Stephen Matthew Griffies

NOAA Geophysical Fluid Dynamics Laboratory
Princeton University Program in Atmospheric and Oceanic Sciences
Stephen.Griffies at noaa.gov • Stephen.M.Griffies at gmail.com
https://StephenGriffies.github.io/
https://orcid.org/0000-0002-3711-236X/

RESEARCH STATEMENT

My research is concerned with elements of ocean fluid mechanics and the role of the ocean in the earth climate system. I make use of theoretical tools, idealized process models, realistic numerical circulation models, and field measurements. I have active collaborations with numerous scientists from around the world, most notably in America, Australia, Europe, and India. Particular research topics in recent years include studies of Atlantic and Southern Ocean dynamics; global and regional sea level variability and change; transport of matter and energy by transient mesoscale and submesoscale eddies; subgrid scale parameterizations of turbulent ocean stirring and mixing; analysis methods aimed at revealing aspects of the ocean as a turbulent fluid; algorithms for ocean circulation models.

EDUCATIONAL STATEMENT

As a lecturer, mentor, author, and editor, I aim to foster a fundamental understanding of physical concepts and their creative use in describing observed and simulated ocean phenomena. Towards this aim, I strive to pedagogically articulate the foundations of ocean fluid mechanics in articles, books, course notes, and lectures. I am particularly interested in revealing how concepts and tools from mathematical physics can be leveraged to deepen our understanding of the ocean, and for nurturing an appreciation of geophysical fluid mechanics within the broader context of theoretical physics.

INTERESTS AND ACTIVITIES

physics, oceanography, climate, writing, education, philosophy, sustainability, cultures, meditation, yoga, surfing, skiing, hiking

EMPLOYMENT AND APPOINTMENTS

2015–present	Lecturer, Atmospheric and Oceanic Sciences Program, Princeton University
2013–2017	NOAA/GFDL Model Development Team Steering Committee
Jun-Aug 2012	Visiting Scientist, National Center for Atmospheric Research, Boulder, USA
Jan-Jun 2011	CSIRO Distinguished Visiting Scientist Fellow, Hobart, Australia
2011-present	NOAA/GFDL Senior Scientist (equivalent to university full professor)
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 Staff Physical Scientist
1995–1996	NOAA/GFDL and Princeton University 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

EDUCATION

1993-1996	Post-doctoral fellow in geosciences	Princeton University
1988-1993	Ph.D in theoretical physics	University of Pennsylvania
1987-1988	Physics undergraduate studies	University of Washington
1986-1987	Masters in engineering sciences & applied mathematics	Northwestern University
1981-1986	Bachelor of science in chemical engineering	Louisiana State University

OCEANOGRAPHIC FIELD WORK

- Mar-May 2017: Eight week cruise on the *RRS JC Ross* to the Orkney Passage and Scotia Sea, as part of the Dynamics of the Orkney Passage Outflow (DynOPO) project. Principal Scientific Officer: A. Naveira Garabato.
- Jul 1993: Two week cruise on the *CCGS Hudson* to the Labrador Sea in support of the WOCE Line AR7W Atlantic Circulation Experiment. Chief Scientist: J. Lazier.

AWARDS AND HONORS

2019	Sigma Xi scientific honor society
2018	Web of Sciences (Clarivate) Highly Cited Researcher
2017	Elected Fellow of the American Geophysical Union "For exceptional and sustained contributions to the understanding of large-scale ocean circulation and physics and seminal advances in ocean modeling"
2017	NOAA Administrator's Award (with Robert Hallberg) "For scientific leadership for the innovation of the versatile community-based Modular Ocean Model MOM6"
2014	European Geosciences Union Fridtjof Nansen Medal for Oceanographic Research "For outstanding contribution and leadership in ocean general circulation model development and critical insights in the physical nature and parameterization of ocean processes"
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 (MOM4) 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

2018-present	Editor of the Journal of Advances in Modeling the Earth System (JAMES)
2016-present	Member of the awards committee for the EGU Fridtjof Nansen medal
2014-2018	Member WCRP/CLIVAR Scientific Steering Group
2014-2016	NCEP Climate Model Development Task Force (co-lead)
2013-2018	WCRP/CLIVAR Ocean Model Development Panel (ex-officio)
2012-2014	CLIVAR/CliC/SCAR Southern Ocean Region Implementation Panel
2012-present	Emeritus member of WCRP/CLIVAR Ocean Model Development Panel
2010-present	Member European Geosciences Union
2009-2015	Scientific Advisory Board for the Catalan Climate Institute *IC3*, Barcelona, Spain
2007-2018	Editor of the journal Ocean Modelling
2006-2009	WCRP/CLIVAR Scientific Steering Group
2004-2009	WRP/CLIVAR Working Group on Coupled Modelling (ex officio)
2004-2007	Editorial Board of the journal **Ocean Science**
1999-2012	WCRP/CLIVAR Working Group on Ocean Model Development (co-chair 2004-2009)
1993-present	Member American Geophysical Union
1993-present	Member American Meteorological Society

MENTORING AND SABBATICAL HOSTING

2019	Hussein Aluie	Princeton University visiting scholar (from University of Rochester)
2018-present	Graeme MacGilchrist	Princeton University post-doc researcher (with Jorge Sarmiento)
2017-present	Houssam Yassin	Princeton University graduate student
2017-2018	Laure Zanna	Princeton University visiting scholar (from Oxford University)
2017	Jianjun Yin	Princeton University visiting scholar (from University of Arizona)
2016-present	Brandon Reichl	Princeton University post-doc researcher
2016-2018	Nathaniel Tarshish	Princeton University pre-doc researcher (with Jorge Sarmiento)
2015-2017	Amanda O'Rourke	University of Michigan post-doc researcher (with Brian Arbic)
2015-2016	Henri Drake	Princeton University pre-doc researcher (with Jorge Sarmiento)
2014-2017	Alison Gray	Princeton University post-doc researcher (with Jorge Sarmiento)
2014-2017	Anna FitzMaurice	Princeton University PhD student (with Sonya Legg and Robert Hallberg)
2014-2015	Ivy Frenger	Princeton University post-doc researcher (with Jorge Sarmiento)
2013-2017	Robert Nazarian	Princeton University PhD student (with Sonya Legg and Robert Hallberg)
2013-2016	Adele Morrison	Princeton University post-doc researcher (with Jorge Sarmiento)
2013	Terrence O'Kane	Visiting senior scientist from CSIRO Marine Laboratory, Hobart, Australia
2012-2017	Carolina Dufour	Princeton University post-doc researcher (with Jorge Sarmiento)
2012-2013	Yalin Fan	Princeton University post-doc researcher
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)
2003-2004	Rüdiger Gerdes	Visiting senior scientist from AWI, Bremerhaven, Germany
2001-2002	Harper Simmons	GFDL post-doc researcher
1999-2002	Shafer Smith	Princeton University and GFDL post-doc researcher

UNIVERSITY TEACHING

- Autumn semester 2018: Princeton University Atmospheric and Oceanic Sciences 571: Geophysical Fluid Dynamics (24 lectures covering the full course)
- Spring semester 2018: Princeton University Atmospheric and Oceanic Sciences 580: Special Topics on Great Papers in Atmospheric and Oceanic Sciences (led one discussion session)
- Autumn semester 2017: Princeton University Atmospheric and Oceanic Sciences 571: Geophysical Fluid Dynamics (24 lectures covering the full course)
- Spring semester 2017: Princeton University Atmospheric and Oceanic Sciences 580: Special Topics on Great Papers in Atmospheric and Oceanic Sciences (led one discussion session)
- Autumn semester 2016: Princeton University Atmospheric and Oceanic Sciences 571: Geophysical Fluid Dynamics (12 lectures covering the second half of the course)
- Spring semester 2016: Princeton University Geosciences 503: Responsible Conduct of Research in Geosciences (co-taught one three-hour discussion session)
- Autumn semester 2015: Princeton University Atmospheric and Oceanic Sciences 571: Geophysical Fluid Dynamics (12 lectures covering the second half of the course)
- Autumn semester 2014: Princeton University Atmospheric and Oceanic Sciences 571: Geophysical Fluid Dynamics (12 lectures covering the first half of the course)
- Autumn semester 1993: Princeton University Atmospheric and Oceanic Sciences 580: Data Assimilation in Atmospheric and Oceanic Models (co-lecturer and coordinator of visiting lectures)
- 1990–1993: Instructor, Undergraduate Physics Laboratory, University of Pennsylvania
- 1990–1993: Teaching Assistant, General Relativity and Quantum Field Theory, University of Pennsylvania

Participant/collaborator on research grants and projects

- Co-PI for Australian Research Council Discovery Project (2019-2022): Risks of rapid ocean warming at the Antarctic continental margin. AU$582,500.
- Co-PI for NOAA Modeling, Analysis, Predictions, and Projections Program (01Aug2018–31Jul2020): Addressing Key Issues in CMIP6-era Earth System Models. $434,000.
- Program advisory board for the UK NERC funded project: Transient tracer-based Investigation of Circulation and Thermal Ocean Change (TICTOC) (2017-2020)
- Partner Investigator for the Australian Research Council (2017-2023) Centre of Excellence for Climate Extremes, AU$30,050,000.
- Co-PI for the Ocean Model Intercomparison Project (OMIP), which is part of the Coupled Model Intercomparison Project (CMIP6) (2016-present).
- Co-PI for the Flux Anomaly Forcing Model Intercomparison Project (FAFMIP), which is part of the Coupled Model Intercomparison Project (CMIP6) (2016-present).
- Co-PI for NOAA Modeling, Analysis, Predictions, and Projections Program (01Jul2016–30Jun2018): Development toward NCEP's fully-coupled global forecast and data assimilation system: A coupled wave-ocean system. $316,000.
- Partner Investigator for the Australian Research Council (2016-2020) funded project: An Australian Consortium for Eddy-Resolving Ocean-Sea Ice Modelling, AU$599,223.
- US Department of Energy (15Aug2014–14Aug2017): Three-dimensional structure of the Southern Ocean overturning circulation. $624,213.
- US National Science Foundation (01Sep2014–31Aug2020): Southern Ocean Carbon and Climate Observations and Modeling (SOCCOM). $20,983,626.
- NASA (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 (01Sept2013–31Aug2016): Signature of the Atlantic meridional overturning circulation in the North Atlantic dynamic sea level. $393,172.
- US Department of Energy (15Sep2011–14Sep2015): Mode and intermediate waters in Earth System Models. $519,741.
- Partner Investigator for the Australian Research Council (2011-2018) Centre of Excellence for Climate System Science, AU$21,400,000.
- NOAA Climate Program Office and US National Science Foundation (2010–2015): Climate Processes Team on representing internal-wave driven mixing in global ocean models.
- NOAA Climate Program Office and US National Science Foundation (2003–2008): Climate Processes Team on ocean eddy mixed layer interactions.
- NOAA Climate Program Office and US National Science Foundation (2003–2008): Climate Processes Team on gravity current entrainment.

Invited pedagogical lectures and courses

- April/May 2019: Fundamentals of ocean models and the analysis of ocean simulations. 15 lectures (45 minutes each) on ocean model fundamentals and analysis methods given as part of the **Advanced Ocean Modelling Summer School**, Tasmania, Australia.
- Jan 2019: Ocean circulation as a problem in mathematical & computational physics: a historical and contemporary perspective. Public lecture given as part of the Australian Mathematics Science Institute (AMSI) Summer School at the University of New South Wales, Sydney, Australia.

- Jul 2016: Ocean Modelling and sea level analysis: three lectures (two hours each) 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: Five lectures (two hours each) at the 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 (two hours each) at the Université Catholique de Louvain, Belgium
- Nov 2007: Ocean Model Fundamentals: 10 lectures (two hours each) at the University of Tasmania, Australia
- Aug 2006: Ocean Model Fundamentals: two lectures (one hour each) at the NSF summer school, Modern Mathematical Methods in Physical Oceanography, Breckenridge, USA
- Oct 2004: Ocean Model Fundamentals: 10 lectures (two hours each) at the Indian Intensive School on Large-Scale Ocean Modelling, Bangalore, India
- Sep 2004: Ocean Model Fundamentals: three lectures (two hours each) at the Global Ocean Data Assimilation Experiment Summer School, La Londe Les Maures, France
- May 2003: Ocean Climate Modeling at NOAA-GFDL: two lectures (one hour each) for a workshop on ocean modeling, Hobart, Australia
- May 2002: Ocean Climate Modeling with MOM4: three lectures (one hour each) for a workshop on ocean modeling, Kiel, Germany
- Jan 2001: Ocean Dynamics and Modeling: three lectures (two hours each) at La Escuela de Verano de Universidad de Concepción, Chile
- Mar 1999: Ocean and Climate Modeling: two lectures (90 minutes each) at Conference on Global Climate, Barcelona, Spain

PEDAGOGICAL MEDIA OUTREACH

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

INVITED RESEARCH PRESENTATIONS SINCE 2008

- May 2018: Understanding and projecting global, regional, and coastal sea level: Reasons to include coastal ocean processes in global models: Consortium for Ocean-Sea Ice Modelling in Australia (COSIMA) Annual Meeting, Australian National University, Canberra, Australia & University of New South Wales, Sydney, Australia.
- Mar 2018: Understanding and projecting global, regional, and coastal sea level: Reasons to include coastal ocean processes in global models: ISSI workshop on understanding the relationship between coastal sea level and large-scale ocean circulation, Bern, Switzerland.
- Feb 2018: Subsurface Warming of Antarctic Coastal Waters: a Role for Both Winds and Freshening: American Geophysical Union Ocean Sciences Conference, Portland, Oregon, USA.
- Dec 2017: Localized Rapid Warming of West Antarctic Subsurface Waters by Remote Winds: American Geophysical Union Fall Meeting, New Orleans, Louisiana, USA.
- Nov 2017: Physical mechanisms of sea level variations in a changing climate: International CLIVAR Scientific Steering Group meeting, Indian Institute of Tropical Meteorology, Pune, India.

- Jul 2017: Localized rapid warming of West Antarctic subsurface waters by remote winds: WCRP Conference on Regional Sea-level Changes and Coastal Impacts, Columbia University, New York City, USA.
- May 2017: Localized rapid warming of West Antarctic subsurface waters by remote winds: *RRS JC Ross* research cruise JR16005 to Orkney Passage, Southern Ocean.
- 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

- Mar 2019: scientific advisory committee for the WCRP workshop: Sources and sinks of ocean mesoscale eddy energy, Florida, USA.
- Feb 2018: co-convener for the Town Hall: Process understanding and standardized assessment towards the eddying realm. American Geophysical Union Ocean Sciences Conference, Portland, Oregon, USA.
- Feb 2018: co-convener for the session: Modeling the Climate System at High Resolution, American Geophysical Union Ocean Sciences Conference, Portland, Oregon, USA.
- 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, Birmingham, UK.

Student participant in competitive 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

10. Comparing Ocean Boundary Vertical Mixing Schemes with Langmuir Turbulence, 2019: Q. Li, B.G. Reichl, B. Fox-Kemper, A.J. Adcroft, S. Belcher, G. Danabasoglu, A. Grant, S.M. Griffies, R.W. Hallberg, T. Hara, R. Harcourt, T. Kukulka, W.G. Large, J.C. McWilliams, B. Pearson, P. Sullivan, L. Van Roekel, P. Wang, Z. Zheng, *in preparation for Journal of Advances in Modeling the Earth System (JAMES)*.
9. On the superposition of mean advective and eddy-induced transports in global ocean heat and salt budgets, 2019: F.B. Dias, C.M. Domingues, S.J. Marsland, S.M. Griffies, S.R. Rintoul, R. Matear, R. Fiedler, N.L. Bindoff, *in preparation*
8. An extrema-diminishing general-coordinate implementation of neutral diffusion, 2019: A. Shao, A.J. Adcroft, R.W. Hallberg, and **S.M. Griffies**, *in preparation for Journal of Advances in Modeling the Earth System (JAMES)*.
7. An assessment of the Indian Ocean mean state and seasonal cycle in a suite of interannual CORE-II simulations, 2019: H. Rahaman, U. Srinivasu, S. Panickal, J. Durgadoo, S.M. Griffies, M. Ravichandran, A. Bozec , A. Voldoire, A. Cherchi, G. Danabasoglu, H. Tsujino, K. Getzlaff, M. Ilicak, Q. Wang, R. Farneti, S. Valcke, S.J. Marsland, *submitted to Ocean Modelling*.
6. ACCESS-OM2: A Global Ocean-Sea Ice Model at Three Resolutions, 2019: A.E. Kiss, A. McC. Hogg, N. Hannah, F. Boeira Dias, G. Brassington, M.A. Chamberlain, C. Chapman, P. Dobrohotoff, C. Domingues, E.R. Duran, M.H. England, R. Fiedler, S.M. Griffies, A. Heerdegen, P. Heil, R.H. Holmes, A. Klocker, S.J. Marsland, A.K. Morrison, J. Munroe, M. Nikurashin, P. Oke, G.S. Pilo, O. Richet, A. Savita, J.P. Spence, K.D. Stewart, M.L. Ward, F. Wu, X. Zhang, *submitted to Geoscientific Model Development*.
5. The GFDL Global Ocean and Sea Ice Model OM4.0: Model Description and Simulation Features, 2019: A.J. Adcroft, W. Anderson, C. Blanton, M. Bushuk, C Dufour, J.P. Dunne, S.M. Griffies, R.W. Hallberg, M.J. Harrison, I.M. Held, M. Jansen, J. John, J. Krasting, A. Langenhorst, S. Legg, Z. Liang, C. McHugh, B. Reichl, A. Radhakrishnan, A. Rosati, B. Samuels, A. Shao, R.J. Stouffer, M. Winton, A. Wittenberg, B. Xiang, N. Zadeh, R. Zhang, *submitted to Journal of Advances in Modeling the Earth System (JAMES)*.
4. Towards comprehensive observing and modeling systems for monitoring and predicting regional to coastal sea level, 2019: R.M. Ponte, M. Carson, M. Cirano, C. Domingues, S. Jevrejeva, M. Marcos, G. Mitchum, R.S.W. van de Wal, P.L. Woodworth, M. Ablain, F. Ardhuin, V. Ballu, M. Becker, J. Benveniste, F. Birol, E. Bradshaw, A. Cazenave, P. De Mey-Frémaux, F. Durand, T. Ezer, L.-L. Fu, I. Fukumori, K. Gordon, M. Gravelle, S.M. Griffies, W. Han, A. Hibbert, C.W. Hughes, D. Idier, V.H. Kourafalou, C.M. Little, A. Matthews, A. Melet, M. Merrifield, B. Meyssignac, S. Minobe, T. Penduff, N. Picot, C. Piecuch, R.D. Ray, L. Rickards, A. Santamara-Gmez, D. Stammer, J. Staneva, L. Testut, K. Thompson, P. Thompson, S. Vignudelli, J. Williams, S.D.P. Williams, G. Wöppelmann, L. Zanna, and X. Zhang, *in revision to Frontiers in Marine Science* as part of OceanObs2019.
3. Ocean climate observing requirements in support of Climate Research and Climate Information, 2019: D. Stammer, A. Bracco, L. Beal, N. Bindoff, P. Braconnot, W. Cai, D. Chen, G. Danabasoglu, B. Dewitte, R. Farneti, K. Takahashi Guevara, B. Fox Kemper, J. Fyfe, S.M. Griffies, S. Jayne, R.M. Koll, A. Lazar, M. Lengaigne, X. Lin, S. Marsland, P.M.S. Monteiron, W. Robinson, R. Rykaczewski, S. Speichy, I. Smith, A. Solomon, J. Vialard, *in revision at Frontiers in Marine Science* as part of OceanObs2019.
2. Rapid mixing and exchange of deep-ocean waters in an abyssal boundary current, 2019: A.C. Naveira Garabato, E.E. Frajka-Williams, C.P. Spingys, S.A. Legg, K.L. Polzin, A. Forryan, E.P. Abrahamsen, C.E. Buckingham, **S.M. Griffies**, S.D. McPhail, K.W. Nicholls, L.F. Thomas, and M.P. Meredith, *in revision at Proceedings of the National Academy of Sciences*.
1. A new algorithm to accurately calculate neutral tracer gradients and their impacts on vertical heat transport and water mass transformation, 2019: S. Groeskamp, P. Barker, T.J. McDougall, R.P. Abernathey, and **S.M. Griffies**, *in revision at Journal of Advances in Modeling the Earth System (JAMES)*.

PEER-REVIEWED PUBLICATIONS

117. Relating the diffusive salt flux immediately below the ocean surface skin layer to boundary freshwater and salt fluxes, 2019: A.J.G. Nurser and **S.M. Griffies**, *Journal of Physical Oceanography*, doi:10.1175/JPO-D-19-0037.1.

116. Sea level and the role of coastal trapped waves in mediating the interaction between the coast and open ocean, 2019: C.W. Hughes, I. Fukumori, **S.M. Griffies**, J.M. Huthnance, S. Minobe, J.P. Spence, K.R. Thompson, and A. Wise, *Surveys in Geophysics*, doi:10.1007/s10712-019-09535-x.

115. Concepts and terminology for sea level–mean, variability and change, both local and global, 2019: J.M. Gregory, **S.M. Griffies**, C.W. Hughes, J.A. Lowe, J.A. Church, I. Fukimori, 5.N. Gomez, R.E. Kopp, F. Landerer, R.M. Ponte, D. Stammer, M.E. Tamisiea, R.S.W. van de Wal, *Surveys in Geophysics*, doi:10.1007/s10712-019-09525-z.

114. 100 Years of Earth System Model Development, 2018: D. Randall, C.M. Bitz, G. Danabasoglu, A.S. Denning, P. Gent, A. Gettelman, **S.M. Griffies**, P. Lynch, H. Morrison, R. Pincus, J. Thurburn, *accepted for publication in A Century of Progress in Atmospheric and Related Sciences: Celebrating the American Meteorological Society Centennial*.

113. Challenges and Prospects in Ocean Circulation Models, 2019: B. Fox-Kemper, A.J. Adcroft, C.W. Böning, E.P. Chassignet, E. Curchitser, G. Danabasoglu, C. Eden, M.H. England, R. Gerdes, R. Greatbatch, S.M. Griffies, R.W. Hallberg, E. Hanert, P. Heimbach, H.T. Hewitt, C.N. Hill, Y. Komuro, S. Legg, J. Le Sommer, S. Masina, S.J. Marsland, S.G. Penny, F. Qiao, T.D. Ringler, A.M. Treguier, H. Tsujino, P. Uotila, S.G. Yeager, *Frontiers in Marine Science*, **6:65**, doi: 10.3389/fmars.2019.00065

112. The water mass transformation framework for ocean physics and biogeochemistry, 2019: S. Groeskamp, **S.M. Griffies**, D. Iudicone, R. Marsh, A.J.G. Nurser, and J.D. Zika, *Annual Review of Marine Science*, **11**, 21.1-21.35, doi:10.1146/annurev-marine-010318-095421.

111. Role of ocean model formulation in climate response uncertainty, 2019: J.P. Krasting, R.J. Stouffer, **S.M. Griffies**, R.W. Hallberg, S.L. Malyshev, B.L. Samuels, and L.T. Sentman, *Journal of Climate*, **31**, 9313-9333, doi:10.1175/JCLI-D-18-0035.1.

110. Surface winds from atmospheric reanalysis lead to contrasting oceanic forcing and coastal upwelling patterns, 2018: F.G. Taboada, C.A. Stock, **S.M. Griffies**, J.P. Dunne, J.G. John, R.J. Small, H. Tsujino, *Ocean Modelling*, **133**, 79-111, doi:10.1016/j.ocemod.2018.11.003.

109. Understanding the Equatorial Pacific Cold Tongue Heat Budget, Part I: Diagnostic Framework, 2018: S. Ray, A.T. Wittenberg, **S.M. Griffies**, and F. Zeng, *Journal of Climate*, **31**, 9965–9985, doi:10.1175/JCLI-D-18-0152.1.

108. Understanding the Equatorial Pacific Cold Tongue Heat Budget, Part II: Evaluation of the GFDL-FLOR Coupled GCM, 2018: S. Ray, A.T. Wittenberg, **S.M. Griffies**, and F. Zeng, *Journal of Climate*, **31**, 9987–10011, doi:10.1175/JCLI-D-18-0153.1.

107. Improved Simulations of Tropical Pacific Annual-Mean Climate in the GFDL FLOR and HiFLOR Coupled GCMs, 2018: A.T. Wittenberg, G.A. Vecchi, T.L. Delworth, A. Rosati, W.G. Anderson, W.F. Cooke, S. Underwood, F. Zeng, **S.M. Griffies**, S. Ray, *Journal of Advances in Modeling the Earth System (JAMES)*, **10**, doi:10.1029/2018MS001372.

106. Science in a world of transient climate change: enabling regional to local predictions in support of reliable climate information, 2018: D. Stammer, A. Bracco, P. Bracconot, G. Brasseur, **S.M. Griffies**, E. Hawkins, *Earth's Future*, doi:10.1029/2018EF000979.

105. Change in future climate due to Antarctic meltwater, 2018: B. Bronselaer, M. Winton, **S.M. Griffies**, R.J. Stouffer, W.J. Hurlin, O.V. Sergienko, K. Rodgers, J. Russell, *Nature*, doi:10.1038/s41586-018-0712-z.

104. The KPP boundary layer scheme for the ocean: revisiting its formulation and benchmarking one-dimensional simulations relative to LES, 2018: L. Van Roekel, A.J. Adcroft, G. Danabasoglu, **S.M. Griffies**, B. Kauffman, W. Large, M. Levy, B.G. Reichl, T. Ringler, M. Schmidt, *Journal of Advances in Modeling the Earth System (JAMES)*, doi:10.1029/2018MS001336

103. Roles of the ocean mesoscale in the horizontal supply of mass, heat, carbon and nutrients to the Northern Hemisphere subtropical gyres, 2018: A. Yamamoto, J.B. Palter, C.O. Dufour, **S.M. Griffies**, C. Dianchi, M. Claret, J.P. Dunne, I. Frenger, and E.D. Galbraith, *Journal of Geophysical Research - Oceans*, doi:10.1029/2018JC013969.

102. The benefits of global high-resolution for climate simulation: process-understanding and the enabling of stakeholder decisions at the regional scale, 2018: M. J. Roberts, P. L. Vidale, C. Senior, H. Hewitt, P. Chang, H. Christensen, S. Danilov, M.-E. Demory, **S.M. Griffies**, R. Haarsma, T. Jung, S. Minobe, T. Ringler, M. Satoh, R. Schiemann, E. Scoccimarro, G. Stephens, M.F. Wehner, G. Martin, S. Bertou, C. Bates, *Bulletin of the American Meteorological Society*, 2341–2359, doi:10.1175/BAMS-D-15-00320.1.

101. Identifying Lagrangian coherent structures in a mesoscale eddy-permitting ocean model, 2018: Tarshish, N., R. Abernathey, C. Zhang, C.O. Dufour, I. Frenger, **S.M. Griffies**, *Ocean Modelling*, **130**, 15–28, doi:10.1016/j.ocemod.2018.07.001.

100. JRA-55 based surface dataset for driving ocean-sea-ice models (JRA55-do), 2018: H. Tsujino, S. Urakawaa, H. Nakano, R.J. Small, W.M. Kim, S.G. Yeager, G. Danabasoglu, T. Suzuki, J.L. Bamber, M. Bentsen, C. Böning, A. Bozec, E. Chassignet, E. Curchitser, F.B. Dias, P.J. Durack, **S.M. Griffies**, Y. Harada, M. Ilicak, S.A. Josey, C. Kobayashi, S.a Kobayashi, Y. Komuro, W.G. Large, J. Le Sommer, S.J. Marsland, S. Masina, M. Scheinert, H. Tomita, M. Valdivieso, D. Yamazaki, *Ocean Modelling*, **130**, 79-139, doi:10.1016/j.ocemod.2018.07.002.

99. Lagrangian timescales of Southern Ocean upwelling in a hierarchy of model resolutions, 2018: H.F. Drake, A.K. Morrison, **S.M. Griffies**, J.L. Sarmiento, W. Weijer, A. Gray, *Geophysical Research Letters*, **45**, doi:10.1002/2017GL076045

98. Lagrangian ocean analysis: fundamentals and practices, 2018: 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 J.D. Zika, *Ocean Modelling*, **121**, 49–75, doi:10.1016/j.ocemod.2017.11.008.

97. Frequency-domain analysis of forced versus intrinsic ocean surface kinetic energy variability in GFDL's CM2-O model hierarchy, 2018: A.K. O'Rourke, B.K. Arbic, and **S.M. Griffies**, *Journal of Climate*, **31**, 1789–1810, doi:10.1175/JCLI-D-17-0024.1.

96. Do high-resolution global ocean models promise benefits for coupled prediction on short-range to climate timescales?, 2017: H.T. Hewitt, M.J. Bell, E.P. Chassignet, A. Czaja, D. Ferreira, **S.M. Griffies**, P. Hyder, J. McClean, A.L. New, M.J. Roberts, *Ocean Modelling*, **120**, 120–136, doi:10.1016/j.ocemod.2017.11.002.

95. 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**, *Geophysical Research Letters*, doi:10.1002/2017GL074706.

94. Mechanistic drivers of re-emergence of anthropogenic carbon in the Equatorial Pacific, 2017: P. Zhai, K.B. Rodgers, **S.M.** Griffies, R.D. Slater, D. Iudicone, J.L. Sarmiento, and L. Resplandy, *Geophysical Research Letters*, doi:10.1002/2017GL073758.

93. CO2-induced ocean warming around the Antarctic ice sheet in an eddying global climate model, 2017: P. Goddard, C.O. Dufour, J. Yin, **S.M. Griffies**, M. Winton, *Journal of Geophysical Research*, doi:10.1002/2017JC012849.

92. 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, *Journal of Climate*, **30**, 7719–7737, doi:10.1175/JCLI-D-16-0586.1

91. Spiraling 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, *Nature Communication*, doi:10.1038/s41467-017-00197-0.

90. 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 M.H. England, *Nature Climate Change*, doi:10.1038/NCLIMATE3335.

89. Biogeochemical protocols and diagnostics for the CMIP6 Ocean Model Intercomparison Project (OMIP), 2017: 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, *Geoscientific Model Development*, **10**, 2169–2199, doi:10.5194/gmd-10-2169-2017.

88. Climate Process Team on Internal-Wave Driven Ocean Mixing, 2017: J.A. MacKinnon, Z. Zhao, C.B. Whalen, A.F. Waterhouse, D.S. Trossman, O.M. Sun, L.C. St. Laurent, H.L. Simmons, K. Polzin, R. Pinkel, A. Pickering, N.J. Norton, J.D. Nash, R. Musgrave, L.M. Merchant, A.V. Melet, B. Mater, S. Legg, W.G. Large, E. Kunze, J.M. Klymak, M. Jochum, S.R. Jayne, R.W. Hallberg, **S.M. Griffies**, P. Gent, S. Diggs, G. Danabasoglu, E.P. Chassignet, M.C. Buijsman, F.O. Bryan, B.P. Briegleb, A. Barna, B.K. Arbic, J.K. Ansong, M.H. Alford, *Bulletin of the American Meteorological Society*, doi:10.1175/BAMS-D-16-0030.1.

87. 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, *Ocean Modelling*, **113**, 50–65, doi:10.1016/j.ocemod.2017.03.012.

86. 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.

85. 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.

84. 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, doi:10.1016/j.ocemod.2016.06.003.

83. 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:10.1175/JCLI-D-15-0458.1.

82. 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

81. 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.

80. 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.

79. 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.

78. 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.

77. 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, doi:10.1016/j.ocemod.2015.11.007.

76. 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.

75. 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.

74. 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. 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*, **94**, 67–94. doi:10.1016/j.ocemod.2015.07.022.

73. 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.

72. 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.

71. 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, doi:10.1016/j.ocemod.2015.03.004.

70. 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.

69. 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:10.1175/JCLI-D-14-00353.1.

68. 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.

67. 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:10.1175/JCLI-D-14-00152.1.

66. 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.

65. 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.

64. 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.

63. An assessment of global and regional sea level in a suite of interannual CORE-II simulations, 2014: **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, doi:10.1016/j.ocemod.2014.03.004.

62. 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, doi:10.1175/JCLI-D-13-00583.1.

61. 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, doi:10.1175/JCLI-D-13-00198.1.

60. 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*, doi:10.1016/j.ocemod.2013.12.005.

59. 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:10.1016/j.ocemod.2013.10.005.

58. 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, doi:10.1175/JCLI-D-13-00016.1.

57. 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.

56. 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.

55. 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.

54. 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.

53. 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.

52. 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.

51. 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, doi:10.1175/JCLI-D-12-00121.1.

50. 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, doi:10.1175/JCLI-D-11-00695.1.

49. 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, doi:10.1175/JCLI-D-12-00296.1.

48. 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, doi:10.1175/JCLI-D-11-00560.1.

47. 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.

46. 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, doi:10.1016/j.ocemod.2012.08.003.

45. 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, doi:10.1016/j.ocemod.2012.05.004.

44. 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*, **117, C06003**, doi:10.1029/2011JC007733.

43. 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.

42. 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.

41. 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.

40. 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.

39. 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.

38. 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.

37. 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.

36. 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.

35. 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.

34. 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.

33. Parameterization of mixed layer eddies. III: Implementation and impact in global ocean climate simulations, 2011: B. 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.

32. 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.

31. 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.

30. 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, doi:10.1175/2010JCLI3533.1.

29. 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, doi: 10.1016/j.ocemod.2010.01.004.

28. 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.

27. 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.

26. 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.

25. 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.

24. 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.

23. 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.

22. 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.

21. 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.

20. 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.

19. 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.

18. 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.

17. 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**.

16. 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.

15. 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.

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

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

12. 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**.

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

10. 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**.
9. 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.
8. A linear thermohaline oscillator driven by stochastic atmospheric forcing, 1995: **S.M. Griffies** and E. Tziperman, *Journal of Climate*, **8**, 2440–2453.
7. 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.
6. 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.
5. 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.
4. Nonperturbative stability of supergravity and superstring vacua, 1993: M. Cvetič, **S.M. Griffies**, and S.-J. Rey, *Nuclear Physics*, **B389**, 3–24.
3. Gravitational effects in supersymmetric domain wall backgrounds, 1992: M. Cvetič and **S.M. Griffies**, *Physics Letters*, **285B**, 27–34.
2. Static domain walls in $N = 1$ supergravity, 1992: M. Cvetič, **S.M. Griffies**, and S.-J. Rey, *Nuclear Physics* **B381**, 301–328.
1. 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

22. Ocean modeling and data assimilation in the context of satellite altimetry, 2017: D. Stammer and **S.M. Griffies**, in **Satellite Altimetry over Oceans and Land Surfaces**, CRC Press.
21. **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.
20. 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.
19. 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.
18. 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.
17. 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.
16. 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.
15. 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*.
14. Modelling and understanding the ocean mesoscale and submesoscale, 2011: **S.M. Griffies**, editor. Special issue of *Ocean Modelling*, **39**, 1–207.
13. 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.

12. 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.
10. 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.
9. 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.
8. 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, doi:10.1029/177GM18.
7. 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.
6. **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.
5. 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.
4. 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.
3. 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.
2. 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.
1. 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.

ARTICLES, REPORTS, AND NEWSLETTERS

28. Climate and Ocean Variability, Predictability and Change (CLIVAR): Science Plan and Implementation Strategy, 2018: A. Bracco, D. Stammer, K. AchutaRao, N. Bindoff, P. Braconnot, C. Deser, B. DeWitte, **S.M. Griffies**, E. Hawkins, and P. Monteiro, WCRP Publication No.: 14/2018.
27. Antarctic Sea Ice Trends: Insights from a Suite of Climate Models, 2018: J. Sauvé, C. Dufour, **S.M. Griffies**, and M. Winton, *McGill Science Undergraduate Research Journal*, **13**, 34–39.
26. Western boundary currents as conduits for the ejection of anthropogenic carbon from the thermocline, 2017: K. Rodgers, P. Zhai, D. Iudicone, A. Aumont, B. Carter, A. Fassbender, **S.M. Griffies**, L. Resplandy, K. Toyama, *U.S. CLIVAR Variations*, **15**, 6–10, doi:10.5065/D6SJ1JB26–10.
25. Final Report of the *Climate Model Development Task Force* of the NOAA Modeling, Analysis, Predictions and Projections Program (MAPP), 2017: J.L. Kinter, S. Saha, and **S.M. Griffies**, doi:10.7289/V5/TR-OAR-CPO-6
24. Comment on "Neutrality versus materiality: A thermodynamic theory of neutral surfaces", 2017: T.J. McDougall, S. Groeskamp, and **S.M. Griffies**, *Fluids*, **2**, doi:10.3390/fluids2020019.
23. 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.
22. 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 http://www.mom-ocean.science/web.

21. 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.
20. Elements of style for writing scientific journal articles, 2013: **S.M. Griffies**, W. Perrie, and G. Hull. Elsevier Publications, available at https://www.elsevier.com/authors-update/story/publishing-tips/element-of-styles-to-write-research-articles.
19. 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, available at https://github.com/CVMix/CVMix-description/blob/master/cvmix.pdf.
18. 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.
17. 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.
16. **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.
15. **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.
Available at http://www.mom-ocean.science/web/docs/project/MOM5_manual.pdf.
14. 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.
13. 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.
11. 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/`
10. **Elements of MOM4p1**, 2009: **S.M. Griffies**, NOAA/Geophysical Fluid Dynamics Laboratory Technical Report No. 6. Princeton, USA. 444 pages. Available at http://www.mom-ocean.science/web/docs/project/MOM4p1_manual.pdf.
9. 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.
8. 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.
7. 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.
6. 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.
5. 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.
4. **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.
Available at http://www.mom-ocean.science/web/docs/project/MOM4_manual.pdf.
3. **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. Available at http://www.mom-ocean.science/web/docs/project/MOM3_manual.pdf.
2. 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.
1. 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.