

M A R Y - L O U I S E E . T I M M E R M A N S

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EDUCATION

- 2000 Ph.D., Trinity College, Cambridge University, Department of Applied Mathematics and Theoretical Physics, Cambridge, UK
- 1996 M.S., Cambridge University, Department of Applied Mathematics and Theoretical Physics, Certificate of Advanced Studies in Mathematics, Cambridge, UK
- 1994 B.S., University of Victoria, Department of Physics and Astronomy, Victoria, BC, Canada

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POSITIONS HELD

- 2017-Present: Professor, Department of Geology and Geophysics, Yale University
- 2015-2017: Associate Professor, Department of Geology and Geophysics, Yale University
- 2009-2015: Assistant Professor, Department of Geology and Geophysics, Yale University
- 2014-Present: Adjunct Scientist, PO Department, Woods Hole Oceanographic Institution, MA
- 2005-2009: Assistant Scientist, PO Department, Woods Hole Oceanographic Institution, USA
- 2005: Research Associate, Department of Physics and Astronomy, Univ. of Victoria, BC, Canada
- 2004: Lecturer in Geophysical Fluid Dynamics, Ocean University of China, Qingdao, China
- 2002-2004: Postdoctoral Scholar, PO Department, Woods Hole Oceanographic Institution, USA
- 2001-2002: Postdoctoral Fellow, Institute of Ocean Sciences & University of Victoria, BC, Canada

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FELLOWSHIPS and AWARDS

- 2015 Dylan Hixon '88 Prize for Teaching Excellence in the Natural Sciences & Mathematics, Yale
- 2017, 2015 & 2014 AGU Editors' Citation for Excellence in Refereeing
- 2015 Kirby Laing Fellow, Bangor University UK
- 2014-2019 National Science Foundation CAREER Award
- 2013 Arthur Greer Memorial Prize for Outstanding Scholarly Publication or Research, Yale
- 2002 Woods Hole Oceanographic Institution Postdoctoral Scholar
- 1997 Summer Fellow in the Geophysical Fluid Dynamics Summer Program, Woods Hole Oceanographic Institution
- 1996-2000 Doctoral Student Fellowship, Trinity College, Cambridge University, UK
- 1995 Summer School in Geophysical and Environmental Fluid Dynamics, Department of Applied Mathematics and Theoretical Physics, Cambridge University, UK
- 1995 Cambridge Commonwealth Trust Scholarship for Graduate Studies at Cambridge University

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SELECTED RECENT PUBLICATIONS

- DeGrandpre, M. D., Lai, C.-Z., Timmermans, M.-L., Krishfield, R. A., Proshutinsky, A., & Torres, D., 2019. Inorganic Carbon and pCO<sub>2</sub> Variability During Ice Formation in the Beaufort Gyre of the Canada Basin. *J. Geophys. Res.*, 124. <https://doi.org/10.1029/2019JC015109>.
- Shibley, N. C., & Timmermans, M.-L., 2019. The formation of double-diffusive layers in a weakly turbulent environment. *J. Geophys. Res.*, 124. <https://doi.org/10.1029/2018JC014625>.
- Bebieva, Y. and M.-L. Timmermans, 2019. Double-diffusive layering in the Canada Basin: An explanation of along-layer temperature and salinity gradients. *J. Geophys. Res.*, 124, [doi.org/10.1029/2018JC014368](https://doi.org/10.1029/2018JC014368).
- Zhao, B., and M.-L. Timmermans, 2018. Topographic Rossby Waves in the Arctic Ocean's Beaufort Gyre. *J. Geophys. Res.*, [doi.org/10.1029/2018JC014233](https://doi.org/10.1029/2018JC014233).
- Timmermans, M.-L., J. Toole and R. Krishfield, 2018. Warming of the interior Arctic Ocean linked to sea ice losses at the basin margins. *Sci. Adv.*, 4(8) eaat6773, [doi: 10.1126/sciadv.aat6773](https://doi.org/10.1126/sciadv.aat6773).
- Zhao, M., Timmermans, M.-L., Krishfield, R., & Manucharyan, G., 2018. Partitioning of kinetic energy in the Arctic Ocean's Beaufort Gyre. *J. Geophys. Res.*, [doi.org/10.1029/2018JC014037](https://doi.org/10.1029/2018JC014037)
- Dosser, H. and M.-L. Timmermans, 2017. Inferring circulation and lateral eddy fluxes in the Arctic Ocean's deep Canada Basin using an inverse method. *J. Phys. Oceanogr.*, [doi.org/10.1175/JPO-D-17-0190.1](https://doi.org/10.1175/JPO-D-17-0190.1).
- Timmermans, M.-L., J. Marshall, A. Proshutinsky and J. Scott, 2017. Seasonally-derived components of the Canada Basin halocline. *Geophys. Res. Lett.*, 44, [doi:10.1002/2017GL073042](https://doi.org/10.1002/2017GL073042).
- Mensa, J. and M.-L. Timmermans, 2017. Characterizing the seasonal cycle of upper-ocean flows under multi-year sea ice. *Ocean Modelling*, 113, [doi.org/10.1016/j.ocemod.2017.03.009](https://doi.org/10.1016/j.ocemod.2017.03.009).
- Bebieva, Y. and M.-L. Timmermans, 2017. The relationship between double-diffusive intrusions and staircases in the Arctic Ocean. *J. Phys. Oceanogr.*, [doi:10.1175/JPO-D-16-0265.1](https://doi.org/10.1175/JPO-D-16-0265.1).
- Shibley, N., M.-L. Timmermans, J. Carpenter, J. Toole, 2017. Spatial variability of the Arctic Ocean's double-diffusive staircase. *J. Geophys. Res.*, 122, [doi:10.1002/2016JC012419](https://doi.org/10.1002/2016JC012419).
- Timmermans, M.-L., and Jayne, S., 2016. The Arctic Ocean spices up. *J. Phys. Oceanogr.*, [doi: dx.doi.org/10.1175/JPO-D-16-0027.1](https://doi.org/10.1175/JPO-D-16-0027.1).
- Bebieva, Y. and M.-L. Timmermans, 2016. An examination of double-diffusive processes in a mesoscale eddy in the Arctic Ocean. *J. Geophys. Res.*, 121, [doi:10.1002/2015JC011105](https://doi.org/10.1002/2015JC011105).
- Zhao, M. and M.-L. Timmermans, 2015. Vertical scales and dynamics of eddies in the Arctic Ocean's Canada Basin. *Journal of Geophysical Research*, 120, 8195–8209, [doi:10.1002/2015JC011251](https://doi.org/10.1002/2015JC011251).
- Timmermans, M.-L., 2015. The impact of stored solar heat on Arctic sea-ice growth. *Geophys. Res. Lett.*, 42, [doi:10.1002/2015GL064541](https://doi.org/10.1002/2015GL064541).
- Proshutinsky, A., D. Dukhovskoy, M.-L. Timmermans, R. Krishfield, J. Bamber, 2015. Arctic circulation regimes. *Philosophical Transactions A*, 373(2052), 20140160.
- Carpenter, J.R. and M.-L. Timmermans, 2014. Does rotation influence double-diffusive fluxes in polar oceans? *Journal of Physical Oceanography*, 44, 289–296.