Stephen Matthew Griffies

NOAA Geophysical Fluid Dynamics Laboratory • Princeton USA
Stephen.Griffies at noaa.gov • www.gfdl.noaa.gov/stephen-griffies-homepage

RESEARCH STATEMENT

My 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 transport; (2) formulating subgrid-scale parameterizations for turbulent ocean stirring and mixing processes; (3) elucidating 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

2017–present	Partner Investigator, Australian Reseach 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 Reseach Council Centre of Excellence for Climate System Science
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-lead)
1996-present	NOAA/GFDL Physical Scientist (senior scientist as of 2011)
1995–1996	NOAA/GFDL Visiting Research Scientist
1993–1995	UCAR Climate & Global 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 Laboratory Technician

OCEANOGRAPHIC CRUISES

1993 **Technical Assistant**: WOCE Line AR7W / Atlantic Circulation Experiment, Labrador Sea, *CCGS* Hudson (John Lazier, Chief Scientist)
2017 **Research specialist**: Scotia Sea cruise as part of the Dynamics of the Orkney Passage Overflow (DynOPO) project, *RRS* J.C. Ross (Alberto Naveira-Garabato, 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 WCRP/CLIVAR Scientific Steering Group
2014-2016 NCEP Climate Model Development Task Force (co-lead)
2013-present WCRP/CLIVAR Ocean Model Development Panel (ex-officio)
2012-2014 CLIVAR/CliC/SCAR Southern Ocean Region Implementation Panel
2010-present Member 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 Modelling (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 AND SABBATICAL HOSTING

2016-present	Brandon Reichl	Princeton University post-doc researcher
2016-present	Nathaniel Tarshish	Princeton University pre-doc researcher (with Jorge Sarmiento)
2015-present	Amanda O'Rourke	University of Michigan post-doc researcher (with Brian Arbic)
2015-2016	Henri Drake	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 and GFDL post-doc researcher

TEACHING AND PEDAGOGICAL LECTURES

- Princeton University graduate course on geophysical fluid dynamics (each autumn since 2014).
- Jul 2016: Ocean Modelling and sea level analysis: lectures at 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

pedagogical media outreach

- Dec 2016: Animation of the ocean's role in El Niño
- Nov 2015: Animation of Southern Ocean circulation
- 2011: Animation of ocean surface temperatures from eddying climate model

Recent invited research presentations

- Jan 2017: The ocean mesoscale: observations, theory, and modeling: Banff International Research Station (BIRS) workshop: *Transport in unsteady flows: From deterministic structures to stochastic models and back again*, Banff, Canada.
- 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 (SOCCOM). $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 INVITED SPECIAL TOPIC 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. Multi-decadal weakening of Indian Ocean summer monsoon circulation induces an increasing northern Indian Ocean sea level, 2017: Swapna P., J. Jyoti, R. Krishnan, S. Setti, and **S.M. Griffies**, *in preparation for Geophysical Research Letters*.
2. An extrema-diminishing general-coordinate implementation of neutral diffusion, 2017: A.J. Adcroft, R.W. Hallberg, and **S.M. Griffies**, *in preparation for Ocean Modelling*.
3. The KPP boundary layer scheme: revisiting its formulation and benchmarking one-dimensional ocean simulations relative to LES, 2017: 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*.
4. Lagrangian timescales of Southern Ocean upwelling in a hierarchy of model resolutions, 2017: H.F. Drake, A.K. Morrison, **S.M. Griffies**, J.L. Sarmiento, W. Weijer, A. Gray, *in preparation for Geophysical Research Letters*
5. Localized rapid warming of West Antarctic Peninsula subsurface waters by remote winds, 2017: P.J. Spence, R. Holmes, A. McC. Hogg, **S.M. Griffies**, K.D. Stewart, and Matthew H. England, *submitted to Nature Communications*.
6. Frequency-domain analysis of forced versus intrinsic ocean surface kinetic energy variability in GFDL's CM2-O model hierarchy, 2017: A.K. O'Rourke, B.K. Arbic, and **S.M. Griffies**, *in review at Journal of Climate*.
7. Ocean modeling and data assimilation in the context of satellite altimetry, 2017: D. Stammer and **S.M. Griffies**, *in review for Satellite altimetry and its use for oceanography*, CRC Press.
8. Vertical resolution of baroclinic modes in global ocean models, 2017: K. Stewart, A. McC Hogg, S.M. Griffies, A.P. Heerdegen, M.L. Ward, P.J. Spence, M.H. England, *in review at Ocean Modelling*.
9. The benefits of high-resolution for climate simulation: process-understanding and the enabling of stakeholder decisions at the regional scale, 2017: 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. Minobe9, T. Ringler, M. Satoh, E. Scoccimarro, G. Stephens, M.F. Wehner, *in review at the Bulletin of the American Meterological Society*.
10. Climate Process Team on Internal-Wave Driven Ocean Mixing, 2017: 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, *in review at the Bulletin of the American Meterological Society*.
11. Spiraling up: pathways of global deep waters to the surface of the Southern Ocean, 2017: 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, *in review at Nature Communication*.
12. Preconditioning of the Weddell Sea polynya by the ocean mesoscale and dense water overflows, 2017: C.O. Dufour, A.K. Morrison, **S.M. Griffies**, I. Frenger, H.M. Zanowski, M. Winton, *in review at Journal of Climate*.
13. Lagrangian ocean analysis: fundamentals and practices, 2017: 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. Rühs, S.H. Shah, M.D. Thomas, J. Wang, P.J. Wolfram, L. Zanna, and D. Zika, *in review at Ocean Modelling*.
14. 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 CO2 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, 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.

11. Atlantic multi-decadal oscillation covaries with Agulhas leakage, 2015: A. Biastoch, J.V. Durgadoo, A.K. Morrison, E. van Sebille, W. Weijer, and **S.M. Griffies**, *Nature Communication*, **6**, 10082, doi: 10.1038/ncomms10082.

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.

13. An assessment of Southern Ocean water masses and sea ice during 1988–2007 in a suite of inter-annual CORE-II simulations, 2015: S.M. Downes, R. Farneti, P. Uotila, **S.M. Griffies**, S. Marsland, D. Bailey, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Böning, A. Bozec, V.M. Canuto, E. Chassignet, G. Danabasoglu, S. Danilov, N. Diansky, H. Drange, P. Giuseppe Foglio, A. Gusev, A. Howard, M. Ilicak, T. Jungl, M. Kelley, W.G. Large, A. Leboissetier, M. Long, J. Lu, S. Masina, A. Mishra, A. Navarra, A.J.G. Nurser, L. Patara, B.L. Samuels, D. Sidorenko, P. Spence, H. Tsujino, Q. Wang, S.G. Yeager, *Ocean Modelling*, **94**, 67–94. doi:10.1016/j.ocemod.2015.07.022.

14. An assessment of Antarctic Circumpolar Current and Southern Ocean Meridional Overturning Circulation sensitivity during 1958–2007 in a suite of inter-annual CORE-II simulations, 2015: R. Farneti, S. Downes, **S.M. Griffies**, S. Marsland, D. Bailey D. Bailey, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Böning, A. Bozec, V.M. Canuto, E. Chassignet, G. Danabasoglu, S. Danilov, N. Diansky, H. Drange, P. Giuseppe Foglio, A. Gusev, A. Howard, M. Ilicak, T. Jung, M. Kelley, W.G. Large, A. Leboissetier, M. Long, J. Lu, S. Masina, A. Mishra, A. Navarra, A.J.G. Nurser, L. Patara, B.L. Samuels, D. Sidorenko, P. Spence, H. Tsujino, Q. Wang, S.G. Yeager, *Ocean Modelling*, **93**, 84–120. doi: 10.1016/j.ocemod.2015.07.009.

15. Simulated South Atlantic transports and their variability during 1958-2007, 2015: L.E. Sitz, R. Farneti, **S.M. Griffies**, *Ocean Modelling*, **91**, 70–90, doi:10.1016/j.ocemod.2015.05.001.

16. Sensitivity of abyssal watermasses to overflow parameterizations, 2015, K. Snow, A. McC. Hogg, S.M. Downes, B.M. Sloyan, M.L. Bates, and **S.M. Griffies**, *Ocean Modelling*, **89**, 84–103, http://dx.doi.org/10.1016/j.ocemod.2015.03.004.

17. An extreme event of sea level rise along the northeast coast of North America in 2009-2010, 2015: P. Goddard, J. Yin, **S.M. Griffies**, and S. Zhang, *Nature Communication*, DOI: 10.1038/ncomms7346.

18. Impacts on ocean heat from transient mesoscale eddies in a hierarchy of climate models, 2015: **S.M. Griffies**, M. Winton, W.G. Anderson, R. Benson, T.L. Delworth, C.O. Dufour, J.P. Dunne, P. Goddard, A.K. Morrison, A. Rosati, A.T. Wittenberg, J. Yin, and R. Zhang, *Journal of Climate*, **28**, 952-977, doi: http://dx.doi.org/10.1175/JCLI-D-14-00353.1

19. Has coarse ocean resolution biased simulations of transient climate sensitivity?, 2014: M. Winton, W.G. Anderson, T.L. Delworth, **S.M. Griffies**, W.J. Hurlin and A. Rosati, *Geophysical Research Letters*, DOI: 10.1002/2014GL061523.

20. Tropical cyclone-induced thermocline warming and its regional and global impacts, 2014: M.R. Bueti, I. Ginis, L.M. Rothstein, and **S.M. Griffies**, *Journal of Climate*, **27**, 6978–6999, doi: http://dx.doi.org/10.1175/JCLI-D-14-00152.1.

21. On the subtropical Pacific meridional overturning circulation variability over the second half of the 20th century, 2014: R. Farneti, S. Dwivedi, F. Kucharski, F. Molteni, and **S.M. Griffies**, *Journal of Climate*, **27**, 7102–7112. doi:10.1175/JCLI-D-13-00707.1.

22. On geometrical aspects of interior ocean mixing, 2014: T.J. McDougall, S. Groeskamp, and **S.M. Griffies**, *Journal of Physical Oceanography*, **44**, 2164–2175, doi:10.1175/JPO-D-13-0270.1.

23. Rapid subsurface warming and circulation changes of Antarctic coastal waters by poleward shifting winds, 2014: P. Spence, **S.M. Griffies**, M.H. England, A. McC. Hogg, O.A. Saenko, and N.C. Jourdain, *Geophysical Research Letters*, **41**, 4601–4610, doi:10.1002/2014GL060613.

24. An assessment of global and regional sea level in a suite of interannual CORE-II simulations, 2013: **S.M. Griffies**, J. Yin, P.J. Durack, P. Goddard, S.C. Bates, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Böning, A. Bozec, C. Cassou, E. Chassignet, G. Danabasoglu, S. Danilov, C. Domingues, H. Drange, R. Farneti, E. Fernandez, R. J. Greatbatch, D.M. Holland, M. Ilicak, J. Lua, S.J. Marsland, A. Mishra, K. Lorgacher, A.J.G. Nurser, D Salas y Mèlia, J.B. Palter, B.L. Samuels, J. Schröter, F.U. Schwarzkopf, D. Sidorenko, A.-M. Treguier, Y. Tseng, H. Tsujino, P. Uotila, S. Valcke, A. Voldoire, Q. Wang, M. Winton, and X. Zhang, *Ocean Modelling*, **78**, 35–89, 10.1016/j.ocemod.2014.03.004.

25. Impacts of parameterized Langmuir turbulence and non-breaking wave mixing in global climate simulations, 2014: Y. Fan and **S.M. Griffies**, *Journal of Climate*, **27**, 4752–4775, http://dx.doi.org/10.1175/JCLI-D-13-00583.1.

26. Simulated global swell and wind sea climate and their responses to anthropogenic climate change at the end of the 21st century, 2014: Y. Fan, S.-J. Lin, **S.M. Griffies**, and M.A. Hemer, *Journal of Climate*, **27**, 3516–3536, http://dx.doi.org/10.1175/JCLI-D-13-00198.1.

27. Development of a regional model for the north Indian Ocean, 2014: H. Rahaman. M. Harrison, D. Sengupta, M. Ravichandran, and **S.M. Griffies**, **75**, 1–19, *Ocean Modelling*, http://dx.doi.org/10.1016/j.ocemod.2013.12.005.

28. North Atlantic Simulations in Coordinated Ocean-ice Reference Experiments phase II (CORE-II). Part I: Mean States, 2013: G. Danabasoglu, S. Yeager, D. Bailey, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Böning, A. Bozec, V.M. Canuto, C. Cassou, E. Chassignet, 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, D. Salas y Mélia, B.L. Samuels, M. Scheinert, D. Sidorenko, A.-M. Treguier, H. Tsujino, P. Uotila, S. Valcke , A. Voldoire, and Q. Wang, *Ocean Modelling*, doi.org/10.1016/j.ocemod.2013.10.005.

29. The deep ocean buoyancy budget and its temporal variability, 2013: J.B. Palter, **S.M. Griffies**, E.D. Galbraith, A. Gnanadesikan, B.L. Samuels, and A. Klocker, *Journal of Climate*, **27**, 551–573, http://dx.doi.org/10.1175/JCLI-D-13-00016.1.

30. Sea level changes forced by Southern Ocean winds, 2013: L.M. Frankcombe, P. Spence, A. McC. Hogg, M.H. England, and **S.M. Griffies**, *Geophysical Research Letters*, **40**, doi:10.1002/2013GL058104.

31. Challenges to Understanding the Dynamic Response of Greenland's Marine Terminating Glaciers to Oceanic and Atmospheric Forcing, 2012: F. Straneo, P. Heimbach, O. Sergienko, G. Hamilton, G. Catania, **S.M. Griffies**, R. W. Hallberg, A. Jenkins, I. Joughin, R. Motyka, W. T. Pfeffer, S. F. Price, E. Rignot, T. Scambos, M. Truffer, A. Vieli, *Bulletin of the American Meteorological Society*, **94**, 1131–1144.

32. The ACCESS coupled model: description, control climate and evaluation, 2013: D. Bi, M. Dix, S.J. Marsland, S. O'Farrell, H. Rashid, P. Uotila, A.C. Hirst, E. Kowalczyk, M. Golebiewski, A. Sullivan, H. Yan, N. Hanna, C. Franklin, Z. Sun, P. Vohralik, I. Watterson, X. Zhou, R. Fiedler, M. Collier, Y. Ma, J. Noonan, L. Stevens, P. Uhe, H. Zhu, **S.M. Griffies**, R. Hill, C. Harris, and K. Puri, *Australian Meteorological and Oceanographic Journal*, **63**, 41–64.

33. Evaluation of ACCESS climate model ocean metrics in CMIP5 simulations, 2013: S.J. Marsland, D. Bi, P. Uotila, R. Fiedler, **S.M. Griffies**, K. Lorbacher, S. O'Farrell, A. Sullivan, P. Uhe, X. Zhou, and A.C. Hirst, *Australian Meteorological and Oceanographic Journal*, **63**, 101-119.

34. ACCESS-OM: the ocean and sea ice core of the ACCESS coupled model, 2013: D. Bi, S.J. Marsland, P. Uotila, S. O'Farrell, R. Fiedler, A. Sullivan, **S.M. Griffies**, X. Zhou, and A.C. Hirst, *Australian Meteorological and Oceanographic Journal*, **63**, 213–232.

35. GFDLs ESM2 global coupled climate-carbon Earth System Models Part II: Carbon system formulation and baseline simulation characteristics, 2013: J.P. Dunne, J.G. John, E.N. Shevliakova, R.J. Stouffer, J.P. Krasting, S.L. Malyshev, P.C.D. Milly, L.A. Sentman, A.J. Adcroft, W. Cooke, K.A. Dunne, **S.M. Griffies**, R.W. Hallberg, , M.J. Harrison, H. Levy, A.T. Wittenberg, P.J. Phillipps, N. Zadeh, *Journal of Climate*, **26**, 2247–2267, doi: 10.1175/JCLI-D-12-00150.1.

36. Influence of ocean and atmosphere components on simulated climate sensitivities, 2013: M. Winton, A.J. Adcroft, **S.M. Griffies**, R.W. Hallberg, L.W. Horowitz and R.J. Stouffer, *Journal of Climate*, **26**, 231–245, http://dx.doi.org/10.1175/JCLI-D-12-00121.1.

37. Northern high latitude heat budget decomposition and transient warming, 2013: M.A.A. Rugenstein, M. Winton, R.J. Stouffer, **S.M. Griffies**, and R.W. Hallberg, *Journal of Climate*, **26**, 609-621, http://dx.doi.org/10.1175/JCLI-D-11-00695.1.

38. Connecting changing ocean circulation with changing climate, 2012: M. Winton, **S.M. Griffies**, B.L. Samuels, J.L. Sarmiento, and T.L. Froelicher, *Journal of Climate*, **26**, 2268–2278, http://dx.doi.org/10.1175/JCLI-D-12-00296.1.

39. GFDLs ESM2 global coupled climate-carbon Earth System Models Part I: Physical formulation and baseline simulation characteristics, 2012: J.P. Dunne, J.G. John, A.J. Adcroft, **S.M. Griffies**, R.W. Hallberg, E.N. Shevliakova, R.J. Stouffer, W. Cooke, K.A. Dunne, M.J. Harrison, J.P. Krasting, S.L. Malyshev, P.C.D. Milly, P.J. Phillipps, L.A. Sentman, B.L. Samuels, M.J. Spelman, M. Winton, A.T. Wittenberg, N. Zadeh, *Journal of Climate*, **25**, 6646–6665, http://dx.doi.org/10.1175/JCLI-D-11-00560.1.

40. The catalytic role of beta effect in barotropization processes, 2012: A. Venaille, G.K. Vallis, and **S.M. Griffies**, *Journal of Fluid Mechanics*, **709**, 490-515, doi:10.1017/jfm.2012.344.

41. A dynamic, embedded Lagrangian model for ocean climate models, Part II: Idealised overflow tests, 2012: M.L. Bates, **S.M. Griffies**, and M.H. England, *Ocean Modelling*, **59-60**, 60–76, http://dx.doi.org/10.1016/j.ocemod.2012.08.003.

42. A dynamic, embedded Lagrangian model for ocean climate models, Part I: Theory and implementation, 2012: M.L. Bates, **S.M. Griffies**, and M.H. England, *Ocean Modelling*, **59-60**, 41–59, http://dx.doi.org/10.1016/j.ocemod.2012.05.004.

43. Rapid barotropic sea level rise from simulated ice-sheet melting scenarios, 2012: K. Lorbacher, S. J. Marsland, J. A. Church, **S.M. Griffies**, and D. Stammer, *Journal of Geophysical Research*, doi:10.1029/2011JC007733, **117, C06003**.

44. Physical processes that impact the evolution of global mean sea level in ocean climate models, 2012: **S.M. Griffies** and R. J. Greatbatch, *Ocean Modelling*, **51**, 37–72, doi:10.1016/j.ocemod.2012.04.003.

45. Impact of climate warming on upper layer of the Bering Sea, 2012: H.-C. Lee, T.L. Delworth, A. Rosati, R. Zhang, W.G. Anderson, F. Zeng, C.A. Stock, A. Gnanadesikan, K.W. Dixon, **S.M. Griffies**, *Climate Dynamics*, **40**, 327340, doi:10.1007/s00382-012-1301-8.

46. Simulated climate and climate change in the GFDL CM2.5 high-resolution coupled climate model, 2012: T.L. Delworth, A. Rosati, W. Anderson, A.J. Adcroft, V. Balaji, R. Benson, K. Dixon, **S.M. Griffies**, H.-C. Lee, R.C. Pacanowski, G.A. Vecchi, A.T. Wittenberg, F. Zeng, and R. Zhang, *Journal of Climate*, **25**, 2755–2781, doi:10.1175/JCLI-D-11-00316.1.

47. Spurious dianeutral mixing and the role of momentum dissipation, 2012: M. Ilicak, A. J. Adcroft, **S.M. Griffies**, and R. W. Hallberg, *Ocean Modelling*, **45-46**, 37–58, doi:10.1016/j.ocemod.2011.10.003.

48. Different magnitudes of projected subsurface ocean warming around Greenland and Antarctica, 2011: J. Yin, J.T. Overpeck, **S.M. Griffies**, A. Hu, J.L. Russell, and R.J. Stouffer, *Nature Geosciences*, doi:10.1038/NGEO1189.

49. Water mass exchange in the Southern Ocean in coupled climate models, 2011: S.M. Downes, A. Gnanadesikan, **S.M. Griffies**, and J.L. Sarmiento, *Journal of Physical Oceanography*, **41**, 1756–1771. doi:10.1175/2011JPO4586.1.

50. The impact of decadal-centennial climate variability on the distribution of radiocarbon in CM2Mc, a new earth system model, 2011: E. Galbraith, E.Y. Hwon, A. Gnanadesikan, **S.M. Griffies**, J. Dunne, K. Rodgers, J.L. Sarmiento, D. Bianchi, J. Simeon, A. Wittenberg, I.M. Held, and R. Slater, *Journal of Climate*, **24**, 4230–4254. doi:10.1175/2011JCLI3919.1.

51. GFDL's CM3 Coupled Climate Model: Characteristics of the Ocean and Sea Ice Simulations, 2011: **S.M. Griffies**, M. Winton, L.J. Donner, L.W. Horowitz, S.M. Downes, R. Farneti, A. Gnanadesikan, W.J. Hurlin, H.-C. Lee, Z. Liang, J.B. Palter, B.L. Samuels, A.T. Wittenberg, B.L. Wyman, J. Yin, and N.T. Zadeh, *Journal of Climate*, **24**, 3520–3544. doi: 10.1175/2011JCLI3964.1.

52. The Dynamical Core, Physical Parameterizations, and Basic Simulation Characteristics of the Atmospheric Component of the GFDL Global Coupled Model CM3, 2011: L.J. Donner, B.L. Wyman, R.S. Hemler, L.W. Horowitz,, Y. Ming, M. Zhao, J.-C. Golaz, J. Austin, W.F. Cooke, S.R. Freidenreich, P. Ginoux, C.T. Gordon, **S.M. Griffies**, I.M. Held, W.J. Hurlin, S.A. Klein, A.R. Langenhorst, H.-C. Lee, S.-J. Lin, S. L. Maleyshev, P.C.D. Milly, R. Pincus, J.J. Ploshay, V. Ramaswamy, M.D. Schwarzkopf, C.J. Seman, E. Shevliakova, W.F. Stern, R.J. Stouer, R. John Wilson, M. Winton, and A.T. Wittenberg, *Journal of Climate*, **24**, 3484–3519. doi:10.1175/2011JCLI3955.1.

53. Realistic test cases for limited area ocean modelling, 2011: M. Herzfeld, M. Schmidt, **S.M. Griffies**, and Z. Liang, *Ocean Modelling*, **37**, 1–34, doi:10.1016/j.ocemod.2010.12.008.

54. Parameterization of mixed layer eddies. III: Implementation and impact in global ocean climate simulations, 2010: N. Fox-Kemper, G. Danabasoglu, R. Ferrari, **S.M. Griffies**, R.W. Hallberg, M.M. Holland, M.E. Maltrud, S. Peacock, and B.L. Samuels, *Ocean Modelling*, doi:10.1016/j.ocemod.2010.09.002.

55. The impact of Greenland melt on regional sea level: a preliminary comparison of dynamic and static equilibrium effects, 2010: R.E. Kopp, J.X. Mitrovica, **S.M. Griffies**, C.C. Hay, J. Yin, and R.J. Stouffer, *Climatic Change Letter*. **103**, 619–625, doi:10.1007/s10584-010-9935-1.

56. The role of mesoscale eddies in the rectification of the Southern Ocean response to climate change, 2010: R. Farneti, T.D. Delworth, A.J. Rosati, **S.M. Griffies**, and F. Zeng, *Journal of Physical Oceanography*, **40**, 1539–1557.

57. Spatial Variability of Sea-Level Rise in 21st Century Projections, 2010: J. Yin, **S.M. Griffies**, and R.J. Stouffer, *Journal of Climate*, **23**, 4585-4607.

58. Boundary-value problem for the parameterized mesoscale eddy transport, 2010: R. Ferrari, **S.M. Griffies**, A.J.G. Nurser, and G.K. Vallis, *Ocean Modelling*, **32**, 143–156.

59. Evaluating the uncertainty induced by the virtual salt flux assumption in climate simulations and future projections, 2010: J. Yin, R.J. Stouffer, M.J. Spelman, and **S.M. Griffies**, *Journal of Climate*, **23**, 80–96.

60. Improving oceanic overflow representation in climate models: the Gravity Current Entrainment Climate Process Team, 2009: S. Legg, B. Briegleb, Y. Chang, E.P. Chassignet, G. Danabasoglu, T. Ezer, A.L. Gordon, **S.M. Griffies**, R. Hallberg, L. Jackson, W. Large, T. Özgökmen, H. Peters, J. Price, U. Riemenschneider, W. Wu , X. Xu, and J. Yang. *Bulletin of the American Meteorological Society*, **90**, 657–670.

61. Coordinated Ocean-ice Reference Experiments (COREs), 2009: **S.M. Griffies**, A. Biastoch, C. Böning, F. Bryan, E. Chassignet, M. England, R. Gerdes, H. Haak, R.W. Hallberg, W. Hazeleger, J. Jungclaus, W.G. Large, G. Madec, B.L. Samuels, M. Scheinert, A. Sen Gupta, C.A. Severijns, H.L. Simmons, A.-M. Treguier, M. Winton, S. Yeager, J. Yin. *Ocean Modelling*, **26**, 1–46.

62. Effects in a climate model of slope tapering in neutral physics schemes, 2007: A. Gnanadesikan, **S.M. Griffies**, B.L. Samuels, *Ocean Modelling*, **16**, 1–16.

63. Algorithms for density, potential temperature, conservative temperature and freezing temperature of seawater, 2006: D.R. Jackett, T.J. McDougall, R. Feistel, D.G. Wright, and **S.M. Griffies**. *Journal of Atmospheric and Oceanic Technology*, **23**, 1709–1728.

64. GFDL's CM2 global coupled climate models-Part 2: The baseline ocean simulation, 2006: A. Gnanadesikan, K.W. Dixon, **S.M. Griffies**, V. Balaji, J.A. Beesley, W.F. Cooke, T.L. Delworth, R. Gerdes, M.J. Harrison, I.M. Held, W.J. Hurlin, H.-C. Lee, Z. Liang, G. Nong, R.C. Pacanowski, A. Rosati, J. Russell, B.L. Samuels, S.M. Song, M.J. Spelman, R.J. Stouffer, C.O. Sweeney, G. Vecchi, M. Winton, A.T. Wittenberg, F. Zeng, and R. Zhang. *Journal of Climate*, **19**, 675–697.

65. GFDL's CM2 global coupled climate models-Part 1: formulation and simulation characteristics, 2006: T.L. Delworth, A.J. Broccoli, A. Rosati, R.J. Stouffer, V. Balaji, J.A. Beeseley, W.F. Cooke, K.W. Dixon, J. Dunne, K.A. Dunne, J.W. Durachta, K.L. Findell, P. Ginoux, A. Gnanadesikan, C.T. Gordon, **S.M. Griffies**, R. Gudgel, M.J. Harrison, I.M. Held, R.S. Hemler, L.W. Horowitz, S.A. Klein, T.R. Knutson, P.J. Kushner, A.L. Langenhorst, H.-C. Lee, S.J. Lin, L. Lu, S.L. Malyshev, P.C. Milly, V. Ramaswamy, J. Russell, M.D. Schwarzkopf, E. Shevliakova, J. Sirutis, M.J. Spelman, W.F. Stern, M. Winton, A.T. Wittenberg, B. Wyman, F. Zeng, R. Zhang. *Journal of Climate*, **19**, 643–674.

66. Sensitivity of a global ocean model to increased run-off from Greenland, 2006: R. Gerdes, W.J. Hurlin, and **S.M. Griffies**, *Ocean Modelling*, **12**, 416–435.

67. Formulation of an ocean model for global climate simulations, 2005: **S.M. Griffies**, A. Gnanadesikan, K.W. Dixon, J.P. Dunne, R. Gerdes, M.J. Harrison, A. Rosati, J. Russell, B.L. Samuels, M.J. Spelman, M. Winton, R. Zhang. *Ocean Science*, **1**, 45–79.

68. Impacts of shortwave penetration depth on large-scale ocean circulation and heat transport, 2005: C. Sweeney, A. Gnanadesikan, **S. M. Griffies**, M. J. Harrison, A. J. Rosati, and B. L. Samuels. *Journal of Physical Oceanography*, **35**, 1103–1119.

69. Tracer conservation with an explicit free surface method for z-coordinate ocean models, 2001: **S.M. Griffies**, R.C. Pacanowski, M. Schmidt, and V. Balaji, *Monthly Weather Review*, **129**, 1081–1098.

70. Developments in ocean climate modelling, 2000: **S.M. Griffies**, C. Böning, F.O. Bryan, E.P. Chassignet, R. Gerdes, H. Hasumi, A. Hirst, A.-M. Treguier, and D. Webb, *Ocean Modelling*, **2**, 123-192. **NOAA/Oceanic and Atmospheric Research Laboratories 2001 Outstanding Scientific Review Paper Award**.

71. Biharmonic friction with a Smagorinsky-like viscosity for use in large-scale eddy-permitting ocean models, 2000: **S.M. Griffies** and R. W. Hallberg. *Monthly Weather Review*, **128**, 2935–2946.

72. Spurious diapycnal mixing associated with advection in a z-coordinate ocean model, 2000: **S.M. Griffies**, R. C. Pacanowski, and R. W. Hallberg. *Monthly Weather Review*, **128**, 538–564.

73. A conceptual framework for predictability studies, 1999: T. Schneider and **S.M. Griffies**. *Journal of Climate*, **12**, 3133-3155.

74. The Gent-McWilliams skew-flux, 1998: **S.M. Griffies**, *Journal of Physical Oceanography*, **28**, 831-841.

75. Isoneutral diffusion in a z-coordinate ocean model, 1998: **S.M. Griffies**, A. Gnanadesikan, R. C. Pacanowski, V. Larichev, J. K. Dukowicz, and R. D. Smith, *Journal of Physical Oceanography*, **28**, 805–830. **NOAA/Oceanic and Atmospheric Research Laboratories 1999 Outstanding Scientific Paper Award**.

76. A predictability study of simulated North Atlantic multidecadal variability, 1997: **S.M. Griffies** and K. Bryan, *Climate Dynamics*, **13**, 459–488.

77. Predictability of North Atlantic multidecadal climate variability, 1997: **S.M. Griffies** and K. Bryan, *Science* **275**, 181–184. **NOAA/Environmental Research Laboratories 1997 Outstanding Scientific Paper Award**.

78. Reply to comment on "Instability of the Thermohaline Circulation with Respect to Mixed Boundary Conditions", 1996: J. R. Toggweiler, E. Tziperman, Y. Feliks, K. Bryan, **S.M. Griffies**, and B. Samuels, *Journal of Physical Oceanography*, **26**, 1106–1110.

79. A linear thermohaline oscillator driven by stochastic atmospheric forcing, 1995: **S.M. Griffies** and E. Tziperman, *Journal of Climate*, **8**, 2440–2453.

80. Local and global aspects of domain wall space-times, 1993: M. Cvetič, **S.M. Griffies**, and H. H. Soleng, *Physical Review* **D 48**, 2613–2634.

81. Nonextreme and ultraextreme domain walls and their global space-times, 1993: M. Cvetič, **S.M. Griffies**, and H. H. Soleng, *Physical Review Letters*, **71**, 670–673.

82. Cauchy horizons, thermodynamics and closed time-like curves in planar supersymmetric space-times, 1993: M. Cvetič, R. Davis, **S.M. Griffies**, and H. H. Soleng, *Physical Review Letters*, **70**, 1191–1194.

83. Nonperturbative stability of supergravity and superstring vacua, 1993: M. Cvetič, **S.M. Griffies**, and S.-J. Rey, *Nuclear Physics*, **B389**, 3–24.

84. Gravitational effects in supersymmetric domain wall backgrounds, 1992: M. Cvetič and **S.M. Griffies**, *Physics Letters*, **285B**, 27–34.

85. Static domain walls in $N = 1$ supergravity, 1992: M. Cvetič, **S.M. Griffies**, and S.-J. Rey, *Nuclear Physics* **B381**, 301–328.

86. Two skyrmion interaction for the Atiyah-Manton ansätz, 1990: A. Hosaka, **S.M. Griffies**, M. Oka, and R. D. Amado, *Physics Letters* **251B**, 1–5.

BOOKS, CHAPTERS, SPECIAL JOURNAL EDITIONS, AND CONFERENCE PROCEEDINGS

1. **Ocean Circulation & Climate: a 21st Century Perspective**, 2013: G. Siedler, **S.M. Griffies**, J. Gould, and J. Church. *International Geophysics Series*, **103**, 904 pages. Published by Elsevier. ISBN: 978-0-12-391851-2.

2. Ocean circulation models and modelling, 2013: **S.M. Griffies** and A.M. Treguier, *International Geophysics Series*, **103**, 521–551. Edited by G. Siedler, **S.M. Griffies**, J. Gould, and J. Church. ISBN: 978-0-12-391851-2.

3. Evaluation of Climate Models. In **Climate Change 2013: Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change**, 2013: G. Flato, J. Marotzke et al., with **S.M. Griffies** a contributing author. Cambridge, UK: Cambridge University Press.

4. Sea level change. In **Climate Change 2013: Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change**, 2013: J.A. Church and P.U. Clark, et al, with **S.M. Griffies** a contributing author. Cambridge, UK: Cambridge University Press.

5. Carbon Dioxide and Climate: Perspectives on a Scientific Assessment, 2013: S. Bony, B. Stevens, I. Held, J. Mitchell, J.-L. Dufresne, K. Emanuel, P. Friedlingstein, **S.M. Griffies**, and C. Senior. G.R. Asrar and J.W. Hurrell (eds.), **Climate Science for Serving Society: Research, Modeling and Prediction Priorities**, DOI:10.1007/978-94-007-6692-1_14. Springer Science+Business Media, Dordrecht.

6. Understanding the Dynamic Response of Greenlands Marine Terminating Glaciers to Oceanic and Atmospheric Forcing: A White Paper by the U.S. CLIVAR Working Group on Greenland Ice Sheet-Ocean Interactions (GRISO), 2012: F. Straneo, O. Sergienko, P. Heimbach, C. Bitz, D. Bromwich, G. Catania, **S. M Griffies**, R. Hallberg, G. Hamilton, A. Jenkins, I. Joughin, R. Motyka, A. Munchow, F. M. Nick, L. Padman, W. T. Pfeffer, S. F. Price, E. Rignot, T. Scambos, M. Spall, M. Truffer, A. Vieli.

7. Impact of CO2 on climate: What have we learned since the Charney Report? What recommendations for the future?, 2011: S. Bony, B. Stevens, I. Held, J. Mitchell, J.-L. Dufresne, K. Emanuel, P. Friedlingstein, **S.M. Griffies**, and C. Senior, *WCRP Position Paper to the Open Science Meeting Oct 2011*.

8. Modelling and understanding the ocean mesoscale and submesoscale, 2011: **S.M. Griffies**, editor. Special issue of *Ocean Modelling*, **39**, 1–207.

9. Problems and Prospects in Large-Scale Ocean Circulation Models, 2010: **S.M. Griffies**, A.J. Adcroft, H. Banks, C.W. Böning, E.P. Chassignet, G. Danabasoglu, S. Danilov, E. Deleersnijder, H. Drange, M. England, B. Fox-Kemper, R. Gerdes, A. Gnanadesikan, R.J. Greatbatch, R.W. Hallberg, E. Hanert, M.J. Harrison, S.A. Legg, C.M. Little, G. Madec, S. Marsland, M. Nikurashin, A. Pirani, H.L. Simmons , J. Schröter, B.L. Samuels , A.-M. Treguier, J.R. Toggweiler, H. Tsujino, G.K. Vallis, L. White. Proceedings of the "OceanObs09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2), J. Hall, D.E. Harrison, and D. Stammer, editors. ESA Publication WPP-306. doi:10.5270/OceanObs09.cwp.38.

10. Decadal Climate Prediction: Opportunities and Challenges, 2010: J. W. Hurrell, T. Delworth, G. Danabasoglu, H. Drange, K. Drinkwater, **S.M. Griffies**, N. Holbrook, B. Kirtman, N. Keenlyside, M. Latif, J. Marotzke, G. A. Meehl, J. Murphy, T. Palmer, H. Pohlmann, T. Rosati, R. Seager, D. Smith, R. Sutton, A. Timmermann, K. E. Trenberth, J. Tribbia, and M. Visbeck. Proceedings of the "OceanObs09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2), J. Hall, D.E. Harrison, and D. Stammer, editors. ESA Publication WPP-306. doi:10.5270/OceanObs09.cwp.45.

11. Synthesis and Assimilation Systems: Essential Adjuncts to the Global Ocean Observing System, 2010: M. Rienecker, T. Awaji, M. Balmaseda, B. Barnier, D. Behringer, M. Bell, M. Bourassa, P. Brasseur, L.-A. Breivik, J. Carton, J. Cummings, E. Dombrowsky, C. Fairall, N. Ferry, G. Forget, H. Freeland, W. Gregg, **S.M. Griffies**, K. Haines, D.E. Harrison, P. Heimbach, M. Kamachi, E. Kent, T. Lee, P.-Y. Le Traon, M. McPhaden, M. Martin, P. Oke, M. Palmer, E. Remy, A. Rosati, A.Schiller, D.M. Smith, D. Stammer, N. Sugiura, K.E. Trenberth, and Y. Xue. Proceedings of the "OceanObs09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2), J. Hall, D.E. Harrison, and D. Stammer, editors. ESA Publication WPP-306. doi:10.5270/OceanObs09.pp.31.
12. The science of ocean climate models, 2009: **S.M. Griffies**. In **Encyclopedia of Ocean Sciences** 2nd Edition, J.H. Steele, K.K. Turekian, and S.A. Thorpe, editors. Elsevier, 133–140.
13. The Future of Ocean Modeling, 2009: S. Legg, A. J. Adcroft, W. Anderson, V. Balaji, J. P. Dunne, S. M. Griffies, R. W. Hallberg, M. J. Harrison, I. Held, T. Rosati, J. R. Toggweiler, G. K. Vallis, and L. White, in **Oceanography in 2025: Proceedings of a Workshop**, edited by Deborah Glickson; National Research Council publishers.
14. Formulating the equations of an ocean model, 2008: **S.M. Griffies** and A.J. Adcroft. In **Ocean Modeling in an Eddying Regime**, Geophysical Monograph 177, M.W. Hecht and H. Hasumi, editors, Washington, DC: American Geophysical Union, 281-318.
15. Some ocean model fundamentals, 2005: **S.M. Griffies**, in **Ocean Weather Forecasting: an Integrated View of Oceanography**, edited by E.P. Chassignet and J. Verron, pages 19–73. Springer Publishing.
16. **Fundamentals of Ocean Climate Models**, 2004: **S.M. Griffies**. *Princeton University Press*. Princeton, USA. 518+xxxiv pages. More than 830 copies in circulation as of September 2013.
17. An Introduction to Linear Predictability Analysis, 2003: **S.M. Griffies**. In **Global Climate: Current Research and Uncertaintites in the Climate System**. X. Rodo and R. A. Comín, editors, pages 55–79. Springer Publishing.
18. An Introduction to Ocean Climate Modeling. 2003: **S.M. Griffies**, In **Global Climate: Current Research and Uncertaintites in the Climate System**. X. Rodo and R. A. Comín, editors. Springer.
19. The Modeling Component of Ocean Forecasting, 2002: E. Chassignet, M. Bell, P. Brasseur, G. Evensen, and **S.M. Griffies**, Conference proceeding, 13-15 Jun 2002, Naval Research Lab, Stennis Space Center, Mississippi, Oceanography Division.
20. Physical climate processes and feedbacks. In **Climate Change 2001: Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change**, 2001: T.F. Stocker and G. K. C. Clarke, with **S.M. Griffies** a contributing author. Cambridge, UK: Cambridge University Press, 418-470.
21. Domain walls in $N = 1$ supergravity, 1993: M. Cvetič and **S.M. Griffies**, in **Proceedings of the International Symposium on Black Holes, Membranes, Wormholes, and Superstrings**. (S. Kalara and D. Nanopoulos editors), World Scientific.

UNREFEREED DOCUMENTS

1. Anthropogenic carbon and heat uptake by the ocean: Will the Southern Ocean remain a major sink?, 2015: C.O. Dufour, I. Frenger, T.L. Frölicher, A.R. Gray, **S.M. Griffies**, A.K. Morrison, J.L. Sarmiento, and S.A. Schlunegger. US CLIVAR Newsletter / OCS Newsletter, **13**, 1–8.
2. A historical introduction to MOM, 2015: **S.M. Griffies**, R.J. Stouffer, A.J. Adcroft, K. Bryan, K.W. Dixon, R.W. Hallberg, M.J. Harrison, R.C. Pacanowski, and A. Rosati. Available at `mom-ocean.org`.
3. Climate modelling with an energetic ocean mesoscale, 2014: **S.M. Griffies**. *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **65**, 10–15.
4. Elements of style for writing scientific journal articles, 2013: **S.M. Griffies**, W. Perrie, and G. Hull. Elsevier Publications, `www.elsevier.com/journal-authors/authors-update/issue-8/element-of-styles-to-write-research-articles`
5. Theory and Numerics of the Community Ocean Vertical Mixing (CVMix) Project, 2013: **S.M. Griffies**, M. Levy, A.J. Adcroft, G. Danabasoglu, R.W. Hallberg, D. Jacobsen, W. Large, and T. Ringler. *In progress*
6. WGOMD/SOP Workshop on Sea Level Rise, Ocean/Ice Shelf Interactions and Ice Sheets Hobart, Australia, 18-20 February 2013: S.J. Marsland, G. Danabasoglu, **S.M. Griffies**, A. Pirani, and J. Church. *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **61**, 2–3.
7. An assessment of global and regional sea level in a suite of interannual CORE- II simulations: a synopsis, 2013: **S.M. Griffies**, J. Yin, S.C. Bates, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Böning, A. Bozec, C. Cassou, E. Chassignet, G. Danabasoglu, S. Danilov, C. Domingues, H. Drange, P.J. Durack, R. Farneti, E. Fernandez, P. Goddard, R.J. Greatbatch, M. Ilicak, J. Lu, S.J. Marsland, A. Mishra, K. Lorbacher, A. J.G. Nurser, D. Salas y Mélia, J.B. Palter, B.L. Samuels, J. Schröter, F.U. Schwarzkopf, D. Sidorenko, A.-M. Treguier, Y. Tseng, H. Tsujino, P. Uotila, S. Valcke, A. Voldoire, Q. Wang, M. Winton, X. Zhang. *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **62**, 11–15.
8. **Datasets and protocol for the CLIVAR WGOMD Coordinated Ocean-sea ice Reference Experiments (COREs)**, 2012: **S.M. Griffies**, M. Winton, B. Samuels, G. Danabasoglu, S. Yeager, S. Marlsand, H. Drange, and M. Bentsen, WCRP Report No. 21/2012, pp. 21.

9. **Elements of the Modular Ocean Model (MOM)**, 2012: **S.M. Griffies**, NOAA/Geophysical Fluid Dynamics Laboratory Technical Report No. 7. Princeton, USA. 613 + xiii pages.
10. Physical ocean fields in CMIP5, 2011: **S.M. Griffies** and G. Danabasoglu. *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **16**, 32–34.
11. Working Group on Ocean Model Development (WGOMD) Activities and Future Directions, 2009: A. Pirani, **S.M. Griffies**, G. Danabasoglu, and H. Drange. *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **14**, 26–27.
12. CLIVAR WGOMD Workshop on Ocean Mesoscale Eddies: Representations, Parameterizations, and Observations, 2009: **S.M. Griffies**, *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **14**, 40–41.
13. Sampling physical ocean fields in WCRP CMIP5 simulations, 2009: **S.M. Griffies**, A.J. Adcroft, H. Aiki, V. Balaji, M. Bentson, F. Bryan, G. Danabasoglu, S. Denvil, H. Drange, M. England, J. Gregory, R.W. Hallberg, S. Legg, T. Martin, T. McDougall, A. Pirani, G. Schmidt, D. Stevens, and H. Tsujino. Southampton, UK, International CLIVAR Project Office, 56pp. (ICPO Publication Series, 137) `http://eprints.soton.ac.uk/65415/`
14. **Elements of MOM4p1**, 2009: **S.M. Griffies**, NOAA/Geophysical Fluid Dynamics Laboratory Technical Report No. 6. Princeton, USA. 444 pages.
15. Furthering the science of ocean climate modelling, 2008: **S.M. Griffies**, H. Banks and A. Pirani. *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **13**(1), 2.
16. Report from the CLIVAR Working Group on ocean model development (WGOMD), 2008: A. Pirani, **S.M. Griffies**, and H. Banks. *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **13**(1), 30-32.
17. Ocean modelling with MOM, 2007: **S.M. Griffies**, M.J. Harrison, R.C. Pacanowski, and A. Rosati, *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Issue No. Volume **12**(3), pages 3–5.
18. Design considerations for Coordinated Ocean-ice Reference Experiments, 2007: **S.M. Griffies**, C. Böning, and A.M. Treguier, *Flux News*, a publication of the WCRP Working Group on Surface Fluxes, Issue **3**, pages 3–5.
19. Reaction of the oceanic circulation to increased melt water flux from Greenland - a test case for ocean general circulation models, 2005: R. Gerdes, **S.M. Griffies**, and W.J. Hurlin, *CLIVAR Exchanges*, Newsletter of the Climate Variability and Predictability Programme. Volume **10**, pages 28–31.
20. **A Technical Guide to MOM4**, 2004: **S.M. Griffies**, M. J. Harrrison, R.C. Pacanowski, and A. Rosati, NOAA/Geophysical Fluid Dynamics Laboratory Technical Report No. 5. Princeton, USA. 337 pages.
21. **The MOM 3 Manual**, 1999: R. C. Pacanowski and **S.M. Griffies**. NOAA/Geophysical Fluid Dynamics Laboratory Technical Report No. 4. Princeton, USA. 680 pages.
22. Predictability of North Atlantic climate on decadal times scales estimated using a coupled ocean-atmosphere model, 1997: K. Bryan and **S.M. Griffies**. *International WOCE Newsletter*, **26**, 5–9.
23. Predictability of North Atlantic climate variability on multidecadal time scales, 1994: **S.M. Griffies** and K. Bryan. *The Atlantic Climate Change Program, Proceedings from the principal investigators meeting*. NOAA: University Corporation for Atmospheric Research, 77–80.