

Curriculum Vitae: Xiangdong Zhang

Contact Information

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Education

09/1987-12/1992: Ph.D. Atmospheric Sciences, Nanjing University, Nanjing, China.
Dissertation: *ENSO Cycle Dynamics and Thermodynamics*
Advisor: Prof. Shisong Huang

Employment

07/2012 – present: Professor (Tenured) at the International Arctic Research Center and
Department of Atmospheric Sciences/Collage of Natural Science and
Mathematics, University of Alaska Fairbanks.

03/2000 – 06/2012: Research Associate Professor and Research Assistant Professor at the
International Arctic Research Center, and Associate Faculty at
Department of Atmospheric Sciences, University of Alaska Fairbanks.

04/2007 – 07/2007: Visiting Scientist at Bjerknes Center for Climate Research, University of
Bergen, Norway.

09/1999 – 03/2004: Invited Research Scientist at the Frontier Research System for Global
Change, National Space Development Agency of Japan and Japanese
Marine Science and Technology Center.

07/1997 – 08/1999: Visiting Research Fellow at Canadian Government Laboratory, Natural
Sciences and Engineering Research Council of Canada, Canadian
Government; Institute of Ocean Science.

01/1993 – 06/1997: Research Assistant Professor and Associate Professor at the Chinese
Academy of Meteorological Science, Beijing, China.

Research Experience and Interests

- Arctic climate change and variability and their impacts on midlatitude extreme climate, weather, and hydrological events.
- Natural variability of and anthropogenically-forced changes in Arctic sea ice, ocean and atmospheric, and atmosphere-sea ice-ocean-hydrology interactions.
- Arctic ocean freshwater and heat budgets and pathways, and their interactive linkage with the North Atlantic meridional overturning/thermohaline circulation.

- Prediction and predictability studies of Arctic sea ice and climate from seasonal to decadal time scale.
- Development of global and regional climate/coupled atmosphere-sea ice-ocean models and improvement of model physical process treatments.

Selected Researches in the News

- Arctic's future: Less ice, more storms, By Maddie Stone, Earther, May 1, 2018.
(<https://earther.gizmodo.com/the-arctics-future-less-ice-more-storms-1825576430>)
- Arctic data shows no pause in global warming: Study. By Levon Sevunts, November 21, 2017.
(<http://www.rcinet.ca/en/2017/11/21/arctic-data-shows-no-pause-in-global-warming-study/#comments>)
- There was no pause in global warming: 'Slow down' in climate change between 1998 and 2012 was caused by a lack of data from the Arctic, By Ellie Zolfagharifard, November 20, 2017.
(<http://www.dailymail.co.uk/sciencetech/article-5100933/There-NO-pause-global-warming.html>)
- Scientist: Arctic warmth setting up conditions for new low-ice record, By Yereth Rosen, Alaska Dispatch News, March 18, 2016, and updated on May 31, 2016.
(<https://www.adn.com/arctic/article/scientist-arctic-warmth-setting-conditions-possible-new-low-ice-record/2016/03/19/>)
- Vanishing sea ice could trigger more Arctic precipitation, By C. Sullivan, Eos, 97, doi:10.1029/2016EO042877, Jan. 4, 2016.
(<https://eos.org/articles/vanishing-sea-ice-could-trigger-more-arctic-precipitation>)
- Study links polar vortex chills to melting sea ice, By Seth Borenstein. The Big Story, Associated Press, Sept. 2, 2014.
(<http://bigstory.ap.org/article/study-links-polar-vortex-chills-melting-sea-ice>)
- Climate change brings colder winters to Europe and Asia, environmental research web, Jan. 23, 2013.
(<http://environmentalresearchweb.org/cws/article/news/52135>)
- Arctic ice low heralds end of 3-million-year cover, New Scientist, Aug. 31, 2012.
(<http://www.newscientist.com/article/mg21528802.200-arctic-ice-low-heralds-end-of-3millionyear-cover.html?full=true>)
- Increased arctic wetting, *Nature climate Change*, Jul. 30, 2012.
(<http://www.natureasia.com/en/research/highlight/7438#.UHPAA45t8Ux>)
- Wetter arctic cloud influence climate change, study finds, Science Daily, Sep. 5, 2012.
(<http://www.sciencedaily.com/releases/2012/09/120905200554.htm>)
- On thin ice. By Susan McGrath, *National Geographic*, 64-75, July 2011.

- Errors and lies thrive in cold weather. By Michael Le Page, *New Scientist*, 2743, 20-21, Jan. 14, 2010.
(<http://www.newscientist.com/article/mg20527436.100-errors-and-lies-thrive-in-cold-weather.html>)
- A harsh new reality transforms the Arctic. By Paul Koberstein. *Cascadia Times*, 2009.
(<http://www.times.org/archives/2009/harsh1.html>)
- Remarkable Change in Arctic Atmospheric Circulation: Have We Passed a Tipping Point? By Johnna Rook. Dec. 7, 2008.
(<http://www.dailykos.com/storyonly/2008/12/7/32011/6676/946/670268>)
- Fast-Forward Warming, Point of No Return for the Arctic Climate? By Volker Mrasek, *Spiegel Online International*, Dec. 4, 2008.
(<http://www.spiegel.de/international/world/0,1518,594461,00.html>)
- Vanishing Sea Ice, Life at Edge. By Paul Nicklen, *National Geographic*, 32-71, June 2007.
(<http://ngm.nationalgeographic.com/2007/06/vanishing-sea-ice/sea-ice-interactive>)

Selected Research Products

- Chukchi-Beaufort seas High-resolution Atmospheric Reanalysis (CBHAR) data (hourly data with a spatial resolution of 10 km from 1979-2009).
- Northern mid-latitudes and Arctic storm track data set (north of 30°N, 6-hourly, 1948-present).
- Mass-balance-corrected global atmospheric moisture transport data set (global, 6-hourly, 1948-present).
- Arctic rapid change pattern (ARP): spatial loading pattern and amplitude time series/index (monthly, 1948-present).
- Animations of Arctic sea ice changes simulated in the 20th century and projected in the 21st century under global warming scenario A1B by the IPCC AR4 multi-models.
- Arctic regional coupled atmosphere (WRF) – sea ice thermodynamics – ocean mixed layer model (in collaboration with Jing Zhang and her meso-scale weather group).
- Global coupled sea ice-ocean model for the Earth Simulator (in collaboration with the Japanese Earth Simulator Center).
- Arctic regional coupled sea ice-ocean general circulation model (in collaboration with Institute of Ocean Science, Canadian Government).

Selected Recently Funded Research Projects

- Modeling Arctic Storms and Impacts of Diminishing Sea Ice. Department of Energy, Co-PI, 2019-2022.

- Interdisciplinary Workshop on Arctic Climate and Weather Extremes. National Science Foundation (NSF), Co-PI, 2019-2020.
- Workshop on Arctic Air-Ice-Sea Interactions and Their Possible Roles in Extreme Weather and Climate Occurrence. Fudan University, China, PI, 2019.
- Storm induced air-ice-sea interactions in a dramatically changing Arctic Ocean. Korean Polar Research Institute, PI, January 2018-December 2019.
- Collaborative Research: Impact of Storm Activity on Recent Changes in Arctic Sea Ice Mass Balance. National Science Foundation (NSF), PI, September 2010 – February 2018.
- Changes in Beaufort-Chukchi Seas Intense Storm Activity and Impacts on Surface Climate and Ocean Properties. Alaska Coastal Marine Institute and Department of the Interior/Bureau of Ocean Energy Management (DOI/BOEM), Co-PI, July 2016-June 2017.
- Collaborative Research: The Arctic Springtime Transition: Dynamics, Impacts, and Future Changes. National Science Foundation (NSF), PI, September 2011 – August 2015.
- Arctic-Midlatitude Working Group. Joint support by NSF, NOAA, DOE, NASA through U.S. CLIVAR, Co-PI, May 2015 – April 2018.
- Postdoc Fellowship Support for Arctic Climate Study. Nanjing University of Information Science and Technology and Natural Science Foundation of China, Co-PI, July 2015 – June 2017.
- Assessing and Understanding Variability, Changes, and Uncertainties of Arctic and Antarctic Sea Ice in the IPCC AR5 Climate Model Simulations. Office of Naval Research (ONR), RAPID Program in Support of IPCC AR5 jointly by NSF, NOAA, NASA and ONR, Sole PI, February 2011 – June 2013.
- International Workshop: Rapid Change in Arctic Sea Ice: Assessing Drivers and Future Trajectories. World Climate Research Programme (WCRP) and National Science Foundation (NSF), PI, October 2010.
- North Pacific Storm Activity and its Responsive and Active Connections with Large-scale Atmosphere-Ocean Interactions and Global Warming. National Oceanic and Atmospheric Administration (NOAA), PI, June 2006 – May 2011.
- Beaufort and Chukchi Seas Meso-scale Meteorological Modeling Study. Department of the Interior/Bureau of Ocean Energy Management (DOI/BOEM), PI, January 2009 – August 2013.
- Collaborative Research: PACMAN - Cyberinfrastructure for Discovering Climate Change Impacts on Water Resources across Alaska and the Hawaiian Islands. National Science Foundation (NSF), Co-I, September 2009 – August 2012.
- Arctic Climate Study: Storm Activity and Atmosphere-Sea Ice-Ocean Interactions. Japan Agency for Marine-Earth Science and Technology (JAMSTEC), PI, April 2004 – March 2014.

- International Collaboration to Achieve Circumpolar Synthesis and Integration. National Science Foundation (NSF), Co-I, July 2008 – June 2011.
- Beaufort Sea Meso-scale Meteorology Model Study. Department of Interior/Mineral Management Service (DOI/MMS), Co-PI, September 2006 – December 2008.

Honors and Awards

- AAS Special Issue Editor Award, Advance in Atmospheric Science 2018.
- Frontier Award for Outstanding Achievement, Frontier Research System for Global Change, Japan, 2003.
- Visiting Fellowship at Canadian Government Laboratory, Natural Sciences and Engineering Research Council of the Canadian Government, Canada, 1997-1999.
- Yong Investigator Award, Natural Science Foundation, China, 1997-2000
- Honor of Excellent Graduate Student at Nanjing University, 1992.
- Guanghua Scholarship at Nanjing University, 1992.
- Guanghua Scholarship at Nanjing University, 1991.
- Ying-Song Scholarship at Nanjing University, 1989.

Professional Leadership, Memberships and Public Service

- Member of American Geophysical Union, American Meteorological Society, and European Geophysical Union.
- Member of the CliC/CLIVAR Northern Oceans Region Panel and Co-lead of the task team on Advancing the Understanding of Climate Variability Due to Arctic-midlatitude Linkages, 2017-present.
- Co-Chair of the Arctic-Midlatitude Working Group, the U.S. Climate Variability and Predictability (CLIVAR) Program, 2015-18.
- Member of the proposal team for developing a CLIVAR/CliC Northern Oceans Region Panel, 2016-17.
- Member of Regional Processes and Transports Working Group, International Arctic Systems for Observing the Atmosphere (IASOA), 2016-present.
- Co-Chair of the Organizing Committee for the Workshop on Arctic Change and Its Influence on Midlatitude Climate and Weather, U.S. CLIVAR Arctic-Midlatitude Working Group, 2016-17.
- Co-Chair of the Workshop on Understanding the Causes and Consequences of Polar Amplification, Aspen Global Change Institute, 2016-17.
- Co-Chair of Arctic Cryosphere Changes and Their Impacts Cooperation Workshop Between IARC-UAF and CAS, 2017
- Panelist of Arctic Science Summit Week (ASSW) Media Panels, Fairbanks, Alaska, March 18, 2016.

- Member of Technology and Operations Subgroup, National Petroleum Council, 2014-2015.
- Member of the Phenomena, Observations and Synthesis (POS) Panel, the US Climate Variability and Predictability (CLIVAR) Program. 2012-2015.
- Panelist of National Science Foundation Arctic Environmental Science Review Panel, 2013.
- Editorial Board member of the journal Scientific Reports, Nature Publishing Group, 2012-.
- Editor of the journal Advances in Atmospheric Sciences, Institute of Atmospheric Physics, Chinese Academy of Science, 2013-.
- Editorial Advisory Board Member of the Open Geography Journal, 2007-present.
- Member of the academic committee, the Earth System Modeling Center (ESMC), Nanjing University of Information Science and Technology, 2014-present.
- Panelist of the Oversight Panel for the international Arctic Ocean Model Intercomparison Project (AOMIP), Woods Hole Oceanographic Institution, 2010.
- Chair of the Organizing Committee of the NSF and WCRP sponsored international workshop “Rapid Change in Arctic Sea Ice: Assessing Drivers and Future Trajectories”, 2010.
- Member of the Advisory Board of the Environmental Research Advocates (Funding Global Scientific Research), 2009-2013.
- Expert reviewer of the First and Second Order Draft of the Working Group I contribution to the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5): Climate Change 2013: The Physical Science Basis.
- Contributions to the Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report (AR4).
- Contributions to the “white paper of Arctic freshwater” of the Arctic/Subarctic Ocean Fluxes (ASOF) program.
- Contribution to the articles “The Big Thaw” and “On Thin Ice” published by National Geographic magazine in June 2007 and July 2011, respectively, and follow-up outreach activity.
- Reviewer of proposals for the U.S. National Science Foundation (NSF), the U.S. National Aeronautics and Space administration (NASA), and a number of other U.S. and foreign funding agencies and foundations.
- Reviewer of manuscripts for almost all major climate, atmosphere, and physical oceanography journals.
- Convener of the sessions “Arctic and Sub-Arctic Storm Activity”, “Northern Extratropical and Arctic Storm Activity: Variability, Long-term Changes and Impacts”, and “Extratropical and Polar Storms: Synoptic-Scale Perspective and Linkage to Large-Scale Climate Variability and Change”, and “Extratropical and High-latitude Storms,

Teleconnections, and Changing Climate” at the AGU Fall Meetings from 2005-10, and 2012-16.

- Chair of the sessions “Arctic and high latitude climate variability” at the 92nd, 93rd and 94th American Meteorological Society Annual Meeting, 2012-2014.
- Member of the Organizing Committee and session chair for the Alaska Weather Symposium, 2011-2014.
- Membership of international Arctic extreme weather and polar low working group.
- Member of IARC Peer Review Committee, 2015-.
- Member of IARC/GI Library Committee, 2015-.
- Member of Advisory Board of the UAF Undergraduate Research and Scholarly Activity (URSA), 2013-.
- Member of the UAF High Performance Computing Task Force appointed by UAF Vice Chancellor for Research, 2011.
- Committee member of junior scientist promotion and member of faculty search committee at International Arctic Research Center, University of Alaska Fairbanks.
- Member of Geophysical Institute/University of Alaska Library Committee.
- Educational outreach activity at the Fairbanks Tanana Valley State Fair (atmospheric science program and IARC boots), 2004-present.

Teaching

- Taught Courses “ATM F644/444: Synoptic Analysis and Forecast”; “ATM F613/413: Atmospheric Radiation”; and “ATM F697: Arctic Water and Energy Cycle”, Department of Atmospheric Sciences, University of Alaska Fairbanks.
- Taught lectures at “ATM F621: Introduction to Computational Meteorology” “ATM F688: Atmospheric Sciences Informal Seminar” and “ATM F693: Climate Journal Club”, Department of Atmospheric Sciences, University of Alaska Fairbanks.
- Taught “Fluid Dynamics” and “Statistics in Meteorology and Weather Forecast”, Nanjing Institute of Meteorology; Nanjing University.
- Supervised undergraduate and graduate students for degree theses, Nanjing Institute of Meteorology; Chinese Academy of Meteorological Sciences; and the University of Alaska Fairbanks.

Graduate Student Supervision

Major Advisor

- Yang Yang, P.D. student, Department of Atmosphere Sciences, University of Alaska Fairbanks, 2015-.
- Liran Peng, Ph.D. student, Department of Atmosphere Sciences, University of Alaska Fairbanks, 2014-.

- Soumik Basu, Ph.D. student, Department of Atmosphere Sciences, University of Alaska Fairbanks, 2009-2014.
- Paula Moreira, M.S. student, Department of Atmosphere Sciences, University of Alaska Fairbanks, 2010-2011.
- Cecelia Borries, M.S. student, Department of Atmospheric Sciences, University of Alaska Fairbanks, 2011-2014.
- Alexander Semenov, Ph.D. student, Department of Atmospheric Sciences, University of Alaska Fairbanks, 2011-2019.
- Bithi De, M.S. student, Department of Atmospheric Sciences, University of Alaska Fairbanks, 2012-2014.

Committee Member

- Jiarong Zhang, Ph.D. student, School of Coastal and Marine System Science, Coastal Carolina University, 2018-.
- Rick Lader, Ph.D. student, Department of Atmospheric Sciences, University of Alaska Fairbanks, 2016-2018.
- Bithi De, Ph.D. student, Department of Earth, Atmospheric & Planetary Sciences, Purdue University, 2015-.
- Wei Tao, Ph.D. student, Department of Energy and Environmental Systems, North Carolina A & T State University, 2011-2016.
- Ipshta Majhi, Ph.D. student, Department of Atmosphere Sciences, University of Alaska Fairbanks, 2013-.
- Michel Mesquita, Ph.D. student, Department of Atmosphere Sciences, University of Alaska Fairbanks, 2006-2009.
- Peter Bieniek, Ph.D. student, Department of Atmosphere Sciences, University of Alaska Fairbanks, 2007-2012.
- Rebecca Legatt, M.S. student, Department of Atmospheric Sciences, University of Alaska Fairbanks, 2007-2010.
- Steve Stegall, Ph.D. student, Department of Energy and Environmental Systems, North Carolina A & T State University, 2009-.
- Gian Villamil-Otero, M.S. student, Department of Energy and Environmental Systems, North Carolina A & T State University, 2013-2014.
- Dyre Dammann, M.S. student, Department of Atmospheric Sciences, University of Alaska Fairbanks, 2009-2011.
- Rick Lader, M.S. student, Department of Atmospheric Sciences, University of Alaska Fairbanks, 2012-2013.
- Matthew Gruber, M.S. student, Department of Atmospheric Sciences, University of Alaska Fairbanks, 2012-2013.

Advisor for visiting students

- Xun Gong, Ph.D. student, Alfred Wegener Institute for Polar and Marine Research, Germany, Feb – Jun, 2011.
- Wei Tao, M. S. student, University of Science and Technology of China, China, Feb – Aug, 2011.

Recent Postdoctoral Fellow and Visiting Scholar Supervision

- Juanxiong He, International Arctic Research Center/Arctic Region Supercomputing Center, University of Alaska Fairbanks, 2006.
- Qigang Wu, School of Meteorology, University of Oklahoma, Sept. 2009 – Feb. 2010.
- Xiaofeng Li, Institute of Atmospheric Physics, Chinese Academy of Sciences, Mar. – Jun. 2010.
- Chuhan Lu, Nanjing University of Information Science and Technology, Sept. 2011 – Dec. 2012.
- Junming Chen, Chinese Academy of Meteorological Sciences, Feb. 2012 – Apr. 2013.
- Shinji Matsumura, Faculty of Environmental Earth Science, Hokkaido University, Japan, May – Sept. 2012.

Peer-reviewed Publications

Journal Papers

1. Peng, L., J.-H. Kim, X. Zhang, B.-M. Kim, K.-H. Cho, and Z. Wang, 2019: Intense Arctic Storms in Summer 2016 and Their Impacts on Melting Process of Sea Ice, *Geophys. Res. Lett.*, submitted.
2. Cohen, J., X. Zhang, J. Francis, T. Jung, R. Kwok, J. Overland, T. Ballinger, U.S. Bhatt, H. W. Chen, D. Coumou, S. Feldstein, D. Handorf, G. Henderson, M. Ionita, M. Kretschmer, F. Laliberte, S. Lee, H. W. Linderholm, W. Maslowski, Y. Peings, K. Pfeiffer, I. Rigor, T. Semmler, J. Stroeve, P.C. Taylor, S. Vavrus, T. Vihma, S. Wang, M. Wendisch, Y. Wu, and J. Yoon, 2019: Divergent consensus on the influence of Arctic Amplification on mid-latitude severe winter weather, *Nat. Clim. Chang*, under review.
3. Wei, J., X. Zhang, and Z. Wang, 2019: Reexamination of Fram Strait Sea Ice Export and its Role in Recently Accelerated Arctic Sea Ice Retreat. *Clim. Dyn.*, 53, 1823-1841. <https://doi.org/10.1007/s00382-019-04741-0>.
4. Hong, J.-Y., B.-M. Kim, E.-H. Baek, J.-H. Kim, X Zhang, S.-J. Kim, 2019: A critical role of extreme Atlantic windstorms in Arctic warming, *Asia-Pacific J. Atm., Sci.* <https://doi.org/10.1007/s13143-019-00123-y>.
5. Semenov, A., X. Zhang, A. Rinke, W. Dorn, and K. Dethloff, 2019: Arctic intense summer storms and their impacts on sea ice – A regional climate modeling study, *Atmosphere*, 10, 218, <https://doi.org/10.3390/atmos10040218>.
6. Smith, D., J. A. Screen, C. Deser, J. Cohen, J. C. Fyfe, J. Garcia-Serrano, T. Jung, V. Kattsov, D. Matei, R. Msadek, Y. Peings, M. Sigmund, J. Ukita, J.-H. Yoon, and X.

- Zhang, 2019: The Polar Amplification Model Intercomparison Project (PAMIP) contribution to CMIP6: Investigating the causes and consequences of polar amplification, *Geosci. Model Dev.*, 12, 1139-1164, <https://doi.org/10.5194/gmd-2018-82>.
7. Wei, J, X. Zhang, and Z. Wang, 2019: Impacts of extratropical storm tracks on Arctic sea ice export through Fram Strait, *Clim. Dyn.*, 52, 2235-2246, <https://doi.org/10.1007/s00382-018-4254-8>.
 8. Basu, S., X. Zhang, and Z. Wang, 2019: A modeling investigation of Northern Hemisphere Extratropical cyclone activity in spring: The linkage between extreme weather and Arctic sea ice forcing, *Climate*, 7, 25, <https://doi.org/10.3390/cli7020025>.
 9. Rinke, A., D. Handorf, W. Dorn, K. Dethloff, J. C. Moore, and X. Zhang, 2018: Atmospheric feedbacks on Arctic summer sea-ice anomalies in ensemble simulations of a coupled regional climate model, *Advances in Polar Science*, 29, 156-164.
 10. Zhang, P., Y. Wu, I. R. Simpson, K. Smith, X. Zhang, B. De, and P. Callaghan, 2018: A stratospheric pathway linking a colder Siberia to Barents-Kara Sea sea ice loss. *Science Advances*, 4, eaat6025, doi:10.1126/sciadv.aat6025.
 11. Zhang, A. Q., Y. F. Fu, Y. L. Chen, G. S. Liu, and X. D. Zhang, 2018: Impact of the surface wind flow on precipitation characteristics over the southern Himalayas: GPM observations. *Atmos. Res.*, **202**, 10–22, <https://doi.org/10.1016/j.atmosres.2017.11.001>.
 12. Screen, J. A., C. Deser, D. M. Smith, X. Zhang, R. Blackport, P. J. Kushner, T. Oudar, K. E. McCusker, and L. Sun, 2018: Consistency and discrepancy in the atmospheric response to Arctic sea-ice loss across climate models. *Nat. Geosci.*, doi:10.1038/s41561-018-0059-y.
 13. Basu, S., X. Zhang, and Z. Wang, 2018: Eurasian winter storm activity at the end of the century: A CMIP5 multi-model ensemble projection. *Earth's Future*, 6, 61-70, <https://doi.org/10.1002/2017EF000670>.
 14. Zhang, J., S. T. Stegall, and X. Zhang, 2018: Wind-SST-sea ice relationship in the Chukchi-Beaufort seas during autumn. *Environ. Res. Lett.*, doi:10.1088/1748-9326/aa9adb.
 15. Zhang, X., J. Thomas, M. Wang, Y. Luo, T. Semmler, and A. Orr, 2018: Preface to the special issue: Towards improving understanding and prediction of Arctic change and its linkage with Eurasian mid-latitude weather and climate. *Adv. Atmos. Sci.*, 35, 1-4, doi:10.1007/s00376-017-7004-7.
 16. Villamil-Otero, G. A., J. Zhang, J. He, and X. Zhang, 2018: Role of extratropical cyclones in the recently observed increase in poleward moisture transport into the Arctic Ocean, *Adv. Atmos. Sci.*, 35, 85-94, doi:10.1007/s00376-017-7116-0.
 17. Huang, J. X. Zhang, Q. Zhang, Y. Lin, M. Hao, Y. Luo, Z. Zhao, Y. Yao, X. Chen, L. Wang, S. Nie, Y. Yin, Y. Xu, and J. Zhang, 2017: Recently amplified arctic warming has contributed to a continual global warming trend. *Nat. Clim. Change*, 7, 875-880, doi:10.1038/s41558-017-0009-5.

18. Tao, W., J. Zhang, and X. Zhang, 2017: Driving Roles of Tropospheric and Stratospheric Thermal Anomalies in the Intensification and Persistence of 2012 Arctic Superstorm. *Geophys. Res. Lett.*, 44, doi:10.1002/2017GL074778.
19. Fu, Y., Y. Chen, R. Li, F. Qin, T. Xian, L. Yu, A. Zhang, G. Liu, and X. Zhang, 2017: Lateral boundary of cirrus cloud from CALIPSO observations. *Scientific Reports*, 7, 14221, <https://doi.org/10.1038/s41598-017-14665-6>.
20. Wang, K., T. Zhang, X. Zhang, G. D. Clow, E. E. Jafarov, I. Overeem, V. Romanovsky, X. Peng, and B. Cao, 2017: Continuously Amplified Warming in the Alaskan Arctic: Implications for Estimating Global Warming Hiatus. *Geophys. Res. Lett.*, 44, 9029-9038, doi:10.1002/2017GL074232.
21. Tao, W. J. Zhang, and X. Zhang, 2017: The Role of Stratosphere Vortex Downward Intrusion in a Long-lasting Late-summer Arctic Storm. *Q. J. R. Meteorol. Soc.*, 143, 1953-1966, doi:10.1002/qj.3055.
22. Kim, B.-M., J.-Y. Hong, S.-Y. Jun, X. Zhang, H. Kwon, S.-J. Kim, J.-H. Kim, S.-W. Kim, and Hyun-Kyung Kim, 2017: Major cause of unprecedented Arctic warming in January 2016: Critical role of an Atlantic windstorm. *Scientific Reports*, 7, 40051, doi: 10.1038/srep40051.
23. Vihma, T., J. Screen, M. Tjernstrom, B. Newton, X. Zhang, V. Popova, C. Derser, M. Holland, and T. Prowse, 2016: The atmospheric role in the Arctic water cycle: A review on processes, past and future changes, and their impacts. *J. Geophys. Res.-Biogeosci.*, 121, 586-620, doi:10.1002/2015JG003132.
24. Zhang, J., F. Liu, W. Tao, J. Krieger, M. Shulski, and X. Zhang, 2016: Mesoscale climatology and variability of surface winds over the Chukchi-Beaufort coastal areas. *J. Clim.*, 29, 2721-2739, doi:10.1175/JCLI-D-15-0436.1.
25. Gong, X., X. Zhang, G. Lohmann, W. Wei, X. Zhang, and M. Pfeiffer, 2015: Higher Laurentide and Greenland ice sheets strengthen the North Atlantic ocean circulation. *Clim. Dyn.*, 45, 139-150, doi:10.1007/s00382-015-2502-8.
26. Wang, Z., X. Zhang, Z. Guan, B. Sun, X. Yang, and C. Liu, 2015: An atmospheric origin of the multidecadal bipolar seesaw. *Scientific Reports*, 5, 8909, doi:10.1038/srep08909.
27. Kim, B.-M., S.-W. Son, S.-K. Min, J.-H. Jeong, S.-J. Kim, X. Zhang, T. Shim, and J.-H. Yoon, 2014: Weakening of the stratospheric polar vortex by Arctic sea-ice loss. *Nature Communications*, 5, 4646, doi: 10.1038/ncomms5646.
28. Matsumura, S., X. Zhang, and K. Yamazaki, 2014: Summer Arctic atmospheric response to spring Eurasian snow cover and its driving role in accelerated sea ice decrease. *J. Clim.*, 27, 6551-6558, doi: 10.1175/JCLI-13-00549.1.
29. Li, X.-F., J. Li, X. Zhang, and C. Sun, 2014: Role of Ferrel cell in Daily variability of Northern Hemisphere annular mode. *Chin. Sci. Bull.*, 59, 3457-3464, doi: 10.1007/s11434-014-0477-1.
30. Wu, Q., J. Zhang, X. Zhang, and W. Tao, 2014: Interannual Variability and Long-Term Changes of Atmospheric Circulation over the Chukchi and Beaufort Seas. *J. Clim.*, 27, 4871-4889, doi:10.1175/JCLI-D-13-00610.1.

31. Shulski, M., J. You, J. Krieger, W. Baule, J. Zhang, X. Zhang, and W. Horowitz, 2014: Quality assessment of meteorological data for the Beaufort and Chukchi Sea coastal region using automated routines. *Arctic*, 67, 104-112, doi: 10.14430/arctic4367.
32. Dong, X., B. J. Zib, B. Xi, R. Stanfield, Y. Deng, X. Zhang, B. Lin, and C. N. Long, 2014: Critical mechanisms for the formation of extreme Arctic sea-ice extent in the summers of 2007 and 1996. *Clim. Dyn.*, 43, 53-70, doi: 10.1007/s00382-013-1920-8.
33. Wu, B. Y., J. E. Walsh, J. P. Liu, and X. Zhang, 2014: Dominant patterns of winter Arctic surface wind variability. *Advances in Polar Science*, 25, 246-260.
34. Basu, S., X. Zhang, I. Polyakov, and U. S. Bhatt, 2013: North American winter-spring storms: Modeling investigation on tropical Pacific sea surface temperature impacts. *Geophys. Res. Lett.*, 40, 5228-5233, doi: 10.1002/grl.50990.
35. Zhang, X., J. He, J. Zhang, I. Polyakov, R. Gerdes, J. Inoue, and P. Wu, 2013: Enhanced poleward moisture transport and amplified the northern high-latitude wetting trend. *Nature Clim. Change*, 3, 47-51, doi: 10.1038/nclimate1631.
36. Fan, X., J. R. Krieger, J. Zhang, and X. Zhang, 2013: Assimilating QuikSCAT ocean surface winds with the weather research and forecast model for surface wind-field simulation over the Chukchi/Beaufort seas. *Boundary-Layer Meteorol.*, 148, 207-226, doi: 10.1007/s10546-013-9805-2.
37. Dammann, D. O., U. Bhatt, P. L. Langen, J. Krieger, and X. Zhang, 2013: Impact of daily Arctic sea ice variability in CAM3.0 during fall and winter. *J. Clim.*, 26, 1939-1955, doi: 10.1175/JCLI-D-11-00710.1.
38. Li, X., J. Li, and X. Zhang, 2013: A two-way stratosphere-troposphere coupling of submonthly zonal-mean circulations in the Arctic. *Adv. Atmos. Res.*, 30, 1771-1785, doi: 10.1007/s00376-013-2210-4.
39. Zhang, X., C. Lu, and Z. Guan, 2012: Weakened cyclones, intensified anticyclones, and the recent extreme cold winter weather events in Eurasia. *Environ. Res. Lett.*, 7, 044044, doi:10.1088/1748-9326/7/4/044044.
40. Legatt, R., I. Polyakov, U. Bhatt, X. Zhang, and R. V. Bekryaev, 2012: North Atlantic variability driven by stochastic forcing in a simple model. *Tellus A*, 64, 18695, doi: 10.3402/tellusa.v64i0.18695.
41. Moreira, P., X. Zhang, J. R. Krieger, J. Inoue, and J. Zhang, 2012: WRF Model Simulation of a Polar Low over the Chukchi and Beaufort Seas: Sensitivity to Model Physics and Large-Scale Forcings. *Polar Science*, submitted (under revision).
42. Zhang, X., J. Inoue, J. Zhang, P. Chu, 2012: Modeled ocean dynamics for regional displacement of Beaufort Sea freshwater storage in the context of Arctic Oscillation. *Clim. Dyn.*, submitted (under revision).
43. Wu, Q., and X. Zhang, 2011: Observed impact of Antarctic sea ice dipole on Antarctic Oscillation. *J. Clim.*, 24, 4508-4518, doi: 10.1175/2011JCLI3965.1.
44. Bieniek, P. A., U. S. Bhatt, L. A. Rundquist, S. D. Lindsey, X. Zhang, and R. L. Thoman, 2011: Large-scale climate controls of interior Alaska river ice breakup. *J. Clim.*, 24, 286-297, doi:10.1175/2010JCLI3809.1.

45. Kattsov, V. M., V. E. Ryabinin, J. E. Overland, M. C. Serreze, M. Visbeck, J. E. Walsh, W. Meier, X. Zhang, 2010: Arctic sea ice change: a grand challenge of climate science. *Journal of Glaciology*, 56, 1115-1121.
46. Zhang, X., 2010: Sensitivity of Arctic summer sea ice coverage to global warming forcing: Toward reducing uncertainty in Arctic climate change projections. *Tellus A*, 62, 220-227, doi:10.1111/j.1600-0870.2010.00441.x.
47. Wu, Q., and X. Zhang, 2010: Observed forcing-feedback processes between northern hemisphere atmospheric circulation and Arctic sea ice coverage. *J. Geophys. Res.*, 115, D14119, doi:10.1029/2009JD013574.
48. Zhang, J., and X. Zhang, 2010: A thermodynamically consistent soil moisture assimilation scheme using satellite-retrieved skin temperature in the mesoscale modeling system MM5/NOAH-LSM. *Atm. Res.*, 95, 333-352, doi:10.1016/j.atmosres.2009.09.003.
49. Polyakov, I. V., V. A. Alexeev, U. S. Bhatt, E. I. Polyakova, and X. Zhang, 2010: North Atlantic warming: Patterns of long-term trend and multidecadal variability. *Clim. Dyn.*, 34, 439-457, doi:10.1007/s-00382-0080522-3.
50. Rawlins, M. A., M. Serreze, R. Schroeder, X. Zhang, and K. C., McDonald, 2009: Diagnosis of the record discharge of Arctic-draining Eurasian rivers in 2007. *Environ. Res. Lett.*, 4, 045011, doi:10.1088/1748-9326/4/4/045011.
51. Zhao, P., X. Zhang, Y. Li, and J. Chen, 2009: Remotely modulated tropical-North Pacific ocean-atmosphere interactions. *Atm. Res.*, 94, 45-60, doi:10.1016/j.atmosres.2009.01.018.
52. Zhang, X., A. Sorteberg, J. Zhang, R. Gerdes, and J. C. Comiso, 2008: Recent radical shifts in atmospheric circulations and rapid changes in Arctic climate system. *Geophys. Res. Lett.*, 35, L22701, doi:10.1029/2008GL035607.
53. Kattsov, V., J. E. Walsh, V. Govorkova, T. Pavlova, and X. Zhang, 2007: Arctic Ocean freshwater budget components in simulations with the IPCC AR4 AOGCMs. *J. Hydrometeor.*, 8, 571-589.
54. 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, 1084-1098.
55. Zhang, X., and J. E. Walsh, 2006: Toward a seasonally ice-covered Arctic Ocean: Scenarios from the IPCC AR4 model simulations. *J. Climate*, 19, 1730-1747.
56. Komori, N., K. Takahashi, K. Komine, T. Motoi, X. Zhang, and G. Sagawa, 2005: Description of sea-ice component of coupled ocean/sea-Ice model for the Earth Simulator (OIFES), *J. Earth Simulator*, 4, 31-45.
57. Polyakov, I. V., U. S. Bhatt, H. L. Simmons, D. Walsh, J. E. Walsh, and X. Zhang, 2005: Multi-decadal variability of North Atlantic temperature and salinity during the 20th century. *J. Climate*, 18, 4562-4581.
58. Zhao, P., X. Zhang, X. Zhou, M. Ikeda, and Y. Yin, 2004: Sea-ice extent anomaly in the North Pacific and its impact on the East Asian summer monsoon rainfall, *J. Climate*, 17, 3434-3447.

59. Zhang, X., J. E. Walsh, J. Zhang, U. S. Bhatt, and M. Ikeda, 2004: Intensifying Arctic cyclone activity. *Bull. Amer. Meteor. Soc.*, 85, 949-950. [summary in Papers of note, invited].
60. Zhang, X., J. E. Walsh, J. Zhang, U. S. Bhatt, and M. Ikeda, 2004: Climatology and interannual variability of Arctic cyclone activity, 1948-2002. *J. Climate*, 17, 2300-2317.
61. Zhang, X., M. Ikeda, and J. E. Walsh, 2003: Arctic sea-ice and freshwater changes driven by the atmospheric leading mode in a coupled sea ice-ocean model. *J. Climate*, 16, 2159-2177.
62. Zhang, X., M. Ikeda, and J. E. Walsh, 2003: Coordinated changes of sea-ice over the Beaufort and Chukchi seas: Regional and seasonal perspectives. *Polar Res.*, 22, 83-90.
63. Bian, L., R. L. Colony, and X. Zhang, 2003: Observational estimate of energy budget on drifting ice and open water over the Arctic Ocean. *Science in China (series D)*, 46, 580-591. (in English, invited)
64. Bian, L., R. Colony, and X. Zhang, 2003: Observational estimate of energy budget on drifting ice and open water over the Arctic Ocean. *Science in China (series D)*, 33, 139-147. (in Chinese)
65. Zhang, X., and M. Ikeda, 2002: Freshwater budgets and pathways in the Arctic Ocean. *Kaiyo Monthly*, 34, 816-818.
66. Wang, J., M. Ikeda, R. Colony, and X. Zhang, 2002: Decadal and multi-decadal variability of the Arctic sea-ice. *Kaiyo Monthly*, 34, 865-869.
67. Zhu, J., S. Wang, and X. Zhang, 2002: Global warming mode of atmospheric circulation. *Atmos. Res. Lett.*, doi:10.1006/asle.2002.0052.
68. Zhang, X., and J. Zhang, 2001: Heat and freshwater budgets and their pathways in the Arctic Mediterranean in a coupled Arctic Ocean/Sea-ice model. *J. Oceanogr.* 57, 207-234.
69. Zhang, X., S. Huang, and J. Zhang, 1998: Analyses of dynamic structures of 1982/83 El Nino. *Chinese J. Atmos. Sci.*, 21, 6, 659-669.
70. Zhang, X., S. Huang, and J. Zhang, 1996: Characteristic mode model of tropical Pacific basin and dynamic mechanisms of El Nino. *Acta Oceanogr. Sinica*, 14, 485-498. (in English, invited).
71. Zhang, X., S. Huang, and J. Zhang, 1996: Characteristic mode model of tropical Pacific basin and dynamic mechanisms of El Nino. *Acta Oceanogr. Sinica*, 18, 31-42. (in Chinese).
72. Zhang, J., T.-J. Wei, and X. Zhang, 1995: Moist potential vorticity diagnosis of a Meiyu frontal heavy rain process simulation during summer, 1991. *Acta Meteorologica Sinica*, 9, 466-479.
73. Ni, Y., Z. Li, X. Zhang, G. Wang, X. Yang, and A. Wu, 1995: Study for ENSO and its influences on Asian monsoon and climate change of China. *Scientia Meteorologica Sinica*, 4, 30-45.

74. Zhang, X., and L. Chen, 1995: Development of coupled oceanic-atmospheric models and their sensitivity. *Meteor. Sci. and Tech.*, 3, 1-6.
75. Zhang, X., 1992: Study of characteristic modes in simple tropical coupled air-sea model. *Acta Meteor. Sinica*, 6, 287-298. (in English).
76. Zhang, X., 1992: Study of characteristic modes in simple tropical coupled air-sea model. *J. Nanjing Institute of Meteorology*, 15, 447-458. (in Chinese, invited).
77. Zhang, X., Z. Yu, and H. Lu, 1991: An energetic study on the interaction between meso-scale systems and between large and meso-scale motions in the Meiyu front processes. *J. Trop. Meteor.*, 7, 72-82.
78. Zhang, X., 1991: Effects of horizontal structure variations of basic flow on propagation of stationary Rossby wave train and barotropic energy conversions. *Scientia Meteor. Sinica*, 11, 169-180.
79. Zhang, X., 1989: The preliminary analysis of the topographic Rossby waves influenced by the random effect of small topographic variations. *Scientia Meteor. Sinica*, 9, 409-416.

Book Chapters:

80. Zhang, J., J. Krieger, U. Bhatt, C. Lu, and X. Zhang, 2016: Alaskan regional climate changes in dynamically downscaled CMIP5 simulations. *Proceedings of the 2013 National Conference on Advances in Environmental Science and Technology*, ed. Godfrey A. Uzochukwu et al., Springer International Publishing.
81. Tao, W. J. Zhang, X. Zhang, and J. Chen, 2016: Arctic storm and its impacts on the surface winds over the Chukchi-Beaufort seas. *Proceedings of the 2013 National Conference on Advances in Environmental Science and Technology*, ed. Godfrey A. Uzochukwu et al., Springer International Publishing.
82. Zhang, X., 1993: ENSO dynamics. *Climate Dynamics*, ed. Yunqi Ni, Chinese Meteorology Press, 641pp.
83. Zhang, X., 1993: Response of low-frequency oceanic modes to tropical wind anomalies. *Atmospheric Science Researches*, Nanjing University Press.

Other Publications

84. Cohen, J., X. Zhang, J. Francis, T. Jung, R. Kwok, J. Overland, P. C. Tayler, S. Lee, F. Laliberte, S. Feldstein, W. Maslowski, G. Henderson, J. Stroeve, D. Coumou, D. Handorf, T. Semmler, T. Ballinger, M. Hell, M. Kretschmer, S. Vavrus, M. Wang, S. Wang, Y. Wu, T. Vihma, U. Bhatt, M. Ionita, H. Linderholm, I. Rigor, C. Routson, D. Singh, M. Wendisch, D. Smith, J. Screen, J. Yoon, Y. Peings, H. Chen, and R. Blackport, 2018: Arctic change and possible influence on mid-latitude climate and weather. *US CLIVAR Report 2018-1*, 41pp, doi:10.5065/D6TH8KGW.
85. Zhang, X., J. Zhang, J. Krieger, M. Shulski, F. Liu, S. Stegall, W. Tao, J. You, W. Baule, and B. Potter, 2013: Beaufort and Chukchi Seas Mesoscale Meteorology Modeling

Study, Final Report. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Alaska OCS Region, Anchorage, AK. OCS Study BOEM 2013-0119. 204 pp.

86. Alaska Center for Climate Assessment and Policy (as one of the contributors), 2009: Decision-making for at-risk communities in a changing climate. *Report for the National Commission on Energy Policy*.
87. Zhang, X., and G. Holloway, 1999: Modeling studies on sensitivity of sea-ice distribution and motion to oceanic heat flux. *Proceedings of the Conference on the Arctic Buoy Program*, 7-9, World Climate Research Programme/Arctic Climate System Study, Seattle, 3-4 August 1998.

Selected Proceedings and Presentations (after 2005)

88. Zhang, X. (2017), Causes and consequences of Arctic Ocean cryosphere changes: Focus on atmosphere-sea ice-ocean interactions, Arctic Cryosphere Changes and Their Impacts. Cooperation Workshop Between IARC-UAF and CAS, Fairbanks, AK, 23 Jun. (invited).
89. Zhang, X. (2017), Accelerated systematic changes in the Arctic and Intensified Arctic-midlatitude linkage, Workshop on Understanding the Causes and Consequences of Polar Amplification, Aspen Global Change Institute, Aspen, CO, 12-16 Jun. (invited).
90. Zhang, X. (2017), Review of US CLIVAR workshop and findings, Workshop on Understanding the Causes and Consequences of Polar Amplification, Aspen Global Change Institute, Aspen, CO, 12-16 Jun. (invited).
91. Zhang, X. (2017), Linkage between Arctic climate and mid-latitude extreme weather, Workshop on Arctic Change and its Influence on Mid-latitude Climate and Weather, US CLIVAR, Washington, DC, 1-3 Feb. (invited).
92. Cohen, J., X. Zhang, J. Francis, T. Jung, R. Kwok, and J. Overland (2017), Arctic mid-latitude linkages and reasons for skepticism, previous workshops, questions, workshop outcomes, Workshop on Arctic Change and its Influence on Mid-latitude Climate and Weather, US CLIVAR, Washington, DC, 1-3 Feb. (invited).
93. Hong, J.-Y., B.-M. Kim, S.-Y. Jun, X. Zhang, H. Kwon, S.-J. Kim, J.-H. Kim, S.-W. Kim, and H.-K. Kim (2016), Major cause of unprecedented Arctic warming in January 2016: Critical role of an Atlantic windstorm, Abstract A53B-0269 presented at 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec.
94. Basu, S., and X. Zhang (2016) Impact of Arctic Sea ice Decline Trend on Northern Hemispheric Storm Activity: A Modeling Investigation, Abstract A53B-0276 presented at 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec.
95. Tao, W., X. Zhang, and J. Zhang (2016), The Role of Stratosphere Vortex Downward Intrusion in a Long-lasting Arctic Summer Storm, Abstract A53B-0281 presented at 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec.

96. Yang Y., X. Zhang, and A. Rinke (2016), Arctic Storm Activities in Ensemble Simulations by the HIRHAM-NAOSIM Regional Coupled Climate Model, Abstract A53B-0281 presented at 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec.
97. Zhang, X. (2016), Atmospheric research and modeling studies at UAF/IARC, Pacific Arctic Group 2016 Fall Meeting, Qingdao, China, 27-28 Oct.
98. Zhang, X., J. Zhang, M. Shulski, J. Krieger, F. Liu, W. Tao, and S. Stagall (2016), CBHAR – Chukchi-Beaufort Seas High Resolution Atmospheric Reanalysis, Year of Polar Prediction (YOPP) Planning Meeting, Reading, UK, 5-9 Sept.
99. Zhang, X. (2016), Modeling study on Arctic cyclone, Year of Polar Prediction (YOPP) Planning Meeting, Reading, UK, 5-9 Sept.
100. Zhang, X. (2016), Atmospheric research and modeling efforts at UAF. Pacific Arctic Group Meeting, Arctic Science Summit Week, Fairbanks, Alaska, 13 Mar. (invited).
101. Cohen, J. L., and X. Zhang (2015), US CLIVAR Working Group: Arctic change and possible influence on midlatitude climate and weather, Abstract A33O-03 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec (invited).
102. Wang, Z., X. Zhang, Z. Guan, B. Sun, X. Yang, and C. Liu (2015), An atmospheric origin of the multi-decadal bipolar seesaw, Abstract A34B-01 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec.
103. Zhang, X., Perspectives. The Multidisciplinary Drifting Observatory for the Study of Arctic Climate (MOSAIC) Implementation Planning Workshop, Alfred Wegener Institute, Potsdam, Germany, July 22-24, 2015 (invited).
104. Zhang, X., S. Basu, C. Lu, Z. Wang, and Z. Guan, Intensified linkage between Arctic climate change and midlatitude extreme events: Role of atmospheric circulation and storm track dynamics. The Fourth International Symposium on the Arctic Research (ISAR-4)/The Third International Conference on Arctic Research Planning (ICARP III), Toyama, Japan, April 27-30, 2015.
105. Dong, X., B. J. Zib, B. Xi, Y. Deng, X. Zhang, B. Lin, and C. N. Long (2014), Identifying Dynamical Forcing and Cloud-Radiative Feedbacks Critical to the Formation of Extreme Arctic Sea-Ice Extent in the Summers of 2007 and 1996, Abstract A31M-07 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
106. Kim, B.-M., S.-W. Son, S.-K. Min, J. H. Jeong, S.-J. Kim, X. Zhang, T. Shim, and J.-H. Yoon (2014), Weakening of the stratospheric polar vortex by Arctic sea-ice loss, Abstract A32D-05 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
107. Lu, C., X. Zhang, Z. Guan, Z. Wang, and Y. Qin (2014), Cyclone and Anticyclone Activities Impact Eurasian Surface Climate and Cause Extreme Cold Events? Abstract A32D-08 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.

108. Tao, W., J. Zhang, Y. Fu, and X. Zhang (2014), The Super Arctic Storm in 2012 - Investigation of Dynamics Mechanism, Abstract A33E-3230 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
109. Tao, W., J. Zhang, Y. Fu, and X. Zhang (2015), The super Arctic storm in 2012: Investigation of Dynamic Mechanisms, Abstract presented at 49th CMOS Congress and 13th AMS Conference on Polar Meteorology and Oceanography, Whistler, Canada, May 31 – June 4.
110. Zhang, J., S. T. Stegall, and X. Zhang (2014), Wind-SST-Sea Ice Relations in the Marginal Ice Zone of the Chukchi-Beaufort Seas, Abstract A33E-3233 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
111. Zhang, X., and S. Matsumura (2014), Summer Arctic Atmospheric Circulation Response to Spring Eurasian Snow Cover and its Possible Linkage to Accelerated Sea Ice Decrease, Abstract A33E-3228 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
112. Zhang, X., Arctic climate change and extreme midlatitude events: Observational analysis and modeling investigation. U.S. CLIVAR Summit. Denver, CO, July 8-11, 2014 (invited).
113. Zhang, X., C. Lu, and Z. Guan, Radically shifted atmospheric circulation and intensified anticyclones: Causes of recent extreme cold weather events in Eurasia. Abstract 8A.5 presented at the 26th Conference on Climate Variability and Change in conjunction with the 94th Annual American Meteorological Society Meeting, Atlanta, GA, 2-6-February 2014.
114. Zhang, X., Physics in Constraining Observational Data Biases and Investigating Climate Changes in Hydrological Cycle. *Role of Physics in Geosciences – Earth and Atmospheric Physics and Climate Physics, the 80th Annual Meeting of the Southeastern Section of the American Physical Society*. Western Kentucky University, Nov. 20-13, 2013 (invited).
115. Zhang, X., Polar climate, U.S. CLIVAR Summit. Annapolis, MA, July 9-11, 2013 (invited).
116. Zhang, X., J. He, J. Zhang, I. Polyakov, R. Gerdes, J. Inoue, and P. Wu, Enhanced Poleward Atmospheric Moisture Transport Amplified Northern High-Latitude Wetting Trend. Korea Polar Research Institute, July 5, 2013 (invited).
117. Zhang, X., C. Lu, and Z. Guan, Radically Shifted Atmospheric Circulation and Intensified Anticyclones: Causes of Recent Extreme Cold Weather Events in East Asia. *12th East Asian Climate Workshop*. Busan, Korea, July 1-3, 2013 (invited).
118. Zhang, X., Rapidly changing Arctic climate system and intensifying Arctic-global climate interactions. *International Workshop on Polar Climate and Ecosystem Changes and Their Global Implications*. Nanjing, China, May 6-7, 2013 (invited).

119. Zhang, X., J. Zhang, M. Shulski, J. Krieger, F. Liu, S. Stegall, and W. Tao, The Chukchi-Beaufort seas mesoscale meteorological modeling project: An overview of high-resolution atmospheric reanalysis (CBHAR). *Workshop on the Chukchi-Beaufort Seas Meteorological Modeling Study and High-Resolution Atmospheric Reanalysis*. Anchorage, Alaska, January 25, 2013 (invited).
120. Zhang, X., J. Zhang, M. Shulski, J. Krieger, F. Liu, S. Stegall, and W. Tao, The Chukchi-Beaufort seas mesoscale meteorological modeling project: An overview of high-resolution atmospheric reanalysis (CBHAR). *Alaska Marine Science Symposium*. Anchorage, Alaska, January 21, 2013.
121. Zhang, X., J. He, J. Zhang, I. Polyakov, R. Gerdes, J. Inoue, and P. Wu, Enhanced poleward atmospheric moisture transport amplifies northern high-latitude wetting trend. *The Third International Symposium on the Arctic Research*. Tokyo, Japan, January 14-17, 2013.
122. Zhang, X., Enhanced high-lower latitude interactions and extreme climate/weather events in a rapidly changing Arctic. *IASC Atmospheric Working Group Workshop*. Tokyo, Japan, January 14, 2013 (invited).
123. Zhang, X., Rapid changes in Arctic sea ice: How do climate models capture the reality? *The 93rd American Meteorological Society Annual Meeting*. Austin, Texas, January 6-10, 2013.
124. Zhang, X., Towards a robust assessment of future Arctic sea ice and temperature changes. *AMAP Arctic Climate Scenario Workshop*. Seattle, October 16-18, 2012 (invited).
125. Zhang, X., J. Zhang, W. Tao, F. Liu, and J. R. Krieger, Detecting regional signature of climate variability and change in the Beaufort-Chukchi seas. *4th WCRP International Conference on Reanalysis*. Silver Spring, Maryland, May 7-11, 2012.
126. Zhang, X., An approach to enhance credibility of decadal-century scale Arctic climate change projections: Transient climate sensitivity analysis. *IPY 2012 Conference: From Knowledge to Action*. Montreal, Canada, Apr. 22-27, 2012.
127. Zhang, X., J. Zhang, W. Tao, and J. R. Krieger, Surface atmospheric signatures in the drastically changed Beaufort and Chukchi seas. *IPY 2012 Conference: From Knowledge to Action*. Montreal, Canada, Apr. 22-27, 2012.
128. Zhang, X., Sensitivity analysis of Arctic and Antarctic sea ice in CMIP5 climate model simulations and projections. *WCRP Workshop on CMIP5 Model Analysis*. Honolulu, Hawaii, Mar. 5-9, 2012.
129. Zhang, X., J. Zhang, W. Tao, and J. R. Krieger, Detecting regional signature of climate variability and change in the Beaufort-Chukchi seas. *92nd AMS Annual Meeting*. New Orleans, Jan. 22-26, 2012.

130. Zhang, X., Examining regional variability of Arctic freshwater from 3D ocean dynamic processes. *15th AOMIP Workshop*. Woods Hole Oceanographic Institutions, Nov. 1-4, 2011.
131. Zhang, X., Strategies for sea ice model verification, individual models and as part of CMIP analysis verification metrics and model weighting. *Arctic CliC Sea Ice Working Group Meeting*. Boulder, Colorado, Oct. 31 – Nov. 1, 2011 (invited).
132. Zhang, X., Synoptic view of climate variability and change: An examination of Arctic cyclone activity. *IARC Summer School: Modeling of the Arctic Climate System*. Fairbanks, May 23 – June 4, 2011 (invited lecture).
133. Zhang, X., Recent Rapid Changes in Arctic Climate and Intensifications of Arctic-Global Climate Interactions. *The Arctic as a Messenger for Global Processes, Climate Change and Pollution*. Copenhagen, Denmark, May 3-6, 2011
134. Zhang, X., Climatology, interannual variability, and extreme events of surface wind field in Beaufort and Chukchi Seas: Mesoscale Modeling and Multi-data Analysis. *Workshop on Evaluation of the Use of Hindcast Model Data for OSRA in a Period of Rapidly Changing Conditions*, SAIC, McLean, Virginia, Mar. 29-31, 2011 (invited).
135. Zhang, X., Atmospheric reanalysis data: Detection, attribution, and application in Arctic climate change. *AOMIP School*, Woods Hole Oceanographic Institutions, Oct. 19-22, 2010 (invited lecture).
136. Zhang, X., Reduce model uncertainty and understand the recent rapid change episode in Arctic climate, Seasonal to Multi-decadal Climate Predictability of Polar Climate, *A pan-WCRP workshop initiated by SPAC and CliC*, Bergen, Norway, Oct. 25-29, 2010 (invited).
137. Zhang, X., Recent Climate Changes in Arctic and Adjacent Sub-arctic Regions, School of Natural Resources and Agricultural Sciences, University of Alaska Fairbanks, Sept. 16, 2010 (invited lecture).
138. Zhang, X., Recent Radical Shift of Atmospheric Circulation, Rapid Changes in Arctic, and Enhancement of Arctic-Midlatitude Interactions, *International Polar Year Oslo Science Conference*, Oslo, Norway, Jun. 8-12, 2010.
139. Zhang, X., Sensitivity of Arctic Summer Sea Ice Coverage to Global Warming Forcing: Toward Reducing Uncertainty in Arctic Climate Change Projections, *EGU*, Vienna, Austria, May 2-7, 2010.
140. Zhang, X., Radical Spatial Shift of Atmospheric Circulation Pattern: The Driving Forcing for Recent Rapid Changes in Arctic Climate System, *The State of the Arctic Conference: At the Forefront of Global Change*, Miami, Mar. 16-19, 2010.
141. Zhang, X., J. He, L. D., Hinzman, I. Polyakov, J. E. Walsh, J. Inoue, and P. Wu, Atmospheric circulation attribution to recent intensification of Arctic hydrological cycle. *Eos Trans. AGU*, 90, Fall Meet. Suppl., Abstract GC51A-0721, AGU Fall Meeting, San Francisco, US, 2009.

142. He, J., and X. Zhang, What role that weather systems play in accelerating Arctic hydrological cycle? *Eos Trans. AGU*, 90, Fall Meet. Suppl., Abstract A11A-0086, AGU Fall Meeting, San Francisco, US, 2009.
143. Zhang, J., U. S. Bhatt, J. R. Krieger, M. Shulski, X. Zhang, and D. E. Atkinson, Regional climate change downscaling for Alaska. *Eos Trans. AGU*, 90, Fall Meet. Suppl., Abstract A33A-0238, AGU Fall Meeting, San Francisco, US, 2009.
144. Zhang, X., A. Sorteberg, J. Zhang, R. Gerdes, and J. Comiso, Recent Radical Shifts of Atmospheric Circulations and Rapid Changes in Arctic Climate System. *Geophysical Research Abstracts*, 11, EGU2009-3827, 2009, EGU General Assembly, Vienna, Austria, 2009.
145. Zhang, X., Atmospheric circulation signatures in the recent rapid Arctic climate system changes: A synthetic analysis of multidisciplinary data sets. July 19-29, 2009, *IAMAS-IAPSO-IASC Joint Assembly (MOCA-2009)*, Montreal, Canada.
146. Zhang, X., Arctic Rapid change Pattern (ARP): An accelerating impetus for recent rapid Arctic climate system changes. May 18-21, 2009, *10th Conference on Polar Meteorology and Oceanography*, Madison, Wisconsin, USA.
147. Zhang, X., From AO to ARP: Untangle the Mystery of the Recent Rapid Arctic Climate Change and the Extreme Sea Ice Loss in 2007. May 22, 2009, Cooperative Institute for Meteorological Satellite Studies, University of Wisconsin-Madison (invited).
148. Zhang, X., A. Sorteberg, J. Zhang, R. Gerdes, and J. C. Comiso, Recent radical shift of atmospheric circulations and rapid changes in Arctic climate. Jan. 10-16, 2009, *The 89th American Meteorological Society Annual Meeting*, Phoenix, AZ.
149. He, J., and X. Zhang, Climatology and Variability of the Moisture Transportation over Pan-Arctic Drainage System: Perspective from cyclone and anti-cyclone activities. *2008 AGU Fall Meeting*. December 15-19, 2008, San Francisco, CA, USA.
150. Zhang, J., J. Krieger, M. Shulski, and X. Zhang, Beaufort Sea Coastal Wind Regime Study. *2008 AGU Fall Meeting*. December 15-19, 2008, San Francisco, CA, USA.
151. Zhang, X., Sensitivity of Arctic Sea Ice to Global Warming Forcing in Observations and Climate Model Simulations. *2007 AGU Fall Meeting*. December 10-14, 2007, San Francisco, CA, USA.
152. Zhang, J., J. Krieger, and X. Zhang, Arctic Cyclone Activity: Synoptic-scale Modeling Study and Upscaling Implication for Large-scale Climate Variability and Change. *2007 AGU Fall Meeting*. December 10-14, 2007, San Francisco, CA, USA.
153. He, J., and X. Zhang, Recent Intensification of Northern High Latitude Hydrological Cycle: Perspective from synoptic-scale storm activity. *2007 AGU Fall Meeting*. December 10-14, 2007, San Francisco, CA, USA.

154. Zhang, X., Sensitivity of Arctic sea ice to global warming forcing in observations and IPCC climate model simulations. September 18, 2007, Alfred-Wegener-Institute for Polar and Marine Research, Bremerhaven, Germany. (invited)
155. Zhang, X., Arctic cyclone activity: Synoptic-scale modeling study and upscaling implication for climate variability and change. *11th European Polar Lows Working Group Workshop and 2nd Workshop on Arctic Weather Extremes*, September 20-21, 2007, Trier, Germany (invited).
156. Zhang, X., Accelerated Multiyear Sea Ice Reduction: Present-day Manifestation, Future Projection, and Underlying Physical Mechanisms. *IUGG 2007*, July 2-13, 2007, Perugia, Italy.
157. Zhang, X., Acceleration of Summer Sea Ice Reduction in the 21st Century: Projection by the IPCC AR4 Climate Models. *CMOS-CGU-AMS Joint Congress 2007*. May 28-June 1, 2007, St. John's, Canada.
158. Zhang, X., Arctic sea ice simulations and projections by the IPCC AR4 climate models: Credibility and systematic bias. *WGNE Workshop on Systematic Errors in Climate and NWP Models*, February 12-16, 2007, San Francisco, USA.
159. Zhang, X., Detecting Seasonality and Regionality of Changes in Arctic Storm Activity. *2006 AGU Fall Meeting*. December 11-15, 2006, San Francisco, CA, USA.
160. Zhang, X., Regional and seasonal perspectives of Arctic cyclone activity. *Workshop on Arctic Weather Extremes 2006*. June 19-20, 2006, Bergen, Norway (invited).
161. Zhang, X., Arctic sea ice changes and the underlying physical mechanisms: Multi-model investigations in the framework of IPCC AR4. *IPCC Special Session, International Association of Meteorology and Atmospheric Sciences 2005 Scientific Assembly*. August 2-11, 2005, Beijing, China (invited).
162. Zhang, X., and J. E. Walsh, Arctic sea ice simulations in the 20th century and in global warming scenarios. *CLIVAR/CMEP: IPCC AR4 Climate Model Simulations Analysis Workshop*. March 1-4, 2005, Honolulu, Hawaii, USA.
163. Zhang, X., Ocean dynamics in recent Arctic freshwater changes. *AMS Annual Meeting*. January 9-13, 2005, San Diego, CA, USA.