

EDUCATION

1993, B.Sc. Geophysics and Atmospheric Sciences: Tel-Aviv University, Israel.

1996, M.Sc. Physical Oceanography: The University of Tokyo, Japan. Thesis title: Modeling interannual variations of the Indonesian Throughflow using ERS-1 Satellite Wind. Adviser: Prof. Toshio Yamagata.

2001, Ph.D. Environmental Sciences: The Weizmann Institute of Science, Israel. Thesis title: Dynamics of glacial-interglacial cycles: the “sea ice switch” and the role of ocean biogeochemistry. Adviser: Prof. Eli Tziperman.

ACADEMIC POSITIONS

2017 Full Professor in the fields of oceanography and climate dynamics, Faculty of Science, The Institute of Earth Sciences, The Hebrew University of Jerusalem.

2010 Associate Professor in the fields of oceanography and climate dynamics (as above).

2003 Senior Scientist, Department of Environmental Sciences and Energy Research, Weizmann Institute of Science.

Publications

Chapters in edited books

1. **Gildor, H.**, Glacial-interglacial CO₂ variations, in M. Follows and T. Oguz (Eds.), *The ocean carbon cycle and climate*, 317-352, Kluwer Academic Publishers, 2004.
2. Sobel, A.H., C.S. Bretherton, **H. Gildor**, and M. Peters, Convection, cloud-radiative feedbacks and thermodynamic ocean coupling in simple models of the Walker circulation, in *Earth's Climate: The Ocean-Atmosphere Interaction*, C. Wang S.-P. Xie, and J. A. Carton, Eds., American Geophysical Union, Geophysical Monograph, 147, 393-405, 2004.
3. **Gildor, H.**, The general circulation in the Gulf of Eilat, in "The Glory of the Sea: Stability and Change in the Aquatic Systems of Israel" (Ed. Noga Stambler), The Israeli Association of Aquatic Sciences, 2013 (in Hebrew).
4. **Gildor, H.**, Paleoclimate over the Red Sea since the Last Glacial Maximum, in "The Glory of the Sea: Stability and Change in the Aquatic Systems of Israel" (Ed. Noga Stambler), The Israeli Association of Aquatic Sciences, 2013 (in Hebrew).
5. Carlson, D.F., A.G. Ostrovskii, K. Konstantin, and **H. Gildor**, Moored automatic mobile profilers and their applications, in "Advances in Marine robotics" (Ed. Oren Gal), 169-206, LAP LAMBERT Academic Publishing, 2013.
6. Y. Masumoto, M. Nagura, S-P Xie, P. N. Vinayachandran, T. Miyama, Z. Yu, J. P. McCreary, Jr., R. R. Hood, **H. Gildor**, "Ocean processes relevant to climate variations in the Indian Ocean sector", in *Indo-Pacific Climate Variability and Predictability*, Eds. Behera and Yamagata, World Scientific Series on Asia-Pacific Weather and Climate, Vol. 7, 2015.

Refereed articles

1. **Gildor, H.**, and E. Tziperman, Sea ice as the glacial cycles' climate switch: Role of seasonal and orbital forcing, *Paleoceanography*, 15, 605-615, 2000.
2. **Gildor, H.**, and E. Tziperman, A sea ice climate switch mechanism for the 100-kyr glacial cycles, *Journal of Geophysical Research-Ocean*, 106, 9117-9133, 2001.
3. **Gildor, H.**, and E. Tziperman, Physical mechanisms behind biogeochemical glacial-interglacial CO₂ variations, *Geophysical Research Letters*, 28, 2421-2424, 2001.

4. **Gildor, H.** and E. Tziperman, Sea-ice, the glacial cycles' climate switch, and inter-hemispheric thermohaline teleconnections, *Annals of Glaciology*, 23, 501-506, 2001.
5. **Gildor, H.**, and M. Ghil, Phase relations between climate proxy records: Potential effect of seasonal precipitation changes, *Geophysical Research Letters*, 29, doi: 10.1029/2001GL013781, 2002.
6. **Gildor, H.**, E. Tziperman, and J.R. Toggweiler, Sea ice switch mechanism and glacial-interglacial CO₂ variations, *Global Biogeochemical Cycles*, 16, doi: 10.1029/2001GB001446, 2002.
7. Tziperman, E. and **H. Gildor**, The stabilization of the thermohaline circulation by the temperature-precipitation feedback, *Journal of Physical Oceanography*, 32, 2704-2714, 2002.
8. Crosta, X., A. Shemesh, M.E. Salvignac, **H. Gildor**, and R. Yam, Late Quaternary variations of elemental ratio (C/Si and N/Si) in diatom-bound organic matter from the Southern Ocean, *Deep Sea Research Part II*, 49, 1939-1952, 2002.
9. **Gildor, H.** and M. Follows, Two-way interaction between ocean biota and climate mediated by biogeochemical cycles, *Israel Journal of Chemistry*, 42, 15-27, 2002 (special issue on Environmental Chemistry).
10. Tziperman, E. and **H. Gildor**, On the mid-Pleistocene transition to 100-kyr glacial cycles and the asymmetry between glaciation and deglaciation times, *Paleoceanography*, 18, doi: 10.1029/2001PA000627, 2003.
11. **Gildor, H.** and E. Tziperman, Sea-ice switches and abrupt climate change. *Philosophical Transactions of the Royal Society of London A*, 361, 1935-1944, 2003.
12. **Gildor, H.**, A.H. Sobel, M.A. Cane, and R.N. Sambrotto, A role for ocean biota in the genesis of tropical intraseasonal atmospheric variability, *Geophysical Research Letters*, 30, doi: 10.1029/2002GL016759, 2003.
13. Timmermann, A., **H. Gildor**, M. Schulz, and E. Tziperman, Coherent resonant millennial-scale climate oscillations triggered by glacial meltwater pulses, *Journal of Climate*, 16, 2569-2585, 2003.
14. Ashkenazy, Y., D.R. Baker, **H. Gildor**, and S. Havlin, Stochastic models for ice-ages, *Physica A*, 330, doi: 10.1029/2003GL018099, 2003.
15. Sobel, A.H. and **H. Gildor**, A simple time-dependent model of SST hot spots, *Journal of Climate*, 16, 3798-3992, 2003.
16. Ashkenazy, Y., D.R. Baker, **H. Gildor**, and S. Havlin, Nonlinearity and multifractality of climate change in the past 400,000 years, *Geophysical Research Letters*, 30, doi: 10.1029/2003GL018099, 2003.

17. Ashkenazy, Y., D.R. Baker, and **H. Gildor**, Simple stochastic models for glacial dynamics, *Journal of Geophysical Research-Ocean*, 110, doi: 10.1029/2004JC002548, 2005.
18. **Gildor, H.** and N.H. Naik, Evaluating the effect of interannual variations of surface chlorophyll on upper ocean temperature, *Journal of Geophysical Research-Ocean*, 110, doi: 10.1029/2004JC002779, 2005.
19. Cane, M.A., P. Braconnot, A. Clement, **H. Gildor**, S. Joussaume, M. Kageyama, M. Khodri, D. Paillard, S. Tett, E. Zorita, *Progress in Paleoclimate Modeling*, *Journal of Climate*, 19, 5031-5057, 2006.
20. Shepon, A., **H. Gildor**, L.J. Labrador, T. Butler, L.N. Ganzeveld, and M.G. Lawrence, Global lightning NO_x deposition, *Journal of Geophysical Research-Atmosphere*, 112, doi: 10.1029/2006JD007458, 2007.
21. Ben-Tzvi, O., M. Kiflawi, **H. Gildor**, and A. Abelson, Possible effects of downwelling on the recruitment of coral reef fishes to the Eilat (Red-Sea) coral reefs, *Limnology and Oceanography*, 52, 2618-2628, 2007.
22. Silverman, J. and **H. Gildor**, The residence time of an active versus a passive tracer in the Gulf of Eilat: a box model approach, *Journal of Marine Systems*, 71, 159-170, doi: 10.1016/j.jmarsys.2007.06.007, 2008.
23. Biton, E., **H. Gildor**, and W.R. Peltier, Red sea during the last glacial maximum: Implications for sea level reconstruction, *Paleoceanography*, 23, doi: 10.1029/2007PA001431, 2008.
24. Shepon, A. and **H. Gildor**, The Lightning-Biota Climatic Feedback, *Global Change Biology*, 14, 440-450, doi: 10.1111/j.1365-2486.2007.01501.x, 2008.
25. Ashkenazy, Y. and **H. Gildor**, Timing and significance of maximum and minimum equatorial insolation, *Paleoceanography*, 23, doi: 10.1029/2007PA001436, 2008.
26. Bar-Or, R., C. Erlick, and **H. Gildor**, The role of dust in glacial-interglacial cycles, *Quaternary Science Reviews*, 27, 201-208, doi: 10.1016/j.quascirev.2007.10.015, 2008.
27. **Gildor, H.**, The bottom Ekman layer and the apparent violation of the maximum principle, *Geophysical and Astrophysical Fluid Dynamics*, 102, 593-599, 2008.
28. Ashkenazy, Y., Y. Feliks, **H. Gildor**, and E. Tziperman, Asymmetry of temperature records, *Journal of the Atmospheric Sciences*, 65, 3327-3336, 2008.
29. Biton, E., J. Silverman, and **H. Gildor**, Observations and modeling of a pulsating density current, *Geophysical Research Letters*, 35, doi: 10.1029/2008GL034123, 2008.

30. **Gildor, H.**, E. Fredj, J. Steinbuck, and S. Monismith, Evidence for submesoscale barriers to horizontal mixing in the ocean from current measurements and aerial-photographs, *Journal of Physical Oceanography*, 39, 1975-1983, doi: 10.1175/2009JPO4116.1, 2009.
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32. Ashkenazy, Y. and **H. Gildor**, Long-range temporal correlations of ocean surface currents, *Journal of Geophysical Research-Ocean*, 114, doi: 10.1029/2008JC005235, 2009.
33. Carlson, D., P.A. Muscarella, **H. Gildor**, B.L. Lipphardt, Jr., and E. Fredj, How useful are Progressive Vector Diagrams for studying coastal ocean transport? *Limnology and Oceanography: Methods*, 8, 98-106, 2010.
34. **Gildor, H.**, E. Fredj, and A. Kostinski, The Gulf of Eilat/Aqaba: a Natural Driven Cavity? *Geophysical and Astrophysical Fluid Dynamics*, 104, 301-308, doi: 10.1080/03091921003712842, 2010.
35. Biton, E., **H. Gildor**, G. Trommer, M. Siccha, M. Kuchera, M. T.J. Van der Meer, and S. Schouten, Sensitivity of Red Sea circulation to monsoonal variability during the Holocene: An integrated data and modeling study, *Paleoceanography*, 25, doi: 10.1029/2009PA001876, 2010.
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37. Ashkenazy, Y., I. Eisenman, **H. Gildor**, and E. Tziperman, The effect of Milankovitch variations in insolation on equatorial seasonality, *Journal of Climate*, 23, 6133-6142, doi: 10.1175/2010JCLI3700.1, 2010.
38. Bar-Or, R., **H. Gildor**, and C. Erlick, The aerosol cloud fraction effect on cellular marine stratocumulus and its contribution to glacial-interglacial cycles, *Journal of Geophysical Research-Atmosphere*, 116, doi: 10.1029/2010JD014470, 2011.
39. Biton, E. and **H. Gildor**, The general circulation of the Gulf of Eilat/Aqaba revisited: The interplay between the exchange flow through the Straits of Tiran and surface fluxes, *Journal of Geophysical Research-Ocean*, 116, doi: 10.1029/2010JC006860, 2011.
40. Biton, E. and **H. Gildor**, Stepwise seasonal restratification and the evolution of salinity minimum in the Gulf of Eilat/Aqaba, *Journal of Geophysical Research-Ocean*, 116, doi: 10.1029/2011JC007106, 2011.

41. Biton, E. and **H. Gildor**, The coupling between exchange flux through a strait and dynamics in a small convectively driven marginal sea: The Gulf of Eilat/Aqaba, *Journal of Geophysical Research-Ocean*, 116, doi: 10.1029/2011JC006944, 2011.
42. Ashkenazy, Y. and **H. Gildor**, On the probability and spatial distribution of ocean surface currents, *Journal of Physical Oceanography*, 41, 2295-2306, doi: 10.1175/JPO-D-11-04.1, 2011.
43. Tziperman, E., D.S. Abbot, Y. Ashkenazy, **H. Gildor**, D. Pollard, C.G. Schoof, and D.P. Schrag, Continental constriction and oceanic ice-cover thickness in a Snowball-Earth scenario, *Journal of Geophysical Research-Ocean*, 117, doi: 10.1029/2011JC007730, 2012.
44. Carlson, D.F., E. Fredj, **H. Gildor**, E. Biton, J.V. Steinbuck, S.G. Monismith, A. Genin, Observations of tidal currents in the northern Gulf of Eilat/Aqaba (Red Sea), *Journal of Marine Systems*, 102-104, 14-28, doi: 10.1016/j.jmarsys.2012.04.008, 2012.
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46. Biton, E. and **H. Gildor**, The seasonal effect in one-dimensional Daisyworld, *Journal of Theoretical Biology*, 314, 145-156, doi: 10.1016/j.jtbi.2012.08.043, 2012.
47. Ashkenazy, Y., M. Losch, **H. Gildor**, D. Mirzayof, and E. Tziperman, Multiple sea-ice states and abrupt MOC transitions in a general circulation ocean model, *Climate Dynamics*, 40, 1803–1817, doi: 10.1007/s00382-012-1546-2, 2013.
48. Ashkenazy, **H. Gildor**, Y., M. Losch, F.A. Macdonald, D.P. Schrag, and E. Tziperman, Dynamics of a Snowball Ocean, *Nature*, 495, 90-93, doi: 10.1038/nature11894, 2013.
49. Boss, E., **H. Gildor**, W. Slade, L. Sokoletsky, A. Oren, J. Loftin, Optical properties of the Dead Sea, *Journal of Geophysical Research-Ocean*, 118, 1-9, doi: 10.1002/jgrc.20109, 2013.
50. Fine, M., **H. Gildor**, and A. Genin, A coral reef refuge in the Red Sea, *Global Change Biology*, 19, 3640–3647, doi: 10.1111/gcb.12356, 2013.
51. **Gildor, H.**, Y. Ashkenazy, E. Tziperman, and I. Lev, The role of sea ice in the temperature-precipitation feedback of glacial cycles, *Climate Dynamics*, 10.1007/s00382-013-1990-7, 2014.
52. Ashkenazy, **H. Gildor**, Y., M. Losch, and E. Tziperman, Ocean circulation under globally glaciated Snowball Earth conditions: steady state solutions, *Journal of Physical Oceanography*, 44, 24-43, doi: 10.1175/JPO-D-13-086.1, 2014.

53. Carlson, D.F., E. Fredj, **H. Gildor**, The annual cycle of vertical mixing and restratification in the northern Gulf of Eilat/Aqaba (Red Sea) based on high temporal and vertical resolution observations, *Deep Sea Research Part I*, 84, 1-17, 2014.
54. Biton, E. and **H. Gildor**, The energy balance of the Gulf of Eilat/Aqaba (northern Red Sea), *Journal of Physical Oceanography*, 44, 1954-1972, doi: 10.1175/JPO-D-13-0220.1, 2014.
55. Mundel, R., E. Fredj, **H. Gildor**, and V. Rom-Kedar, New Lagrangian diagnostics for characterizing fluid flow mixing, *Physics of Fluids*, 26, doi: 10.1063/1.4903239, 2014.
56. Afargan, H. and **H. Gildor**, The role of the wind in the formation of coherent eddies in the Gulf of Eilat/Aqaba, *Journal of Marine Systems*, 142, 75-95, doi: 10.1016/j.jmarsys.2014.09.006, 2015.
57. Siccha, M., E. Biton, and **H. Gildor**, Red Sea circulation during Marine Isotope Stage 5e, *Paleoceanography*, 10.1002/2013PA002603, 2015.
58. Ashkenazy, **H. Gildor**, Y., and G. Bel, The effect of stochastic wind on the infinite depth Ekman layer model, *European Physical Letters*, doi:10.1209/0295-5075/111/39001, 2015.
59. Bar-Yosef Mayer, D.E., Y. Kahanov, J. Roskin, and **H. Gildor**, Neolithic voyages to Cyprus: Wind patterns, routes and mechanisms, *Journal of Island & Coastal Archaeology*, doi: 10.1080/15564894.2015.1060277, 2015.
60. **Gildor, H.**, N. Paldor, and S. Ben Shushan, Numerical Simulation of Harmonic, and Trapped, Rossby Waves in a Channel on the Mid-latitude β -plane, *Quarterly Journal of the Royal Meteorological Society*, doi: 10.1002/qj.2820, 2016.
61. Ashkenazy, Y., E. Fredj, **H. Gildor**, G-C Gong, and H-J Lee, Current temporal asymmetry and the role of tides: Nan-Wan Bay vs. the Gulf of Elat, *Ocean Science*, 12, 1–10, 2016.
62. Biton, E. and **H. Gildor**, On the origin of a chain of eddies in the Gulf of Eilat/Aqaba, *Journal of Physical Oceanography*, doi: 10.1175/JPO-D-15-0208.1, 8, 2269-2284, 2016.
63. Fredj, E., D.F., Carlson, Y. Amitai, A. Gozolchiani, **H. Gildor**, The particle tracking and analysis toolbox (PaTATO) for Matlab. *Limnology and Oceanography: Methods*, doi: 10.1002/lom3.10114, 9, 586-599, 2016.
64. Amitai, Y., and **H. Gildor**, Can precipitation over Israel be predicted from Eastern Mediterranean heat content? *International Journal of Climatology*, doi: 10.1002/joc.4860, 37, 2492-2501, 2017.
65. Amitai, Y., Y. Ashkenazy, **H. Gildor**, Multiple equilibria and overturning variability of the Aegean-Adriatic Seas, *Global and Planetary Change*, 151, 49-59, 2017.

66. Grossowicz, M., Tchernov, and **H. Gildor**, A quantitative management tool reflecting impact of nutrient enrichment from mariculture in the Levantine basin, *Frontiers in Marine Science*, doi: 10.3389/fmars.2017.00134, 2017.
67. Rey-Sánchez, A.C., G. Bohrer, T.H. Morin, D. Shlomo, G. Mirfenderesgi, **H. Gildor** & A. Genin, Evaporation and CO₂ fluxes in a coastal reef: an eddy covariance approach, *Ecosystem Health and Sustainability*, 3, doi: 10.1080/20964129.2017.1392830, 2017.
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70. Amitai, Y., Y. Ashkenazy, **H. Gildor**, The effect of wind-stress over the Eastern Mediterranean on deep-water formation in the Adriatic Sea, *Deep Sea Research II*, 164, 5-13, 2019.
71. Hayes, D.R., S. Dobricic, **H. Gildor**, and A. Matsikaris, Operational assimilation of glider temperature and salinity for an improved description of the Cyprus eddy, *Deep Sea Research II*, 164, 41-53, 2019.
72. Mauri, E., L. Sitz, R. Gerin, P.M. Poulain, D. Hayes, **H. Gildor**, On the variability of the circulation and water mass properties in the eastern Levantine Sea between September 2016–August 2017, *Water* 11 (9), 1741, 2019.
73. Hozumi, A., I. Ostrovsky, A. Sukenik, **H. Gildor**, Turbulence regulation of *Microcystis* surface scum formation and dispersion during a cyanobacteria bloom event, *Inland Waters*, 10 (1), 51-70, 2020.
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77. Amitai, Y., Y. Ashkenazy, **H. Gildor**, The effect of the source of deep water in the Eastern Mediterranean on Western Mediterranean intermediate and deep water, *Frontiers in Marine Science*, doi.org/10.3389/fmars.2020.615975, 2021.
78. Yacoby, I., N. Paldor, **H. Gildor**, Geostrophic adjustment on the f-plane: Symmetric versus anti-symmetric initial height distributions, *Physics of Fluids*, 33, DOI: 10.1063/5.0056592, 2021.