

CURRICULUM VITAE

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Michael James McPhaden

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PROFESSIONAL EXPERIENCE

1998–present Senior Scientist
Pacific Marine Environmental Laboratory, Seattle, Washington

1993–present Affiliate Professor, School of Oceanography, University of Washington

1992–present Director, Tropical Atmosphere Ocean (TAO) Array Project Office
Pacific Marine Environmental Laboratory, Seattle, Washington

1992–1998 Supervisory Oceanographer GM-15, Pacific Marine Environmental Laboratory,
Seattle, Washington

1991–1992 Oceanographer, GS-15, Pacific Marine Environmental Laboratory, Seattle,
Washington

1990–present Senior Fellow, Joint Institute for the Study of the Atmosphere and Ocean,
University of Washington

1990–1993 Affiliate Associate Professor, School of Oceanography, University of
Washington

1988–1990 Affiliate Assistant Professor, School of Oceanography, University of Washington

1987–present Senior Fellow, Joint Institute for Marine and Atmospheric Research, University
of Hawaii

1986–1991 Oceanographer GS-14, Pacific Marine Environmental Laboratory, Seattle,
Washington

1984–1986 Research Assistant Professor, School of Oceanography, University of
Washington

1982–1984 Visiting Research Scientist, Joint Institute for the Study of the Atmosphere and
Ocean, University of Washington

1980–1982 Research Scientist, Oceanography Section, National Center for Atmospheric
Research

EDUCATION

1980 Scripps Institution of Oceanography, Ph.D., Physical Oceanography: Dissertation title:
“Models of the Equatorial Ocean Circulation”

1973 State University of New York at Buffalo, B.S., Physics, magna cum laude

HONORS AND AWARDS

Editors’ Citation for Excellence in Refereeing, *Journal of Geophysical Research-Oceans*, 2016

Sverdrup Medal, American Meteorological Society, 2015

Fellow, American Geophysical Union, 2014

Priestley Lecture, Commonwealth Scientific and Industrial Research Organisation, Australia, 2012

Fridtjof Nansen Medal, European Geosciences Union, 2010

Fellow, American Meteorological Society, 2007

Guest Professor, Ocean University of China, 2006

Fellow, the Oceanography Society, 2005

Scientific American “Science & Technology Web Awards” for El Niño Theme Page, 2005

Presidential Rank Award for Meritorious Federal Service, 2004

Listed in Thomson ISI Highly Cited Researchers in Geosciences, 2004
Grace Hopper Government Technology Award (“Gracie Award”), given to the TAO project for
Leadership in the Innovative Application of Information Technology, 2003
American Geophysical Union, Frontiers of Geophysics Lecturer, 2002 Western Pacific Geophysics
Meeting
American Meteorological Society, Walter Orr Roberts Lecturer, 2002
American Meteorological Society, Special Award for Completing and Maintaining the TAO Array,
1999
Public Service Award, Federal Executive Board, Seattle, 1999
American Geophysical Union, Sverdrup Lecturer, Fall 1998 Meeting
Department of Commerce, Gold Medal, 1997
Editor’s Citation for Excellence in Refereeing, *Journal of Geophysical Research*, 1995
NOAA/OAR Outstanding Publication Award, 1999, 2000, 2002, 2004
NOAA/PMEL Outstanding Publication Award, 1989–1993, 1995, 1997, 1998, 2007
Phi Beta Kappa

PROFESSIONAL SOCIETIES

The Oceanography Society, 1988–present
American Geophysical Union, 1979–present
The American Meteorological Society, 1978–present
The European Geosciences Union, 2005–present
Marine Technology Society/IEEE, 1990

PROFESSIONAL SERVICE ACTIVITIES

Member, International review committee for the Tropical Atlantic Observing System, 2017 – 18.
Member, Advisory Committee, Centre for Southern Hemisphere Ocean Research (CSHOR),
Hobart, Australia, 2017- present
Co-chair, Scientific Organizing Committee, Fourth International ENSO Conference, Guayaquil,
Equador, 2018
Member, Oceanographic Research Awards Committee, American Meteorological Society, 2017 -
2018
Member, The Oceanography Society Fellows Evaluation Committee, 2017 -18
Member, US IIOE-2 Scientific Steering Committee, 2016 - present
Member, AGU Bowie Medal Committee, 2015-18
Vice-Chair, AGU Development Board, 2015-18
Chair, AGU Ethics Committee, 2015-18
Member, Committee on Researcher Involvement in the AMS, 2015- 2017
Member, U.S. CLIVAR ENSO Diversity Task Team, 2015-present
Convenor, AMS Annual Meeting Special Session on ENSO, Tropical Ocean-Atmosphere
Interactions, and Global Climatic Impacts: 20 Years after TOGA, 2015
Member, RAPID-AMOC Program Advisory Committee, 2014-present
Member, Scientific Organizing Committee, Third International ENSO Conference, Guayaquil,
Ecuador, 2014
Convenor, AGU Fall Meeting Special Session on the 30th Anniversary of the 1982-83 El Niño
Chairman, Scientific Organizing Committee, Tropical Atlantic Climate Variability Conference,
Venice, Italy, 2013
President, American Geophysical Union, 2010-2012 (President-elect 2008-2010; Past President
2012-14)
Member, Review Committee, University of Maryland Department of Atmospheric and Oceanic
Science, 2011
Member, IUGG Nominations Committee, 2010-2011

Member, International Scientific Advisory Committee, Centro Internacional para la Investigacion del Fenomeno de El Niño (CIIFEN), 2010-present

Member, National Academy of Science Advisory Panel on National Security Implications of Climate Change for U.S. Naval Forces, 2009-11

Member, MIT/WHOI Joint Program Review Committee, 2009

Member, RAPID-WATCH Program Advisory Committee, 2008-2014

Contributing author, IPCC Fourth Assessment Report, 2007

Convener, IUGG Symposium on Interannual to Interdecadal Climate Variability, 2007

Member, RAPID (Rapid Climate Change) Review Committee, February 2007

Member, Review Committee, Cooperative Institute for Climate and Ocean Research (CICOR), June 2005

President, Ocean Sciences Section, American Geophysical Union, 2002–2004

Member, Executive Committee, AGU Ocean Sciences Section, 2000–2008

Member, IOC/WMO Joint Commission on Oceanography and Marine Meteorology, observations Coordination Group, 2001–present

Member, International CLIVAR Global Synthesis and Observations Panel, 2004–present

Member, International CLIVAR Indian Ocean Panel, 2003–present

Member, International CLIVAR Pacific Ocean Panel, 2001–present

Chairman, Tropical Moored Buoy Implementation Panel, 2001–present

Member, International CLIVAR/OOPC OceanSITES Working Group, 2000–present

Editorial Board, Bulletin of the American Meteorological Society, 2001–present

Member, PIRATA Steering Group, 1995–present

Member, International CLIVAR Ocean Observations Panel, 2000–2003

Member, OCEANOBS99 Conference Steering Committee, 1999

Member, AMS Committee on the Interaction of the Sea and the Atmosphere, 1999–2002

Member, O-CLIVAR Steering Group, 1996–1997

Member, Nominations Committee, The Oceanography Society, 1994–1996

Chairman, Pan American Climate Studies Subcommittee on Observations, 1994–1996

Member, Organizing Committee, Final TOGA Conference, 1994–1995

Chairman, TAO Implementation Panel, 1992–2001

Member, Ocean Observing System Development Panel, 1992–1994

Member, International TOGA Scientific Steering Group, 1992–1994

Member, National Academy of Science Advisory Panel on Near-term Development of Operational Ocean Observations, 1991–1993

Member, WCRP Pacific Panel, 1990–1994

Member, International TOGA Scientific Steering Group Ad Hoc Committee on Moored Current Measurements, 1989

Member, WOCE Moored Measurements Implementation Panel, 1988–1991

Member, EPOCS Council, 1987–1994

Convener, The ENSO Event of 1986–1987 Fall AGU, San Francisco, 1987

Member, US/PRC bilateral air-sea interaction planning committee, 1986–1992

Member, WOCE Committee on Surface Layer Observations, 1986–1988

Convener, Equatorial Undercurrent Centennial Conference, Fall AGU, San Francisco, 1986

Co-Convener, Second International TOGA Workshop on Thermal Sampling, Hobart, Australia, November 1986

Convener, TOGA Thermal Data Center Workshop, Monterey, California, July 1985

Consultant, CCCO Pacific, Atlantic, and Indian Ocean Panels, 1984–1990

Co-Chairman, Pacific Subsurface Thermal Field Monitoring Steering Group 1984–1987

Member, U.S. Delegation to India, Indo-U.S. bilateral on monsoon variability, Bangalore, India, 1984

Co-Convener, Pacific Subsurface Thermal Field Monitoring Workshop, Seattle, 1984
Member, TOGA Pacific Drafting Workshop, Miami, 1983
Convener, Special Ocean/Atmospheric Sciences session on El Niño 1982–1983, Fall AGU Meeting,
San Francisco, 1983
Member, Navy/NOAA Committee on Observational Strategies for Ocean Monitoring, Miami, 1983
Consultant, FOCAL/SEQUAL Programs, 1982–1986
Member, Tropic Heat Experiment Executive Committee, 1981–1982
Consultant, CAGE Feasibility Study Committee, 1981–1982
Member, Equatorial Theoretical Panel, 1978–1984

STUDENT RESEARCH SUPPORT

Hillary Scannell	2015-2017
Guan Cong	2015-2016
Yi Wang	2011-2013
Jacob Wenegrat	2010-2015
Natalia Stephanova	2005–2008
Xuebin Zhang	2002–2007
Weimin Wang	1994–2000
Xuri Yu	1991–1999
Rusty Brainard	1991–1994
Ken Duvall	1987
Scott Springer	1986–1989
Mary Landsteiner	1985–1987
Jeff Proehl	1984–1988

STUDENT COMMITTEES

University of Washington

Shirley Leung, Ph.D.
Hillary Scannell, Ph.D. (Chairman)
Nan-Husn Chi, Ph.D.
Jacob Wenegrat, Ph.D (Chairman)
Chuanli Jiang, Ph.D.
Natalia Stephanova, M.S. (Chairman)
Xuebin Zhang, Ph.D. (Chairman)
Weimin Wang, Ph.D. (Chairman)
Xuri Yu, Ph.D. (Chairman)
Scott Springer, M.S. (Chairman), Ph.D.
Mary Landsteiner, M.S. (Chairman)
Jeff Proehl, Ph.D. (Chairman)
Joanna Meunch, Ph.D.
Keith Brainard, Ph.D.
David Battisti, Ph.D.
William Kessler, Ph.D.

Naval Postgraduate School
Rusty Brainard, Ph.D.

University of Paris - VI
Lucia Bunge, Ph.D.
Christophe Menkes, Ph.D.

University of Toulouse - III
Christelle Bosc, Ph.D.
Takeshi Izumo, Ph.D.
Sophie Cravatte, Ph.D.

University of Maryland
Gregory Foltz, Ph.D.

Macquarie University, New South Wales, Australia
Shayne McGregor, PhD

Ocean University of China, Qingdao, China
Yi Wang, PhD

Chinese Academy of Sciences, Qingdao
Guan Cong, PhD

POSTDOC SUPPORT AND SUPERVISION

Kandaga Pujiana	2017-present
Lu Dong	2015-2017
Aaron Levine	2014-present
Ebenezer Nyadjro	2012-2014
Joke Luebbecke	2011-2013
Iskhaq Iskandar	2009-2011
Motoki Nagura	2008-2010
Xuebin Zhang	2008
Regina Rodrigues	2005–2007
Greg Foltz	2003–2006
Weimin Wang	2000
Dongxiao Zhang	1999–2001
Daniela Turk	1999-2001
Xuri Yu	1999
Chris Meinen	1998–2000
Kenong Bi	1995–1996
Meghan Cronin	1993–1995
Janet Sprintall	1992–1993
Eric Johnson	1990–1992

TEACHING EXPERIENCE

Lecturer, University of Rhode Island Summer School on Equatorial Dynamics, June 1991
Lecturer, CLIVAR-IPRC-WCRP ENSO Summer School, Puna, Hawaii, June 2008
Guest Lecturer, University of Washington, Ocean500: Current Problems in Oceanography, 2005, 2006, 2009

OCEANOGRAPHIC RESEARCH CRUISES

RV *Fridtjof Nansen*, 18-27 November 2008, Mahe, Seychelles to Pemba, Mozambique
NOAA Ship *Ka'imimoana*, 10-23 September 2006, Nuku Hiva, French Polynesia to Honolulu, Hawaii (Chief Scientist)
NOAA Ship *Ka'imimoana*, 5-27 April 2005, San Diego, CA to Galapagos Islands, Ecuador
NOAA Ship *Ka'imimoana*, 1-23 March 2002, Honolulu, HI to Galapagos Islands, Ecuador (Chief Scientist)
NOAA Ship *Ka'imimoana*, 27 September-15 October 1997, San Diego, CA to Nuku Hiva, French Polynesia (Chief Scientist)
RV *Le Noroit*, 2-18 February 1992, Kwajalein, Marshall Islands to Noumea, New Caledonia
RV *Le Noroit*, 26 March-4 April 1991, Kwajalein, Marshall Islands to Noumea, New Caledonia
NOAA Ship *Malcolm Baldrige*, 20 April-22 May 1990, Honolulu, HI to Rodman, Panama (Chief Scientist)
Xiangyanghong #14, 12-28 October 1987, Pohnpei, Micronesia to Republic of Nauru

NOAA Ship *Oceanographer*, 17 October-10 November 1986, Seattle, WA to Manzanillo, Mexico (Chief Scientist)
RV *Marion Dufresne*, May-July 1983, Dakar, Senegal to La Reunion.

REFEREED PUBLICATIONS

Dong, L. and M.J. McPhaden, 2018: Unusually warm Indian Ocean sea surface temperatures help to arrest development of El Niño in 2014. *Science Reports*, in press.

Hu, Z.-Z.*, B. Huang, J. Zhu, A. Kumar, and M.J. McPhaden, 2018: On the Variety of Coastal El Niño Events. *Climate Dynamics*, submitted.

Pujiana, K. and M.J. McPhaden, 2018: Ocean's response to the convectively coupled Kelvin waves in the eastern equatorial Indian Ocean. *J. Geophys. Res.*, submitted.

Timmermann, A., et al, 2018: El Niño-Southern Oscillation Complexity. *Nature*, submitted.

Yeh, S.-W., W. Cai, S.-K. Min, M.J. McPhaden, D. Dommenges, B. Dewitte, M. Collins, K. Ashok, S.-I. An, B.-Y. Yim, and J.-S. Kug, 2018: ENSO atmospheric teleconnections and their response to greenhouse gas forcing. *Rev. Geophys.*, in press.

Brainard, R.E., T. Oliver, M.J. McPhaden, A. Cohen, R. Veneers, A. Heenan, B. Vargas-Angel, R. Rotjan, S. Mangubhai, E. Flint, and S.A. Hunter, 2017: Ecological Impacts of the 2015-2016 El Niño in the Central Equatorial Pacific. *Bull. Am. Meteorol. Soc.*, 98, S21 – S26.

Chen, G., W. Han, Y. Li, M.J. McPhaden, J. Chen, W. Wang, and D. Wang, 2017: Strong Intraseasonal Variability of Meridional currents near 5°N in the Eastern Indian Ocean: Characteristics and Causes. *J. Phys. Oceanogr.* 47, 979-998.

Cuyppers, Y., P. Bouruet-Aubertot, J. Vialard, and M.J. McPhaden, 2017: Focusing of internal tides by near-inertial waves, *Geophys. Res. Lett.*, 44, doi:10.1002/2017GL072625.

Dong, L. and M.J. McPhaden, 2017: The effects of external forcing and internal variability on the formation of interhemispheric sea surface temperature gradient trends in the Indian Ocean. *J. Climate*, 30, 9077-9095.

Dong, L. and M.J. McPhaden, 2017: Why has the relationship between Indian and Pacific Ocean decadal variability changed in recent decades? *J. Climate*, 30, 1971-1983.

Dong, L. and M.J. McPhaden, 2017: The role of external forcing and internal variability in regulating global mean surface temperatures on decadal timescales. *Environ. Res. Lett.*, 12, 034011. <https://doi.org/10.1088/1748-9326/aa5dd8>.

Girishkumar, M.S., J. Joseph, V.P. Thangaprakash, P. Vijay and M.J. McPhaden, 2017: Mixed layer temperature budget for the northward propagating summer monsoon intraseasonal oscillation (MISO) in the central Bay of Bengal. *J. Geophys. Res.*, 122, 8841-8854.
<https://doi.org/10.1002/2017JC013073>.

Khodri, M., T. Izumo, J. Vialard, C. Cassou, M. Lengaigne, J. Mignot, E. Guilyardi, N. Lebas, Y. Ruprich-Robert, A. Robock, and M.J. McPhaden, 2017. How tropical explosive volcanic eruptions trigger El Niño events by cooling tropical Africa. *Nature Comm.*, 8, doi:10.1038/s41467-017-00755-6.

- Levine, A.F.Z., M.J. McPhaden, and D.M.W. Frierson, 2017: The impact of the AMO on multidecadal ENSO variability. *Geophys. Res. Lett.*, *44*, doi:10.1002/2017GL072524.
- Lübbecke, J.F., and M.J. McPhaden, 2017: Symmetry of the Atlantic Niño mode, *Geophys. Res. Lett.*, *44*, 965-973, doi:10.1002/2016GL071829.
- McGregor, S., A. Sen Gupta, D. Dommenget, T. Lee, M.J. McPhaden, and W.S. Kessler, 2017: Factors influencing the skill of synthesized satellite wind products in the tropical Pacific. *J. Geophys. Res. Oceans*, *122*, doi:10.1002/2016JC012340.
- Nagura, M. and M.J. McPhaden, 2017: The Shallow Overturning Circulation in the Indian Ocean, *J. Phys. Oceanogr.*, submitted.
- Puy, M., J. Vialard, M. Lengaigne, E. Guilyardi, A. Voldoire, M. Balmaseda, G. Madec, C. Menkes, and M.J. McPhaden, 2017: Influence of Westerly Wind Events stochasticity on El Niño amplitude: the case of 2014 vs. 2015. *Clim Dyn.* DOI 10.1007/s00382-017-3938-9.
- Santoso, A., M.J. McPhaden, W. Cai, 2017: The defining characteristics of ENSO extremes and the strong 2015/16 El Niño. *Rev. Geophys.*, *55*, 1079-1129.
<https://doi.org/10.1002/2017RG000560>.
- Wang, G., W. Cai, B. Gan, L. Wu, A. Santoso, X. Lin, Z. Chen and M. J. McPhaden, 2017: Continued increase of extreme El Niño frequency long after 1.5°C warming stabilization. *Nature Climate Change*, DOI: 10.1038/NCLIMATE3351.
- Wang, Y. and M.J. McPhaden, 2017: Seasonal Cycle of Cross-Equatorial Flow in the Central Indian Ocean. *J. Geophys. Res.*, *122*, 3817-3827, doi:10.1002/2016JC012537.
- Dong, L. and M.J. McPhaden, 2016: Interhemispheric SST gradient trends in the Indian Ocean prior to and during the recent global warming hiatus. *J. Climate*, *29*, 9077-9095.
- Guan, C. and M.J. McPhaden, 2016: Ocean processes affecting the 21th century shift in ENSO SST variability. *J. Climate*, *29*, 6861-6879.
- Levine, A.F.Z., F.F. Jin, M.J. McPhaden, 2016: Extreme Noise-Extreme El Niño: How State-Dependent Noise Forcing Creates El Niño-La Niña Asymmetry. *J. Climate*, *29*, 5483-5499.
DOI: <http://dx.doi.org/10.1175/JCLI-D-16-0091.1>
- Levine, A.F.Z. and M.J. McPhaden, 2016: How the July 2014 Easterly Wind Burst Gave the 2015-6 El Niño a Head Start. *Geophys. Res. Lett.*, *43*, 6503-6510. DOI:10.1002/2016GL069204.
- Nagura, M. and M.J. McPhaden, 2016: Zonal propagation of near surface zonal currents in relation to surface wind forcing in the equatorial Indian Ocean. *J. Phys. Oceanogr.*, *46*, 3623-3638.
- Sutton, A.J., C.L. Sabine, R.A. Feely, W.-J. Cai, M.F. Cronin, M.J. McPhaden, J.M. Morell, J.A. Newton, J.-H. Noh, S.R. Ólafsdóttir, J.E. Salisbury, U. Send, D.C. Vandemark, 2016: Using present-day observations to detect when anthropogenic change forces surface ocean carbonate chemistry outside pre-industrial bounds. *Biogeosci.*, *13*, 5065-5083, doi:10.5194/bg-13-5065-2016.

- Wenegrat, J.O. and M.J. McPhaden, 2016: A simple analytical model of the diurnal Ekman layer. *J. Phys. Oceanogr.*, *46*, 2877-2894.
- Wenegrat, J.O. and M.J. McPhaden, 2016: Wind, waves, and fronts: Frictional effects in a generalized Ekman model. *J. Phys. Oceanogr.*, *46*, 371-394.
- Amaya, D.J., S.-P. Xie, A.J. Miller, and M.J. McPhaden, 2015: Seasonality of tropical Pacific decadal trends during the 21st century global warming hiatus. *J. Geophys. Res.*, *120*, doi:10.1002/2015JC010906.
- Cai, W., G. Wang, A. Santoso, M.J. McPhaden, L. Wu, F.-F. Jin, A. Timmermann, M. Collins, G. Vecchi, M. Lengaigne, M.H. England, D. Dommenges, K. Takahashi, and E. Guilyardi, 2015: Increasing frequency of extreme La Niña events induced by greenhouse warming. *J. Geophys. Res.*, *120*, 132-137, doi: 10.1038/nclimate2492.
- Legler, D.M., H.J. Freeland, R. Lumpkin, G. Ball, M.J. McPhaden, S. North, R. Crowley, G.J. Goni, U. Send and M.A. Merrifield, 2015: The current status of the real-time in situ Global Ocean Observing System for operational oceanography. *J. Operational Oceanogr.*, *8* Suppl. 2, s189-s200.
- Levine, A.F.Z., and M.J. McPhaden, 2015: The annual cycle in ENSO growth rate as a cause of the spring predictability barrier. *Geophys. Res. Lett.*, *42*, 5034-5041, doi:10.1002/2015GL064309.
- McPhaden, M.J. 2015: Playing hide and seek with El Niño. *Nat. Clim Change*, *5*, 791-795.
- McPhaden, M.J., A. Timmermann, M.J. Widlansky, M.A. Balmaseda and T.N. Stockdale, 2015: The Curious Case of the El Niño that Never Happened: A Perspective from 40 Years of Progress in Climate Research and Forecasting. *Bull. Am. Meteorol. Soc.*, *96*, 1647-1665.
- McPhaden, M.J., Y. Wang, and M. Ravichandran, 2015: Volume transports of the Wyrтки Jets and their Relationship to the Indian Ocean Dipole. *J. Geophys. Res.*, *120*, 5302-5317, doi:10.1002/2015JC010901.
- Strutton, P.G., V.J. Coles, R.R. Hood, R.J. Matear, M.J. McPhaden and H.E. Phillips, 2015: Biogeochemical variability in the equatorial Indian Ocean during the monsoon transition. *Biogeochem.*, *12*, 2367-2382, doi:10.5194/bg-12-1-2015.
- Cai, W., S. Borlace, M. Lengaigne, P. van Rensch, M. Collins, G. Vecchi, A. Timmermann, Santoso, M. J. McPhaden, L. Wu, M. England, E. Guilyardi, and F.-F. Jin, 2014: Increasing frequency of extreme El Niño events due to greenhouse warming. *Nature Climate Change*, *4*, 111-116. doi:10.1038/nclimate2100.
- England, M. H., S. McGregor, P. Spence, G. A. Meehl, A. Timmermann, W. Cai, A. Sen Gupta, M. J. McPhaden, A. Purich, and A. Santoso, 2014: Recently intensified Pacific Ocean wind-driven circulation and the ongoing warming hiatus, *Nature Climate Change*, *4*, 222-227. doi:10.1038/nclimate2106.
- Han, W., J. Vialard, M.J. McPhaden, T. Lee, Y. Masomoto, M. Feng, and W. de Ruijter, 2014: Indian Ocean decadal variability: a review. *Bull. Am. Meteorol. Soc.*, *95*, 1679-1703.

- Hood, R. R., M. J. McPhaden, and E. Urban, 2014: New Indian Ocean program builds on scientific legacy. *EOS, Trans. Am. Geophys. Union*, *95*, 349-60.
- Lee, T., G. Lagerloef, H.-Y. Kao, M. J. McPhaden, J. Willis, and M. M. Gierach, 2014: The influence of salinity on tropical Atlantic instability waves and eddies. *J. Geophys. Res.*, *41*, 7933–7941.
- Lübbecke, J. F. and M. J. McPhaden, 2014: Assessing the 21st century shift in ENSO variability in terms of the Bjerknes stability index. *J. Climate*, *27*, 2577-2587, doi: <http://dx.doi.org/10.1175/JCLI-D-13-00438.1>.
- Lübbecke, J. F., N. L. Burls, C. J. C. Reason, and M. J. McPhaden, 2014: Variability in the South Atlantic anticyclone and the Atlantic Niño mode. *J. Climate*, *27*, 8135–8150, doi: <http://dx.doi.org/10.1175/JCLI-D-14-00202.1>
- McPhaden, M. J. and M. Nagura, 2014: Indian Ocean Dipole interpreted in terms of Recharge Oscillator theory. *Clim. Dyn.*, *42*, 1569–1586, doi 10.1007/s00382-013-1765-1.
- Nagura, M. and M. J. McPhaden, 2014: Zonal momentum budget along the equator in the Indian Ocean from a high resolution ocean general circulation model. *J. Geophys. Res. Oceans*, *119*, 4444-4461, doi:10.1002/2014JC009895.
- Nyadjro, E. and M. J. McPhaden, 2014: Variability of zonal currents in the eastern equatorial Indian Ocean on seasonal to interannual time scales. *J. Geophys. Res.*, *119*, 7969–7986, doi:10.1002/2014JC010380.
- Praveen Kumar, B., J. Vialard, M. Lengaigne, V.S.N. Murty, G.R. Foltz, M.J. McPhaden, S. Pous, and C. de Boyer Montégut, 2014: Processes of interannual mixed layer temperature variability in the thermocline ridge of the Indian Ocean. *Clim. Dyn.*, *43*, 2377-2397, doi:10.1007/s00382-014-2059-y.
- Rodrigues, R. R. and M. J. McPhaden, 2014: Why did the 2011-12 La Niña cause a severe drought in the Brazilian Northeast? *Geophys. Res. Lett.*, *41*, 1012–1018. DOI: 10.1002/2013GL058703.
- Servain, J., G. Caniaux, Y. K. Kouadio, M. J. McPhaden, and M. Araujo, 2014: Recent Climatic Trends in the Tropical Atlantic. *Clim. Dyn.*, *41*, 3071-3089, doi:10.1007/s00382-014-2168-7.
- Sutton, A. J. R. A. Feely, C. L. Sabine, M. J. McPhaden, T. Takahashi, F. P. Chavez, G. E. Friederich, and J. T. Mathis, 2014: Natural variability and anthropogenic change in equatorial Pacific surface ocean pCO₂ and pH. *Global Biogeochem. Cycles*, *28*, 131–145, doi:10.1002/2013GB004679.
- Wen, C., A. Kumar, Y. Xue, and M. J. McPhaden, 2014: Understanding Causes for Change in ENSO Characteristics after 1999: An oceanic perspective. *J. Climate*, *19*, 7230-7249, <http://dx.doi.org/10.1175/JCLI-D-13-00518.1>.
- Wenegrat, J. O. and M. J. McPhaden, 2014: Dynamics of surface layer diurnal cycle in the equatorial Atlantic Ocean (0°, 23°W), *J. Geophys. Res.*, doi: 10.1002/2014JC010504.

- Wenegrat, J. O., M. J. McPhaden, and R.-C. Lien, 2014: Wind Stress and Near-Surface Shear in the Equatorial Atlantic Ocean. *Geophys. Res. Lett.*, *41*, 1226–1231, doi:10.1002/2013GL059149.
- Zhang, D., M. J. McPhaden, and T. Lee, 2014: Observed Interannual Variability of Zonal Currents in the Equatorial Indian Ocean Thermocline and Their Relation to Indian Ocean Dipole. *Geophys. Res. Lett.*, *41*, 7933-7941, doi: 10.1002/2014GL061449.
- Cuypers, Y., X. Le Vaillant, P. Bouruet-Aubertot, J. Vialard and M. J. McPhaden, 2013: Tropical storm-induced near-inertial internal waves during the Cirene experiment: energy fluxes and impact on vertical mixing. *J. Geophys. Res.*, *118*, 358-380, doi: 10.1029/2012JC007881.
- Feng, M., M. J. McPhaden, S.-P. Xie, and J. Hafner, 2013: La Niña forces unprecedented Leeuwin Current warming in 2011. *Nature Sci. Repts.*, *3*, 1277, doi 10.1038/srep01277.
- Foltz, G. R., A. T. Evan, H. P. Freitag, S. Brown, and M. J. McPhaden, 2013: Dust accumulation biases in PIRATA shortwave radiation records. *J. Atmos. Ocean. Tech.* *30*, 1414-1432, doi: 10.1175/JTECH-D-12-00169.1.
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