

PUBLICATIONS

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- McWilliams, J.C., 1972: Observations of kinetic energy correspondence in the internal wave field. *Deep-Sea Res.* **19**, 793-811.
- McWilliams, J.C., 1974: Forced transient flow and small scale topography. *Geophys. Fluid Dyn.* **6**, 49-79.
- McWilliams, J.C., & A.R. Robinson, 1974: A wave analysis of the Polygon array in the tropical Atlantic. *Deep-Sea Res.* **21**, 359-368.
- Robinson, A.R., & J.C. McWilliams, 1974: The baroclinic instability of the open ocean. *J. Phys. Ocean.* **14**, 281-294.
- McWilliams, J.C., & G.R. Flierl, 1976: Optimal, quasi-geostrophic wave analyses of MODE array data. *Deep-Sea Res.* **23**, 285-300.
- McWilliams, J.C., 1976: Large-scale inhomogeneities and mesoscale ocean waves: A single, stable wave field. *J. Mar. Res.* **34**, 423-456.
- McWilliams, J.C. 1976: Maps from the MODE experiment. I. Geostrophic streamfunction. *J. Phys. Ocean.* **6**, 810-827.
- McWilliams, J.C., 1976: Maps from the MODE experiment. II. Potential vorticity and its conservation. *J. Phys. Ocean.* **6**, 828-846.
- McWilliams, J.C., 1976: Mapping the weather in the sea. *Oceanus* **19**, 77-81.
- McWilliams, J.C., 1977: On the large scale circulation of the ocean: A discussion for the unfamiliar. In: *Ocean Sound Scattering Prediction*, N.R. Anderson & B.J. Zahuranec, eds., Plenum Press, New York, 723-747.
- Flierl, G.R., & J.C. McWilliams, 1977: On the sampling requirements for measuring moments of eddy variability. *J. Mar. Res.* **35**, 797-820.
- McWilliams, J.C., 1977: A note on a consistent quasigeostrophic model in a multiply connected domain. *Dyn. Atmos. Oceans* **1**, 427-441.
- McWilliams, J.C., 1977: On a class of stable, slightly geostrophic mean gyres. *Dyn. Atmos. Oceans* **2**, 19-28.

- McWilliams, J.C., 1978: Stable jet modes: A special case of eddy and mean flow interaction. *J. Phys. Ocean.* **8**, 344-362.
- McWilliams, J.C., & P.R. Gent, 1978: A coupled air and sea model for the Tropical Pacific. *J. Atmos. Sci.* **35**, 962-989.
- McWilliams, J.C., W.R. Holland, & J.H.S. Chow, 1978: A description of numerical Antarctic Circumpolar Currents. *Dyn. Atmos. Oceans* **2**, 213-291.
- The MODE Group, 1978: The Mid-Ocean Dynamics Experiment. *Deep-Sea Res.* **25**, 859-910.
- McWilliams, J.C., & P.R. Gent, 1979: Corrigendum, *J. Atmos. Sci.* **36**, 181.
- McWilliams, J.C., & G.R. Flierl, 1979: On the evolution of isolated non-linear vortices. *J. Phys. Ocean.* **9**, 1155-1182.
- McWilliams, J.C., 1979: A review of research on mesoscale ocean currents. *Rev. Geophys. and Space Phys.* **17**, 1548-1558.
- Leith, C.E., & J.C. McWilliams, 1979: The role of the oceans in climate. *Astronautics & Aeronautics*, **July-August**, 46-52.
- Flierl, G.F., V.D. Larichev, J.C. McWilliams, & G.M. Reznik, 1980: The dynamics of baroclinic and barotropic solitary eddies. *Dyn. Atmos. Oceans* **5**, 1-41.
- McWilliams, J.C., 1980: An application of equivalent modons to atmospheric blocking. *Dyn. Atmos. Oceans* **5**, 43-66.
- McWilliams, J.C., & C.Y. Shen, 1980: Mesoscale modal coupling. *J. Phys. Ocean.* **10**, 741-752.
- McWilliams, J.C., & P.R. Gent, 1980: Intermediate models of planetary circulations in the atmosphere and ocean. *J. Atmos. Sci.* **37**, 1657-1678.
- Bretherton, F.P., & J.C. McWilliams, 1980: Estimations from irregular arrays. *Rev. Geophys. and Space Phys.* **18**, 789-812.
- McWilliams, J.C., G.R. Flierl, V.D. Larichev, & G.M. Reznik, 1981: Numerical studies of barotropic modons. *Dyn. Atmos. Oceans* **5**, 219-238.
- McWilliams, J.C., & J.H.S. Chow, 1981: Equilibrium geostrophic turbulence: I. A reference solution in a β -plane channel. *J. Phys. Ocean.* **11**, 921-949.
- Gent, P.R., & J.C. McWilliams, 1982: Intermediate model solutions to the Lorenz equations: Strange attractors and other phenomena. *J. Atmos. Sci.* **39**, 3-13.
- McWilliams, J.C., & N.J. Zabusky, 1982: Interactions of isolated vortices. I. Modons colliding with modons. *Geophys. & Astrophys. Fluid Dyn.* **19**, 207-227.
- Zabusky, N.J., & J.C. McWilliams, 1982: A modulated point-vortex model for geostrophic, β -plane dynamics. *Phys. Fluids* **25**, 2175-2182.
- McWilliams, J.C., 1982: Isolated vortices in planetary fluid motions. *Proceedings of Ninth U.S. National Congress of Applied Mechanics*, Amer. Soc. of Mech. Eng., New York, NY, 283-289.

- McWilliams, J.C., E.D. Brown, H.L. Bryden, C.C. Ebbesmeyer, B.A. Elliot, R.H. Heinmiller, B.L. Hua, K.D. Leaman, E.J. Lindstrom, J.R. Luyten, S.E. McDowell, W.B. Owens, H. Perkins, J.F. Price, L. Regier, S.C. Riser, H.T. Rossby, T.B. Sanford, C.Y. Shen, B.A. Taft, & J.C. Van Leer, 1983: The local dynamics of eddies in the western North Atlantic. In: *Eddies in Marine Science*, A.R. Robinson, ed., Springer-Verlag, Berlin Heidelberg, 92-113.
- Gent, P.R., & J.C. McWilliams, 1983: Consistent balanced models in bounded and periodic domains. *Dyn. Atmos. Oceans* **7**, 67-93.
- McWilliams, J.C., 1983: Interactions of isolated vortices. II. Modon generation by monopole collision. *Geophys. & Astrophys. Fluid Dyn.* **24**, 1-22.
- McWilliams, J.C., 1983: On the relevance of two-dimensional turbulence to geophysical fluid motions. *J. de Mécanique* **Numero Special**, 83-97.
- McWilliams, J.C., 1983: On the mean dynamical balances of the Gulf Stream Recirculation Zone. *J. Mar. Res.* **41**, 427-460.
- Gent, P.R., & J.C. McWilliams, 1983: Regimes of validity for balanced models. *Dyn. Atmos. Oceans* **7**, 167-183.
- Gent, P.R., & J.C. McWilliams, 1983: The equatorial waves of balanced models. *J. Phys. Ocean.* **13**, 1179-1192.
- Gent, P.R., & J.C. McWilliams, 1984: Balanced models in isentropic coordinates and the shallow water equations. *Tellus* **36A**, 166-171.
- McWilliams, J.C., 1984: The emergence of isolated, coherent vortices in turbulent flow. *J. Fluid Mech.* **146**, 21-43.
- McWilliams, J.C., 1985: Submesoscale, coherent vortices in the ocean. *Rev. Geophys.* **23**, 165-182.
- Herring, J.R., & J.C. McWilliams, 1985: Comparison of direct numerical simulation of two-dimensional turbulence with two-point closure: The effects of intermittency. *J. Fluid Mech.* **153**, 229-242.
- McWilliams, J.C., 1985: A note on a uniformly valid model spanning the regimes of geostrophic and isotropic, stratified turbulence: Balanced turbulence. *J. Atmos. Sci.* **42**, 1773-1774.
- Shen, C.Y., J.C. McWilliams, B.A. Taft, C.C. Ebbesmeyer, & E.J. Lindstrom, 1986: The mesoscale spatial structure and evolution of dynamical and scalar properties observed in the Northwestern Atlantic Ocean during the POLYMODE local dynamics experiment. *J. Phys. Ocean.* **16**, 454-482.
- Taft, B.A., C.C. Ebbesmeyer, E.J. Lindstrom, J.C. McWilliams, & C.Y. Shen, 1986: Water mass structure during the POLYMODE local dynamics experiment. *J. Phys. Ocean.* **16**, 403-426.
- Ebbesmeyer, C.C., B.A. Taft, J.C. McWilliams, C.Y. Shen, S.C. Riser, H.T. Rossby, P.E. Biscayne, & H.G. Ostlund, 1986: Detection, structure, and origin of extreme anomalies in a western Atlantic oceanographic section. *J. Phys. Ocean.* **16**, 591-612.
- McWilliams, J.C., W.B. Owens, & B.L. Hua, 1986: An objective analysis of the POLYMODE Local Dynamics Experiment. I. General formalism and statistical model parameters. *J. Phys. Ocean.* **16**, 483-504.

- Hua, B.L., J.C. McWilliams, & W.B. Owens, 1986: An objective analysis of the POLYMODE Local Dynamics Experiment. II. Streamfunction and potential vorticity fields during the Intensive Period. *J. Phys. Ocean.* **16**, 506-522.
- Gent, P.R., & J.C. McWilliams, 1986: The instability of barotropic circular vortices. *Geophys. & Astrophys. Fluid Dyn.* **35**, 209-233.
- McWilliams, J.C., & P.R. Gent, 1986: The evolution of sub-mesoscale, coherent vortices on the β -plane. *Geophys. & Astrophys. Fluid Dyn.* **35**, 235-255.
- McWilliams, J.C., P.R. Gent, & N.J. Norton, 1986: The evolution of balanced, low-mode vortices on the β -plane. *J. Phys. Ocean.* **16**, 838-855.
- Large, W.G., J.C. McWilliams, & P.P. Niiler, 1986: Upper ocean thermal response to Fall forcing in the Northeast Pacific. *J. Phys. Ocean.* **16**, 1524-1550.
- Norton, N.J., J.C. McWilliams, & P.R. Gent, 1986: A numerical model of the Balance Equations in a periodic domain and an example of balanced turbulence. *J. Comp. Phys.* **67**, 439-471.
- Melander, M.V., J.C. McWilliams, & N.J. Zabusky, 1987: Axisymmetrization and vorticity gradient intensification of an isolated two-dimensional vortex. *J. Fluid Mech.* **178**, 137-159.
- Melander, M.V., N.J. Zabusky, & J.C. McWilliams, 1987: Asymmetric vortex merger in two-dimensions: Which vortex is “victorious”? *Phys. Fluids* **30**, 2610-2612.
- Holland, W.R., & J.C. McWilliams, 1987: Computer modeling in physical oceanography from the global circulation to turbulence. *Phys. Today* **40**, 51-57.
- Imawaki, S., P.P. Niiler, C.H. Gautier, D. Halpern, R.A. Knox, W.G. Large, D.S. Luther, J.C. McWilliams, J.N. Moum, & C.A. Paulsen, 1988: A new method for estimating the turbulent heat flux at the bottom of the daily mixed layer. *J. Geophys. Res.* **93**, 14,005-14,012.
- McWilliams, J.C., 1988: Vortex generation through balanced adjustment. *J. Phys. Ocean.* **18**, 1178-1192.
- Melander, M.V., N. Zabusky, & J.C. McWilliams, 1988: Symmetric vortex merger in two dimensions: Causes and conditions. *J. Fluid Mech.* **195**, 303-340.
- McWilliams, J.C., 1989: Statistical properties of decaying geostrophic turbulence. *J. Fluid Mech.* **198**, 199-230.
- Carton, X.J., & J.C. McWilliams, 1989: Barotropic and baroclinic instabilities of axisymmetric vortices in a quasigeostrophic model. In: *Mesoscale/Synoptic Coherent Structures in Geophysical Turbulence: Proceedings of the 20th International Liege Colloquium on Ocean Hydrodynamics*, J.C.J. Nihoul and B.M. Jamart, eds., Elsevier Press, Amsterdam, The Netherlands, 225-244.
- Herring, J.R., & J.C. McWilliams (eds.), 1989: *Lecture Notes on Turbulence: Lecture Notes from the NCAR-GTP Summer School, June 1987*. World Scientific, Singapore, 371pp.
- Gent, P.R., & J.C. McWilliams, 1990: Isopycnal mixing in ocean circulation models. *J. Phys. Ocean.* **20**, 150-155.
- McWilliams, J.C., 1990: The vortices of two-dimensional turbulence. *J. Fluid Mech.* **219**, 361-385.

- McWilliams, J.C., 1990: The vortices of geostrophic turbulence. *J. Fluid Mech.* **219**, 387-404.
- Treguier, A.M., & J.C. McWilliams, 1990: Topographic influences on wind-driven, stratified flow in a β -plane channel: An idealized model of the Antarctic Circumpolar Current. *J. Phys. Ocean.* **20**, 324-343.
- McWilliams, J.C., N.J. Norton, P.R. Gent, & D.B. Haidvogel, 1990: A linear balance model of wind-driven, mid-latitude ocean circulation. *J. Phys. Ocean.* **20**, 1349-1378.
- McWilliams, J.C., 1990: A demonstration of the suppression of turbulent cascades by coherent vortices in two-dimensional turbulence. *Phys. Fluids A* **2**, 547-552.
- Verron, J., E. Hopfinger, & J.C. McWilliams, 1990: Sensitivity to initial conditions in the merging of two-layer baroclinic vortices. *Phys. Fluids A* **2**, 886-889.
- Verron, J., E. Hopfinger, & J.C. McWilliams, 1991: Merging of two-layer baroclinic vortices. In: *Turbulence and Coherent Structures*, M. Lesieur and O. Metais, eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 355-366.
- McWilliams, J., 1991: The coherent vortices of two-dimensional and geostrophic turbulence. In: *Turbulence and Coherent Structures*, M. Lesieur & O. Metais, eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 323-342.
- McWilliams, J.C., 1991: Geostrophic vortices. In: *Nonlinear Topics in Ocean Physics: Proceedings of the International School of Physics Enrico Fermi*, Course 109, A.R. Osborne, ed., North-Holland, Elsevier Science Publishers B.V., Amsterdam, 5-50.
- Mied, R.P., J.C. McWilliams, & G.J. Lindemann, 1991: The generation and evolution of mushroom-like vortices. *J. Phys. Ocean.* **21**, 489-510. [Also, a cover photo and report in *EOS* **71**, No. 49, December 4, 1990.]
- Weiss, J.B., & J.C. McWilliams, 1991: The nonergodicity of point vortices. *Phys. Fluids A* **3**, 835-844.
- Larichev, V.D., & J.C. McWilliams, 1991: Weakly decaying turbulence in an equivalent-barotropic fluid. *Phys. Fluids A* **3**, 938-950.
- Carnevale, G.F., J.C. McWilliams, Y. Pomeau, J.B. Weiss, & W.R. Young, 1991: Evolution of vortex statistics in two-dimensional turbulence. *Phys. Rev. Lett.* **66**, 2735-2737.
- Spall, M.A., & J.C. McWilliams, 1992: Rotational and gravitational influences on the degree of balance in the shallow-water equations. *Geophys. & Astrophys. Fluid Dyn.* **64**, 1-30.
- Thual, O., & J.C. McWilliams, 1992: The catastrophe structure of thermohaline convection in a two-dimensional fluid model and a comparison with low-order box models. *Geophys. & Astrophys. Fluid Dyn.* **64**, 67-95.
- McWilliams, J.C., & J.B. Weiss, 1992: The search for simplified models of two-dimensional, structured turbulence. In: *Nonlinear Phenomena in Atmospheric and Oceanic Sciences*, G.F. Carnevale & R.T. Pierrehumbert, eds., Institute for Mathematics and Its Applications **40**, Springer-Verlag, New York City, 207-220.

- Haidvogel, D.B., J.C. McWilliams, & P.R. Gent, 1992: Boundary current separation in a quasi-geostrophic, eddy-resolving ocean circulation model. *J. Phys. Ocean.* **22**, 882-902.
- Carnevale, G.F., J.C. McWilliams, Y. Pomeau, J.B. Weiss, & W.R. Young, 1992: Rates, pathways, and end-states of nonlinear evolution in decaying two-dimensional turbulence: Scaling theory vs. selective decay. *Phys. Fluids A* **4**, 1314-1316.
- McWilliams, J.C., P.C. Gallacher, C.-H. Moeng, & J.C. Wyngaard, 1993: Modeling the oceanic planetary boundary layer. In: *Large-Eddy Simulations of Complex Engineering and Geophysical Flows*, Cambridge University Press, Cambridge, 441-454.
- Weiss, J.B., & J.C. McWilliams, 1993: Temporal scaling behavior of decaying two-dimensional turbulence. *Phys. Fluids A* **5**, 608-621.
- Haupt, S.E., J.C. McWilliams, & J.J. Tribbia, 1993: Modons in shear flow. *J. Atmos. Sci.* **50**, 1181-1198.
- Kinney, R., T. Tajima, N. Petviashvili, & J.C. McWilliams, 1993: Discrete vortex representation of magnetohydrodynamics. *Phys. Rev. Lett.* **71**, 1712-1715.
- McWilliams, J.C., 1993: The delicacy of the oceanic thermohaline circulation. In: *Ice in the Climate System*, W.R. Peltier, ed., Springer Verlag, Berlin Heidelberg, 363-374.
- Milliff, R.A., & J.C. McWilliams, 1994: The evolution of boundary pressure in enclosed ocean basins. *J. Phys. Ocean.* **24**, 1317-1338.
- Kinney, R., T. Tajima, J.C. McWilliams, N. Petviashvili, 1994: Filamentary magnetohydrodynamic plasmas. *Phys. Plasmas* **1**, 260-280.
- McWilliams, J.C., J.B. Weiss, & I. Yavneh, 1994: Anisotropy and coherent structures in planetary turbulence. *Science* **264**, 410-413.
- Yavneh, I., & J.C. McWilliams, 1994: Breakdown of the slow manifold in the Shallow-Water Equations. *Geophys. & Astrophys. Fluid Dyn.* **75**, 131-161.
- McWilliams, J.C., 1994: Statistical dynamics and coherent vortices in two-dimensional and planetary turbulence. In: *Modelling of Oceanic Vortices*, G.J.F. van Heijst, ed., Elsevier, Amsterdam, 15-24.
- Large, W.G., J.C. McWilliams, & S.C. Doney, 1994: Oceanic vertical mixing: a review and a model with a non-local K-profile boundary layer parameterization. *Rev. Geophys.* **32**, 363-403.
- Polvani, L.M., J.C. McWilliams, M.A. Spall, & R. Ford, 1994: The coherent structures of Shallow-Water turbulence: Deformation-radius effects, cyclone/anticyclone asymmetry, and gravity-wave generation. *Chaos* **4**, 177-186.
- McWilliams, J.C., & J.B. Weiss, 1994: Anisotropic geophysical vortices. *Chaos* **4**, 305-312.
- Sullivan, P.P., J.C. McWilliams, & C.-H. Moeng, 1994: A subgrid-scale model for large-eddy simulation of planetary boundary layer flows. *Boundary-Layer Meteor.* **71**, 247-276.
- McWilliams, J.C., & P.R. Gent, 1994: The wind-driven ocean circulation with an isopycnal-thickness mixing parameterization. *J. Phys. Ocean.* **24**, 46-65.

- Gent, P.R., J.C. McWilliams, & C. Snyder, 1994: A note on a scaling analysis of curved fronts: The formal validity of the balance equations and semigeostrophy. *J. Atmos. Sci.* **51**, 160-163.
- Danabasoglu, G., J.C. McWilliams, & P.R. Gent, 1994: The role of mesoscale tracer transports in the global ocean circulation. *Science* **264**, 1123-1126.
- McWilliams, J.C., 1995: Sub-grid-scale parameterizations in oceanic general circulation models. In: *Natural Climate Variability on Decade-to-Century Time Scales*, D.G. Martinson, K. Bryan, M. Ghil, M.M. Hall, T.R. Karl, E.S. Sarachik, S. Sorooshian, & L.D. Talley, eds., National Academy Press, Washington, D.C., 339-352.
- Yavneh, I., & J.C. McWilliams, 1995: Robust multigrid solution of the shallow-water balance equations. *J. Comp. Phys.* **119**, 1-25.
- Gent, P.R., J. Willebrand, T.J. McDougall, & J.C. McWilliams, 1995: Parameterizing eddy-induced tracer transports in ocean circulation models. *J. Phys. Ocean.* **25**, 463-474.
- Yano, J.-I., J.C. McWilliams, M.W. Moncrieff, & K.A. Emanuel, 1995: Hierarchical tropical cloud systems in an analog shallow water model. *J. Atmos. Sci.* **52**, 1723-1742.
- Böning, C.W., W.R. Holland, F.O. Bryan, G. Danabasoglu, & J.C. McWilliams, 1995: An overlooked problem in model simulations of the thermohaline circulation and heat transport in the Atlantic Ocean. *J. Climate* **8**, 515-523.
- Saravanan, R., & J.C. McWilliams, 1995: Multiple equilibria, natural variability, and climate transitions in an idealized ocean-atmosphere model. *J. Climate* **8**, 2296-2323.
- Bush, A.B.G., J.C. McWilliams, & W.R. Peltier, 1995: The origins and evolution of imbalance in synoptic-scale baroclinic wave life cycles. *J. Atmos. Sci.* **52**, 1051-1069.
- Danabasoglu, G., & J.C. McWilliams, 1995: Sensitivity of the global ocean circulation to parameterizations of mesoscale tracer transports. *J. Climate* **8**, 2967-2987.
- Bush, A.B.G., J.C. McWilliams, & W.R. Peltier, 1995: The formation of oceanic eddies in symmetric and asymmetric jets. Part I: Early time evolution and bulk eddy transports. *J. Phys. Ocean.* **25**, 1959-1979.
- Kinney, R., J.C. McWilliams, & T. Tajima, 1995: Coherent structures and turbulent cascades in two-dimensional magnetohydrodynamics turbulence. *Phys. Plasmas* **2**, 3623-3639.
- Yano, J.-I., J.C. McWilliams, & M.W. Moncrieff, 1995: Fractality in idealized simulations of large-scale tropical cloud systems. *Mon. Weather Rev.* **124**, 838-848.
- Baillie, C.F., J.C. McWilliams, J.B. Weiss, & I. Yavneh, 1995: Implementation and performance of a Grand Challenge 3D quasi-geostrophic multi-grid code on the Cray T3D and IBM SP2. In: *Supercomputing 95*, ACM Press, New York.
- Wang, D., W.G. Large, & J.C. McWilliams, 1996: Large-eddy simulation of the equatorial ocean boundary layer: Diurnal cycling, eddy viscosity, and horizontal rotation. *J. Geophys. Res.* **101**, 3649-3662.
- McWilliams, J.C., G. Danabasoglu, & P.R. Gent, 1996: Tracer budgets in the Warm Water Sphere.

Tellus **48A**, 179-192.

Julien K., S. Legg, J. McWilliams, & J. Werne, 1996: Penetrative convection in rapidly rotating flows: Preliminary results from numerical simulation. *Dyn. Atmos. Oceans* **24**, 237-249.

Carton, X.J., & J.C. McWilliams, 1996: Nonlinear oscillatory evolution of a baroclinically unstable geostrophic vortex. *Dyn. Atmos. Oceans* **24**, 207-214.

Bush, A.B.G., J.C. McWilliams, & W.R. Peltier, 1996: The formation of oceanic eddies in symmetric and asymmetric jets. Part II: Late time evolution and eddy dynamics. *J. Phys. Ocean.* **9**, 1092-1110.

Yavneh, I., & J.C. McWilliams, 1996: Multigrid solution of stably stratified flows: The quasi-geostrophic equations. *J. Sci. Comp.* **11**, 47-69.

Ayotte, K.W., P.P. Sullivan, A. Andr n, S.C. Doney, A.A.M. Holtslag, W.G. Large, J.C. McWilliams, C.-H. Moeng, M.J. Otte, J.J. Tribbia, & J.C. Wyngaard, 1996: An evaluation of neutral and convective planetary boundary layer parameterizations relative to Large Eddy Simulations. *Boundary-Layer Meteor.* **79**, 131-175.

Milliff, R.F., W.G. Large, W.R. Holland, & J.C. McWilliams, 1996: The general circulation responses of high-resolution North Atlantic Ocean models to synthetic-scatterometer winds. *J. Phys. Ocean.* **26**, 1747-1768.

Sullivan, P.P., J.C. McWilliams, & C.-H. Moeng, 1996: A grid nesting method for large-eddy simulation of planetary boundary layer flows. *Boundary-Layer Meteor.* **80**, 167-202.

Danabasoglu, G., J.C. McWilliams, & W.G. Large, 1996: Approach to equilibrium in global ocean models. *J. Climate* **9**, 1092-1110.

Gent, P.R., & J.C. McWilliams, 1996: Eliassen-Palm fluxes and the momentum equations in non-eddy-resolving ocean circulation models. *J. Phys. Ocean.* **26**, 2540-2546.

Kubokawa, A., & J.C. McWilliams, 1996: Topographic ocean gyres: A western boundary slope. *J. Phys. Ocean.* **26**, 1468-1479.

Julien K., S. Legg, J. McWilliams, & J. Werne, 1996: Hard turbulence in rotating Rayleigh-Benard convection. *Phys. Rev. E* **53**, R5557-R55560.

Julien K., S. Legg, J. McWilliams, & J. Werne, 1996: Rapidly rotating turbulent Rayleigh-Benard convection. *J. Fluid Mech.* **322**, 243-273.

McWilliams, J.C., 1996: Modeling the oceanic general circulation. *Annual Rev. of Fluid Mech.* **28**, 1-34.

Kinney, R., & J.C. McWilliams, 1996: Stability of magnetic vortices with flow in anisotropic magnetohydrodynamics. *Phys. Plasmas* **3**, 3583-3590.

Lin, C.-L., J.C. McWilliams, C.-H. Moeng, & P.P. Sullivan, 1996: Coherent structures and dynamics in neutrally stratified planetary boundary-layer flows. *Phys. Fluids* **8**, 2626-2639.

McWilliams, J.C., P.P. Sullivan, & C.-H. Moeng, 1997: Langmuir turbulence in the ocean. *J. Fluid Mech.* **334**, 1-30.

- Morel, Y., & J.C. McWilliams, 1997: Evolution of isolated interior vortices in the ocean. *J. Phys. Ocean.* **27**, 727-748.
- Yavneh, I., A.F. Shchepetkin, J.C. McWilliams, & L.P. Graves, 1997: Multigrid solution of rotating, stably stratified flows: The balance equations and their turbulent dynamics. *J. Comp. Phys.* **136**, 245-262.
- Saravanan, R., & J.C. McWilliams, 1997: Stochasticity and spatial resonance in interdecadal climate fluctuations. *J. Climate* **10**, 2299-2320.
- Kinney, R., & J.C. McWilliams, 1997: Magnetohydrodynamics equations under anisotropic conditions. *J. Plasma Phys.* **57**, 73-82.
- Kinney, R.M. & J.C. McWilliams, 1997: Multiple time scales in anisotropic magnetohydrodynamics. In: *Two-Dimensional Turbulence in Plasmas and Fluids: Research Workshop, Canberra, Australia, June-July 1997*, R.L. Dewar & R.W. Griffiths, eds., AIP Conference Proceedings 414, American Institute of Physics, Woodbury, New York, 235-242.
- Large, W.G., G. Danabasoglu, S.C. Doney, & J.C. McWilliams, 1997: Sensitivity to surface forcing and boundary layer mixing in a global ocean model: Annual-mean climatology. *J. Phys. Ocean.* **27**, 2418-2447.
- Lin, C.-L., C.-H. Moeng, P.P. Sullivan, & J.C. McWilliams, 1997: The effect of surface roughness on flow structures in a neutrally stratified planetary boundary layer flow. *Phys. Fluids* **9**, 3225-3249.
- Julien, K., J. Werne, S. Legg, & J.C. McWilliams, 1997: The effects of rotation on the global dynamics of turbulent convection. In: *Solar Convection and Oscillations and their Relationship*, F.P. Pijpers, J. Christensen-Dalsgaard & C.S. Rosenthal, eds., Kluwer Academic Publishers, Dordrecht, The Netherlands.
- Julien, K., J. Werne, S. Legg, & J.C. McWilliams, 1997: The effect of rotation on convective overshoot. In: *Solar Convection and Oscillations and their Relationship*, F.P. Pijpers, J. Christensen-Dalsgaard & C.S. Rosenthal, eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 231-234.
- Yano, J.-I., M.W. Moncrieff, & J.C. McWilliams, 1998: Linear stability and single-column analyses of several cumulus parameterization categories in a shallow-water model. *Q. J. Roy. Met. Soc.* **124**, 983-1005.
- Smyth, W.D. & J.C. McWilliams, 1998: Instability of an axisymmetric vortex in a stably stratified rotating environment. *Theor. and Comp. Fluid Dyn.* **11**, 305-322.
- Wang, D., J.C. McWilliams, & W.G. Large, 1998: Large Eddy Simulation of the diurnal cycle of deep equatorial turbulence. *J. Phys. Ocean.* **28**, 129-148.
- Saravanan, R., & J.C. McWilliams, 1998: Advective ocean-atmosphere interaction: An analytical stochastic model with implications for decadal variability. *J. Climate* **11**, 165-188.
- Gent, P.R., F.O. Bryan, G. Danabasoglu, S.C. Doney, W.R. Holland, W.G. Large, & J.C. McWilliams, 1998: The NCAR Climate System Model global ocean component. *J. Climate* **11**, 1287-1306.

- Legg, S., J.C. McWilliams, & J. Gao, 1998: Localization of deep ocean convection by a geostrophic eddy. *J. Phys. Ocean.* **48**, 944-970.
- Sutyrin, G.G., J.C. McWilliams, & R. Saravanan, 1998: Co-rotating stationary states and vertical alignment of geostrophic vortices with thin cores. *J. Fluid Mech.* **357**, 321-349.
- Shchepetkin, A., & J.C. McWilliams, 1998: Quasi-monotone advection schemes based on explicit locally adaptive dissipation. *Mon. Weather Rev.* **126**, 1541-1580.
- McWilliams, J.C., 1998: Oceanic general circulation models. In: *Ocean Modeling and Parameterization*, E. Chassignet & J. Verron, eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 1-44.
- McWilliams, J.C., & I. Yavneh, 1998: Fluctuation growth and instability associated with a singularity of the Balance Equations. *Phys. Fluids* **10**, 2587-2596.
- Hua, B.L., J.C. McWilliams, & P. Klein, 1998: Lagrangian acceleration and dispersion in geostrophic turbulence. *J. Fluid Mech.* **366**, 87-108.
- Marshall, J., F. Dobson, K. Moore, P. Rhines, M. Visbeck, E. d'Asaro, K. Bumke, S. Chang, R. Davis, K. Fischer, R. Garwood, P. Guest, R. Harcourt, C. Herbaut, T. Holt, J. Lazier, S. Legg, J. McWilliams, R. Pickart, M. Prater, I. Renfrew, F. Schott, U. Send, & W. Smethie, 1998: The Labrador Sea Deep Convection Experiment, *Bulletin Am. Meteor. Soc.* **79**, 2033-2058.
- Weiss, J.B., A. Provenzale, & J.C. McWilliams, 1998: Lagrangian dynamics in high-dimensional point-vortex systems. *Phys. Fluids* **10**, 1929-1941.
- Kinney, R., & J.C. McWilliams, 1998: Turbulent cascades in anisotropic magnetohydrodynamics. *Phys. Rev. E* **57**, 7111-7121.
- McWilliams, J.C., I. Yavneh, M.J.P. Cullen, & P.R. Gent, 1998: The breakdown of large-scale flows in rotating, stratified fluids. *Phy. Fluids* **10**, 3178-3184.
- Berloff, P.S., & J.C. McWilliams, 1999: Large-scale, low-frequency variability in wind-driven ocean gyres. *J. Phys. Ocean.* **29**, 1925-1949.
- McWilliams, J.C., C.-H. Moeng, & P.P. Sullivan, 1999: Turbulent fluxes and coherent structures in marine boundary layers: Investigations by Large-Eddy Simulation. In: *Air-Sea Exchange: Physics, Chemistry, Dynamics, and Statistics*, G. Geernaert, ed., 507-538.
- Julien, K., S. Legg, J.C. McWilliams, & J. Werner, 1999: Plumes in rotating convection. Part 1. Ensemble statistics and dynamical balances. *J. Fluid Mech.* **391**, 151-187.
- Kinney, R.M., & J.C. McWilliams, 1999: Reduced dynamical equations for the high-latitude thermosphere: Ion drag balance. *J. Geophys. Res.* **104**, 6805-6812.
- McWilliams, J.C., & J.M. Restrepo, 1999: The wave-driven ocean circulation. *J. Phys. Ocean.* **29**, 2523-2540.
- Berloff, P.S., & J.C. McWilliams, 1999: Quasigeostrophic dynamics of the western boundary current. *J. Phys. Ocean.* **29**, 2607-2634.
- Kinney, R.M., F. Coroniti, J.C. McWilliams, & P. Pritchett, 1999: Mechanisms for discrete auroral

- arc breakup by nonlinear Alfvén wave interaction, *J. Geophys. Res. (Space Physics)* **104**, 19931-19940.
- McWilliams, J.C., J.B. Weiss, & I. Yavneh, 1999: The vortices of homogeneous geostrophic turbulence. *J. Fluid Mech.* **401**, 1-26.
- Legg, S., & J.C. McWilliams, 2000: Temperature and salinity variability in heterogeneous oceanic convection. *J. Phys. Ocean.* **30**, 1188-1206.
- Sullivan, P.P., J.C. McWilliams, & C.-H. Moeng, 2000: Simulations of turbulent flow over idealized water waves. *J. Fluid Mech.* **404**, 47-85.
- Saravanan, R., G. Danabasoglu, S.C. Doney, & J.C. McWilliams, 2000: Decadal variability and predictability in the midlatitude ocean-atmosphere system. *J. Climate* **13**, 1073-1097.
- Von Hardenberg, J., J.C. McWilliams, A. Provenzale, A. Shchepetkin, & J.B. Weiss, 2000: Vortex merging in quasigeostrophic flows. *J. Fluid Mech.* **412**, 331-353.
- Tailleux, R., & J.C. McWilliams, 2000: Acceleration, creation, and depletion of wind-driven, baroclinic Rossby waves over an ocean ridge. *J. Phys. Ocean.* **30**, 2186-2213.
- McWilliams, J.C., 2000: The formulation of oceanic general circulation models. In: *General Circulation Model Development: Past, Present, and Future: Proceedings of a Symposium in honor of Professor Akio Arakawa*, D. Randall, ed., Academic Press, New York, 421-456.
- Chao, Y., M. Ghil, & J.C. McWilliams, 2000: Pacific interdecadal variability in this century's sea surface temperatures. *Geophys. Res. Lett.* **27**, 2261-2264.
- Bracco, A., J.C. McWilliams, G. Murante, A. Provenzale, & J.B. Weiss, 2000: Revisiting two-dimensional turbulence at millennial resolution. *Phys. Fluids* **12**, 2931-2941.
- Kinney, R.M., B. Chandran, S. Cowley, & J.C. McWilliams, 2000: Magnetic field growth and saturation in plasmas with high Prandtl number. Part I: The two-dimensional case. *Astrophys. J.* **545**, 907-921.
- Danabasoglu, G., & J.C. McWilliams, 2000: An upper-ocean model for short-term climate variability. *J. Climate* **13**, 3380-3411.
- Legg, S., & J.C. McWilliams, 2001: Convective modifications of a geostrophic eddy field. *J. Phys. Ocean.* **31**, 874-891.
- Li, X., Y. Chao, J.C. McWilliams, & L.-L. Fu, 2001: A comparison of two vertical mixing schemes in a Pacific Ocean General Circulation Model. *J. Climate* **14**, 1377-1398.
- McWilliams, J.C., & P.P. Sullivan, 2001: Vertical mixing by Langmuir circulations. *Spill Science and Technology* **6**, 225-237.
- Marchesiello, P., J.C. McWilliams, & A. Shchepetkin, 2001: Open boundary conditions for long-term integration of regional ocean models. *Ocean Modelling* **3**, 1-20.
- Siegel, A., J.B. Weiss, J. Toomre, J.C. McWilliams, P. Berloff, & I. Yavneh, 2001: Eddies and vortices in ocean basin dynamics. *Geophys. Res. Lett.* **28**, 3183-3186.

- Molemaker, M.J., J.C. McWilliams, & I. Yavneh, 2001: Instability and equilibration of centrifugally-stable stratified Taylor-Couette flow. *Phys. Rev. Lett.* **23**, 5270-5273.
- Huber, M., M. Ghil, & J.C. McWilliams, 2001: A climatology of turbulent dispersion in the troposphere. *J. Atmos. Sci.* **58**, 2377-2394.
- Tailleux, R., & J.C. McWilliams, 2001: The effect of bottom-pressure decoupling on the speed of extratropical, baroclinic Rossby waves. *J. Phys. Ocean.* **31**, 1461-1476.
- Legg, S., K. Julien, J. McWilliams, & J. Werne, 2001: Vertical transport by convective plumes: modification by rotation. *Phys. & Chem. of Earth* **26**, 259-262.
- Large, W.G., G. Danabasoglu, J.C. McWilliams, P.R. Gent, & F.O. Bryan, 2001: Equatorial circulation of a global ocean climate model with anisotropic viscosity. *J. Phys. Ocean.* **31**, 518-536.
- Yavneh, I., J.C. McWilliams, & M.J. Molemaker, 2001: Non-axisymmetric instability of centrifugally stable, stratified Taylor-Couette flow. *J. Fluid. Mech.* **448**, 1-21.
- Morel, Y., & J.C. McWilliams, 2001: Effects of isopycnal and diapycnal mixing on the stability of oceanic currents. *J. Phys. Ocean.* **31**, 2280-2296.
- McWilliams, J.C., M.J. Molemaker, & I. Yavneh, 2001: From stirring to mixing of momentum: Cascades from balanced flows to dissipation in the oceanic interior. *'Aha Huliko'a Proceedings: 2001*, U. Hawaii, Honolulu, 59-66.
- McWilliams, J.C., & P.P. Sullivan, 2001: Surface-wave effects on winds and currents in marine boundary layers. In: *Fluid Mechanics and the Environment: Dynamical Approaches: A Collection of Research Papers Written in Commemoration of the 60th Birthday of Sidney Leibovich*, J. Lumley, ed., Springer-Verlag, 201-224.
- Howes, G.G., S.C. Cowley, & J.C. McWilliams, 2001: Local buoyant instability of magnetized shear flow. *Astrophys. J.* **560**, 617-629.
- Stevens, B., J. Duan, J.C. McWilliams, M. Munnich, & J.D. Neelin, 2002: Entrainment, Rayleigh friction, and boundary-layer winds over the Tropical Pacific. *J. Climate* **15**, 30-44.
- Legg, S., & J.C. McWilliams, 2002: Sampling characteristics from isobaric floats in a convective eddy field. *J. Phys. Ocean.* **32**, 527-544.
- Berloff, P., J.C. McWilliams, & A. Bracco, 2002: Material transport in oceanic gyres. Part I: Phenomenology. *J. Phys. Ocean.* **32**, 764-796.
- Berloff, P., & J.C. McWilliams, 2002: Material transport in oceanic gyres. Part II: Hierarchy of stochastic models. *J. Phys. Ocean.* **32**, 797-830.
- Sullivan, P.P., & J.C. McWilliams, 2002: Turbulent flow over water waves in the presence of stratification, *Phys. Fluids* **14**, 1182-1195.
- McWilliams, J.C., & G. Danabasoglu, 2002: Eulerian and eddy-induced meridional overturning circulations in the Tropics. *J. Phys. Ocean.* **32**, 2054-2071.
- Schekochihin, A., J. Maron, S. Cowley, & J.C. McWilliams, 2002: The small-scale structure of MHD turbulence with large magnetic Prandtl numbers. *Astrophys. J.* **576**, 806-813.

- Tailleux, R., & J.C. McWilliams, 2002: Energy propagation of long extratropical Rossby waves over slowly varying zonal topography. *J. Fluid Mech.* **473**, 295-319.
- Yu, J.-Y., C.R. Mechoso, J.C. McWilliams, & A. Arakawa, 2002: Impacts of the Indian Ocean on the ENSO cycle. *Geophys. Res. Lett.* **29**, 46(1)-46(4).
- Schekochihin, A.A., S.C. Cowley, G.W. Hammett, J.L. Maron, & J.C. McWilliams, 2002: A model of nonlinear evolution and saturation of the turbulent MHD dynamo. *New J. Phys.* **4**, 84.1-84.22.
- Blanke, R., C. Roy, P. Penven, S. Speich, J.C. McWilliams, & G. Nelson, 2002: Linking wind and interannual upwelling variability in a regional model of the southern Benguela. *Geophys. Res. Lett.* **29**, 41(1)-41(4).
- Nezlin, N.P., & J.C. McWilliams, 2003: Satellite data empirical orthogonal functions statistics, and the 1997-1998 El Niño off California. *Remote Sensing Environ.* **84**, 234-254.
- Smith, R.D., & J.C. McWilliams, 2003: Anisotropic horizontal viscosity for ocean models. *Ocean Modelling* **5**, 129-156.
- Shchepetkin, A.F., & J.C. McWilliams, 2003: A method for computing horizontal pressure-gradient force in an ocean model with a non-aligned vertical coordinate. *J. Geophys. Res.* **108**, 35.1-35.34.
- Marchesiello, P., J.C. McWilliams, & A. Shchepetkin, 2003: Equilibrium structure and dynamics of the California Current System, *J. Phys. Ocean.* **33**, 753-783.
- McWilliams, J.C., 2003: Diagnostic force balance and its limits. In: *Nonlinear Processes in Geophysical Fluid Dynamics*, O.U. Velasco Fuentes, J. Sheinbaum, J. Ochoa, eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 287-304.
- Berloff, P.S., & J.C. McWilliams, 2003: Material transport in oceanic gyres. Part III: Randomized stochastic models. *J. Phys. Ocean.*, **33**, 1416-1445.
- McWilliams, J.C., L.P. Graves, & M.T. Montgomery, 2003: A formal theory for vortex Rossby waves and vortex evolution. *Geophys. & Astrophys. Fluid Dyn.* **97**, 275-309.
- Laval, J.-P., B. Dubrulle, & J.C. McWilliams, 2003: Langevin models of turbulence: Renormalization group, distant interaction algorithm, or rapid distortion? *Phys. Fluids* **15**, 1327-1339.
- Laval, J.-P., J.C. McWilliams, & B. Dubrulle, 2003: Forced stratified turbulence: Successive transitions with Reynolds number. *Phys. Rev. E* **68**, 036308/1-036308/8.
- Niiler, P.P., N.A. Maximenko, & J.C. McWilliams, 2003: Dynamically balanced absolute sea level of the global ocean derived from near-surface velocity observations. *Geophys. Res. Lett.* **30**, 7/1-7/4.
- Gallego, B., P. Cessi, & J.C. McWilliams, 2004: The Antarctic Circumpolar Current in equilibrium. *J. Phys. Ocean.* **34**, 1571-1587.
- Moeng, C.-H., J.C. McWilliams, R. Rotunno, P.P. Sullivan, & J. Weil, 2004: Investigating 2D modeling of atmospheric convection in the PBL. *J. Atmos. Sci.* **61**, 889-903.
- Sullivan, P.P., J.C. McWilliams, & W.K. Melville, 2004: The oceanic boundary layer driven by wave breaking with stochastic variability. I: Direct numerical simulation of neutrally-stratified shear flow. *J. Fluid Mech.* **507**, 143-174.

- Schekochihin, A.A., S.C. Cowley, S.F. Taylor, J.L. Maron, & J.C. McWilliams, 2004: Simulations of the small-scale turbulent dynamo. *Astrophys. J.* **612**, 276-307.
- McWilliams, J.C., 2004: Phenomenological hunts in two-dimensional and stably stratified turbulence. In: *Atmospheric Turbulence and Mesoscale Meteorology: Scientific Research Inspired by Doug Lilly*. E. Fedorovich, B. Stevens, & R. Rotunno, eds., Cambridge University Press, Cambridge, 35-49.
- McWilliams, J.C., J.M. Restrepo, & E.M. Lane, 2004: An asymptotic theory for the interaction of waves and currents in coastal waters. *J. Fluid Mech.* **511**, 135-178.
- McWilliams, J.C., J.M. Molemaker, & I. Yavneh, 2004: Ageostrophic, anticyclonic instability of a barotropic boundary current. *Phys. Fluids***16**, 3720-3725.
- Capet, X.J., P. Marchesiello, & J.C. McWilliams, 2004: Upwelling response to coastal wind profiles. *Geophys. Res. Lett.* **31** (13), L13311/1-L13311/4.
- Schekochihin, A.A., S.C. Cowley, J.L. Maron, & J.C. McWilliams, 2004: The self-similar turbulent dynamo. *Phys. Res. Lett.* **92**, 064501-1 – 064501-4.
- Schekochihin, A.A., S.C. Cowley, S.F. Taylor, G.W. Hammett, J.L. Maron, & J.C. McWilliams, 2004: On the saturated state of the nonlinear small-scale dynamo. *Phys. Res. Lett.* **92**, 084504-1 – 084504-4.
- Schekochihin, A.A., S.C. Cowley, J.L. Maron, & J.C. McWilliams, 2004: On the existence of a critical magnetic Prandtl number for small-scale dynamo. *Phys. Res. Lett.* **92**, 054502-1 – 054502-4.
- Bracco, A., J. von Hardenberg, A. Provenzale, J.B. Weiss, & J.C. McWilliams, 2004: Dispersion and mixing in quasigeostrophic turbulence. *Phys. Rev. Lett.* **92**, 084501-1 – 084501-4.
- Shchepetkin, A.F., & J.C. McWilliams, 2005: The regional oceanic modeling system (ROMS): A split-explicit, free-surface, topography-following-coordinate oceanic model. *Ocean Modelling* **9**, 347-404.
- Plattner, G.-K., N. Gruber, H. Frenzel, & J. C. McWilliams, 2005: Decoupling marine export production from new production. *Geophys. Res. Lett.* **32**, L11612/1-4.
- Molemaker, J.M., J.C. McWilliams, & I. Yavneh, 2005: Baroclinic instability and loss of balance. *J. Phys. Ocean.* **35**, 1505-1517.
- Schekochihin, A., N.E.L. Haugen, A. Brandenburg, S.C. Cowley, J.L. Maron, & J.C. McWilliams, 2005: Onset of small-scale turbulent dynamo at low magnetic Prandtl numbers. *Astrophys. J. Lett.* **625**, L115-L118.
- Muller, P., J. McWilliams, & J. Molemaker, 2005: Routes to dissipation in the ocean: the 2D/3D turbulence conundrum. In: *Marine Turbulence: Theories, Observations and Models*, Eds. H. Baumert, J. Simpson, & J. Sundermann, eds., Cambridge University Press, Cambridge, 397-405.
- Di Lorenzo, E., A.J. Miller, N. Schneider, & J.C. McWilliams, 2005: The warming of the California Current: Dynamics, thermodynamics and ecosystem implications. *J. Phys. Ocean.* **35**, 336-362.

- Caldeira, R.M.A., P. Marchesiello, N. Nezlin, P. DiGiacomo, & J.C. McWilliams, 2005: Island wakes in the Southern California Bight. *J. Geophys. Res.* **110**, C11012 - 1-20 (text) plus 6 pages of color figures.
- Fringer, O., J.C. McWilliams, & R.L. Street, 2006: A new hybrid model for coastal simulations. *Oceanography* **19**, 46-59.
- McWilliams, J.C., 2006: *Fundamentals of Geophysical Fluid Dynamics*. Cambridge University Press, Cambridge.
- McWilliams, J.C., 2006: Intrinsic climatic variability: An essay on modes and mechanisms of oceanic and atmospheric fluid dynamics. In: *Frontiers in the Science of Climate Modeling*, J.T. Kiehl & V. Ramanathan, eds., Cambridge University Press, Cambridge, 73-118.
- McWilliams, J.C., & E. Huckle, 2006: Ekman layer rectification, *J. Phys. Ocean.* **36**, 1646-1659.
- Gruber, N., H. Frenzel, S.C. Doney, P. Marchesiello, J.C. McWilliams, J.R. Moisan, J. Oram, G.K. Plattner, & K.D. Stolzenbach, 2006: Eddy-resolving simulations of plankton ecosystem dynamics in the California Current System: Part I: Model description, evaluation, and ecosystem structure. *Deep Sea Res. I* **53**, 1483-1516.
- Penven P., L. Debreu, P. Marchesiello, & J.C. McWilliams, 2006: Evaluation and application of the ROMS 1-way embedding procedure to the California Current Upwelling System. *Ocean Modelling* **12**, 157-187.
- Li, Z., Y. Chao, & J.C. McWilliams, 2006: Computation of the streamfunction and velocity potential for limited and irregular domains. *Mon. Weather Rev.* **134**, 3384-3394.
- Danabasoglu, G., W.G. Large, J.J. Tribbia, P.R. Gent, B.P. Briegleb, & J.C. McWilliams, 2006: Diurnal coupling in the tropical oceans of CCSM3. *J. Climate* **19**, 2347-2365.
- Graves, L.P., J.C. McWilliams, & M.T. Montgomery, 2006: Vortex evolution due to straining: A mechanism for dominance of strong, interior anticyclones. *Geophys. & Astrophys. Fluid Dyn.* **100**, 151-183.
- Kravtsov, S., W.K. Dewar, P. Berloff, J.C. McWilliams, & M. Ghil, 2006: Dynamical origin of low-frequency variability in a highly nonlinear midlatitude coupled model. *J. Climate* **19**, 6391-6408.
- Berloff, P., W. Dewar, S. Kravtsov, J. McWilliams, & M. Ghil, 2007: Ocean eddy dynamics in a coupled ocean-atmosphere model. *J. Phys. Ocean.* **37**, 1103-1121.
- Blaas, M., C. Dong, P. Marchesiello, J.C. McWilliams, & K.D. Stolzenbach, 2007: Sediment transport modeling on Southern Californian shelves: A ROMS case study. *Contin. Shelf Res.* **27**, 832-853.
- Doney, S.C., S. Yeager, G. Danabasoglu, W.G. Large, & J.C. McWilliams, 2007: Mechanisms governing interannual variability of upper ocean temperature in a global ocean hindcast simulation. *J. Phys. Ocean.* **37**, 1918-1938.
- Dong, C., J.C. McWilliams, & A.F. Shchepetkin, 2007: Island wakes in deep water. *J. Phys. Ocean.* **37**, 962-981.

- Dong, C., & J.C. McWilliams, 2007: A numerical study of island wakes in the Southern California Bight. *Cont. Shelf Res.* **27**, 1233-1248.
- Iskakov, A.B., Schekochihin, A.A., S.C. Cowley, J.C. McWilliams, and M.R. Proctor, 2007: Numerical demonstration of fluctuation dynamo at low magnetic Prandtl numbers. *Phys. Rev. Lett.* **98**, 208501/1-4.
- Kanarska, Y., A. Shchepetkin, & J.C. McWilliams, 2007: Algorithm for non-hydrostatic dynamics in the Regional Oceanic Modeling System, *Ocean Modelling* **18**, 143-174.
- Khvoles, R., J.C. McWilliams, & Z. Kizner, 2007: Non-coincidence of separatrices in two-layer modons. *Phys. Fluids* **19**, 056602 – 1-14.
- Kizner, Z., R. Khvoles, & J.C. McWilliams, 2007: Rotating multipoles on the f - and γ -planes. *Phys. Fluids* **19**, 016603 – 1-13.
- Kravtsov, S., P. Berloff, W.K. Dewar, M. Ghil, & J.C. McWilliams, 2007: A highly nonlinear mode of decadal-to-interdecadal variability in a mid-latitude ocean-atmosphere model. *Dyn. Atmos. Oceans* **43**, 123-150.
- Lane, E.M., J.M. Restrepo, & J.C. McWilliams, 2007: Wave-current interaction: A comparison of radiation-stress and vortex-force representations. *J. Phys. Ocean.* **37**, 1122-1141.
- McWilliams, J.C., 2007: Irreducible imprecision in atmospheric and oceanic simulations. *Proc. Nat. Acad. Sci.* **104**, 8709-8713.
- McWilliams, J.C. [with unpublished contributions from A. Bracco, X. Capet, J.-P. Laval, M.J. Molemaker, & P.P. Sullivan], 2007: Extreme events in geophysical turbulence and waves: What populates the tails of the distribution functions? In: *'Aha Huliko'a Proceedings: 2007*, P. Muller, ed., U. Hawaii, Honolulu, 73-80.
- Schekochihin, A.A., A.B. Iskakov, S.C. Cowley, J.C. McWilliams, and M.R.E. Proctor, 2007: Fluctuation dynamo and turbulent induction at low magnetic Prandtl numbers. *New J. Phys.* **9**, 300, 1-25.
- Sullivan, P.P., J.C. McWilliams, & W.K. Melville, 2007: Surface gravity wave effects in the oceanic boundary layer: Large Eddy Simulation with vortex force and stochastic breakers. *J. Fluid Mech.* **593**, 405-452.
- Capet, X., P. Klein, B.L. Hua, G. Lapeyre, & J.C. McWilliams, 2008: Surface kinetic energy transfer in SQG flows. *J. Fluid Mech.* **604**, 165-175.
- Capet, X., J.C. McWilliams, M.J. Molemaker, & A. Shchepetkin, 2008: Mesoscale to submesoscale transition in the California Current System. I: Flow structure, eddy flux, and observational tests. *J. Phys. Ocean.* **38**, 29-43.
- Capet, X., J.C. McWilliams, M.J. Molemaker, & A. Shchepetkin, 2008: Mesoscale to submesoscale transition in the California Current System. II: Frontal processes. *J. Phys. Ocean.* **38**, 44-64.
- Capet, X., F. Colas, P. Penven, P. Marchesiello, & J.C. McWilliams, 2008: Eddies in eastern-boundary subtropical upwelling systems. In: *Eddy-Resolving Ocean Modeling*, M. Hecht & H.

Hasumi, eds., AGU Monograph, 131-147.

Capet, X., J.C. McWilliams, M.J. Molemaker, & A. Shchepetkin, 2008: Mesoscale to submesoscale transition in the California Current System. III: Energy balance and flux. *J. Phys. Ocean.* **38**, 2256-2269.

Carr, S.D., X.J. Capet, J.C. McWilliams, J.T. Pennington, & F.P. Chavez, 2008: The influence of diel vertical migration on zooplankton transport and recruitment in an upwelling region: Estimates from a coupled behavioral-physical model. *Fisheries Ocean.*, **17**, 1-15.

Colas, F., X. Capet, J.C. McWilliams, & A. Shchepetkin, 2008: 1997-98 El Niño off Peru: A numerical study. *Progress in Ocean.* **79**, 138-155.

Danabasoglu, G., R. Ferrari, & J.C. McWilliams, 2008: Sensitivity of an ocean general circulation model to a parameterization of near-surface eddy fluxes. *J. Climate* **21**, 1192-1208.

Di Lorenzo, E.D., N. Schneider, K.M. Cobb, P.J.S. Franks, K. Chhak, A.J. Miller, J.C. McWilliams, S.J. Bograd, H. Arango, E. Curchitser, T.M. Powell, & P. Pieière, 2008: North Pacific Gyre Oscillation links ocean climate and ecosystem change. *Geophys. Res. Lett.* **35** L08607.

Ferrari, R., J.C. McWilliams, V.M. Canuto, & M. Dubovikov, 2008: Parameterization of eddy fluxes near oceanic boundaries. *J. Climate* **21**, 2770-2789.

Haidvogel, D.B., H. Arango, W.P. Budgell, B.D. Cornuelle, E. Curchitser, E. Di Lorenzo, K. Fennel, W.R. Geyer, A.J. Hermann, L. Lanerolle, J. Levin, J.C. McWilliams, A.J. Miller, A.M. Moore, T.M. Powell, A.F. Shchepetkin, C.R. Sherwood, R.P. Signell, J.C. Warner, and J. Wilkin, 2008: Ocean forecasting in terrain-following coordinates: Formulation and skill assessment of the Regional Ocean Modeling System. *J. Comp. Phys.* **227**, 3595-3624.

Kizner, Z., G. Reznik, B. Bridman, R. Khovles, & J.C. McWilliams, 2008: Shallow-water modons on the f-plane. *J. Fluid Mech.* **603**, 305-329.

Kravtsov, S., W.K. Dewar, M. Ghil, P. Berloff, & J.C. McWilliams, 2008: North Atlantic climate variability in coupled models and data. *Nonlinear Proc. Geophys.* **15**, 1-12.

Kravtsov, S., W.K. Dewar, M. Ghil, J.C. McWilliams, & P. Berloff, 2008: A mechanistic model of mid-latitude decadal climate variability. *Physica D* **237**, i584-599.

Li, Z., Y. Chao, J.C. McWilliams, & K. Ide, 2008: A three-dimensional variational data assimilation system for the Regional Ocean Modeling System: Implementation and basic experiments. *J. Geophys. Res.* **113**, C05002. doi:10.1029/2006JC004042.

Li, Z., Y. Chao, J.C. McWilliams, & K. Ide, 2008: A three-dimensional variational data assimilation system for the Regional Ocean Modeling System. *J. Atmos. Ocean. Tech.* **25**, 2074-2090.

McWilliams, J.C., 2008: The nature and consequences of oceanic eddies. In: *Eddy-Resolving Ocean Modeling*, M. Hecht & H. Hasumi, eds., AGU Monograph, 5-15.

McWilliams, J.C., 2008: Fluid dynamics on the margin of rotational control. *Conf. Proceedings Dec. 2007, Fifth International Symposium on Environmental Hydraulics*, D. Boyer, ed., Arizona State University, and *Environ. Fluid Mech.* **8**, 441-449.

- Sullivan, P.P., J.C. McWilliams, & W.K. Melville, 2008: Catalyzing Craik-Leibovich instabilities by breaking waves. *Conf. Proceedings Dec. 2007, Fifth International Symposium on Environmental Hydraulics*, D. Boyer, ed., Arizona State University.
- Nagai, T., A. Tandon, N. Gruber, & J.C. McWilliams, 2008: Biological and physical impacts of ageostrophic frontal circulations driven by confluent flow and vertical mixing. *Dyn. Atmos. and Oceans* **45**, 229-251. doi:10.1016/j.dynatmoce.2007.12.001.
- Oram, J.J., J.C. McWilliams, & K.D. Stolzenbach, 2008: Gradient-based edge detection and feature classification of sea-surface images of the Southern California Bight. *Remote Sensing of Environment* **112**, 2397-2415.
- Shchepetkin, A.F., & J.C. McWilliams, 2008: Computational kernel algorithms for fine-scale, multiprocess, longtime oceanic simulations. In: *Handbook of Numerical Analysis: Computational Methods for the Ocean and the Atmosphere*, R. Temam & J. Tribbia, eds., Elsevier Science, 119-181.
- Sullivan, P.P., J.B. Edson, T. Hristov, & J.C. McWilliams, 2008: Large eddy simulations and observations of atmospheric marine boundary layers above non-equilibrium surface waves. *J. Atmos. Sci.* **65**, 1225-1245.
- Uchiyama, Y., & J.C. McWilliams, 2008: Infragravity waves in the deep ocean: Generation, propagation, and seismic hum excitation. *J. Geophys. Res.* **113** C07029, doi:10.1029/2007JC004562.
- Xin, J., N. Gruber, H. Frenzel, S.C. Doney, & J.C. McWilliams, 2008: The impact on atmospheric CO₂ of iron fertilization induced by the ocean's biological pump. *Biogeosciences*, **5**, 385-406.
- Yousef, T.A., T. Heinemann, A.A. Schekochinin, N. Kleorin, I. Rogachevskii, A.B. Iskakov, S.C. Cowley, & J.C. McWilliams, 2008: Generation of magnetic field by combined action of turbulence and shear. *Phys. Rev. Lett.* **100**, 184501/1 - 4.
- Yousef, T.A., T. Heinemann, A.A. Schekochinin, N. Kleorin, I. Rogachevskii, S.C. Cowley, & J.C. McWilliams, 2008: Numerical experiments on dynamo action in sheared and rotating turbulence. *Astron. Nachr.* **329**, 737-749.
- Chao, Y., Z. Li, J. Farrara, J.C. McWilliams, J. Bellingham, X. Capet, F. Chavez, J.-K. Choi, R. Davis, J. Doyle, D.M. Frantaoni, P. Li, P. Marchesiello, M.A. Moline, J. Paduan, & S. Ramp, 2009: Development, implementation, and evaluation of a data-assimilative ocean forecasting system off the central California coast. *Deep-Sea Res. II* **56**, 100-126.
- Dong, C., E.Y. Idica, & J.C. McWilliams, 2009: Circulation and multiple-scale variability in the Southern California Bight. *Prog. Oceanography*, **82**, 168-190.
- Dong, C., T. Mavor, F. Nencioli, S. Jiang, Y. Uchiyama, J.C. McWilliams, T. Dickey, M. Ondrusek, H. Zhang, and D.K. Clark, 2009: An oceanic cyclonic eddy on the lee side of Lanai Island, Hawai'i. *J. Geophys. Res.* **114**, C12001. doi:10.1029/2008JC005258.
- Jin, X., C. Dong, J. Kurian, J.C. McWilliams, D.B. Chelton, and Z. Li, 2009: SST-Wind interaction in coastal upwelling: Oceanic simulation with empirical coupling. *J. Phys. Ocean.*, **39**, 2957-2970.
- Koszalka, I., A. Bracco, J.C. McWilliams, & A. Provenzale, 2009: Dynamics of wind-forced coherent anticyclones in open ocean. *J. Geophys. Res.* **114**, C08011, doi:10.1029/2009JC005388.

- Liang, J.H., J.C. McWilliams, & N. Gruber, 2009: The high-frequency response of the ocean to mountain gap winds in the northeastern tropical Pacific. *J. Geophys. Res.* **114**, C12005. doi:10.1029/2009JC005370.
- McWilliams, J.C., 2009: Targeted coastal circulation phenomena in diagnostic analyses and forecasts. *Dyn. Atmos. Oceans*, **48**, 3-15. doi:10.1016/j.dynatmoce.2008.12.004
- McWilliams, J.C., E. Huckle, & A.F. Shchepetkin, 2009: Buoyancy effects in a stratified Ekman layer. *J. Phys. Ocean.* **39**, 2581-2599.
- McWilliams, J.C., M.J. Molemaker, & E.I. Olafsdottir, 2009: Linear fluctuation growth during frontogenesis. *J. Phys. Ocean.* **39**, 3111-3129.
- McWilliams, J.C., F. Colas, & M.J. Molemaker, 2009: Cold filamentary intensification and oceanic surface convergence lines. *Geophys. Res. Lett.* **36**, L18602.
- Mitarai, S., D.A. Siegel, J.R. Watson, C. Dong, and J.C. McWilliams, 2009: Quantifying connectivity in the coastal ocean with application to the Southern California Bight. *J. Geophys. Res.* **114**, C10026.
- Sangrà, P., A. Pascual, A. Rodriguez-Santana, F. Machín, E. Mason, J.C. McWilliams, J.-L. Pelegrí, C. Dong, A. Rubio, J. Arístegui, A. Marrero-Díaz, A. Hernández-Guerrez, A. Hernández-Guerra, A. Mertínez-Marrero, & M. Auladell, 2009: The Canary Eddies Corridor: A major pathway for long-lived eddies in the subtropical North Atlantic. *Deep Sea Res. I*, **56**, 2100-2114.
- Shchepetkin, A.F., & J.C. McWilliams, 2009: Correction and Commentary for “Ocean Forecasting in Terrain-Following Coordinates: Formulation and Skill Assessment of the Regional Ocean Modeling System” by Haidvogel et al., *J. Comp. Phys.* **227**, pp. 3595-3624. *J. Comp. Phys.*, **228**, 8985-9000.
- Uchiyama, Y., J.C. McWilliams, and J.M. Restrepo, 2009: Wave-current interaction in nearshore shear instability analyzed with a vortex-force formalism. *J. Geophys. Res.* **114**, C06021. doi:10.1029/2009JC006021
- Wang, X., Y. Chao, C. Dong, J. Farrara, Z. Li, J.C. McWilliams, J.D. Paduan, & L.K. Rosenfeld,, 2009: Modeling tides in Monterey Bay, California. *Deep-Sea Res. II* **56**, 219-231.
- Bracco, A., and J.C. McWilliams, 2010: Reynolds-number dependency in homogeneous, stationary two-dimensional turbulence. *J. Fluid Mech.* **646**, 517-526.
- Buijsman, M.C., Y. Kanarska, and J.C. McWilliams, 2010: On the generation and evolution of nonlinear internal waves in the South China Sea. *J. Geophys. Res.* **115**, C02012,
- Nencioli, F., C. Dong, T. Dickey, L. Washburn, & J.C. McWilliams, 2010: A vector geometry based eddy detection algorithm and its application to a high-resolution numerical model product and high-frequency radar surface velocities in the Southern California Bight, *J. Tech. Ocean.* **27**, 564-579.
- Molemaker, M.J., & J.C. McWilliams, 2010: Local balance and cross-scale flux of available potential energy. *J. Fluid Mech.*, **645**, 295-314.
- Sullivan, P.P., and J.C. McWilliams, 2010: Dynamics of winds and currents coupled to surface

- waves. *Ann. Rev. Fluid Mech.* **42**, 19-42.
- Watson, J.R., S. Mitarai, D.A. Siegel, J. Caselle, C. Dong, and J.C. McWilliams, 2010: Realized and potential larval connectivity in the Southern California Bight. *Marine Ecology Prog. Series* **401**, 31-48.
- Mason, E., M.J. Molemaker, A. F. Shchepetkin, F. Colas, J.C. McWilliams, and P. Sangrà, 2010: Procedures for offline grid nesting in regional ocean models. *Ocean Modelling* **35**, 1-15.
- Emery, W.J., T. Strub, R. Leben, M. Foreman, J.C. McWilliams, G. Han, C. Ladd, & H. Ueno, 2011: Satellite altimetry applications off the coasts of North America. In: *Coastal Altimetry*, S. Vignudelli, A. Kostianoy, P. Cipollini, & J. Benveniste (eds.), Springer, 417-451.
- McWilliams, J.C., 2010: A perspective on submesoscale geophysical turbulence. In: *IUTAM Symposium on Turbulence in the Atmosphere and Oceans*, D. Dritschel, ed., Springer, 131-141.
- Buijsman, M.C., J.C. McWilliams, & C.R. Jackson, 2010: East-west asymmetry in nonlinear internal waves from Luzon Strait. *J. Geophys. Res.* **115**, C10057.
- Molemaker, M.J., J.C. McWilliams, & X. Capet, 2010: Balanced and unbalanced routes to dissipation in an equilibrated Eady flow. *J. Fluid Mech.* **654**, 35-63.
- Shchepetkin, A.F., and J.C. McWilliams, 2011: Accurate Boussinesq modeling with a practical, “stiffened” equation of state. *Ocean Modelling* **38**, 41-70.
- Uchiyama, Y., J.C. McWilliams, & A.F. Shchepetkin, 2010: Wave-current interaction in an oceanic circulation model with a vortex-force formalism: Application to the surf zone. *Ocean Modelling* **34** 16-35.
- McWilliams, J.C., & M.J. Molemaker, 2011: Baroclinic frontal arrest: A sequel to unstable frontogenesis. *J. Phys. Ocean.* **41**, 601-619.
- Restrepo, J.M., J.M. Ramírez, J.C. McWilliams, and M. Banner, 2011: Multi-scale momentum flux and diffusion due to whitecapping in wave/current interactions. *J. Phys. Ocean* **41**, 837-856.
- Neelin, J.D, A. Bracco, H. Luo, J.C. McWilliams, & J.E. Meyerson, 2010: Considerations for parameter optimization and sensitivity in climate models. *Proc. Nat. Acad. Sci.* **107**, 21349-21354.
- Dong, C., J.C. McWilliams, A. Hall, & M. Hughes, 2011: Numerical simulation of a Synoptic Event in the Southern California Bight. *J. Geophys. Res.* **116**, C05018.
- Weir, B., Y. Uchiyama, E.M. Lane, J.M. Restrepo, & J.C. McWilliams, 2011: A vortex force analysis of the interaction of rip currents and gravity waves. *J. Geophys. Res.* **116**, C05001. doi:10.1029/2010JC006232
- Kurian, J., F. Colas, X. Capet, J.C. McWilliams, & D.B. Chelton, 2011: Eddy properties in the California Current System,. *J. Geophys. Res.* **116**, C08027, doi:10.1029/2010JC006895.
- Liang, J.H., J.C. McWilliams, P.P. Sullivan, & B. Baschek, 2011: Modeling bubbles and dissolved gases in the ocean. *J. Geophys. Res.* **116**, C03015. doi:10.1029/2010JC006579
- Watson, J.R., C.G. Hays, P.T. Raimondi, S. Mitarai, D.A. Siegel, C. Dong, J.C. McWilliams,

- & C.A. Blanchette, 2011: Currents connecting communities: the decay of nearshore community similarity with ocean circulation. *Ecology* **92**, 1193-1200.
- Boe, J., A. Hall, F. Colas, J. McWilliams, X. Qu, & J. Kurian, 2011: What shapes mesoscale wind anomalies in coastal upwelling zones? *Climate Dynamics* **36**, 871-877.
- Waliser, D.E., J. Kim, Y. Xue, Chao, Y., A. Eldering, R. Fovell, A. Hall, Q. Li, K. Liou, J. McWilliams, S. Kapnick, R. Vasic, Fs. De Sale, & Y. Yu, 2011, Simulating the Sierra Nevada snowpack: The impact of snow albedo and multi-layer snow physics, *Climatic Change*, **109**, Supp. 1, 95-117.
- Gruber, N., Z. Lachkar, H. Frenzel, P. Marchesiello, M. Munnich, J.C. McWilliams, T. Nagai, & G.-K. Plattner, 2011: Eddy-induced reduction of biological production in eastern boundary upwelling systems. *Nature Geophysics*, **4**, 787-792. doi:10.1038/NGE01273
- Buijsman, M.C., Y. Uchiyama, J.C. McWilliams, & C.R. Hill-Lindsay, 2011: Modeling semidiurnal internal tide variability in the Southern California Bight. *J. Phys. Ocean.*, **42**, 62-77.
- Dong, C., F. Nencioli, Y. Liu, & J.C. McWilliams, 2011: An automated approach to detect oceanic eddies from satellite remote sensed Seas Surface Temperature data. *IEEE Geoscience and Remote Sensing Letters* **8**, 1055-1059.
- Mason, E., F. Colas, M.J. Molemaker, A.F. Shchepetkin, C. Troupin, J.C. McWilliams, and P. Sangrà, 2011: Seasonal variability in the Canary Basin: a numerical study. *J. Geophys. Res.*, **116**, C06001, doi:10.1029/2010JC006665.
- Heinemann, T., J.C. McWilliams, & A.A. Schekochichin, 2011: Large-scale magnetic-field generation by randomly forced shearing waves. *Phys. Rev. Lett.*, **107**, 255004.
- Molemaker, M.J., & J.C. McWilliams, 2012: The bifurcation structure of decadal thermohaline oscillations. *Geophys. & Astrophys. Fluid Dyn.*, **106**, 1-21.
- Dong, C. X.Y. Lin., Y. Liu, F. Nencioli, Y. Chao, Y. Guan, T. Dickey, & J.C. McWilliams, 2012: Three-dimensional oceanic eddy analysis in the Southern California Bight from a numerical product. *J. Geophys. Res.* **117**, C00H14.
- Dong, C., Y. Liu, R. Lumpkin, M. Lankhorst, D. Chen, J.C. McWilliams, & Y. Guan, 2011: A scheme to identify loops from trajectories of oceanic surface drifters: An application in the Kuroshio Extension region. *J. Atmos. Ocean Tech.*, in press.
- Roulet, G., J.C. McWilliams, X. Capet, & M.J. Molemaker, 2011: Properties of equilibrium geostrophic turbulence with isopycnal outcropping. *J. Phys. Ocean.*, in press.
- Colas, F., J.C. McWilliams, X. Capet, & J. Kurian, 2011: Heat balance and eddies in the Peru-Chile Current System. *Climate Dynamics*, **37**, in press. doi10.1007/s00382-011-11706
- Baschek, B., M. Abramczyk, D. Stokes, G. Deane, J.H. Liang, & J.C. McWilliams, 2010: Direct laboratory seawater measurements of the dissolved CO₂ signature of individual breaking waves. *J. Geophys. Res.*, submitted.
- Li, Z., Y. Chao, J. McWilliams, K. Ide, & J.D. Farrara, 2011: A multi-scale three-dimensional

variational data assimilation and its application to coastal oceans. *Q. J. Roy. Met. Soc.*, submitted.

Colas, F., X. Wang, X. Capet, Y. Chao, & J.C. McWilliams, 2011: Untangling the roles of wind, run-off and tides in Prince William Sound. *Continental Shelf Research*, submitted.

Wang, X., Y. Chao, H. Zhang, J. Farrara, Z. Li, X. Jin, K. Park, F. Colas, J.C. McWilliams, C. Paternostro, C.K. Shum, Y. Yi, C. Schoch, & P. Olsson, 2011: Modeling tides in Prince William Sound, Alaska and their influence on circulation. *Continental Shelf Research*, submitted.

Li, Z., Y. Chao, J. Farrara, & J.C. McWilliams, 2011: Impacts of distinct observations during the 2009 Prince William Sound field experiment: A data assimilation study. *Continental Shelf Research*, submitted.

Liu, Y., C. Dong, Y. Guan, D. Chen, & J.C. McWilliams, 2011: Eddy analysis for the subtropical zonal band of the North Pacific Ocean. *J. Geophys. Res.*, submitted.

McWilliams, J.C., 2011: The elemental shear dynamo. *J. Fluid Mech.*, submitted.

Lemarie, F., J. Kurian, A.F. Shchepetkin, M.J. Molemaker, F. Colas, & J.C. McWilliams, 2011: Are there inescapable issues prohibiting the use of terrain-following coordinates in climate models? *Ocean Modelling*, submitted.

Menesguen, C., U.C. McWilliams, & M.J. Molemaker, 2011: An example of ageostrophic instability in a rotating stratified flow. *J. Fluid Mech.*, submitted.

Li, Z., Y. Chao, J.C. McWilliams, K. Ide, & J. Farrara, 2011: Experiments with a multi-scale data assimilation scheme. *Tellus Series A: Dynamic Meteorology and Oceanography*, submitted.

Liang, J.H., J.C. McWilliams, P.P. Sullivan, & B. Baschek, 2011: Large Eddy Simulation of the bubbly ocean: Impacts of wave forcing and bubble buoyancy. *J. Geophys. Res.*, submitted.

Dong, C., J.C. McWilliams, Y. Liu, & D. Chen, 2011: Global heat and salt transports by eddy movement. *Nature Geosci.*, submitted.

Colas, F., X. Capet, X., J.C. McWilliams, and Z. Li, 2011: Mesoscale eddy buoyancy flux and eddy-induced circulation in eastern-boundary upwelling systems. *J. Phys. Ocean.*, submitted.

Wang, P., & J.C. McWilliams, 2011: Ageostrophic instability in rotating shallow water. *J. Fluid Mech.*, submitted.