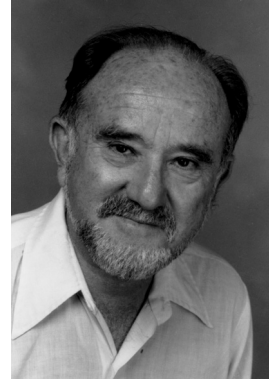


CURRICULUM VITAE

Melvin E. Stern

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Personal

Born January 22, 1929, New York, New York

Education

B.E.E. The Cooper Union School of Engineering, 1950
M.S. Illinois Institute of Technology (Physics), 1951
Ph.D. Massachusetts Institute of Technology (Meteorology), 1956

Professional Experience

1951-52 Woods Hole Oceanographic Institution
1952-57 1/Lt. U.S.A.F. stationed at M.I.T. as Geophysics Research Directorate
1957 Woods Hole Oceanographic Institution, Physicist
1962 Director of summer program in Geophysical Fluid Dynamics,
Woods Hole Oceanographic Institution
1964-87 University of Rhode Island, Professor of Oceanography
1975-76 Visiting Professor, M.I.T. Department of Meteorology and Oceanography
1978-79 Visiting Professor, Max Planck Institute for Meteorology and Oceanography
1979 Director of summer program in Geophysical Fluid Dynamics,
Woods Hole Oceanographic Institution
1980 Visiting Professor, University of Gothenburg, Sweden
(2 mos.)
1983 Director of summer program in Geophysical Fluid Dynamics,
Woods Hole Oceanographic Institution
1985 Visiting Professor, Institut de Mechanique de Grenoble
(3 mos.)
1986 Director of summer program in Geophysical Fluid Dynamics,
Woods Hole Oceanographic Institution
1986 Distinguished Visiting Scientist Jet Propulsion Lab
(1 mo.)
1987-present Florida State University, Professor of Oceanography
1989 Director of Summer Program in Geophysical Fluid Dynamics,
Woods Hole Oceanographic Institution

Honors and Awards

2000	Ekman Professor of Oceanography, Florida State University
1998	Member, National Academy of Sciences
1996	Distinguished Research Professor, Florida State University
1995	AGU Fellow
1995	The Henry Stommel Medal, American Meteorological Society, First Recipient
1977	Fellow, American Academy of Arts and Sciences
1970-71	John Simon Guggenheim Fellow

Publications

1. Malkus, W., and M. E. Stern, 1952: Determination of ocean transports by electromagnetic effects. *J. Mar. Res.*, **11**(2), 97-105.
2. Longuet-Higgins, M., M. E. Stern and H. Stommel, 1954: Electrical field induced by ocean currents and waves. *Papers in Physical Oceanography and Meteorology*, **13**(1), 1-37.
3. Malkus, J., and M. E. Stern, 1953: Flow of a stable atmosphere over a heated island, I. *J. Meteorology*, **10**(1), 30-41.
4. Stern, M. E., and J. Malkus, 1953: Flow of a stable atmosphere over a heated island, II. *J. Meteorology*, **10**(2), 105-121.
5. Stern, M. E., 1954: Theory of the mean atmospheric perturbations produced by differential surface heating. *J. Meteorology*, **11**(6), 495-502.
6. Stern, M. E., 1959: The moving flame experiment. *Tellus*, **11**(2), 175-179.
7. Stern, M. E., 1960: The "salt-fountain" and thermohaline convection. *Tellus*, **12**(2), 172-175.
8. Stern, M. E., 1960: Instability of Ekman flow at large Taylor number. *Tellus*, **12**(4), 399-417.
9. Stern, M. E., 1962: The stability of thermocline jets. *Tellus*, **13**(4), 503-508.
10. Stern, M. E., 1962: The relative stability of the solutions in non-linear convection. *Phys. Fluids*, **5**(1), 120-121.
11. Charney, J., and M. E. Stern, 1962: On the stability of internal baroclinic jets in a rotating atmosphere. *J. Atmos. Sci.*, **19**(2), 159-172.
12. Stern, M. E., 1963: Joint instability of hydromagnetic fields which are separately stable. *Phys. Fluids*, **6**(5), 636-642.
13. Stern, M. E., 1963: Trapping of low frequency oscillations in an equatorial "boundary layer". *Tellus*, **15**(3), 246-250.
14. Stern, M. E., 1965: Interaction of a uniform wind stress with a geostrophic vortex. *Deep-Sea Res.*, **12**, 355-367.
15. Stern, M. E., 1966: Interaction of a uniform wind stress with hydrostatic eddies. *Deep-Sea Res.*, **13**, 193-203.

16. Stern, M. E., 1967: Lateral mixing of water masses. *Deep-Sea Res.*, **14**, 747-753.
17. Stern, M. E., 1968: T-S gradients on the micro-scale. *Deep-Sea Res.*, **15**, 245-250.
18. Stern, M. E., 1968: Towards a generalization of “minimum free-energy” applicable to statistically steady turbulent motion. *Studies in Applied Mathematics* (formerly *J. Math. Physics*), Vol. XLVII, pp. 416-428.
19. Stern, M. E., 1969: Collective instability of salt fingers. *J. Fluid Mech.*, **35**, 209-218.
20. Stern, M. E., 1969: Salt finger convection and the energetics of the general circulation. *Deep-Sea Res.*, **16**, (Suppl.) 263-267.
21. Stern, M. E., and J. S. Turner, 1969: Salt fingers and convecting layers. *Deep-Sea Res.*, **16**, 497-511.
22. Stern, M. E., 1970: Optical measurement of salt fingers. *Tellus*, **22**(1), 76-81.
23. Stern, M. E., 1971: Generalizations of the rotating flame effect. *Tellus*, **23**(2), 122-128.
24. Stern, M. E., 1972: Hydraulically critical rotating flow. *Phys. Fluids*, **15**(11), 2062-2064.
25. Stern, M. E., 1974: Comment on rotating hydraulics. *Geophys. Fluid Dyn.*, **6**, 127-130.
26. Huppert, H., and M. E. Stern, 1974: Ageostrophic effects in rotating stratified flow. *J. Fluid Mech.* **62**(2), 369-385.
27. Huppert, H., and M. E. Stern, 1974: The effect of side walls on homogeneous rotating flow over two-dimensional obstacles. *J. Fluid Mech.*, **62**(3), 417-436.
28. Stern, M. E., and Y. A. Adam, 1974: Capillary waves generated by a shear current in water. *Mémoires Société Royale des Sciences de Liège*, **75**, 179-185.
29. Stern, M. E., 1975: Minimal properties of planetary eddies. *J. Mar. Res.*, **33**(1), 1-13.
30. Stern, M. E., and C. Y. Shen, 1976: Displacement and rectification of planetary fluids. *Geophys. Fluid Dyn.*, **7**, 81-118.
31. Stern, M. E., 1976: Maximum buoyancy flux across a salt finger interface. *J. Mar. Res.*, **34**(1), 95-110.
32. Stern, M. E., 1977: Interaction of inertia-gravity waves with the wind. *J. Mar. Res.*, **35**(3) 479-498.
33. Stern, M. E., 1979: Inequalities and variational principles in turbulent transport. *J. Fluid Mech.* **91**(1), 513-540.
34. Stern, M. E., 1980: Mixing in stratified fluids. In: *Hypersaline Brines and Evaporitic Environments* (Bat Shiva Seminar), Vol. **28**, Elsevier Press, 9-22.
35. Stern, M. E., 1980: Geostrophic fronts, bores, breaking and block waves. *J. Fluid Mech.*, **99**(4), 687-703.
36. Stern, M. E., 1980: A variational principle for turbulent flow. *Phys. Fluids*, **23**(11), 2161-2170.
37. Stern, M. E., 1982: Inequalities and variational principles in double diffusive turbulence. *J. Fluid Mech.*, **114**, 105-121.
38. Griffiths, R. W., P. D. Killworth and M. E. Stern, 1982: Ageostrophic instability of ocean currents. *J. Fluid Mech.*, **117**, 343-377.

39. Killworth, P. D., and M. E. Stern, 1982: Instabilities on density driven boundary currents and fronts. *Geophys. Astrophys. Fluid Dyn.*, **22**, 1-28.
40. Stern, M. E., J. Whitehead and B.-L. Hua, 1982: The intrusion of a density current along the coast of a rotating fluid. *J. Fluid Mech.*, **123**, 237-265.
41. Stern, M. E., and N. Paldor, 1983: Large amplitude long waves in a shear flow. *Phys. Fluids*, **26**(4), 906-919.
42. Lambert, C., P. Linden, and D. Lowenthal, M. E. Stern, 1983: Benthic fronts and global excess radon distribution. *Geophys. Astrophys. Fluid Dynamics*, **25**, 309-315.
43. Flierl, G. R., M. E. Stern and J. A. Whitehead, Jr., 1983: The physical significance of modons: Laboratory experiments and general integral constraints. *Dyn. Atmos. and Oceans*, **7**, 233-263.
44. Stern, M. E., and S. I. Voropayev, 1984: Formation of vorticity fronts in shear flow. *Phys. Fluids*, **27**(4), 848-855.
45. Killworth, P. D., N. Paldor and M. E. Stern, 1984: Wave propagation and growth on a surface front in a two-layer geostrophic current. *J. Mar. Res.* **42**, 761-785.
46. Stern, M. E., 1985: Lateral wave breaking and “shingle” formation in large-scale shear flow. *J. Phys. Oceanogr.*, **15**(10), 1274-1283.
47. Stern, M. E., and L. J. Pratt, 1985: Dynamics of vorticity fronts. *J. Fluid Mech.*, **161**, 513-532.
48. Pratt, L. J., and M. E. Stern, 1986: Dynamics of potential vorticity fronts and eddy detachment. *J. Phys. Oceanogr.*, **16**, 1101-1120.
49. Stern, M. E., 1986: On the amplification of convergences in coastal currents and the formation of “squirts”. *J. Mar. Res.*, **44**, 403-421.
50. Stern, M. E., and G. R. Flierl, 1987: On the interaction of a vortex with a shear flow. *J. Geophys. Res.*, **92**(C10), 10733-10744.
51. Stern, M. E., 1987: Large-scale lateral entrainment and detrainment at the edge of a geostrophic shear layer. *J. Phys. Oceanogr.*, **17**(10), 1680-1687.
52. Stern, M. E., 1987: Horizontal entrainment and detrainment in large-scale eddies. *J. Phys. Oceanogr.*, **17**(10), 1688-1695.
53. Mory, M., M. E. Stern, and R. W. Griffiths, 1987: Coherent baroclinic eddies on a sloping bottom. *J. Fluid Mech.*, **183**, 45-62.
54. Stern, M. E., 1989: Evolution of locally unstable shear flow. *J. Fluid Mech.*, **198**, 79-99.
55. Stern, M. E., 1989: Vorticity frontogenesis. In: *Mesoscale/Synoptic Coherent Structures in Geophysical Turbulence*, Nihoul and Jamart, Eds., Elsevier Oceanography Series, **50**, 95-101.
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67. Stern, M. E., and J.-R. Bidlot, 1995: Lateral entrainment in baroclinic currents II. *J. Mar. Res.*, **53**, 249-267.
68. Stern, M. E., 1995: Finite-amplitude three-dimensional instability of inviscid laminar boundary layers. *J. Fluid Mech.*, **290**, 203-212.
69. Stern, M. E., and J. Austin, 1995: Entrainment of shelf water by a bifurcating continental boundary current. *J. Phys. Oceanogr.*, **25**(12), 3118-3131.
70. Stern, M. E., E.P. Chassignet, J.A. Whitehead, 1997: The wall jet in a rotating fluid. *J. Fluid Mech.*, **335**, 1-28.
71. Stern, M. E., 1997: Splitting of a free jet flowing over a saddle sill. *J. Geophys. Res. Oceans*, **102**(C9), 20957-20965.
72. Stern, M. E. and T. Radko, 1997: Maintaining the inshore shear of continental boundary layers. *Dyn. Atmos. and Oceans*, **27**, 661-678.
73. Stern, M. E., and T. Radko, 1998: The self propagating quasi-monopolar vortex. *J. Phys. Oceanogr.*, **28**, 22-39.
74. Stern, M. E. and T. Radko, 1998: The salt finger amplitude in unbounded T-S gradient layers. *J. Mar. Res.*, **56**(1), 157-196.
75. Stern, M. E., 1998: Separation of a density current from the bottom of a continental slope. *J. Phys. Oceanogr.*, **28**, 2040-2049.
76. Stern, M. E., 1998: Statistical mechanics of a dissipative dynamical system with small noise. *Physica D*, **122**, 105-116.
77. Stern, M. E., 1999: Separation of a mid-level density current from the bottom of a continental slope. *Proceed. Nat. Acad. Sci.*, **96**, 1206-1211 (Inaugural article).

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79. Radko, T., and M. E. Stern, 1999: On the propagation of oceanic mesoscale vortices. *J. Fluid Mechanics*, **380**, 39-57.
80. Stern, M. E., 2000: Scattering of an eddy advected by a current towards a topographic obstacle. *J. Fluid Mechanics*, **402**, 211-223.
81. Stern, M. E., and E. P. Chassignet, 2000: Mechanism of eddy separation from coastal currents. *J. Mar. Res.*, **58**(2), 269-295.
82. Radko, T., and M. E. Stern, 2000: Finite-amplitude salt fingers in a vertically bounded layer. *J. Fluid Mechanics*, **425**, 133-160.
83. Radko, T., and M. E. Stern, 2000: Self-propagating eddies on the stratified f plane. *J. Phys. Oceanogr.*, **30**(12), 3134-3144.
84. Stern, M. E., T. Radko and J. Simeonov, 2001: Salt fingers in an unbounded thermocline. *J. Mar. Res.*, **59**(3), 355-390.
85. Stern, M. E., 2002: The vertical scale of isopycnal intrusions: comment on a paper by Ruddick, Phillips and Turner. *Dyn. Atmos. and Oceans*, **35**(3), 295-297.
86. Stern, M. E., and K. Helfrich, 2002: Propagation of a finite-amplitude potential vorticity front along the wall of a stratified fluid. *J. Fluid Mech.*, **468**, 179-204. DOI: 10.1017/S0022112002001520.
87. Stern, M. E., and J. Simeonov, 2002: Internal wave overturns produced by salt fingers. *J. Phys. Oceanogr.*, **32**(12), 3638-3656.
88. Stern, M. E., 2003: Initiation of doubly diffusive convection in a stable halocline. *J. Mar. Res.*, **61**, 211-233.
89. Stern, M. E., 2004: Local “mean field” theory of hydraulically controlled strait flow. *J. Phys. Oceanogr.*, **34**, 1692-1701.
90. Simeonov, J., and M. E. Stern, 2004: Double-diffusive intrusions on a finite-width thermohaline front. *J. Phys. Oceanogr.*, **34**, 1723-1740.
91. Stern, M. E., and J. Simeonov, 2004: Amplitude equilibration of sugar-salt fingers. *J. Fluid Mech.*, **508**, 265-286.
92. Stern, Melvin E., 2004: Transport extremum through Denmark Strait. *Geophys. Res. Lett.*, **31**(12), L12303 10.1029/2004GL020184. 16 June 2004.
93. Stern, M. E., and J. Simeonov, 2005: The secondary instability of salt fingers. *J. Fluid Mech.*, **533**, 361-380. 25 June 2005.
94. Simeonov, J., and M. E. Stern, 2006: Equilibration of two-dimensional double diffusive intrusions. *J. Phys. Oceanogr.*, in press.
95. Stern, M.E., 2006: Finite amplitude waves in a strait. *J. Fluid Mech.*, submitted.

Books

Stern, M. E., 1975: *Ocean Circulation Physics*. International Geographic Series, Academic Press. 246 pp.

Students for whom Dr. Stern was Major Professor

J. Demenkow	Ph.D.	1980	University of Rhode Island
N. Paldor	Ph.D.	1982	University of Rhode Island
C. Shen	Ph.D.	1983	University of Rhode Island
S. Ramp	Ph.D.	1985	University of Rhode Island
Q. Du	M.S.	1991	Florida State University
J. Bidlot	Ph.D.	1993	Florida State University
T. Radko	Ph.D.	1997	Florida State University
J. Simeonov*	Ph.D.	2002	Florida State University

*currently post doc

Recent Grants

National Science Foundation 03/01/03-02/28/08 NSF OCE-0236304 <i>Isopycnal Intrusions in Doubly Diffusive Fluids</i> FSU Grant Number: 1368-890-22 (OMNI 009692)	\$496,000
National Science Foundation 03/01/01-02/28/05 OCE-0092504 <i>3D Salt Finger Fluxes in the Thermocline</i> FSU Grant Number: 1368-796-22 (OMNI 008203)	\$422,000
National Science Foundation 03/01/98-02/28/01 NSF OCE-973223 <i>Three Dimensional Structure and Flux of Salt Fingers in an Unbounded Gradient Region</i> FSU Grant Number: 1368-738-22	\$326,000
National Science Foundation 05/01/96-04/30/00 NSF OCE-9529261 <i>Theoretical Studies of Ocean Boundary Currents</i> FSU Grant Number: 1368-709-22	\$325,000
National Science Foundation 01/15/93-12/31/96 NSF OCE-9216319 <i>Theoretical and Experimental Studies of Ocean Boundary Currents</i> FSU Grant Number: 1368-660-22	\$320,000