Curriculum Vitae

NATHAN PALDOR
Professor of Dynamical Meteorology and Physical Oceanography
Fredy and Nadine Herrmann Institute of Earth Sciences;
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Date of Resume: January, 2022
Languages: Hebrew, English
Citizenship: Israel, USA

Scientific interests

a. Geophysical Fluid Dynamics
b. Application of linear wave theory to formulate test cases for global scale GCMs
c. Extension of the Geostrophic Adjustment problem to continuous initial fields
d. Wind-driven circulation in the ocean for general wind stress
e. A Lagrangian perspective of net evaporation (evaporation minus precipitation)
f. Circulation in semi-enclosed basins and estuaries

Education

Summer 1983: Post-Doctoral Fellow – Woods Hole Oceanographic Inst., Summer Program in Geophysical Fluid Dynamics; Woods Hole, MA 02135

1979-1982: Ph.D. - Physical Oceanography, Graduate School of Oceanography University of Rhode Island; Kingston, RI 02881

1973-1976: M.Sc. - Applied Physics (Electro-Optics), Weizmann Institute of Science; Rehovot, 76100 Israel

1970-1973: B.Sc., Cum Laude - Mathematics and Physics, Hebrew University of Jerusalem; Jerusalem, 91904 Israel

Ph.D. Thesis Topic: Stable and Unstable Modes of Surface Fronts (Melvin E. Stern, Advisor)
M.Sc. Thesis Topic: Wave Propagation and Energy Losses in Hollow, Dielectric Waveguides (S. Shtrikman, Advisor)

Academic Experience

1985 – Present:	Department of Atmospheric Sciences, Institute of Earth Sciences; The Hebrew University of Jerusalem.
1982 – 1985:	Post-Doctoral Fellow; Geo-science Group, Department of Isotope Research, The Weizmann Institute of Science; Rehovot, 76100 Israel
1976 – 1979:	Research Associate; Geo-science Group, Department of Isotope Research, The Weizmann Institute of Science; Rehovot, 76100 Israel

Long visits and Short-Term/Adjunct Appointments

9/2020 – 9/2021	Visiting Professor, School of Marine Science and Policy, College of Earth, Ocean and Environment, University of Delaware, DL, USA.
1999 – 2017:	Adjunct Professor Rosenstiel School of Marine and Atmospheric Sciences, University of Miami.
Spring 2015:	Visiting Professor, Department of Earth and Planetary Sciences, University of Pennsylvania, Philadelphia, Pennsylvania.
March – Oct. 2013:	Visiting Professor, Department of Earth and Planetary Sciences, Johns Hopkins University, Baltimore, Maryland
March – Aug. 2009:	Visiting Professor, Institute of Marine and Coastal Sciences, Rutgers, The State University of New Jersey, New Brunswick, New Jersey.
2007 – 2011:	Adjunct Professor, Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY
March – Oct. 1999:	Visiting Professor, MPO/RSMAS/University of Miami, Miami, FL 33149
Summers 1986 – 96:	Visiting Assoc. Prof., Department of Atmospheric Sciences and Institute of Geophysics and Planetary Physics, UCLA, Los Angeles, CA 90024
1991 – 92:	Visiting Professor, Graduate School of Oceanography, University of Rhode Island, Kingston, RI 02882
Fall 1989:	Visitor, Department of Oceanography and Institute of Geophysical Fluid Dynamics, Florida State University, Tallahassee, FL 32306

Professional Affiliations

1) American Meteorological Society
2) American Geophysical Union.
3) European Geosciences Union

Public Commitments

1) Member, Board of Directors Israel Oceanographic and Limnological Research (1993–96)
2) Associate Editor: Israel Journal of Earth Sciences (1990–92), (1 Jan. 2000 – Present)
3) Chair of Scientific Steering Committee for Oceanography: IOLR, Haifa (1992–1998)
4) Chair of Studies: Institute of Earth Sciences, The Hebrew University, Jerusalem (1994–96)
5) Member of the Board of Editors: Ocean Modeling (1999 – 2009)
6) Chairman and Convener of Environmental Physics sessions; Israel Physical Society 46th and 47th Annual Meetings, IPS2000 and IPS2001.
7) Member; Steering Committee of the Hydrologic Service: "Lake Kinneret Modeling" 2003-06.
8) Chair of Studies: Institute of Earth Sciences, Hebrew University, Jerusalem (2004–2008).
9) Member, National committee of the Israel Academy of Sciences on space-related research in Israel (The Israeli branch of COSPAR International). 2005 – Present.
10) Associate Dean – Academic Affairs; Faculty of Mathematics and Natural Sciences, the Hebrew University of Jerusalem. 2009 - 2012.
11) Member, Public Committee of Speaker of the House's Prize for the Environment - 2012.
12) Member, International COSPAR Task Force on GEO (Group on Earth Observations) 2012 – 2015
13) Member, Editorial Board, Journal of Marine Sciences and Engineering. 2020 - Present

Prizes, Awards and Fellowships

2014/2015 – Bogen Foundation Fellow – HU/University of Pennsylvania

2001 – Fellow of the Royal Meteorological Society.
1989, 1990, 1997, 1999 – Rector's citation for excellence in teaching; The Hebrew University.
1998 – Senior Associateship: US National Res. Council (GSFC/GISS deferred appointment)
1987 – The Royal Society of London/Israel Academy of Sciences Fellowship; Hooke Institute for Atmospheric Physics, University of Oxford.
1986 – M. Richter Young Researchers' Award; The Hebrew University, Jerusalem.
1984 – The M. Marks Kennedy Fellowship, Weizmann Institute of Science.

Outstanding Public Recognition of my Research

1992 – Study on parting of the Red Sea (publications 23 and 27) discussed in editorials in *Science*, *NY Times*, the *Britannica* 1994 Yearbook of Science and the Future, *Public Broadcast Service* (PBS), CNN, NBC and hundreds of newspapers and television networks around the world.

Research Grants (recent 5 years)

Paldor, N. "The structure and trajectory of meso-scale oceanic vortices". Eshkol Foundation of the Israel Ministry of Science and technology. 2011-2014, 180,000 NIS

Current Graduate Students

1. Itamar Yacoby (Ph.D. – Geophysical Fluid Dynamics, co-supervised with H. Gildor)

Past Graduate students and Postdocs under my supervision

Post-Doc Fellows	Year Graduated	Ph.D. students	Year Graduated	M.Sc. students	Year Graduated
Baruch Ziv	2002	Tal Berman	1999	Ann Wolf-Vecht	1990
Yair De-Leon	Current	Yona Dvorkin	2001	Tal Berman	1991
Ofer Shamir	2021	Ori Adam	2011	Emmanuel Boss	1991
		Yair Cohen	2016	Ran Weinstein	1999
		Yair De-Leon	2016	Moshe Ben-Sasson	2004
		Ofer Shamir	2018	Shira Rubin	2006
		Itamar Yacoby	Current	Yair De-Leon	2008
				Yair Cohen	2009
				Ofer Shamir	2011
				Itamar Yacoby	2019

Invited Talks (recent five years)

Paldor, N. (2020). *A Lagrangian View of Evaporation from the Ocean*. International workshop on Mathematical Aspects of Geophysical Flows. University of Vienna, 19-24/January/2020.
Paldor, N. (2019). *Waves and Turbulence in the Atmosphere: Observations, Theory and Simulations.* International Workshop on Climate and Wave Dynamics. Eilat, Israel, 23-27/September/2019
Paldor, N. (2018). *How Do Large Scale Flows in the Ocean Become Geostrophic*? Open Mathematical Questions in Physical Oceanography. International Workshop on Mathematical Aspects of Physical Oceanography. Erwin Schrödinger International Institute, Vienna, 1-10/2/2018.
Paldor, N. (2013). A mini-course on: *Non-Harmonic Waves in Geophysical Fluid Dynamics*. International Meteorological Institute, Stockholm University, 7-11/October 2013.

Refereed Publications - Nathan Paldor

1. Paldor, N., A. Nir and S. Lewis (1978). Use of simulation as an aid in parameter identification of a lake ecosystem., In: *Modeling, Identification and Control in Environmental Systems*. Vensteenkiste (Ed.), North Holland Publishing Company.
2. Paldor, N. and D. A. Anati (1979). Seasonal variations of temperature and salinity in the Gulf of Elat. *Deep-Sea Res.,* **26/6A,** 661–672. https://doi.org/10.1016/0198-0149(79)90039-6
3. Stern, M. E. and N. Paldor (1983). Large amplitude long waves in shear flow. *Phys. Fluids*, 26(4), 906–919. http://doi.org/10.1063/1.864240
4. Paldor, N. (1983a). Linear stability and stable modes of geostrophic fronts. *Geophys. Astrophys. Fluid Dyn.,* **24,** 299–326. http://doi.org/10.1080/03091928308209070
5. Paldor, N. (1983b). Stability and stable modes of coastal fronts. *Geophys. Astrophys. Fluid Dyn.,* **27,** 217–228. http://doi.org/10.1080/03091928308210127
6. 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. https://doi.org/10.1357/002224084788520701
7. Killworth, P. D. and N. Paldor (1985). A model of sea-ice front instability. *J. Geophys. Res.,* **90(C1),** 883–895. http://doi.org/10.1029/JC090iC01p00883
8. Paldor, N. (1986). Nonlinear waves on a coupled density front. *Geophys. Astrophys. Fluid Dyn.,* **37,** 171–191. https://doi.org/10.1080/03091928608210095
9. Ronen, D., M. Magaritz, N. Paldor and Y. Bachmat (1986). The behavior of groundwater in the vicinity of the water table, evidenced by specific discharge profiles. *Water Resources Res.,* **22(6),** 1217–1224. https://doi.org/10.1029/WR022i008p01217
10. Paldor, N. and P. D. Killworth (1987). Instabilities of a two-layer coupled front. *Deep Sea Res.,* **34(9),** 1525–1539. https://doi.org/10.1016/0198-0149(87)90107-5
11. Paldor, N. (1988). Amplitude-Wavelength Relations of Nonlinear Frontal Waves on Coastal Currents. *J. Phys. Oceanogr.,* **18(5),** 753–760. https://doi.org/10.1175/1520-0485(1988)018<0753:ARONFW>2.0.CO;2.
12. Khait, A. and N. Paldor (1988). Long, Nonlinear Oscillations of Density Fronts. *Geophys. Astrophys. Fluid Dyn.,* **42,** 175–186. https://doi.org/10.1080/03091929008213206
13. Ronen, D., M. Magaritz and N. Paldor (1988). Microscale haline convection – a proposed mechanism for transport at the water table region. *Water Resources Res.,* **24(7),** 1111–1117. https://doi.org/10.1029/WR024i007p01111
14. Paldor, N. and P. D. Killworth (1988). Inertial Trajectories on the Rotating Earth. *J. Atmos. Sci.,* **45,** 4013–4019. https://doi.org/10.1029/88WR01824.
15. Gvirtzman, H., N. Paldor, M. Magaritz and Y. Bachmat (1988). Mass Exchange between Mobile Fresh Water and Immobile Saline Water in the Unsaturated Zone. *Water Resources Res.,* **24,** 1638–1644. https://doi.org/10.1029/WR024i010p01638
16. Ganor, J., A. Matthews and N. Paldor (1989). Constraints on Effective Diffusivity During Oxygen Isotope Exchange at a Marble-Schist Contact, Sifnos (Cyclades), Greece. *Earth Planet. Sci. Lett.,* **94(3/4),** 208–216. https://doi.org/10.1016/0012-821X(89)90140-4
17. Paldor, N. and M. Ghil (1990). Finite-wavelength instabilities of a coupled density front. *J. Phys. Oceanogr.,* **20(1),** 114–123. https://doi.org/10.1175/1520-0485(1990)020<0114:FWIOAC>2.0.CO;2
18. Paldor, N. and A. Khait (1990). A note on the use of zero potential vorticity models. *Geophys. Astrophys. Fl. Dyn.,* **51,** 27–34. https://doi.org/10.1080/03091929008219849

19. Paldor, N. and D. Nof (1990). Linear instability of an anticyclonic vortex in a two-layer ocean. *J. Geophys. Res.,* **95(C10),** 18,075–18,079. https://doi.org/10.1029/JC095iC10p18075
20. Paldor, N. (1990). Nonlinear Waves on Geostrophic Fronts. In: Proceedings of the Third International Symposium on Stratified Flows, February 3-5, 1987, Pasadena, California; E. J. List and G. H. Jirka, (Eds.), *Am. Soc civil Eng.,* 1124 pp, 249-255.
21. Paldor, N. and M. Ghil (1991). Shortwave instabilities of coastal currents. *Geophys. Astrophys. Fluid Dyn.,* **58,** 225–242. https://doi.org/10.1080/03091929108227340
22. Nof, D., N. Paldor and S. VanGorder (1991). Abyssal Gyres. *Geophys. Astrophys. Fluid Dyn.,* **58,** 173–196. https://doi.org/10.1080/03091929108227338
23. Ganor, J., A. Matthews and N. Paldor (1991). Diffusional isotopic exchange across an interlayered Marble-schist sequence with an application to Tinos, Cyclades, Greece. *J. Geophys. Res.,* **96(B10),** 18073–18080. https://doi,org/10.1029/91JB01575
24. Nof, D. and N. Paldor (1992). Are there oceanographic explanations for the Israelites crossing of the Red Sea? *Bull. Am. Met. Soc.,* **73(3),** 305–314. https://doi.org/10.1175/1520-0477(1992)073<0305:ATOEFT>2.0.CO;2
25. Wolf-Vecht, A., N. Paldor and S. Brenner (1992). Hydrographic indications of the advection/ convection effects in the Gulf of Elat. *Deep Sea Res.* **39(7/8),** 1393–1401. https://doi.org/10.1016/0198-0149(92)90075-5
26. Paldor, N. and E. Boss (1992). Chaotic trajectories and dispersion of Lagrangian particles in a tidally driven atmosphere. *J. Atmos. Sci.,* **49(23),** 2306–2318. https://doi.org/10.1175/1520-0469(1992)049<2306:CTOTPI>2.0.CO;2
27. Paldor, N., C.-H. Liu, R. M. Wakimoto and M. Ghil (1994). A New frontal instability: Theory and ERICA observations. *J. Atmos. Sci.,* **51(22),** 3227–3237. https://doi.org/10.1175/1520-0469(1994)051<3227:ANFITA>2.0.CO;2
28. Nof, D. and N. Paldor (1994). Statistics of wind over the Red Sea with application to the Exodus question. *J. Appl. Met.,* **33(8),** 1017–1025. https://doi.org/10.1175/1520-0450(1994)033<1017:SOWOTR>2.0.CO;2
29. Ghil, M. and N. Paldor (1994). A model equation for nonlinear wavelength selection and amplitude evolution of frontal waves. *J. Nonlinear Sci.,* **4,** 471–496. https://doi.org/10.1007/BF02430642
30. Dutkiewicz, S. and N. Paldor (1994). On the mixing enhancement in a meandering jet due to the interaction with an eddy. *J. Phys. Oceanogr.,* **24(11),** 2418–2423. https://doi.org/10.1175/1520-0485(1994)024<2418:OTMEIA>2.0.CO;2
31. Berman, T., S. Brenner and N. Paldor (1995). Salt fingering in the Cyprus Eddy. In: Double- Diffusive Convection. Brandt A. and H. J. S. Fernando (Eds.). *The American Geophysical Union, Geophysical Monographs,* **94,** 251–260. https://doi.org/10.1029/GM094p0251
32. Rom-Kedar, V., Y. Dvorkin and N. Paldor (1995). Chaotic motion on a rotating sphere. In: *Lévy flights and related topics in physics.* Shlesinger, Zaslavsky and Frisch (Eds). Springer- Verlag Lecture Notes in Physics. **450,** 72–87. An invited paper to the volume.
33. Boss, E., N. Paldor and L. Thompson (1996). Stability of a potential vorticity front; from quasi-geostrophy to shallow-water. *J. Fluid Mech.,* **315,** 65–83. https://doi.org/10.1017/S0022112096002339
34. Rom-Kedar, V., Y. Dvorkin and N. Paldor (1997). Chaotic Hamiltonian dynamics of particle's horizontal motion in the atmosphere. *Physica D,* **106(3–4),** 389–431. https://doi.org/10.1016/S0167-2789(97)00015-8
35. Paldor, N. and M. Ghil (1997). Linear instability of a zonal jet on an f-plane. *J. Phys. Oceanogr.,* **27(11),** 2361–2369. https://doi.org/10.1175/1520-0485(1997)027<2361:LIOAZJ>2.0.CO;2

36. Rom-Kedar, V. and N. Paldor (1997). From the Tropics to the Poles in forty days. *Bull. Am. Met. Soc.*, **78(12),** 2779–2784. https://doi.org/10.1175/1520-0477(1997)078<2779:FTTTTP>2.0.CO;2
37. Gelb, A., D. Gotllieb and N. Paldor (1997). Wind set-down relaxation on a sloping beach. *J. Comp. Phys.*, **138(2),** 644–664. https://doi.org/10.1006/jcph.1997.5837
38. Genin, A. and N. Paldor (1998). Changes in the circulation and current spectrum near the tip of the narrow, seasonally mixed, Gulf of Elat. *Israel J. Earth Sci.*, **47,** 87–92.
39. Dvorkin, Y. and N. Paldor (1999). Analytical considerations of Lagrangian Cross–Equatorial flow. *J. Atmos. Sci.*, **56(9),** 1229–1237. https://doi.org/10.1175/1520-0469(1999)056<1229:ACOLCE>2.0.CO;2
40. Ziv, B. and N. Paldor (1999). The divergence field associated with time-dependent jet streams. *J. Atmos. Sci.*, **56(12),** 1843–1857. https://doi.org/10.1175/1520-0469(1999)056<1843:TDFAWT>2.0.CO;2
41. Paldor, N. (1999). Linear instability of barotropic submesoscale coherent vortices observed in the Ocean. *J. Phys. Oceanogr.*, **29(6),** 1442–1452. https://doi.org/10.1175/1520-0485(1999)029<1442:LIOBSC>2.0.CO;2
42. Paldor, N. and V. Rom-Kedar (1999). Reply to Comments on "From the Tropics to the Poles in forty days". *Bull. Am. Met. Soc.*, **80(5),** 905–908.
43. Paldor, N. and Y. Dvorkin (2000). Noise induced inter-hemispheric particle transport – Stochastic Resonance in a Hamiltonian system. *J. Atmos. Sci.*, **57(1),** 150–157. https://doi.org/10.1175/1520-0469(2000)057<0150:NIIPTS>2.0.CO;2
44. Kearns, E. D. and N. Paldor (2000). Why are the meanders of the North Atlantic Current stable and stationary? *Geophys. Res. Lett.*, **27(7),** 1029–1033. https://doi.org/10.1029/1999GL010508
45. Weinstein, R., N. Paldor, A. Anati and A. Hecht (2000). Internal Seiches in the Strongly Stratified Dead Sea. *Israel J. Earth Sci.*, **49(1),** 45–53.
46. Berman, T., N. Paldor and S. Brenner (2000). Simulation of Wind-Driven Circulation in the Gulf of Elat (Aqaba). *J. Mar. Sys.*, **26(3-4),** 349–365. https://doi.org/10.1016/S0924-7963(00)00045-2
47. Dvorkin, Y., N. Paldor and C. Basdevant (2001). Reconstructing balloon trajectories in the tropical stratosphere with a hybrid model using analyzed fields. *Q. J. Roy. Meteor. Soc.*, **127(573A),** 975-988. https://doi.org/10.1002/qj.49712757314
48. Paldor, N. (2001). The zonal drift associated with time-dependent particle motion on the earth. *Q. J. Roy. Meteor. Soc.*, **127(577A),** 2435-2450. https://doi.org/10.1002/qj.49712757713
49. Paldor N. and A. Sigalov (2001). The mechanics of inertial motion on the earth and on a rotating sphere. *Physica D,* **160(1-2),** 29-53. https://doi.org/10.1016/S0167-2789(01)00341-4
50. Paldor, N., Y. Dvorkin and C. Basdevant (2002). Improving the calculation of particle trajectories in the extra-tropical troposphere using standard NCEP fields. *Atmos. Env.*, **36/3**, 483-490. https://doi.org/10.1016/S1352-2310(01)00305-3
51. Paldor, N. (2002). The transport in the Ekman surface layer on the spherical Earth. *J. Mar. Res.*, **60(1),** 47-72. https://doi.org/10.1357/002224002762341249
52. Nof, D., N. Paldor and S. VanGorder (2002). The Reddy Maker. *Deep Sea Res. Part I.*, **49(9),** 1531-1549. https://doi.org/10.1016/S0967-0637(02)00040-7
53. Berman, T., N. Paldor and S. Brenner (2003). The annual SST cycle in the Eastern Mediterranean Red Sea and Gulf of Elat. *Geophys. Res. Lett.*, **30(5),** 1261-1264. https://doi.org/10.1029/2002GL015860
54. Berman, T., N. Paldor and S. Brenner (2003). The Seasonality of Tidal Circulation in the Gulf of Elat. *Israel J. Earth Sci.*, **52(1),** 11-19.

55. Paldor, N., A. Sigalov and D. Nof (2003). The mechanics of eddy transport from one hemisphere to the other. *Q. J. Roy. Meteor. Soc.*, **129(591B),** 2011-2025. https://doi.org/10.1256/qj.02.157
56. Paldor, N., Y. Dvorkin, A.J. Mariano, T. Ozkogmen and E. Ryan (2004). A practical, hybrid model for predicting the trajectories of near-surface ocean drifters. *J. Tech.*, **21(8),** 1246-1258. https://doi.org/10.1175/1520-0426(2004)021<1246:APHMFP>2.0.CO;2
57. Haza, A. C., N. Paldor and A. J. Mariano (2004). Linear instabilities of a two-layer geostrophic surface front near a wall. *J. Mar. Res.*, **62(5),** 639-662. https://doi.org/10.1357/0022240042387574
58. Paldor, N. and A. Sigalov (2006). Inertial particle approximation to solutions of the Shallow Water Equations on the rotating spherical Earth. *Tellus*, **58A,** 280-292. https://doi.org/10.1111/j.1600-0870.2006.00170.x
59. Nof, D., I. McKeague and N. Paldor (2006). Is there a paleolimnological explanation for "walking on water" in the Sea of Galilee? *J. Paleolimnology*, **35(3),** 417-439. https://doi.org/10.1007/s10933-005-1996-1
60. Paldor, N. and Y. Dvorkin (2006). Barotropic Instability of a Zonal Jet: From Nondivergent Perturbations on the β-plane to Divergent Perturbations on a Sphere. *J. Phys. Oceanogr.*, **36(12),** 2271-2282. http://doi.org/10.1175/JPO2960.1
61. Paldor, N., S. Rubin and A. J. Mariano (2007). A Consistent Theory for Linear Waves of the Shallow-Water Equations on a Rotating Plane in Midlatitudes. *J. Phys. Oceanogr.*, **37(1),** 115-128. http://doi.org/10.1175/JPO2986.1
62. Paldor, N. (2007). Inertial Particle Dynamics on the Rotating Earth. In: *Lagrangian Analysis and Prediction of Coastal and Ocean Dynamics.* A. Griffa, A. D. Kirwan Jr., A. J. Mariano, T. Özgökmen, and H. T. Rossby (Eds.). Cambridge Univ. Press, UK. 119-135. https://doi.org/10.2277/0521870186
63. Erlick, C., N. Paldor and B. Ziv (2007). Linear waves in a symmetric equatorial channel. *Q. J. Roy. Meteor. Soc.*, **133(624),** 571-577. DOI: https://doi.org/10.1002/qj.44.
64. Rubin, S., B. Ziv and N. Paldor (2007). Tropical Plumes over Eastern North Africa as a source of rain in the Middle East. *Month. Wea. Rev.*, **135(12),** 4135-4148. https://doi.org/10.1175/2007MWR1919.1
65. Nof, D., I. McKeague and N. Paldor (2007). Was there ice along the shore of the Sea of Galilee during the last 12,000?—Reply to a comment by Prange et al. (2007) and a comment by Friedman (2007). *J. Paleolimonology.* **38(4),** 597-600. https://doi.org/10.1007/s10933-007-9137-7
66. Heifetz, E., N. Paldor, Y. Oreg, A. Stern and I. Merksamer (2007). Higher order corrections for Rossby waves in a zonal channel on the β-plane. *Q. J. Roy. Meteor. Soc.*, **133(628),** 1893-1898, DOI: http://doi.org/10.1002/qj.144.
67. Rubin, S., N. Paldor and B. Ziv (2007). On the dominance of changes in planetary angular momentum in large scale Extra-tropical flows. *Geophys. Res. Lett.*, **34,** L23814, DOI: http://doi.org/10.1029/2007GL031145.
68. Paldor, N. (2008). Non-divergent 2D vorticity dynamics and the Shallow Water Equations on the rotating Earth. In: *IUTAM symposium on Hamiltonian Dynamics, Vortex Structures and Turbulence. Proceedings of the IUTAM symposium held in Moscow, 25-30 August, 2006.* A.V. Borisov, V. V. Kozlov, I. S. Mamaev and M. A. Sokolovskiy (Eds.). Springer-IUTAM bookseries. **6**, 177-187.
69. Paldor, N. and A. Sigalov (2008). A unified theory of linear waves of the Shallow Water Equations on a rotating plane. In: *IUTAM symposium on Hamiltonian Dynamics, Vortex Structures and Turbulence. Proceedings of the IUTAM symposium held in*

Moscow, 25-30 August, 2006. A.V. Borisov, V. V. Kozlov, I. S. Mamaev and M. A. Sokolovskiy (Eds.). Springer-IUTAM bookseries. **6**, 403-413.
70. Paldor, N. (2008). On the estimation of trends in annual rainfall using paired gauge observations. *J. Appl. Met. Clim.*, **47(6),** 1814-1818. https://doi.org/10.1175/2007JAMC1697.1
71. Paldor, N., S. Rubin and A. J. Mariano (2008). Reply to: On "A Consistent Theory for Linear Waves of the Shallow-Water Equations on a Rotating Plane in Midlatitudes" by Poulin F. J. and K. Rowe (2008). *J. Phys. Oceanogr.*, **38(9),** 2118-2119. https://doi.org/10.1175/2008JPO4015.1
72. Paldor, N. and A. Sigalov (2008). Trapped waves on the Mid-latitude β-plane. *Tellus,* **60A,** 742-748. DOI: https://doi.org/10.1111/j.1600-0870.2008.00332.x
73. Ben-Sasson, M., S. Brenner and N. Paldor (2009). Estimating air-sea heat fluxes in semi-enclosed basins: The case of the Gulf of Elat (Aqaba). *J. Phys. Oceangor.*, **39(1)**, 185-202. https://doi.org/10.1175/2008JPO3858.1
74. Adam, O. and N. Paldor (2009). Global circulation in an axially symmetric shallow water model forced by equinoctial differential heating. *J. Atmos. Sci.*, **66(5),** 1418-1433. https://doi.org/10.1175/2008JAS2685.1
75. Paldor, N., Y. Dvorkin and E. Heifetz (2009). Divergent versus non-divergent perturbation of piecewise uniform shear flows on the f-plane. *J. Phys. Oceanogr.*, **39(7),** 1685-1699. https://doi.org/10.1175/2009JPO4048.1
76. Paldor, N. and J. R. E. Lutjeharms (2009). Why is the stability of the Agulhas Current geographically bi-modal? *Geophys. Res. Lett.*, **36,** L14604, https://doi.org/10.1029/2009GL038445.
77. De-Leon, Y. and N. Paldor (2009). Linear waves in Mid-latitudes on the rotating spherical Earth. *J. Phys. Oceanogr.*, **39(12),** 3204-3215. https://doi.org/10.1175/2009JPO4083.1
78. Cohen, Y., N. Paldor and J. Sommeria (2010). Laboratory experiments and a non-harmonic theory for topographic Rossby waves over a linearly sloping bottom on the f-plane. *J. Fluid Mech.*, **645,** 479-496. https://doi.org/10.1017/S0022112009992862
79. De-Leon, Y., C. Erlick and N. Paldor (2010). The eigenvalue equations of equatorial waves on a sphere. *Tellus,* **62A,** 62-70. https://doi.org/10.1111/j.1600-0870.2009.00420.x .
80. Adam, O. and N. Paldor (2010). Global circulation in an axially symmetric shallow water model forced by off-equatorial differential heating. *J. Atmos. Sci.*, **67(4),** 1275-1286. https://doi.org/10.1175/2008JAS2685.1
81. Nof, D. and N. Paldor (2010). The cave resonator and the Parker Turner cave collapse problem. *Safety Science*, **48(5)**, 607-614. https://doi.org/10.1016/j.ssci.2010.01.010
82. Adam, O. and N. Paldor (2010). On the role of viscosity in ideal Hadley circulation models. *Geophys. Res. Lett.* **37**, L16801, https://doi.org/10.1029/2010GL043745.
83. Paldor, N. (2010). On spurious instabilities on the β-planes with no mean flows. *Ann. Geophys.*, **28,** 1737-1739. https://doi.org/10.5194/angeo-28-1737-2010.
84. Paldor, N. and A. Sigalov (2011). An Invariant Theory of the Linearized Shallow Water Equations with Rotation and its application to a sphere and a plane. *Dyn. Atmos. Ocean*, **51,** 26-44. https://doi.org/10.1016/j.dynatmoce.2010.10.001.
85. De-Leon Y. and N. Paldor (2011). Zonally propagating wave solutions of Laplace Tidal Equations in a baroclinic ocean of an aqua-planet. *Tellus*, **63A,** 348-353. https://doi.org/10.1111/j.1600-0870.2010.00490.x
86. Ashkenazy, Y., N. Paldor and Y. Zarmi (2011). On the meridional structure of extra-tropical Rossby waves. *Tellus,* **63A,** 817-827. https://doi.org/10.1111/j.1600-0870.2011.00516.x

87. Nof, D., V. Zharkov, J. Ortiz, N. Paldor and E. Chassignet (2011). The arrested Agulhas retroflection. *J. Mar. Res.* **69,** 659-691. https://doi.org/10.1357/002224011799849453
88. Paldor, N., Y. Dvorkin and D. Nof (2011). Linear instability of uniform shear zonal currents on the β-plane. *J. Mar. Res.* **69,** 693-704. https://doi.org/10.1357/002224011799849327.
89. Cohen, Y., N. Paldor and J. Sommeria (2012). Application of laboratory experiments to assess the error introduced by the imposition of "wall" boundary conditions in shelf models. *Ocean Model.*, **41,** 35-41. https://doi.org/10.1016/j.ocemod.2011.10.005.
90. Ashkenazy, Y., N. Paldor and Y. Zarmi (2012). A new approximation for the dynamics of topographic Rossby waves over an arbitrary bottom profile. *Tellus* **64A,** 18160, https://doi.org/10.3402/tellusa.v64i0.18160.
91. Paldor, N. and A. Sigalov (2012). Linear waves on the spheroidal Earth. *Dyn. Atmos. Ocean*, **57,** 17-26, https://doi.org/10.1016/j.dynatmoce.2012.05.002.
92. Nof D., V. Zharkov, W. Arruda, T. Pichevin, S. Van Gorder and N. Paldor (2012). Comments on "On the Steadiness of Separating Meandering Currents". *J. Phys. Oceanogr.*, **42(8),** 1366-1370. https://doi.org/10.1175/JPO-D-11-0160.1.
93. Beenstock, M., Y. Reingewertz and N. Paldor (2012). Polynomial cointegration tests of anthropogenic impact on global warming. *Earth Sys. Dyn.*, **3**, 173-188. https://doi.org/10.5194/esd-3-173-2012.
94. Wurgaft, E., O. Shamir, E. Barkan, N. Paldor and B. Luz (2013). Mixing processes in the deep water of the Gulf of Elat (Aqaba): Evidence from measurements and modeling of the triple isotopic composition of dissolved oxygen. *Limn. Oceanog.*, **58(4),** 1373-1386. https://doi.org/10.4319/lo.2013.58.4.1373.
95. Paldor, N. and Y. De-Leon and O. Shamir (2013). Planetary (Rossby) waves and Inertia-Gravity (Poincaré) waves in a barotropic ocean over a sphere. *J. Fluid Mech.*, **726,** 123-136. https://doi.org/10.1017/jfm.2013.219.
96. Shamir, O. and N. Paldor (2014). A Hermite-based Shallow Water solver for a thin "ocean" over a rotating sphere. *J. Comp. Phys.*, **269,** 80-97. https://doi.org/10.1016/j.jcp.2014.03.015.
97. Cohen, Y., Y. Dvorkin and N. Paldor (2015a). Linear instability of warm core, constant potential vorticity, eddies in a two-layer ocean. *Quart. J. Royal Met. Soc.*. **141A,** 1884-1893. https://doi.org/10.1002/qj.2493.
98. Cohen, Y., Y. Dvorkin and N. Paldor (2015b). Linear instability of cold core, constant potential vorticity, eddies in a two-layer ocean. *Quart. J. Royal. Met. Soc*. **141A**, 2886-2897. https://doi.org/10.1002/qj.2575.
99. Shamir O. and N. Paldor (2016a). A Gegenbauer-based Shallow Water solver for a thick "ocean" over a rotating sphere. *J. Comp. Phys.*, **304**, 487-505. https://doi.org/10.1016/j.jcp.2015.10.019.
100. Beenstock, M., Y Reingewertz and N. Paldor (2016). Testing the Historic Tracking of Climate Models. *Int. J. Forecst.*, **32(4)**, 1234-1246. https://doi.org/10.1016/j.ijforecast.2016.02.010.
101. Cohen, Y., Y. Dvorkin and N. Paldor (2016). On the stability of outcropping eddies in a constant PV ocean. *Quart. J. Royal. Met. Soc*. **142(699)A**, 1920-1928. https://doi.org/10.1002/qj.2785.
102. Gildor, H., N. Paldor and S. Ben-Shushan (2016). Numerical Simulation of Harmonic, and Trapped, Rossby Waves in a Channel on the Mid-Latitude β-plane. *Quart. J. Royal. Met. Soc*., **142(699)B**, 2292-2299 https://doi.org/10.1002/qj.2820.
103. Shamir, O. and N. Paldor (2016b). A quantitative test case for global-scale dynamical cores based on analytic wave solutions of the Shallow Water Equations. *Quart. J. Royal. Met. Soc.*, **142(700)A**, 2705-2714. https://doi.org/10.1002/qj.2861

104. De-Leon, Y. and N. Paldor (2017a). Trapped Planetary Waves Observed in the Indian Ocean by Satellite Borne Altimeters. *Ocean. Sci.*, **13**, 483-494. https://doi.org/10.5194/os-13-483-2017.
105. Garfinkel, C., I. Fouxon, O. Shamir and N. Paldor (2017). Classification of Eastward Propagating Waves on the Spherical Earth. *Quart. J. Royal. Met. Soc.*, **143(704)A**, 1554-1564. https://doi.org/10.1002/qj.3025.
106. De-Leon, Y. and N. Paldor (2017b). An accurate procedure for estimating the phase speed of ocean waves from observations by satellite borne altimeters. *Acta Astronautica*. **137**, 504-511. https://doi.org/10.1016/j.actaastro.2016.11.016.
107. Paldor, N., I. Fouxon, O. Shamir and C. I. Garfinkel (2018). The Mixed Rossby-Gravity Wave on the Spherical Earth. *Quart. J. Royal. Met. Soc.*, **144**, 1820-1930. https://doi.org/10.1002/qj.3354.
108. Paldor, N. (2019). Recent Advances in Linear Wave Theory on the Spherical Earth. *Deep Sea Res. Part II.* Topical studies in Oceanography: Waves and Currents. **163,** 63-67. http://doi.org/10.1016/j.dsr2.2018.10.009.
109. Berman, H., N. Paldor, J. Churchill and B. Lazar (2019). Constraining evaporation rates based on large scale sea-surface transects of salinity or isotopic compositions. *J. Geophys. Res.*: *Oceans.* **124**, 1322-1330. https://doi.org/10.1029/2018JC014106.
110. Shamir, O., I. Yacoby, S. Ziskin Ziv and N. Paldor (2019). The Matsuno baroclinic wave test case. *Geosci. Model Dev*., **12**, 2181-2193. https://doi.org/10.5194/gmd-12-2181-2019.
111. Haza, A., N. Paldor, T. M. Ozgokmen, M. Curcic, S. Chen and G. Jacobs (2019). Wind-Based Estimations of Ocean Surface Currents from Massive Clusters of Drifters in the Gulf of Mexico. *J. Geophys. Res.*: *Oceans*. 5844-5869. https://doi.org/10.1029/2018JC014813.
112. De-Leon, Y. and N. Paldor (2019). Commonly used methods fail to detect known phase speeds of simulated signals from time-longitude (Hovmöller) diagrams. *Ocean Sci*., **15**, 1593-1599. https://doi.org/10.5194/os-15-1593-2019.
113. De-Leon, Y., C. I. Garfinkel and N. Paldor (2020). Barotropic modes, baroclinic modes and equivalent depths in the atmosphere. *Quart. J. Royal. Met. Soc.* **146**, 2096-2115. https://doi.org/10.1002/QJ.3781
114. Dritschel, D. G., N. Paldor and A. Constantin (2020). The Ekman spiral for piecewise-uniform viscosity. *Ocean Sci*. **16**, 1089-1093. https://doi.org/10.5194/os-16-1089-2020.
115. Constantin, A., D. G. Dritschel and N. Paldor (2020). The deflection angle between a wind-forced surface current and the overlying wind in an ocean with vertically varying eddy viscosity. *Phys. Fluids*. **32**, 116604. https://doi.org/10.1063/5.0030473.
116. Cohen, Y. and N. Paldor (2021). Lagrangian Trajectories at the Outflow of Tropical Cyclones *Quart. J. Roy. Met. Soc*., **147**, 58–73. https://doi.org/10.1002/qj.3904.
117. Paldor, N., O. Shamir and C. I. Garfinkel (2021). Barotropic Instability of a Zonal Jet on a Sphere: From Non-Divergence through Quasi-Geostrophy to Shallow Water. *Geophy. Astrophys. Fluid. Dyn.* **115**, 15-34. http://doi.org/10.1080/03091929.2020.1724996.
118. Gianchandani, K., H. Gildor and N. Paldor (2021). On the role of domain aspect ratio in the westward intensification of wind-driven surface ocean circulation. *Ocean Sci.* **17**, 351-363. https://doi.org/10.5194/os-17-351-2021.
119. Garfinkel, C. I., O. Shamir, I. Fouxon and N. Paldor (2021). Tropical background and wave spectra: contribution of wave-wave interactions in a moderately nonlinear turbulent flow. *J. Amos. Sci.* **78(6)**. 1773-1789. https://doi.org/10.1175/JAS-D-20-0284.1.
120. Shamir, O., C. Schwartz, C. I. Garfinkel and N. Paldor (2021). The power distribution between symmetric and antisymmetric components of the Tropical wavenumber-

frequency spectrum. *J. Atmos. Sci.* **78(6)**, 1983-1998. https://doi.org/10.1175/JAS-D-20-0283.1

121. De-Leon, Y., I. Fouxon, C. I. Garfinkel and N. Paldor (2021). Planetary, Inertia-Gravity and Kelvin waves on the *f*-plane and the β-plane in the presence of a uniform zonal flow. *Quart. J. Roy. Met. Soc.* **147**, 2935-2952. https://doi.org/10.1002/qj.4107
122. Paldor, N. and D. G. Dritschel (2021). A Lagrangian theory of geostrophic adjustment for zonally-invariant flows on a rotating spherical earth. *Phys. Fluids*. **33**, 066602, https://doi.org/10.1063/5.0054535
123. Yacoby, I., H. Gildor and N. Paldor (2021). Geostrophic adjustment on the *f*-plane: symmetric versus anti-symmetric initial conditions. *Phys. Fluids.* **33**, 076607, http://doi.org/10.1063/5.0056592. **Paper selected as Editor's Pick**
124. Shamir, O., O. Adam, C. I. Garfinkel and N. Paldor (2021). A note on the power distribution between symmetric and anti-symmetric components of the tropical Brightness Temperature spectrum in the wavenumber-frequency plane. *J. Atmos. Sci.* **78(11)**, 3473-3476. https://doi.org/10.1175/JAS-D-21-0099.01.
125. Garfinkel, C. I., E. P. Gerber, O. Shamir, J. Rao, M. Jucker, I. White and N. Paldor (2022). A QBO cookbook: Sensitivity of the Quasi-Biennial Oscillation to resolution, resolved waves, and parameterized gravity waves. *J. Adv. Mod. Earth. Sci.* **14**, In press. https://doi.org/10.1029/2021MS002568
126.

Books

Paldor, N. (2015). *Shallow Water Waves on the Rotating Earth*. SpringerBriefs in Earth System Sciences. 77 pp. https://doi.org/10.1007/978-3-319-20261-7, ISBN: 978-3-319-20260-0 (Print) 978-3-319-20261-7 (eBook)

Publications under review in refereed journals

S1. Paldor, N., O. Shamir, A. Muenchow and A. D. Kirwan (2022). Changes in the Surface Salinity Gradient and Transport of the Irminger Current: The Climate Perspective. *Ocean Sci.*
S2. Weinberger, I., I. C. Garfinkel, N. Harnik, and N. Paldor (2022). Transmission and reflection of upward propagating Rossby waves in the lowermost stratosphere: Importance of the Troposphere Inversion Layer. *J. Atmos. Sci*.
S3. De-Leon, Y., C. I. Garfinkel and N. Paldor (2022). Equatorial waves on the $\boldsymbol{\beta}$-plane in the the presence of a uniform zonal flow: Beyond the Doppler shift. *Quart. J. Roy. Met. Soc.*