcher (with Jorge Sarmiento)            |
| 2015-2016    | Henri Gray         | Princeton University pre-doc researcher (with Jorge Sarmiento)            |
| 2014-present | Alison Gray        | Princeton University post-doc (with Jorge Sarmiento)                      |
| 2014-present | Anna FitzMaurice   | Princeton University PhD student (with Sonya Legg and Bob Hallberg)       |
| 2014-2015    | Ivy Frenger        | Princeton University post-doc (with Jorge Sarmiento)                      |
| 2013-present | Robert Nazarian    | Princeton University PhD student (with Sonya Legg and Bob Hallberg)       |
| 2013-2016    | Adele Morrison     | Princeton University post-doc (with Jorge Sarmiento)                      |
| 2013         | Terrence O'Kane    | Visiting senior scientist from CSIRO Marine Laboratory, Hobart, Australia |
| 2012-present | Carolina Dufour    | Princeton University post-doc (with Jorge Sarmiento)                      |
| 2012-2013    | Yalin Fan          | Princeton University post-doc   |
| 2011-2014    | Michael Bueti      | University of Rhode Island PhD student (with Isaac Ginis)                 |
| 2008-2011    | Michael Bates      | University of New South Wales PhD student (with Matthew England)          |
| 2005-2009    | Andreas Klocker    | University of Tasmania PhD student (with Trevor McDougall)                |
| 2001-2002    | Harper Simmons     | GFDL post-doc researcher  |
| 1999-2002    | Shafer Smith       | Princeton University / GFDL post-doc                                      |

**TEACHING AND PEDAGOGICAL LECTURES**

- Lecturer, Princeton University graduate course on geophysical fluid dynamics, Princeton, USA (each autumn since 2014).
- Jul 2016: OCEAN MODELLING AND THE ANALYSIS OF SEA LEVEL: lectures for the International Centre for Theoretical Physics / Indian Institute for Tropical Meteorology: ADVANCED SCHOOL ON EARTH SYSTEM MODELLING, Pune, India

- Aug 2013: OCEAN MODELS AND OCEAN MODELING: LECTURES ON THE FUNDAMENTALS AND PRACTICES: 10 hour intensive course. International Centre for Theoretical Physics School: FUNDAMENTALS OF OCEAN CLIMATE MODELING AT GLOBAL AND REGIONAL SCALES, Hyderabad, India
- Mar 2009: PHYSICAL PROCESSES SETTING THE OCEAN'S WATER MASSES: four lectures at Université Catholique de Louvain, Belgium
- Nov 2007: OCEAN MODEL FUNDAMENTALS: 20 hour intensive course at the University of Tasmania, Australia
- Aug 2006: OCEAN MODEL FUNDAMENTALS: two lectures at the NSF summer school, MODERN MATHEMATICAL METHODS IN PHYSICAL OCEANOGRAPHY, Breckenridge, USA
- Oct 2004: OCEAN MODEL FUNDAMENTALS: 20 hour intensive course at the INDIAN INTENSIVE SCHOOL ON LARGE-SCALE OCEAN MODELLING, Bangalore, India
- Sep 2004: OCEAN MODEL FUNDAMENTALS: three lectures at the GLOBAL OCEAN DATA ASSIMILATION EXPERIMENT SUMMER SCHOOL, La Londe Les Maures, France
- May 2003: OCEAN CLIMATE MODELING AT NOAA-GFDL: two presentations for a workshop on ocean modeling, Hobart, Australia
- May 2002: OCEAN CLIMATE MODELING WITH MOM4: three presentations for a workshop on ocean modeling, Kiel, Germany
- Jan 2001: OCEAN DYNAMICS AND MODELING: three lectures at La Escuela de Verano de Universidad de Concepción, Chile
- Mar 1999: OCEAN AND CLIMATE MODELING: two lectures at CONFERENCE ON GLOBAL CLIMATE, Barcelona, Spain
- Sep-Dec 1993: Co-Lecturer: Atmospheric and Oceanic Data Assimilation, Princeton University
- 1990–1993: Instructor, Undergraduate Physics Laboratory, University of Pennsylvania
- 1990–1993: Teaching Assistant, General Relativity and Quantum Field Theory, University of Pennsylvania

## RECENT INVITED RESEARCH PRESENTATIONS

- July 2016: ELEMENTS OF SEA LEVEL IN A CHANGING CLIMATE: Indian Institute of Tropical Meteorology, Pune, India.
- July 2016: OCEAN MODELLING: AN INTRODUCTION FOR MATHEMATICAL PHYSICISTS: Department of Mathematics, Savitribai Phule Pune University, Pune, India.
- May 2016: ELEMENTS OF SEA LEVEL IN A CHANGING CLIMATE: University of New South Wales, Sydney, Australia & Australian National University, Canberra, Australia.
- Jan 2016: ELEMENTS OF SEA LEVEL IN A CHANGING CLIMATE: Louisiana State University Chemical Engineering Department, Baton Rouge, Louisiana, USA.
- Oct 2015: IMPACTS ON OCEAN HEAT FROM THE MESOSCALE: Lamont-Doherty Earth Observatory / Columbia University, USA.
- Oct 2015: IMPACTS ON OCEAN HEAT FROM THE MESOSCALE: Stony Brook Marine Sciences, Stony Brook, USA.
- Oct 2014: IMPACTS ON OCEAN HEAT FROM THE MESOSCALE: Meeting on ocean heat uptake at National Oceanography Centre, Southampton, UK.
- Jun 2014: IMPACTS ON OCEAN HEAT FROM THE MESOSCALE: University of Stockholm, Sweden.
- Apr 2014: PROBLEMS AND PROSPECTS WITH OCEAN MESOSCALE EDDYING CLIMATE MODELS: Nansen Medal lecture at the European Geosciences Union annual meeting, Vienna, Austria.
- Apr 2014: PROBLEMS AND PROSPECTS WITH OCEAN MESOSCALE EDDYING CLIMATE MODELS: lecture given at a CLIVAR workshop on eddying ocean climate models, Kiel, Germany.

- Sep 2013: PROBLEMS AND PROSPECTS OF MODEL COMPARISONS: AN OCEAN PROCESS PERSPECTIVE: lecture given at a symposium celebrating the 80th birthday of Gerold Siedler, Kiel, Germany.
- Feb 2013: SEA LEVEL IN A SUITE OF FORCED GLOBAL OCEAN-ICE SIMULATIONS: CLIVAR workshop on Sea-Level Rise, Ocean/Ice-Shelf Interactions, and Ice Sheets, Hobart, Australia
- Jan 2013: OCEAN MODEL NUMERICS AND PHYSICS: CHALLENGES FOR MESOSCALE EDDYING GLOBAL CLIMATE SIMULATIONS: 10th annual meeting of the Drakkar Ocean Modelling Consortia, Grenoble, France
- Sep 2012: SEA LEVEL IN OCEAN CLIMATE MODELS: FUNDAMENTALS AND PRACTICES: University of Tasmania, Hobart, Australia
- Sep 2012: OCEAN MODELLING WITH MOM AND ITS RELATION TO AUSTRALIAN OCEAN CLIMATE SCIENCE: Second meeting of Consortia for Ocean Modelling in Australia, Hobart, Australia
- Feb 2012: OCEAN MODELLING WITH MOM AND ITS RELATION TO AUSTRALIAN OCEAN CLIMATE SCIENCE: First meeting of Consortia for Ocean Modelling in Australia, Hobart, Australia
- Mar 2011: DYNAMIC SEA LEVEL, STATIC SEA LEVEL, AND THE NON-BOUSSINESQ STERIC EFFECT: Australia National University, Canberra, Australia
- Nov 2010: OCEAN CLIMATE MODELING AT GFDL: Scientific Workshop for the Centre for Australian Weather and Climate Research, Hobart, Australia
- Sep 2010: SENSITIVITY OF ATLANTIC OCEAN VARIABILITY TO OCEAN PHYSICS AND VERTICAL COORDINATE: CLIVAR WGOMD/GSOP Workshop on Decadal Variability, Predictability, and Predictions: Understanding the Role of the Ocean. Boulder USA
- Apr 2008: PHYSICAL PROBLEMS IN SIMULATING THE OCEAN CLIMATE SYSTEM: presentation given during a workshop on Oceans and Climate at Yale University
- Mar 2008: PHYSICAL PROBLEMS IN SIMULATING THE OCEAN CLIMATE SYSTEM: presentation given during a special session on Climate Physics at the American Physical Society's March Meeting of Condensed Matter Physics

### CONVENER/ORGANIZER OF WORKSHOPS & MEETINGS

- Sep 2016: Science Organizing Committee and Executive Planning Team for CLIVAR OPEN SCIENCE CONFERENCE, Qingdao, China.
- Apr 2014: PHYSICAL AND BIOGEOCHEMICAL OCEAN MODELLING: DEVELOPMENT, ASSESSMENT, AND APPLICATIONS, Session at the European Geosciences Union General Assembly, Vienna, Austria.
- Feb 2014: PHYSICAL AND BIOGEOCHEMICAL OCEAN MODELING: DEVELOPMENT, ASSESSMENT AND APPLICATIONS, Session at the Ocean Sciences meeting, Honolulu, Hawaii.
- Apr 2013: PHYSICAL AND BIOGEOCHEMICAL OCEAN MODELLING: DEVELOPMENT, ASSESSMENT, AND APPLICATIONS, Session at the European Geosciences Union General Assembly, Vienna, Austria.
- Feb 2013: CLIVAR WGOMD/SOP WORKSHOP ON SEA-LEVEL RISE, OCEAN/ICE-SHELF INTERACTIONS, AND ICE SHEETS, Hobart, Australia.
- Apr 2012: PHYSICAL AND BIOGEOCHEMICAL OCEAN MODELLING: DEVELOPMENT, ASSESSMENT, AND APPLICATIONS, Session at the European Geosciences Union General Assembly, Vienna, Austria.
- Oct 2011: OCEAN CIRCULATION AND VENTILATION, Session at the WCRP Open Science Conference, Denver, USA.
- Apr 2011: PHYSICAL AND BIOGEOCHEMICAL OCEAN MODELLING: DEVELOPMENT, ASSESSMENT, AND APPLICATIONS, Session at the European Geosciences Union General Assembly, Vienna, Austria.
- Oct 2009: WORKSHOP ON OCEAN CLIMATE MODELING, GFDL/Princeton, USA.
- Apr 2009: CLIVAR WORKSHOP ON OCEAN MESOSCALE EDDIES: OBSERVATIONS, SIMULATIONS, AND PARAMETERIZATIONS, Exeter, UK.

- Aug 2007: CLIVAR WORKSHOP ON NUMERICAL METHODS IN OCEAN MODELLING, Bergen, Norway.
- Nov 2005: CLIVAR WORKSHOP ON MODELLING THE SOUTHERN OCEAN, Hobart, Australia.
- Jun 2004: CLIVAR WORKSHOP ON EVALUATING THE OCEAN COMPONENT OF IPCC MODELS, Princeton, USA.
- Aug 2002: WORKSHOP ON Z-COORDINATE OCEAN MODELING, Massachusetts Institute of Technology, USA.
- Nov 1999: MEETING OF Z-COORDINATE OCEAN MODELING AT GFDL, LANL, MIT, AND NCAR, Princeton, USA.
- Jul 1999: OCEAN/ATMOSPHERE VARIABILITY AND PREDICTABILITY, Session at the International Union of Geodesy and Geophysics, Session, Birmingham, UK.

### **PARTICIPANT/COLLABORATOR ON RESEARCH GRANTS**

- NOAA/MAPP Grant (01Jul2016–30Jun2018): Development toward NCEP’s fully-coupled global forecast and data assimilation system: A coupled wave-ocean system. \$316,000.
- DOE Grant (15Aug2014–14Aug2017): Three-dimensional structure of the Southern Ocean overturning circulation. \$624,213.
- NSF Grant (01Sep2014–31Aug2020): Southern Ocean Carbon and Climate Observations and Modeling (SOC-COM). \$20,983,626.
- NASA Grant (26Jun2014–25 Jun2017): The role of mesoscale eddies in cross-frontal transport and subduction of nutrients and carbon in the Southern Ocean. \$715,123.
- NOAA Grant (01Sept2013–31Aug2016): Signature of the Atlantic meridional overturning circulation in the North Atlantic dynamic sea level. \$393,172.
- DOE Grant (15Sep2011–14Sep2015): Mode and intermediate waters in Earth System Models. \$519,741.
- NOAA/CPO and NSF Grant (2003–2008): Climate Processes Team on ocean eddy mixed layer interactions.
- NOAA/CPO and NSF Grant (2003–2008): Climate Processes Team on gravity current entrainment.
- NOAA/CPO and NSF Grants (2010–2015): Climate Processes Team on representing internal-wave driven mixing in global ocean models.

### **PARTICIPANT IN SCHOOLS**

- Jan 1998: NATO Advanced Study Institute: OCEAN MODELING AND PARAMETERIZATION, Les Houches, France.
- Jan 1996: NATO Advanced Study Institute: CLIMATE VARIABILITY AND PREDICTABILITY, Les Houches, France.
- Jul 1994: Meeting of UCAR Global and Climate Change Fellows. Steamboat Springs, USA.
- Jul 1992: Theoretical Advanced Study Institute: FROM STRING THEORY TO BLACK HOLES, Boulder, USA.
- Jul 1991: High Energy Physics and Cosmology School, Center for Theoretical Physics, Trieste, Italy.
- Jun 1991: Theoretical Physics Summer School: PARTICLE PHYSICS IN THE 1990’s, Les Houches, France.



## DOCUMENTS UNDER REVIEW OR IN PREPARATION

1. An extrema-diminishing general-coordinate implementation of neutral diffusion, 2016: A.J. Adcroft, R.W. Hallberg, and **S.M. Griffies**, *in preparation for Ocean Modelling*.
2. An examination of the CVMix implementation of KPP against large eddy simulations, 2016: L. Van Roekel, A.J. Adcroft, G. Danabasoglu, **S.M. Griffies**, B. Kauffman, W. Large, M. Levy, B. Reichl, T. Ringler, P. Sullivan, M. Veneziani, *in preparation for Ocean Modelling*.
3. Ocean modeling and data assimilation in the context of satellite altimetry, 2016: D. Stammer and **S.M. Griffies**, *in preparation for Satellite altimetry and its use for oceanography*, CRC Press.
4. Lagrangian timescales of Southern Ocean upwelling in a hierarchy of model resolutions, 2016: H.F. Drake, A.K. Morrison, **S.M. Griffies**, J.L. Sarmiento, W. Weijer, A. Gray, *in preparation for Geophysical Research Letters*
5. Vertical resolution of baroclinic modes in global ocean models, 2016: K. Stewart, A. McC Hogg, S.M. Griffies, A.P. Heerdegen, M.L. Ward, P.J. Spence, M.H. England, *submitted to Ocean Modelling*.
6. The benefits of high-resolution for climate simulation: process-understanding and the enabling of stakeholder decisions at the regional scale, 2016: M. J. Roberts, C. Senior, P. L. Vidale, H. Hewitt, P. Chang, H. Christensen, S. Danilov, M.-E. Demory, S.M. Griffies, R. Haarsma, T. Jung, S. Minobe<sup>9</sup>, T. Ringler, M. Satoh, E. Scoccimarro, G. Stephens, M.F. Wehner, *submitted to Bulletin of the American Meteorological Society*.
7. Climate Process Team on Internal-Wave Driven Ocean Mixing, 2016: J.A. MacKinnon, M.H. Alford, J.K. Ansong, B.K. Arbic, A. Barna, B.P. Briegleb, F.O. Bryan, M.C. Buijsman, E.P. Chassignet, G. Danabasoglu, S. Diggs, P. Gent, S.M. Griffies, R.W. Hallberg, S.R. Jayne, M. Jochum, J.M. Klymak, E. Kunze, W.G. Large, S. Legg, B. Mater, A.V. Melet, L.M. Merchant, R. Musgrave, J.D. Nash, N.J. Norton, A. Pickering, R. Pinkel, K. Polzin, H.L. Simmons, L.C. St. Laurent, O.M. Sun, D.S. Trossman, A.F. Waterhouse, C.B. Whalen, Z. Zhao *submitted to Bulletin of the American Meteorological Society*.
8. Spiraling up: pathways of global deep waters to the surface of the Southern Ocean, 2016: V. Tamsitt, H. Drake, A.K. Morrison, L.D. Talley, C.O. Dufour, A.R. Gray, **S.M. Griffies**, M.R. Mazloff, J.L. Sarmiento, J. Wang, and W. Weijer, *submitted to Nature Geosciences*.
9. Preconditioning of the Weddell Sea polynya by the ocean mesoscale and dense water overflows, 2016: C.O. Dufour, A.K. Morrison, **S.M. Griffies**, I. Frenger, H.M. Zanowski, M. Winton, *in review at Journal of Climate*.
10. Lagrangian ocean analysis: fundamentals and practices, 2016: E. van Sebille, **S.M. Griffies**, R. Abernathey, T.P. Adams, P. Berloff, A. Biastoch, B. Blanke, E.P. Chassignet, Y. Cheng, C.J. Cotter, E. Deleersnijder, K. Döös, H. Drake, S. Drijfhout, S.F. Gary, A.W. Heemink, J. Kjellsson, I.M. Koszalka, M. Lange, C. Lique, G.A. MacGilchrist, R. Marsh, G.C. Mayorga Adame, R. McAdam, F. Nencioli, C.B. Paris, M.D. Piggott, J.A. Polton, S. Rühls, S.H. Shah, M.D. Thomas, J. Wang, P.J. Wolfram, L. Zanna, and D. Zika, *in review at Ocean Modelling*.
11. OMIP biogeochemical protocols for CMIP6, 2016: J.C. Orr, R.G. Najjar, O. Aumont, L. Bopp, J. Bullister, G. Danabasoglu, S. Doney, J.P. Dunne, J.-C. Dutay, H. Graven, **S.M. Griffies**, J.G. John, F. Joos, I. Levin, K. Lindsay, R. J. Matear, A. Mouchet, G. McKinley, A. Oschlies, A. Romanou, R. Schlitzer, A. Tagliabue, T. Tanhua, and A. Yool, *in review at Geoscientific Model Development*.

## PEER-REVIEWED PUBLICATIONS

1. The Flux-Anomaly-Forced Model Intercomparison Project (FAFMIP) for investigation of sea-level and ocean climate change in response to CO<sub>2</sub> forcing, 2016: J. Gregory, N. Bouttes-Mauhourat, **S.M. Griffies**, H. Haak, W.J. Hurlin, J. Jungclaus, M. Kelley, W.G. Lee, J. Marshall, A. Romanou, O.A. Saenko, D. Stammer, and M. Winton, *Geoscientific Model Development*, **9**, 3993–4017, doi: 10.5194/gmd-9-3993-2016.
2. OMIP contribution to CMIP6: experimental and diagnostic protocol for the physical component of the Ocean Model Intercomparison Project, 2016: **S.M. Griffies**, G. Danabasoglu, P.J. Durack, A.J. Adcroft, V. Balaji, C. Böning, E.P. Chassignet, E. Curchitser, J. Deshayes, H. Drange, B. Fox-Kemper, P.J. Gleckler, J.M. Gregory, H. Haak, R.W. Hallberg, P. Heimbach, H.T. Hewitt, D.M. Holland, T. Ilyina, J.H. Jungclaus, Y. Komuro, J.P. Krasting, W.G. Large, S.J. Marsland, S. Masina, T.J. McDougall, A.J.G. Nurser, J.C. Orr, A. Pirani, F. Qiao, R.J. Stouffer, K.E. Taylor, A.M. Treguir, H. Tsujino, P. Uotila, M. Valdivieso, Q. Wang, M. Winton, and S.G. Yeager, *Geoscientific Model Development*, **9**, 3231–3296, doi:10.5194/gmd-9-3231-2016.
3. North and Equatorial Pacific Ocean Circulation in the CORE-II Hindcast Simulations, 2016: Y. Tseng, H. Lin, H. Chen, K. Thompson, M. Bentsen, C. Böning, A. Bozec, C. Cassou, E. Chassignet, C. Chow, G. Danabasoglu, S. Danilov, R. Farneti, Y. Fujii, **S.M. Griffies**, M. Ilicak, T. Jung, S. Masina, A. Navarra, L. Patara, B.L. Samuels, M. Scheinert, D. Sidorenko, C. Sui, H. Tsujino, S. Valcke, A. Voldoire, Q. Wang, *Ocean Modelling*, **104**, 143–160, <http://dx.doi.org/10.1016/j.ocemod.2016.06.003>.
4. The influence of geothermal heating on Southern Ocean circulation in a global climate model, 2016: S.M. Downes, A. McC. Hogg, **S.M. Griffies**, and B.L. Samuels, *Journal of Climate*, **29**, 5689–5708, DOI: <http://dx.doi.org/10.1175/JCLI-D-15-0458.1>.

5. Mechanisms of Southern Ocean heat uptake and transport in a global eddying climate model, 2016: A.K. Morrison, **S.M. Griffies**, M. Winton, W.G. Anderson, and J.L. Sarmiento, *Journal of Climate*, **29**, 2059–2075, DOI:10.1175/JCLI-D-15-0579.1
6. An assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part III: Hydrography and fluxes, 2016: M. Ilicak, H. Drange, Q. Wang, R. Gerdes, Y. Aksenov, D. Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A.C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, P.G. Fogli, Y. Fuji, **S.M. Griffies**, D. Iovino, A. Jahn, T. Jung, W.G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A. J.G. Nurser, C. Roth, D. Salas y Mélia, B.L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S.G. Yeager, *Ocean Modelling*, **100**, 141–161, doi:10.1016/j.ocemod.2016.02.004.
7. An assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part II: liquid freshwater, 2016: Q. Wang, M. Ilicak, R. Gerdes, H. Drange, Y. Aksenov, D. Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A.C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, P. Giuseppe Fogli, Y. Fujii, **S.M. Griffies**, R. Ingvaldsen, D. Iovino, A. Jahn, T. Jung, W.G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A.J.G. Nurser, B. Rabe, C. Roth, D. Salas y Mélia, B.L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S.G. Yeager, *Ocean Modelling*, **99**, 86–109.
8. An assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part I: Sea ice and solid freshwater, 2016: Q. Wang, M. Ilicak, R. Gerdes, H. Drange, Y. Aksenov, D. Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A.C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, P. Giuseppe Fogli, Y. Fujii, **S.M. Griffies**, R. Ingvaldsen, D. Iovino, A. Jahn, T. Jung, W.G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A.J.G. Nurser, B. Rabe, C. Roth, D. Salas y Mélia, B.L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S.G. Yeager, *Ocean Modelling*, **99**, 110-132, doi:10.1016/j.ocemod.2015.12.008.
9. Enhanced warming of the Northwest Atlantic Ocean under climate change, 2016: V. S. Saba, **S.M. Griffies**, W.G. Anderson, M. Winton, M.A. Alexander, T.L. Delworth, J.A. Hare, M.J. Harrison, A. Rosati, G.A. Vecchi, and R. Zhang, *Journal of Geophysical Research - Oceans*, DOI: 10.1002/2015JC011346.
10. North Atlantic Simulations in Coordinated Ocean-ice Reference Experiments phase II (CORE-II). Part II: Inter-Annual to Decadal Variability, 2016: G. Danabasoglu, S.G. Yeager, W.M. Kim, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, R. Bleck, C. Böning, A. Bozec, V.M. Canuto, C. Cassou, E. Chassignet, A.C. Coward, S. Danilov, N. Diansky, H. Drange, R. Farneti, E. Fernandez, P.G. Fogli, G. Forget, Y. Fujii, **S.M. Griffies**, A. Gusev, P. Heimbach, A. Howard, T. Jung, M. Kelley, W.G. Large, A. Leboissetier, J. Lu, G. Madec, S.J. Marsland, S. Masina, A. Navarra, A. J.G. Nurser, A. Pirani, A. Romanou, D. Salas y Melia, B.L. Samuels, M. Scheinert, D. Sidorenko, S. Sun, A.-M. Treguier, H. Tsujino, P. Uotila, S. Valcke, A. Voldoire, and Q. Wang, *Ocean Modelling*, **97**, 65–90, 10.1016/j.ocemod.2015.11.007.
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12. Role of mesoscale eddies in cross-frontal transport of heat and biogeochemical tracers in the Southern Ocean, 2015: C.O. Dufour, **S.M. Griffies**, G.F. de Souza, I. Frenger, A.K. Morrison, J.B. Palter, J.L. Sarmiento, E.D. Galbraith, J.P. Dunne, W.G. Anderson, and R.D. Slater, *Journal of Physical Oceanography*, **45**, 3057–3081. doi: 10.1175/JPO-D-14-0240.1.
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