

Muyin Wang

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Education

- Ph.D. Mesoscale modeling and data analysis, University of Utah
- M. Sc. Climate Dynamics, Peking University
- B. Sc. Atmospheric Dynamics, Peking University

Professional Experience

- PI/Supervisor, JISAO/UW, 2009 –present
- Meteorologist, JISAO /PMEL, 2000 – present
- Research Associate, Dalhousie University, Canada, 1995-2000
- Visiting Scientist, University of Utah, Jan. – Aug., 1999
- Research Associate, University of Utah, 1994-1995
- Research Assistant, University of Utah, 1988-1994

Refereed Publications Since 2000

1. Overland J. and M. Wang, (2015), Increased variability in early winter subarctic North American atmospheric circulation. *J. Climate*, 28(18), 7297–7305, doi: 10.1175/JCLI-D-15-0395.1.
2. Wang, M., and J.E. Overland (2015): Projected future duration of the sea-ice-free season in the Alaskan Arctic. *Prog. Oceanogr.*, doi: 10.1016/j.pocean.2015.01.001.
3. Overland, J., E. Hanna, I. Hanssen-Bauer, S.-J. Kim, J. Walsh, M. Wang, and U.S. Bhatt (2015): Arctic Air temperature. In *State of the Climate in 2014*, The Arctic. *Bull. Am. Meteorol. Soc.*, 96(7), S128–S129.
4. Overland, J., J. Key, E. Hanna, I. Hanssen-Bauer, B.-M. Kim, S.-J. Kim, J. Walsh, M. Wang, U. Bhatt, Y. Liu, R. Stone, C. Cox, and V. Walden (2014): The lower atmosphere: Air temperature, clouds and radiation. In *State of the Climate in 2013*, The Arctic. *Bull. Am. Meteorol. Soc.*, 95(7), S115–S117, S120.
5. Overland, J. E., M. Wang, and J. Walsh and J.C. Stroeve (2014): Future Arctic climate change: Adaptation and mitigation timescale. *Earth’s Future*, 2(2), doi: 10.1002/2013EF000162,68-74.
6. Overland, J., J. Key, B.-M. Kim, S.-J. Kim, Y. Liu, J. Walsh, M. Wang, U. Bhatt, and R. Thoman (2013): Air temperature, atmospheric circulation, and clouds. In *State of the Climate in 2012*, The Arctic. View full report online, *Bull. Am. Meteorol. Soc.*, 94(8), S111–S113.
7. Overland, J. E. and M. Wang (2013): When will the summer Arctic be nearly sea ice free?, *Geophys. Res. Lett.*, doi:10.1002/grl.50316,2097-2101.
8. Overland, J.E., J.A. Francis, E. Hanna, and M. Wang (2012): The recent shift in early summer arctic atmospheric circulation. *Geophys. Res. Lett.*, 39, L19804, doi: 10.1029/2012GL053268.
9. Wang, M., and J.E. Overland (2012): A sea ice free summer Arctic within 30 years—an update from CMIP5 models. *Geophys. Res. Lett.*, 39, L18501, doi: 10.1029/2012GL052868.
10. Overland, J.E., J.A. Francis, E. Hanna, and M. Wang (2012): The recent shift in early summer arctic atmospheric circulation. *Geophys. Res. Lett.*, 39, L19804, doi: 10.1029/2012GL053268.
11. Overland, J. E., U. Bhatt, J. Key, Y. Liu, J. Walsh, and M. Wang, 2012 [The Arctic] Air temperature, atmospheric circulation, and clouds [in “State of the Climate in 2011], *Bull. Amer. Meteor. Soc.*, 93 (7), S127-S129.
12. Overland, J.E., M. Wang, K.R. Wood, D.B. Percival, and N.A. Bond (2012): Recent Bering Sea warm and cold events in a 95-year perspective. *Deep-Sea Res. II*. 65–70, doi: 10.1016/j.dsr2.2012.02.013, 6–13.
13. Overland, J.E., M. Wang, J.E. Walsh, J.H. Christensen, V.M. Kattsov, and W.L. Chapman (2012): Climate model projections for the Arctic. Chapter 3 in *Snow, Water, Ice and Permafrost in the Arctic*. AMAP, Oslo, 3.1-3.18.
14. Wang, M., J.E. Overland, and P. Stabeno (2012): Future Climate of the Bering and Chukchi Seas projected by global climate models. *Deep-Sea Res. II*. 65-70, doi: 10.1016/j.dsr2.2012.02.022, 46-57.

15. Overland, J.E., J. Wang, R.S. Pickart, and M. Wang (2011): Recent and future change in the meteorology of the Pacific Arctic. In *Pacific Arctic Region Synthesis*. [Submitted]
16. Chylek, P., J. Li, M. K. Dubey, M. Wang, and G. Lesins (2011): Observed and model simulated 20th century Arctic temperature variability: Canadian Earth System Model Can ESM2. *Atmos. Chem. Phys. Discuss.*, 11, 1-15, 2011
17. Overland, J.E., K. R. Wood, and M. Wang, (2011): Warm Arctic-cold continents: impacts of the newly open Arctic Sea. *Polar Res.*, 30, 15787, doi: 10.3402/polar.v30i0.15787
18. Overland, J., M. Wang, and J. Walsh (2011): b. Atmosphere. In *State of the Climate in 2010*, 5. The Arctic. *Bull. Am. Meteorol. Soc.*, 92(6), S143–S145.
19. Overland, J., M. Wang, and J. Walsh (2010): b. Atmosphere. In *State of the Climate in 2009*, 5. The Arctic. *Bull. Am. Meteorol. Soc.*, 91(7), S107–S109, doi: 10.1175/BAMS-91-7-StateoftheClimate
20. Overland, J. E., M. Wang, N. A. Bond, J. E. Walsh, V. M. Kattsov, and W. L. Chapman (2010), Considerations in the Selection of Global Climate Models for Regional Climate Projections: The Arctic as a Case Study. *J. Climate* 24(6), doi: 10.1175/2010JCLI3462.1, 1583–1597
21. Overland, J. E. and M. Wang (2010), Large-Scale atmospheric circulation changes are associated with the recent loss of Arctic sea ice. *Tellus*, 62A, 1-9
22. Wang, M., J.E. Overland, and N.A. Bond (2010), Climate forecast for selected large marine ecosystems. *Journal of Marine Systems*. 79, 258-266.
23. Schwing, F.B., R. Mendelssohn, S.J. Bograd, J.E. Overland, M. Wang, and S.-I. Ito (2010): Climate change, teleconnection patterns, and regional processes forcing marine populations in the Pacific. *J. Mar. Syst.*, 79(3–4), doi: 10.1016/j.jmarsys.2008.11.027, 245–257.
24. Chylek P., Chris K. Folland, G.Lesins M. K. Dubey and M. Wang (2009), Arctic air temperature change amplification and the Atlantic multidecadal oscillation, *GRL*, 2009, vol 36 L14801, doi:10.1029/2009GL038777
25. Wang, M., and J. E. Overland, (2009), An ice free Arctic within 30 years? *Geophys. Res. Lett.*, Vol, 36, L07502, doi:10.1029/2009GL037820.
26. Overland, J.E., M. Wang, and S. Salo, (2008), The recent Arctic warm period, *Tellus* 60A, 589-597.
27. Overland, J.E., J. E. Walsh, and M. Wang (2008), The Poles: Atmosphere. In *State of the Climate in 2007*, D. H. Levinson and J. H. Lawrimore (eds.). *Bull. Am. Meteorol. Soc.*, 89(7), S85–S86.
28. Wang, M., N.A. Bond, and J.E. Overland (2007), Comparison of atmospheric forcing in four sub-arctic seas. *Deep-Sea Research II*. 54, 2543-2559.
29. Overland, J.E., and M. Wang (2007), Future regional Arctic Sea ice declines. *Geophys. Res. Lett.*, 34, L17705, doi: 10.1029/2007GL030808.
30. Overland, J.E., and M. Wang (2007), Future climate of the North Pacific Ocean. *EOS* Vol 88, #6, April 17, 2007
31. Wang, M., J.E. Overland, V. Kattsov, J.E. Walsh, X. Zhang, and T. Pavlova (2007), Intrinsic versus forced variation in coupled climate model simulations over the Arctic during the 20th century. *J. Climate* 20, 1093–1107.
32. Wang, M., J.E. Overland, D. Percival, and H.O. Mofjeld (2006), Change in the Arctic influence on Bering Sea climate during the twentieth century. *Int. J. Climatol.*, 26(4), 531–539
33. Overland, J.E., and M. Wang (2005), The Third Arctic Climate Pattern: 1930s and early 2000s. *Geophys. Res. Lett.*, 32(23), L23808, 10.1029/2005GL024254.
34. Overland, J. E. and M. Wang (2005), The Arctic Climate Paradox: the Recent Decreases of the Arctic Oscillation., *Geophys. Res. Lett.*, 32, No. 6, L06701, doi: 10.1029/2004GL021752
35. Wang, M., and J. E. Overland (2004), Detecting Arctic Climate change using Koppen climate classification. *Climatic Change*, 67, 43-62.
36. Overland, J. E., M. C. Spillane, D. B. Percival, M. Wang and H. O. Mofjeld (2004), Seasonal and regional variation of Pan-Arctic air temperature over the instrumental record, *J. Clim*, 17, 3263-3282.
37. Percival, D. B., M. Wang, and J. E. Overland (2004), An introduction to wavelet analysis with applications to vegetation time series. *Community Ecology*, 5(1), 19-30.
38. Overland, J.E., M. Wang, and N.A. Bond (2004), Ocean and climate changes. In *Marine Ecosystems of the North Pacific*, PICES Special Publication 1, 39–57
39. Overland, J., M. Wang, and N. Bond (2002), Recent temperature changes in the western Arctic during Spring *J. of Climate*, 1702-1716.

40. Cao Z., M. Wang, B.A. Proctor, G.S. Strong, R.E. Stewart, H. Ritchie, and J. Burford, (2002), On the physical processes associated with the water budget and discharge of the Mackenzie Basin during the 1994/1995 water year. *Atmosphere Ocean*, 125-143.
41. Strong, G.S., B. Proctor, M. Wang, E.D. Soulis, C.D. Smith, F. Seglenieks, and K. Snelgrove, (2002), Closing the Mackenzie Basin Water Budget, Water-years 1994-95 through 1996-97. *Atmosphere Ocean*. 113-124.

Other Publications

- Overland, J.E., J. Wang, R.S. Pickart, and M. Wang (2014): Recent and future changes in the meteorology of the Pacific Arctic. In *The Pacific Arctic Region: Ecosystem Status and Trends in a Rapidly Changing Environment*, J.M. Grebmeier and W. Maslowski (eds.), Springer Science+Business Media, Dordrecht, 17–30.
- Overland, J. E., J. Key, B.M. Kim, S. J. Kim, Y. Liu, J. Walsh, M. Wang and U. Bhatt, (2012), Arctic Report Card update for 2012, Air Temperature, Atmospheric Circulation and Clouds.
http://www.arctic.noaa.gov/reportcard/temperature_clouds.html
- Overland, J. E., U. Bhatt, J. Key, Y. Liu, J. Walsh, and M. Wang, (2011), Arctic Report card update for 2011, Temperature and Clouds. http://www.arctic.noaa.gov/reportcard/temperature_coulds.html
- Overland, J. E., M. Wang, and J. Walsh, (2010), Arctic Report card update for 2010, Atmosphere.
<http://www.arctic.noaa.gov/reportcard/atmosphere.html>
- Richter-Menge, J. et al., (2008), Arctic Report Card 2008. <Http://www.arctic.noaa.gov/reportcard>
- Wang, M and J. E. Overland (2009), Projections of sea-ice cover in the vicinity of Bering Strait from CMIP3 models for the AMSA Bering Strait regional case study.
- Overland, J. E., J. E. Walsh, and M. Wang, (2007), Why are ice and snow changing? United Nations Environment Programme “Global outlook for ice and snow” Chapter 3.,
- Wang, M., C. Ladd, J Overland, P. Stabeno, N. Bond, and S. Salo, (2007): Eastern Bering Sea. Ecosystem Considerations Chapter for 2008. Alaska Fisheries Science Center.
- Overland, J.E., M. Wang, and N.A. Bond (2004): Ocean and climate changes. In *Marine Ecosystems of the North Pacific*, PICES Special Publication 1, 39–57.

Awards

- PMEL Outstanding Scientific Papers, 2009 (Wang and Overland, GRL)
- JISAO Excellent Performance Award 2009
- PMEL Outstanding Scientific Papers, 2008 (Wang et al., 2007, *J. Climate*)
- Best Presentation of Science Board Symposium, PICES XVI, 2007
- NSERC postdoctoral fellowship, Dalhousie University, 1995-2000
- American Meteorological Society Scholarship to attend the Symposium on Global Change Studies, Dallas, TX, 1995

Professional Membership

American Meteorological Society Member: 1994 –
 American Geophysical Union Member: 2004 –
 PICES Working Group 20: Evaluation of Climate Change Projections (ECCP), 2006 -2011

Selected Presentations (for the past 15 years)

2016

- Next Generation Global Prediction Systems (NGGPS) sea ice model workshop, Boulder, CO, February, 2016
- Seasonal Arctic Sea Ice Predictability Seen from CFSv2, AMSS, Anchorage, AK, January, 2016.

2015

- Is it realistic to use CFS atmospheric forecasts to force stand-alone ice ocean models for Arctic sea ice prediction?, AGU, San Francisco, December, 2015
 - Initial assessment of CFSv2 predictability on Arctic sea ice and atmospheric forcings, Workshop on Polar Predictability, Reading, UK, April 2015.
 - Chukchi Acoustics, Oceanography, and Zooplankton Study (CHZAOZ): Climate modeling, Chukchi Sea Whale Ecology Workshop, Anchorage, AK, January, 2015.
- 2014
- Projected future duration of the sea-ice-free season in the Alaskan Arctic, AGU, San Francisco, CA, December, 2014.
 - Modeling Efforts and Arctic Flux field Campaign, Pacific Arctic Group (PAG) and Distributed Biological Observatory (DBO) workshop, Seattle, WA October, 2014.
 - Future duration of the sea-ice-free season in the Alaskan Arctic, AMSS, Anchorage, AK, January, 2014.
- 2013
- Sea ice characteristics as simulated by CMIP5 models, AGU, San Francisco, CA, December, 2013.
 - Arctic sea ice projections and uncertainties - An update from CMIP5 models. **Invited**, PICES Annual Meeting, Scient Board Symposium. Nanaimo, BC, Canada, October, 2013.
 - The Changing Arctic Climate and the global implications, Qinghua University, **Invited Lecture**, Beijing, China, September, 2013
 - The recent shift of the Arctic atmospheric circulation and the reduction of sea ice, 12th Conference on Polar Meteorology and Oceanography, Seattl, WA, May 2013.
 - The recnet shift of the Arctic circulation and the reduction of sea ice, EGU, Vienna, Austria, April, 2013.
 - Sea ice Characteristics as simulated by CMIP3 and CMIP5 models, WGNE workshop, Exeter, UK, April, 2013.
 - A sea ice free sumer Arctic within 30 years: an update from CMIP5 models. AMSS, Anchorage, AK, January, 2013.
- 2012
- The Changing Arctic Climate and the global implications, Lanzhou University, Lanzhou, Gansu, China, December, 2012, **Invited**
 - The Changing Arctic Climate and the global implications, LASG, IAP, Beijing, China, December, 2012, **Invited**
 - Uncertainties in CMIP5 sea ice models, AMAP workshop, Seattle, WA, October, 2012.
 - The PDO signature in CMIP3 and CMIP5 models, Qingdao, China, August, 2012.
 - The Chukchi Sea climate variability seen from CESM model, Breckenridge, CO, June, 2012.
 - Sea ice simulations from 23 CMIP5 models, CMIP5 workshop, Honolulu, HI, March, 2012.
- 2011
- A First look at he Sea ice simulations from CMIP5, WCRP Open Science Conference, Denver, CO, October, 2011.
 - The Chaning Arctic: observation and model study, **Invited**, OSRA workshop, McLean, Virginia, March, 2011.
 - Future Status of the Chukchi Sea Seen from Global Climate Models, AMSS, Anchorage, AK, January, 2011.
- 2010
- Contributions of Episodic Events in Decadal Climate Variation over the Bering Sea, PICES annual meeting, Portland, OR, October, 2010.
 - Rapid change in Arctic sea ice: assessing drivers and future trajectories workshop, Fairbanks, AK, October, 2010
 - Examples of using global climate models for regional marine ecosystem projection, **Invited**, Climate Change Effects on Fish and Fisheries, Sendai, Japan, April, 2010.
 - How soon will we see a sea-ice free summer Arctic? State of Arctic, Miami, FL, March, 2010.
 - Arctic Climate Feedbacks: Global Implication. **invited**, HMSC, Newport, OR, January, 2010.
- 2009

- Examples of selecting global climate models for regional projections, AGU, San Francisco, CA, December, 2009.
 - A Means for reducing projection uncertainty of climate models on regional scales, PICES, Jeju, Korea, October, 2009.
 - The Recent Arctic Warm Period: A Change in the dominant patten?, 10th Conference on Polar Meteorology and Oceanography, Madison, WI, May, 2009.
 - Sea ice over Bering Sea: the past, present and future, Alaska Marine Science Symposium, Anchorage, AK, January, 2009.
- 2008
- Causes of the Recent Arctic Warm Period within a Hundred Year Context, AGU, San Francisco, December, 2008
 - Selection of Climate models for regional ecosystem projection. PICES 17th annual meeting, Dalian, Liaoning, China, October, 2008.
 - Selection of AOGCMs for regional climate projection, Pacific Arctic Group (PAG) Model-Data Fusion Workshop, Sanya, Hainan, China, February, 2008.
 - Future Climate of the North Pacific as Projected by IPCC-AR4 Models, 20th Conference on Climate Variability and Change, 88th AMS annual meeting, New Orleans, LA. January, 2008.
- 2007
- The future climate of the North Pacific – from IPCC AR4 model projections. PICES XVI, Science Board Symposium, Victoria, Canada, October, 2007. (**won best presentation award**)
 - The uncertainties of Climate Model Projections. PICES XVI, Workshop 6, Victoria, Canada, October, 2007.
 - US-China Arctic Polar panel on synthesis studies of Bering and Arctic, Washington DC, October, 2007
 - Ecosystem workshop, Hakodate, Japan, June 2010
 - The future climate of the North Pacific – from IPCC AR4 model projection, Climate Impact Group (CIG)/JISAO seminar, Seattle, WA, March 29, 2007. **Invited**
 - The North Pacific climate variability as simulated by IPCC AR4 models. WGNE/PCMDI model errors workshop, San Francisco, CA, February 2007.
- 2006
- What will the North Pacific look like in the next 40 years? PICES XV, Yokohama, Japan, October 2006.
- 2005
- Evaluation of the coupled climate simulations over the Arctic – Decadal variability of seasonal SAT anomalies, AGU, San Francisco, December, 2005
 - A first look at the new IPCC AR4 climate model simulations over the North Pacific, PICES XIV, Vladivostok, Russia, September, 2005. **Invited**
 - Multiple indicators track major ecosystem shifts in the Bering Sea: A persistent Warm phase? PICES, XIV, Vladivostok, Russia, September, 2005.
 - Evaluation of the coupled climate simulations over the Arctic – Decadal variability of seasonal SAT anomalies. IAMSA, Beijing, China, August, 2005
 - Comparison of atmospheric forcing in the four sub-arctic seas, GLOBEC/ESSAS meeting, Victoria, Canada, May, 2005.
 - PAG/ASSW, Kunming, China, April 2005
 - Arctic change detection: multiple observations and recent explanation, CLIC first science conference, Beijing, China, April 2005
- 2004
- Koppen Classification, Polar conferences on meteorology and oceanography, Hyannis, MA, May 2004
 -
- 2003
- Detecting Arctic Climate Change using Koppen Climate classification, Clic St. Petersburg, Russia, October, 2003

Other Professional Activities

Referee for

Journal of Climate, Geophysical Research Letter, Journal of Geophysical Research, Global and Planetary Change, Climate Change, Climate Dynamics, The Cryosphere, Ocean Dynamics, National Science Foundation