

Joseph Pedlosky

Senior Scientist Emeritus
Department of Physical Oceanography
Woods Hole Oceanographic Institution

Education

B.Sc., Massachusetts Institute of Technology, 1960
M.Sc., Massachusetts Institute of Technology, 1960
Ph.D., Massachusetts Institute of Technology, 1963

Positions Held

Research Engineer, Summer 1958, M.I.T. Naval Supersonics Laboratory
Sponsored Research Staff, 1959 and 1961, Massachusetts Institute of Technology
Summer Fellowship in Geophysical Fluid Dynamics, 1960, 1962, W.H.O.I.
Fulbright Fellowship, 1961–1962, International Institute of Meteorology, Stockholm
Assistant Professor, 1963–1967; Associate Professor, 1967–1968, Department of Mathematics, M.I.T.
Sloan Foundation Fellowship, 1967–1968, Visitor, Department of Mathematics, Imperial College, London
Associate Professor of Meteorology, 1968–1972; Department of Geophysical Sciences, The University of Chicago
Professor of Geophysical Fluid Dynamics, 1972–1979, Department of Geophysical Sciences, The University of Chicago
Guggenheim Fellow, Guest Investigator, 1977–1978, Woods Hole Oceanographic Institution
Senior Scientist and Doherty Oceanographer, 1979–2007, Woods Hole Oceanographic Institution
Senior Scientist Emeritus 2007- present. Woods Hole Oceanographic Institution.
Visiting Scientist, Istituto per lo Studio delle Grandi Masse, Venice, 1984–1985, 1994–1995
Visiting Scientist, University of Washington as JISAO (Joint Institute for Study of the Atmosphere & Ocean) Distinguished Scientist, January, 1988

Member, Scientific Advisory Committee, 1975–1979; Scientific Program Evaluation Committee, 1980–1981, National Center for Atmospheric Research
Member, Committee on Atmospheric Science, National Academy of Sciences, 1976–1979
Member National Research Council Committee: Strengthening the links between the Sciences and the Mathematical Sciences 1998-2000

Honors and Awards

Meisinger Award, American Meteorological Society, 1970
Fellow, American Meteorological Society, 1981
Member, National Academy of Sciences, 1985
Fellow, American Geophysical Union, 1986
Fulbright Fellow, 1994–1995
Victor Starr Lecturer (M.I.T.), 1995
Member, American Academy of Arts and Sciences, 1996
Fellow, American Association for Advancement of Science, 1997
Foreign Member, Earth & Cosmic Sciences Section of Academia Europaea, 2000

Sverdrup Gold Medal of the American Meteorological Society, 2005
Arnold Arons Award of the Woods Hole Oceanographic Institution 2005
Haurwitz Lecturer, American Meteorological Society, 2009
Editors' Award, American Meteorological Society 2010

Research Interests: Baroclinic instability and general stability problems in fluid dynamics; nonlinear dynamics of finite amplitude waves; general circulation of the ocean, especially mid-latitude gyres; geophysical fluid dynamics; equatorial oceanic circulation, abyssal ocean circulation.

Graduate Students Advised: Frank Richter, Ph.D, 1972, Arthur Loesch Ph.D. 1973. (University of Chicago) . Lynne Talley, Ph.D., 1982, Steven Meacham, Ph.D., 1984; Lorenzo Polvani, 1988; Paola Cessi, Ph.D.,1987, Zhengyu Liu, Ph.D. 1992; Igor Kamenkovich, Ph.D., 1997; C. Edwards, Ph.D, 1997; Judith Wells, S.M. 2001; Julie Atherton, S.M. 2002; Baylor Fox-Kemper, Ph.D. 2003; Yu Zhang, Ph.D 2009. Evgeny Logvino , 5th year Ph.D. student.

Postdoctoral Scholars: Onno Bokhove, 1997; Vitalii Sheremet, 1997; Annalisa Bracco 2002, Ted Durland, 2006.

Author or co-author of about 150 refereed publications.

October 2009

Refereed Publications

- Pedlosky, Joseph, 1962. Spectral considerations in two-dimensional incompressible flow. *Tellus*, **14**, 125–132.
- Pedlosky, Joseph, 1963. Baroclinic instability in two-layer systems. *Tellus*, **15**, 20–25.
- Charney, Jule G., and Joseph Pedlosky, 1963. On the trapping of unstable planetary waves in the atmosphere. *Journal of Geophysical Research*, **68**, 6441–6442.
- Pedlosky, Joseph, 1964. The stability of currents in the atmosphere and the ocean. Part I. *Journal of the Atmospheric Sciences*, **21**, 201–219.
- Pedlosky, Joseph, 1964. The stability of currents in the atmosphere and the ocean. Part II. *Journal of the Atmospheric Sciences*, **21**, 342–353.
- Pedlosky, Joseph, 1964. An initial value problem in the theory of baroclinic instability. *Tellus*, **16**, 12–17.
- Pedlosky, Joseph, 1965. On the stability of baroclinic flows as a functional of the velocity profile. *Journal of the Atmospheric Sciences*, **22**, 137–145.
- Pedlosky, Joseph, 1965. A note on the western intensification of the oceanic circulation. *Journal of Marine Research*, **23**, 207–209.
- Pedlosky, Joseph, 1965. A necessary condition for the existence of an inertial boundary layer in a baroclinic ocean. *Journal of Marine Research*, **23**, 69–72.
- Pedlosky, Joseph, 1965. A study of the time dependent ocean circulation. *Journal of the Atmospheric Sciences*, **22**, 267–272.
- Pedlosky, Joseph, and H. P. Greenspan, 1967. A simple laboratory model for the oceanic circulation. *Journal of Fluid Mechanics*, **27**, 291–304.
- Pedlosky, Joseph, 1967. Fluctuating winds and the ocean circulation. *Tellus*, **19**, 250–257.
- Pedlosky, Joseph, 1967. The spin up of a stratified fluid. *Journal of Fluid Mechanics*, **28**, 463–480.
- Barcilon, V., and Joseph Pedlosky, 1967. Linear theory of rotating stratified fluid motions. *Journal of Fluid Mechanics*, **29**, 1–16.
- Barcilon, V., and Joseph Pedlosky, 1967. A unified theory of homogeneous and stratified rotating fluids. *Journal of Fluid Mechanics*, **29**, 609–621.
- Barcilon, V., and Joseph Pedlosky, 1967. On the steady motions produced by a stable stratification in a rapidly rotating fluid. *Journal of Fluid Mechanics*, **29**, 673–690.
- Pedlosky, Joseph, 1968. An overlooked aspect of the wind-driven oceanic circulation. *Journal of Fluid Mechanics*, **32**, 809–821.
- Pedlosky, Joseph, 1968. Linear theory of the circulation of a stratified ocean. *Journal of Fluid Mechanics*, **35**, 185–205.
- Pedlosky, Joseph, 1969. Axially symmetric motion of stratified, rotating fluid in a spherical annulus of narrow gap. *Journal of Fluid Mechanics*, **36**, 401–415.

- Pedlosky, Joseph, 1970. Finite-amplitude baroclinic waves. *Journal of the Atmospheric Sciences*, **27**, 15–30.
- Pedlosky, Joseph, 1971. A note on the role of the buoyancy layer in a rotating stratified fluid. *Journal of Fluid Mechanics*, **48**, 181–182.
- Pedlosky, Joseph, 1971. Finite-amplitude baroclinic waves with small dissipation. *Journal of the Atmospheric Sciences*, **28**, 587–597.
- Pedlosky, Joseph, 1972. Limit cycles and unstable baroclinic waves. *Journal of the Atmospheric Sciences*, **29**, 53–63.
- Pedlosky, Joseph, 1972. Finite-amplitude baroclinic wave packets. *Journal of the Atmospheric Sciences*, **29**, 680–686.
- Pedlosky, Joseph, 1974. On coastal jets and upwelling in bounded basins. *Journal of Physical Oceanography*, **4**, 3–18.
- Pedlosky, Joseph, 1974. Longshore currents, upwelling and bottom topography. *Journal of Physical Oceanography*, **4**, 214–226.
- Pedlosky, Joseph, 1974. Longshore currents and the onset of upwelling over bottom slope. *Journal of Physical Oceanography*, **4**, 310–320.
- Pedlosky, Joseph, 1975. The development of thermal anomalies in a coupled ocean–atmosphere model. *Journal of the Atmospheric Sciences*, **32**, 1501–1514.
- Pedlosky, Joseph, 1975. Reply to R. K. Smith's note on vacillating baroclinic waves *Journal of the Atmospheric Sciences*, **32**, 2027.
- Pedlosky, Joseph, 1975. A note on the amplitude of baroclinic waves in the mid-ocean. *Deep-Sea Research*, **22**, 575–576.
- Pedlosky, Joseph, 1975. On secondary baroclinic instability and the meridional scale of motion in the ocean. *Journal of Physical Oceanography*, **5**, 603–607.
- Pedlosky, Joseph, 1975. The amplitude of baroclinic wave triads and mesoscale motion in the ocean. *Journal of Physical Oceanography*, **5**, 608–614.
- Pedlosky, Joseph, 1976. Finite amplitude baroclinic disturbances in downstream varying currents. *Journal of Physical Oceanography*, **6**, 335–344.
- Pedlosky, Joseph, 1976. On the dynamics of finite-amplitude baroclinic waves as a function of supercriticality. *Journal of Fluid Mechanics*, **78**(3), 621–637.
- Pedlosky, Joseph, 1977. On the radiation of mesoscale energy in the mid-ocean. *Deep-Sea Research*, **24**, 591–600.
- Pedlosky, Joseph, 1977. A model of wave amplitude vacillation. *Journal of the Atmospheric Sciences*, **34**, 1898–1912.
- Pedlosky, Joseph, 1978. An inertial model of steady coastal upwelling. *Journal of Physical Oceanography*, **8**, 171–177.
- Pedlosky, Joseph, 1978. A nonlinear model of the onset of upwelling. *Journal of Physical Oceanography*, **8**, 178–187.

- Pedlosky, Joseph, 1979. Finite amplitude baroclinic waves in a continuous model of the atmosphere. *Journal of the Atmospheric Sciences*, **36**, 1908–1924.
- Pedlosky, Joseph, and Christopher Frenzen, 1980. Chaotic and periodic behavior of finite-amplitude baroclinic waves. *Journal of the Atmospheric Sciences*, **37**(6), 1177–1196.
- Pedlosky, Joseph, 1980. The destabilization of shear flow by topography. *Journal of Physical Oceanography*, **10**(11), 1877–1880.
- Pedlosky, Joseph, 1981. The nonlinear dynamics of baroclinic wave ensembles. *Journal of Fluid Mechanics*, **102**, 169–209.
- Pedlosky, Joseph, 1981. The effect of β on the chaotic behavior of unstable baroclinic waves. *Journal of the Atmospheric Sciences*, **38**(4), 717–731.
- Pedlosky, Joseph, 1981. Resonant topographic waves in barotropic and baroclinic flows. *Journal of the Atmospheric Sciences*, **38**(12), 2626–2641.
- Pedlosky, Joseph, 1982. Finite-amplitude baroclinic waves at minimum critical shear. *Journal of the Atmospheric Sciences*, **39**(3), 555–562.
- Pedlosky, Joseph, 1982. A simple model for nonlinear critical layers in an unstable baroclinic wave. *Journal of the Atmospheric Sciences*, **39**(10), 2119–2127.
- Luyten, J. R., J. Pedlosky, and H. Stommel, 1983. The ventilated thermocline. *Journal of Physical Oceanography*, **13**(2), 292–309.
- Luyten, J., J. Pedlosky, and H. Stommel, 1983. Climatic inferences from the ventilated thermocline. *Climatic Change*, **5**, 183–191.
- Pedlosky, Joseph, 1983. The growth and decay of finite-amplitude baroclinic waves. *Journal of the Atmospheric Sciences*, **40**(8), 1863–1876.
- Pedlosky, Joseph, and William R. Young, 1983. Ventilation, potential-vorticity homogenization and the structure of the ocean circulation. *Journal of Physical Oceanography*, **13**(11), 2020–2037.
- Pedlosky, Joseph, 1983. Eastern boundary ventilation and the structure of the thermocline. *Journal of Physical Oceanography*, **13**(11), 2038–2044.
- Pedlosky, Joseph, 1983. On the relative importance of ventilation and mixing of potential vorticity in mid-ocean gyres. *Journal of Physical Oceanography*, **13**(11), 2121–2122.
- Pedlosky, Joseph, 1984. The equations for geostrophic motion in the ocean. *Journal of Physical Oceanography*, **14**(2), 448–455.
- Pedlosky, Joseph, 1984. Cross-gyre ventilation of the subtropical gyre: An internal mode in the ventilated thermocline. *Journal of Physical Oceanography*, **14**(7), 1172–1178.
- Pedlosky, Joseph, Wendy Smith, and James R. Luyten, 1984. On the dynamics of the coupled mixed layer – thermocline system and the determination of the oceanic surface density. *Journal of Physical Oceanography*, **14**(7), 1159–1171.
- Pedlosky, Joseph, 1984. On the circulation of the warm water of the subtropical gyres. *Journal of Physical Oceanography*, **14**(12), 1949–1954.

- Pedlosky, Joseph, 1985. The instability of continuous Heton clouds. *Journal of the Atmospheric Sciences*, **42**(14), 1477–1486.
- Klein, Patrice, and Joseph Pedlosky, 1986. A numerical study of baroclinic instability at large supercriticality. *Journal of the Atmospheric Sciences*, **43**(12), 1243–1262.
- Pedlosky, Joseph, 1986. The buoyancy and wind-driven ventilated thermocline. *Journal of Physical Oceanography*, **16**(6), 1077–1087.
- Cessi, Paola, and Joseph Pedlosky, 1986. On the role of topography in the ocean circulation. *Journal of Marine Research*, **44**, 445–471.
- Pedlosky, Joseph, and Lorenzo M. Polvani, 1987. Wave–wave interaction of unstable baroclinic waves. *Journal of the Atmospheric Sciences*, **44**(3), 631–647.
- Pedlosky, Joseph, 1987. On Parson's model of the ocean circulation. *Journal of Physical Oceanography*, **17**(10), 1571–1582.
- Pedlosky, Joseph, 1987. An inertial theory of the equatorial undercurrent. *Journal of Physical Oceanography*, **17**(11), 1978–1985.
- Pedlosky, Joseph, 1988. Entrainment and the termination of the Equatorial Undercurrent. *Journal of Physical Oceanography*, **18**(6), 880–886.
- Polvani, Lorenzo M., and Joseph Pedlosky, 1988. The effect of dissipation on spatially growing baroclinic nonlinear waves. *Journal of the Atmospheric Sciences*, **45**(14), 1977–1989.
- Pedlosky, Joseph, 1989. Simple models for local instabilities in zonally inhomogeneous flows. *Journal of the Atmospheric Sciences*, **46**(12), 1769–1778.
- Pedlosky, Joseph, and Roger M. Samelson, 1989. Wind forcing and the zonal structure of the equatorial undercurrent. *Journal of Physical Oceanography*, **19**(9), 1244–1254.
- Pedlosky, Joseph, 1990. Propagation of velocity discontinuities on potential vorticity fronts. *Journal of Physical Oceanography*, **20**(2), 235–240.
- Pedlosky, Joseph, 1990. The dynamics of the oceanic subtropical gyres. *Science*, **248**, 316–322.
- Samelson, Roger M., and Joseph Pedlosky, 1990. Local baroclinic instability of flow over variable topography. *Journal of Fluid Mechanics*, **221**, 411–436.
- Klein, Patrice, and Joseph Pedlosky, 1991. The role of dissipation mechanisms in the nonlinear dynamics of unstable baroclinic waves. *Journal of the Atmospheric Sciences*, **49**(1), 29–48.
- Pedlosky, Joseph, 1991. The link between western boundary currents and the equatorial undercurrent. *Journal of Physical Oceanography*, **21**(10), 1553–1558.
- Pedlosky, Joseph, and Patrice Klein, 1991. The nonlinear dynamics of slightly supercritical baroclinic jets. *Journal of the Atmospheric Sciences*, **48**(10), 1276–1286.
- Pedlosky, Joseph, and Roger M. Samelson, 1991. Radiation-induced baroclinic instability. *Geophysical and Astrophysical Fluid Dynamics*, **58**, 243–262.
- Pedlosky, Joseph, and Paul M. Robbins, 1991. The role of finite mixed-layer thickness in the structure of the ventilated thermocline. *Journal of Physical Oceanography*, **21**(7), 1018–1031.

- Pratt, Larry J., and Joseph Pedlosky, 1991. Linear and nonlinear barotropic instability of geostrophic shear layers. *Journal of Fluid Mechanics*, **224**, 49–76.
- Pedlosky, Joseph, 1992. Baroclinic instability localized by dissipation. *Journal of the Atmospheric Sciences*, **49**(13), 1161–1170.
- Pedlosky, Joseph, 1992. The baroclinic structure of the abyssal circulation. *Journal of Physical Oceanography*, **22**(6), 652–659.
- Liu, Zhengyu, Joseph Pedlosky, David Marshall, and Tornster Warncke, 1993. On the feedback of the Rhines–Young pool on the ventilated thermocline. *Journal of Physical Oceanography*, **23**(7), 1592–1596.
- Pedlosky, Joseph, and David C. Chapman, 1993. Baroclinic structure of the abyssal circulation and the role of meridional topography. *Journal of Physical Oceanography*, **23**(5), 979–991.
- Pedlosky, Joseph, and Henry M. Stommel, 1993. Self-sustained inertial oscillations. *Journal of Physical Oceanography*, **23** (8), 1800–1808.
- Helfrich, Karl R., and Joseph Pedlosky, 1993. Time-dependent isolated anomalies in zonal flows. *Journal of Fluid Mechanics*, **251**, 377–409.
- Oh, Siang Peng, Joseph Pedlosky and Roger Samelson, 1993. Linear and finite-amplitude localized baroclinic instability. *Journal of the Atmospheric Sciences*, **50**(16), 2772–2784.
- Pedlosky, Joseph, 1993. The reflection of unstable baroclinic waves and the production of mean coastal currents. *Journal of Physical Oceanography*, **23** (9), 2130–2135.
- Pedlosky, Joseph, 1994. Stratified abyssal flow in the presence of fractured ridges. *Journal of Physical Oceanography*, **24**(2), 403–417.
- Liu, Z., and J. Pedlosky, 1994. Thermocline forced by annual and decadal surface temperature variation. *Journal of Physical Oceanography*, **24**(3), 587–608.
- Pedlosky, Joseph, 1994. Ridges and recirculations: Gaps and jets. *Journal of Physical Oceanography*, **24**(12), 2703–2707.
- Kamenkovich, Igor V., and Joseph Pedlosky, 1994. Instability of baroclinic currents which are locally non-zonal. *Journal of the Atmospheric Sciences*, **51**(16), 2418–2433.
- Helfrich, Karl R., and Joseph Pedlosky, 1995. Large-amplitude coherent anomalies in baroclinic zonal flows. *Journal of the Atmospheric Sciences*, **52**(10), 1615–1629.
- Edwards, Christopher A., and Joseph Pedlosky, 1995. The influence of distributed sources and upwelling on the baroclinic structure of the abyssal circulation. *Journal of Physical Oceanography*, **25**(10), 2259–2284.
- Kamenkovich, Igor V., and Joseph Pedlosky, 1996. Radiating instability of nonzonal ocean currents. *Journal of Physical Oceanography*, **26**(4), 622–643.
- Kamenkovich, Igor V., and Joseph Pedlosky, 1996. On the correct matching and boundary conditions for a radiating broken-line current. *Journal of Physical Oceanography*, **26**(8), 1664–1665.
- Pedlosky, Joseph, 1996. Baroclinic abyssal flow in the presence of a peninsula. *Journal of Physical Oceanography*, **26**(10), 2230–2242.

- Pedlosky, J., J. A. Whitehead and Graham Veitch, 1997. Thermally driven motions in a rotating stratified fluid: Theory and experiment. *Journal of Fluid Mechanics*, **339**, 391–411.
- Pedlosky, Joseph, Lawrence J. Pratt, Michael A. Spall, and Karl R. Helfrich, 1997. Circulation around islands and ridges. *Journal of Marine Research*, **55**, 1199–1251.
- Kamenkovich, Igor V., and Joseph Pedlosky, 1998. Radiation of energy from nonzonal ocean currents, nonlinear regime. Part I: Single wave development. *Journal of Physical Oceanography*, **28**(9), 1661–1682.
- Kamenkovich, Igor V., and Joseph Pedlosky, 1998. Radiation of energy from nonzonal ocean currents, nonlinear regime. Part II: Interactions between waves. *Journal of Physical Oceanography*, **28**(9), 1683–1701.
- Pratt, Larry, and Joseph Pedlosky, 1998. Barotropic circulation around islands with friction. *Journal of Physical Oceanography*, **28**(11), 2148–2162.
- Edwards, Christopher A., and Joseph Pedlosky, 1998. Dynamics of nonlinear cross-equatorial flow. Part I: Potential vorticity transformation. *Journal of Physical Oceanography*, **28**(12), 2382–2406.
- Edwards, Christopher A., and Joseph Pedlosky, 1998. Dynamics of nonlinear cross-equatorial flow. Part II: The tropically enhanced instability of the western boundary current. *Journal of Physical Oceanography*, **28**(12), 2407–2417.
- Huang, Rui Xin, and Joseph Pedlosky, 1999. Climate variability inferred from a layered model of the ventilated thermocline. *Journal of Physical Oceanography*, **29**(4), 779–790.
- Pedlosky, Joseph, and Michael Spall, 1999. Rossby normal modes in basins with barriers. *Journal of Physical Oceanography*, **29**(9), 2332–2349.
- Helfrich, Karl R., Joseph Pedlosky, and Eleanor Carter, 1999. The shadowed island. *Journal of Physical Oceanography*, **29**(10), 2559–2577.
- Whitehead, J. A., and J. Pedlosky, 2000. Circulation and boundary layers in differentially heated rotating stratified fluid. *Dynamics of Atmospheres and Oceans*, **31**(1–4), 1–21.
- Lionello, P., and J. Pedlosky, 2000. The role of a finite density jump at the bottom of the quasi-continuous ventilated thermocline. *Journal of Physical Oceanography*, **30**(2), 338–351.
- Pedlosky, Joseph, 2000. The transmission of Rossby waves through basin barriers. *Journal of Physical Oceanography*, **30**(3), 495–511.
- Huang, Rui Xin, and Joseph Pedlosky, 2000. Climate variability of the equatorial thermocline inferred from a two-moving-layer model of the ventilated thermocline. *Journal of Physical Oceanography*, **30**(11), 2610–2626.
- Huang, Rui Xin, and Joseph Pedlosky, 2000. Climate variability induced by anomalous buoyancy forcing in a multilayer model of the ventilated thermocline. *Journal of Physical Oceanography*, **30**(1), 3009–3021.
- Pedlosky, J., 2000. The transmission and transformation of baroclinic Rossby waves by topography. *Journal of Physical Oceanography*, **30**(12), 3077–3101.
- Lionello, P., and J. Pedlosky, 2001. The relation between the potential vorticity and the Montgomery function in the ventilated ocean thermocline. *Journal of Physical Oceanography*, **31**(1), 212–225.

- Pedlosky, Joseph, 2001. The transparency of ocean barriers to Rossby waves: The Rossby slit problem. *Journal of Physical Oceanography*, **31**(2), 336–352.
- Pedlosky, J., 2001. Steady baroclinic flow through ridges with narrow gaps. *Journal of Physical Oceanography*, **31**(8), Part 2, 2418–2440.
- Walker, Alison and Joseph Pedlosky, 2002. On the instability of meridional baroclinic currents. *Journal of Physical Oceanography*, **32**, 1075–1093.
- Huang, Rui Xin and Joseph Pedlosky, 2002. On aliasing Rossby waves induced by asynchronous time stepping. *Ocean Modeling*, **5**, 65–75.
- Pedlosky, Joseph, 2002. The destabilization of Rossby normal modes by meridional baroclinic shear. *Journal of Physical Oceanography*, **32**, 2418–2423.
- LaCasce, J. H., and J. Pedlosky, 2002. Baroclinic Rossby waves in irregular basins. *Journal of Physical Oceanography*, **32**, 2828–2847.
- Pedlosky, Joseph, 2002. A theory of equatorial deep jets. *Journal of Physical Oceanography*, **32**, 3551–3561.
- Fox-Kemper, Baylor, Raffaele Ferrari, and Joseph Pedlosky, 2003. A note on the indeterminacy of rotational and divergent eddy fluxes. *Journal of Physical Oceanography*, **33**, 478–483.
- Bracco, Annalisa and Joseph Pedlosky, 2003. Vortex generation by topography in locally unstable baroclinic flows. *Journal of Physical Oceanography*, **33**, 207–219.
- Poulin, F. J., G. R. Flierl, and J. Pedlosky, 2003. Parametric instability of oscillatory shear flow. *Journal of Fluid Mechanics*, **481**, 329–353.
- Pedlosky, J. and J. Thomson, 2003. Baroclinic instability of time-dependent currents. *Journal of Fluid Mechanics*, **490**, 189–215.
- Pedlosky, J., 2003. Thermally driven circulations in small oceanic basins. *Journal of Physical Oceanography*, **33**, 2333–2340.
- Fox-Kemper, B. and J. Pedlosky, 2004. Wind-driven barotropic gyre I: Circulation control by eddy fluxes of vorticity to a region of enhanced removal. *Journal of Marine Research*, **62**, 169–193.
- LaCasce, J. H. and J. Pedlosky, 2004. The instability of Rossby basin modes and the oceanic eddy field. *Journal of Physical Oceanography*, **34**, 2027–2041.
- Pedlosky, J. and M. A. Spall, 2005. Boundary intensification of vertical velocity in a beta-plane basin. *Journal of Physical Oceanography*, **35**, 2487–2500.
- Pedlosky, J. 2006. Time dependent response to cooling in a beta-plane basin. *Journal of Physical Oceanography*, **36**, 2185–2198.
- Flierl, G.R. and J. Pedlosky, 2007. The nonlinear dynamics of time-dependent subcritical baroclinic currents. *Journal of Physical Oceanography*, **37**, 1001–1021.
- Isachsen, P.E., J.H. LaCasce and J. Pedlosky, 2007. Rossby wave instability and apparent phase speeds in large ocean basins. *Journal of Physical Oceanography*, **37**, 1177–1191.

- Zhang, Yu and J. Pedlosky 2007. Triad instability of planetary Rossby waves. *Journal of Physical Oceanography*, **37**, 2158-2171.
- Pedlosky, J. 2007. The coastal bottom boundary layer: a note on the model of Chapman and Lentz. *Journal of Physical Oceanography*, **37**, 2776-2784
- Spall, M. A. and J. Pedlosky, 2008. Lateral coupling in baroclinically unstable flows. *Journal of Physical Oceanography*, **38**, 1267-1277.
- Pedlosky, J. 2008. On the weakly nonlinear Ekman layer: thickness and flux. *Journal of Physical Oceanography*, **38**, 1334- 1339.
- Bracco, A., J. Pedlosky, and R.S. Pickart. 2008 Eddy formation near the West Coast of Greenland. *Journal of Physical Oceanography*, **38**, 1992-2002.
- Hristova, H. , J. Pedlosky, and M.A. Spall. 2008. Radiating instability of a meridional boundary current. *Journal of Physical Oceanography*, **38**, 2294-2307.
- Pedlosky, J. 2009. The response of a weakly stratified layer to buoyancy forcing. *Journal of Physical Oceanography*, **39**, 1060-1068.
- Kamenkovich, I., P. Berloff, and J. Pedlosky, 2009. Role of eddy forcing in the dynamics of multiple zonal jets in a model of the North Atlantic. *Journal of Physical Oceanography*, **39**, 1361-1379.
- Durland, T. S., J. Pedlosky, and M.A. Spall. 2009. Response to a steady poleward outflow, Part I: The linear quasi-geostrophic problem. *Journal of Physical Oceanography*, **39**, 1541-1550.
- Durland, T.S., M.A. Spall, and J. Pedlosky. 2009. Response to a steady poleward outflow. Part II: Oscillations and eddies. *Journal of Physical Oceanography*, **39**, 1551-1573.
- Berloff, P. , I Kamenkovich, and J. Pedlosky, 2009, A mechanism of the formation of multiple zonal jets in the oceans. *Journal of Fluid Mechanics*. **628**, 395-425.
- Kamenkovich, I., P. Berloff and J. Pedlosky, 2009. Anisotropic material transport by eddies and eddy-driven currents in a model of the North Atlantic. *Journal of Physical Oceanography*, **(accepted)**
- Pedlosky, J., R. Iacono, E. Napolitano, and K. Helfrich, 2009. The skirted island, *Journal of Physical Oceanography*, **(accepted)**.

Books

- Pedlosky, Joseph, 1979. *Geophysical Fluid Dynamics*. Springer-Verlag, New York, 624 pp.
- Pedlosky, Joseph, 1987. *Geophysical Fluid Dynamics*, 2nd Edition. Springer-Verlag, New York, 710 pp.
- Pedlosky, Joseph, 1991. Theoretical Developments in Ocean Circulation Theory. *Environmental Dynamics Series I*, Instituto Veneto di Scienz, Lettere ed Arti, Venice, 124 pp.
- Pedlosky, Joseph, 1996. *Ocean Circulation Theory*. Springer-Verlag, Heidelberg, 453 pp.
- Pedlosky, Joseph, 2003. *Waves in the Ocean and Atmosphere: Introduction to Wave Dynamics*. Springer-Verlag, Heidelberg and New York, 260 pp.

Non-refereed Publications

- Pedlosky, Joseph, 1970. Flow and rotating stratified systems. In: Notes on the 1970 Summer Study Program in Geophysical Fluid Dynamics at the Woods Hole Oceanographic Institution, Vol. 1. *Woods Hole Oceanographic Institution Technical Report* WHOI-70-50, pp. 1–67.
- Pedlosky, Joseph, 1971. Geophysical fluid dynamics. In: *Lectures in Applied Mathematics*, American Mathematical Society, Volume 13 and 14, pp. 1–60.
- Pedlosky, Joseph, 1977. The finite amplitude dynamics of baroclinic waves. In: *Proceedings of Seminar on Applications of Bifurcation Theory*, Paul H. Rabinowitz, editor; Academic Press, New York, pp. 225–258.
- Pedlosky, Joseph, 1986. Thermocline theories. In: *General Circulation of the Ocean*, H. Abarbanel and W. R. Young, editors, Springer–Verlag, New York, pp. 55–101.
- Pedlosky, Joseph, 1990. Baroclinic instability: The Charney paradigm. In: *The Atmosphere—A Challenge, The Science of Jule Gregory Charney*, R. S. Lindzen, E. N. Lorenz, and G. W. Platzman, editors, American Meteorological Society, Boston, pp. 159–176.
- Pedlosky, Joseph, 1992. Graduate Education in Physical Oceanography. *Oceanography*, **5**(2), 117–120.
- Pedlosky, Joseph, 1995. Henry Stommel and the wind-driven ocean circulation: Wrestling with the angel. In: *Collected Works of Henry M. Stommel*, Vol. II, N. G. Hogg and R. X. Huang, editors, American Meteorological Society, Boston, Massachusetts; pp. II-5–II-10.
- Pedlosky, Joseph and Michael Spall, 1998. Crossing the ridge: Rossby Wave tunneling. *Woods Hole Oceanographic Institution 1998 Annual Report*, pp. 23–24.
- Committee on Strengthening the Linkages Between the Sciences and the Mathematical Sciences (Joseph Pedlosky a member), Commission on Physical Sciences, Mathematics, and Applications, National Research Council, 2000. Strengthening the linkages between the sciences and the mathematical sciences. National Academy Press, Washington, D.C., 122 pp.
- Pedlosky, J. 2006 A history of thermocline theory. In “Physical Oceanography: Developments since 1950” Jochum, M. and R. Murtugude, Eds. Springer Verlag.