

Curriculum Vitae

Menglin Susan Jin

Visiting Professor

Department of Atmospheric and Oceanic Science

University of Maryland College Park

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POSITION

2014 August - present – Visiting Professor,

Department of Atmospheric and Oceanic Science, **University of Maryland, College Park**

2008 August – December 2014 – Assistant professor, Department of Meteorology and Climate Science, San José State University, CA, USA

2012 June – 2013 May: Visiting Professor in Earth Climate System Center, Tsinghua University, China

2006 – 2008 July **Associate Research Scientist**, Department of Atmospheric & Oceanic Science, University of Maryland, College Park

2003 – 2007. 8 Visiting Scientist of **NASA Goddard Space Flight Center**, Lab of Atmospheric Science

2000 – 2005 Assistant Research Scientist, Department of Atmospheric & Oceanic Science, University of Maryland, College Park

RESEARCH EXPERIENCE

Land surface remote sensing, Clouds remote sensing, Clouds-Aerosol-Rainfall Interaction, Global climate change, Global/Land surface modeling, Urban climate system

Data management information system (MIS).

TEACHING EXPERIENCE: (Courses taught)

Global Climate Change (Fall 2008, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, Fall 2012, Spring 2013, Fall 2013, Spring 2014)

Satellite Meteorology (Spring 2009)

Remote Sensing (Spring 2010, Spring 2011, Spring 2013)

Advanced Physical Meteorology (Fall 2010, Fall 2012, Fall 2013)

EDUCATION

1999 Ph.D., Atmospheric Dynamics,

Department of Atmospheric Science, University of Arizona, USA

Advised by Prof. Robert E. Dickinson

1995 M.S., Atmospheric Dynamics,

Department of Atmospheric Science, University of Arizona, USA

1991-1993 M.S. program, Institute of Atmospheric Physics,

Academia Sinica, P.R. China

1989 B.S., Atmospheric Dynamics,

Department of Atmospheric Dynamics, Nanjing University, P. R. China

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CURRENT FUNDING

“Urban effect on snowfall extension and lifetime” Funded by NASA Precipitation Program, 2013-2016. \$450K

“Urban effect on agriculture products” Funded by NASA Precipitation Program program, 2016-2019. \$450K

“Energy Use and Water Use Forecasting Product” NSF I-Corps Program. Year 2016-2017 \$50K

RECENT FINISHED FUNDED PROJECTS

“Skin temperature changes and its mechanisms”, **PI**, Funded by NSF Large-Scale Dynamics and Climate Program, 2007-2014, total \$420,000 for PI Jin (co-PI: R. E. Dickinson).

“Using DOE ARM Observations to Evaluate CESM/CLM5 Simulation”, **PI**, NSF Large-Scale Dynamics and Climate Program. \$68,000. 2011-2013.

“Urban Effects on Snow Coverage” Projected funded by NASA PMM Program total \$100K for **Co-PI**-Jin (PI J. M. Shepherd), 2010-2013. Non-cost extension to 2014.

“NSF REU: Study urban effect on temperature”, \$9200, NSF, 2013-2014

“Develop Climate Model Best Estimate Data Set for Land Surface Modeling (CMBE-Land)”, **PI**, DOE, \$69,000. 2012-2013.

“Skin Temperature Workshop”, **PI**, NSF Atmosphere Program, 2010, Total funding \$15,000.

“Urban land cover changes on local and regional rainfall”, **Co-PI**, (PI- J. M. Shepherd), by NASA PMM Program, 2007-2010, total \$150K for Jin

National Center for Atmospheric Research Graduate Visitor Program, 2012 summer, \$20,386

“Urban Aerosol Effects on Surface Energy Budget”, co-PI, DOD 2007-2009. total \$100K for Jin

“Is Surface Warming over Greenland and Antarctica in the Past Two Decades? – A Study Using MODIS and NCAR Atmosphere-Land Surface Model”, **PI**, funded by NASA Cryospheric Sciences Program 2005-2007

“Improving the Representation of Land in Climate Models by Application of EOS Observations ”, Co-I, (PI –R. E. Dickinson) by NASA EOSIDS, 2004-2006

“Urban land cover changes on local and regional rainfall”, Co-PI, (PI- J. M. Shepherd), by NASA TRMM Program, 2004-2006 renewed to 2007-2009

“Urban Modeling”, co-PI, (PI Christa Peters-Lidard) for Jin 2006-2008

“Satellite Observations of Land Surface Changes” funded by NASA Education Program as Ph.D. fellowship. **PI**. 1997-1999.

PENDING PROPOSALS

Jin, M. “Enhance Skin Temperature Over Snow Surface in GFS via Land Physical Process Improvement and Data Assimilation”, submitted to NOAA Climate Program October 2014, PI. \$280,000

Jin, M. R. E. Dickinson, M. Ek, W. He, Z. Zheng, “Use NOAA S-NPP/JPSS Land Products to Evaluate and Improve Noah Land Model Skin Temperature Simulations towards City Heatwave and Coldwave Risk Reduction Management” submitted to NOAA JPSS PGRR Program on March 2015, PI, \$288,000

EDITORSHIP: Editor of Climate (March 2014 – present)

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MEDIA HITS (selected from over 60 media hits)

1. NASA Top News: “New Yorkers' Work Week Clouds Air With Tiny Particles, Study Finds”,
http://www.nasa.gov/centers/goddard/news/topstory/2005/ny_air.html, February 13, 2006
2. NASA NEWS: “Satellite Act as Thermometers in Space”
http://www.nasa.gov/home/hqnews/2004/apr/HQ_04121_thermometers.html
3. NASA Top Story: “Satellite Act as Thermometers in Space, Show Earth Has a Fever”
<http://www.gsfc.nasa.gov/topstory/2004/0315skintemp.html>
4. CNN: “Urban heat, pollution found to mess up weather” Thursday, December 16, 2003
<http://www.cnn.com/2003/TECH/science/12/16/urban.climate.ap/index.html>
5. ABC: “Heat, Pollution changing precipitation” December, 13, 2003
http://abcnews.go.com/wire/US/ap20031213_41.html
and many others

DOCUMENTAIRES

Interviewed, "Thick City Smog Viewed from Space," Weather Channel, produced by Heidi Cullen, February 16, 2006.

PROFESSIONAL SERVICES

- Review Panel** for NASA Modeling, Analysis and Prediction (MAP) program, 2012.
- American Meteorological Society Planned and Inadvertent Weather Modification Committee, 2010-2013, 2013-2016**
- Panel Review** for NASA Education & Public Outreach for Earth & Space Science August 11-13, 2009
- Chair Sessions** for Global Environmental Change Program at AGU fall annual meeting in December 2008, the title of the session is “Climate Change and Hydrology: Urban Impact on the Weather, Climate, and Hydrology Posters”
- Reviewer** for Journal of Climate, Journal of Geophysical Research - Atmospheres, JGR-Ocean, Journal of Applied Meteorology, Remote Sensing Environment, Journal of Hydrometeorology, International Journal of Remote Sensing, IEEE Transactions on Geoscience and Remote Sensing, Water Resources Research, etc
- Proposal Reviewer** for NASA, NSF
- Committee**, 2006 AAG Tellers Committee
- Convener and Chair** of the Union session: “*Human-induced climate changes linked to urbanization: From observation to modeling*” for the AGU Fall Meeting, San Francisco, CA, 2003
- Chair**, Maryland Climate Change Committee, for Department of Meteorology and Maryland State Industry Stakeholder 2003-2004
- Convener and Chair** of the AMS Hydrological Session session: “*Land Surface Modeling*” for the AMS annual Meeting, San Diego, CA, 2005
- Board member** of Chinese-American Oceanic and Atmospheric Association (COAA) 2005-2006
- Member**, NCAR Climate System Model Land Working Group, 2001-present
- Member**, NASA GSFC unified land surface model working group

PROFESSIONAL MEMBERSHIP

- American Geophysical Union (AGU)
- American Meteorological Society (AMS)
- Association of American Geographers (AAG)

KEY COLLABORATORS – in terms of funding and publication

Marshall Shepherd (UG), Michael D. King (UC), Robert Dickinson (UT), Xubin Zeng (UA), Weizhong Zheng (NOAA), Samuel Levis (NCAR). Debin Su (Beijing Weather Forecasting Center)

REFEREED PUBLICATIONS

32. **Jin, M.** J. M. Shepherd, A. Chiuppi, 2016: Snow variations and mechanisms for Sierra Nevada. submitted
31. **Jin, M.**, Y. Li and Debin Su, 2015: Urban-induced mechanisms for an extreme rainfall event in Beijing. *Climate* **2015**, 3(1), 193-209; doi:[10.3390/cli3010193](https://doi.org/10.3390/cli3010193).
Paper accessible at <http://www.mdpi.com/2225-1154/3/1/193>
30. **Jin, M.**, T. Mullens, and H. Bartholomew, 2014: Evaluate CLM skin temperature and soil moisture simulation using ARM ground observation. *Climate* **2014**, 2.
Paper accessible at <http://www.mdpi.com/2225-1154/2/4/279>
29. Henry Bartholomew and **Menglin S. Jin** 2013: ENSO Effects On Land Skin Temperature Variations: A Global Study From Satellite Remote Sensing And NCEP/NCAR Reanalysis. *Climate*, 1(2), 53-73; doi:[10.3390/cli1020053](https://doi.org/10.3390/cli1020053)
<http://www.mdpi.com/2225-1154/1/2/53>
28. **Jin, M.** 2012: Developing an Index to Measure Urban Heat Island Effect Using Satellite Land Skin Temperature and Land Cover Observations. *J. of Climate*. vol 25, 6193-6201.
27. **Jin, M.** S. and Terrence J. Mullens, 2012: Land–biosphere–atmosphere interactions over the Tibetan plateau from MODIS observations. *Environ. Res. Lett.* 7 (2012) 014003. (*T. J. Mullen is a SJSU graduate student*)
26. **Jin, M.**, W. Kessomkiat, and Gary Pereira, 2011: Satellite-observed Urbanization Characters in Shanghai, China: Aerosols, Urban Heat Island Effect, and Land-Atmosphere Interactions. *Remote Sensing*, 3, 83-99; doi:10.3390/rs3010083 (note: *W. Kessomkiat was a SJSU graduate student*)
25. **Jin, M.**, J. M. Shepherd and W. Zheng, 2010: Aerosol Direct Effects on Surface Skin Temperature: A Study from WRF modeling and MODIS Observations. *Advances in Meteorology*, Volume (2010), Article ID 681587, 1pagesdoi:10.1155/2010/681587
24. **Jin, M.** and R. E. Dickinson, 2010: Land Surface Skin Temperature Climatology: Benefitting from the Strengths of Satellite Observations. *Environmental Research letters*, 5 044004
23. **Jin, M.** 2009: Greenland surface height and its impacts on skin temperature: A study using ICESat observations. *Advances in Meteorology*. Volume 2009, Article ID 189406, doi:10.1155/2009/189406.
22. Shepherd, J.M, J.A. Stallins, **M. Jin**, and T.L. Mote, 2009: Urban Effects on Precipitation and Associated Convective Process. *Handbook of Urban Ecology*. Eds. Ian Douglas et al. Taylor and Francis Books. Published
21. Shepherd, J.M, J.A. Stallins, **M. Jin**, and T.L. Mote, 2009: Urbanization: Impacts on Clouds, Precipitation, and Lightning, Monograph on Urban Ecological Ecosystems. Eds. Jacqueline Peterson and Astrid Volder, American Society of Agronomy-Crop Science Society of America- Soil Science Society of America. Pages 1-27
20. **Jin, M.**, and J. M. Shepherd 2008, Aerosol relationships to warm season clouds and rainfall at monthly scales over east China: Urban land versus ocean, *J. Geophys. Res.*, 113, D24S90, doi:10.1029/2008JD010276.
19. **Jin, M.** J. M. Shepherd, and Christa Peters-Lidard, 2007: Development of A Parameterization For Simulating the Urban Temperature Hazard Using Satellite Observations In Climate Model *Natural Hazards* DOI 10.1007/s11069-007-9117-2.

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18. Zhanqing Li, Long Chiu, Steve Weng, Da-Lin Zhang, Jun Du, Joseph Huang, Menglin Jin, Henry Juang, Fung-Chi Ko, Sarah Lu, Song Yang, Dongliang Yuan, 2007: The Rapid Growth of Publications by Atmospheric and Oceanic Scientists of Chinese Origin Journal: *Bulletin of The American Meteorological Society - BULL AMER METEOROL SOC*_, vol. 88, no. 6, 2007 DOI: [10.1175/BAMS-88-6-846](https://doi.org/10.1175/BAMS-88-6-846)
17. **Jin, M.**, 2006: MODIS observed seasonal and interannual variations of atmospheric conditions associated with hydrological cycle over Tibetan Plateau, *Geophys. Res. Lett.*, 33, L19707, doi:10.1029/2006GL026713.
16. **Jin, M.** and S. Liang, 2006: Improving Land Surface Emissivity Parameter of Land Surface Model in GCM. *J. of Climate*, **19**, 2867-2881.
15. **Jin, M.**, R. E. Dickinson, and D-L. Zhang, 2005: The footprint of urban areas on global climate as characterized by MODIS. *Journal of Climate*, vol. 18, No. 10, pages 1551-1565
14. **Jin, M.**, J. M. Shepherd, M. D. King, 2005: Urban aerosols and their interaction with clouds and rainfall: A case study for New York and Houston. *J. Geophysical Research*, 110, D10S20, doi:10.1029/2004JD005081.
13. **Jin, M.** and J. M. Shepherd, 2005: On including urban landscape in land surface model – How can satellite data help? *Bull. AMS*, vol 86, No. 5, 681-689. 10.
12. Shepherd, J. M. and M. Jin, 2004: Summary on urban heat island effect. Published on *EOS*, June.
11. **Jin, M.**, 2004: Analyzing Skin Temperature variations from long-term AVHRR. *Bulletin of the American Meteorological Society*, vol 85, No. 4, 587-600.
10. Zhou, L, R. E. Dickinson, **M. Jin** et. al., 2003: A sensitivity study of climate and energy balance simulations with use of satellite derived emissivity data over Northern Africa and the Arabian Peninsula. *J. Geophys. Res.*, 108(D24), 4795, doi:so.1029/2003JD004083
9. Zhou, L., R. E. Dickinson, **M. Jin** et. al., 2003: Relations between albedos and emissivities from MODIS and ASTER data over North African Desert. *Geophys. Res. Lett.*, 30(20), 2026, doi:10/1029/2003GL018069.
8. **Jin, M.** and R. E. Treadon, 2003: Correcting Orbit Drift Effects of AVHRR on Skin Temperature Measurements. *International Journal of Remote Sensing*, DOI: 10.1080/0143116031000095943
7. **Jin, M.** and R. E. Dickinson 2002: New Observational Evidence for Global Warming from Satellite Data. *Geophysica. Research Letter*, 29(10), 10.1029/2001GL013833.
6. **Jin, M.** and D-L. Zhang, 2002: Changes and interactions between skin temperature and leaf area index in summer 1981-1998. *Meteorology and Atmospheric Physics*, 80, 117-129.
5. **Jin, M.** and R. E. Dickinson 2000: A Generalized algorithm for retrieving cloudy sky skin temperature from satellite thermal infrared radiances. *Journal of Geophysical Research*, D22, 27,037-27,047
4. **Jin, M.**, 2000: Interpolation of surface radiation temperature measured from polar orbiting satellites to a diurnal cycle. Part 2: Cloudy-pixel Treatment. *Journal of Geophysical Research*, 105, D3, 4061-4076.
3. **Jin, M.**, 1999: Interpolation of surface radiation temperature measured from polar orbiting satellites to a diurnal cycle. **Ph.D. Dissertation**, University of Arizona, Tucson, 243pp. [Available from the University of Arizona Library]
2. **Jin, M.** and R. E. Dickinson, 1999: Interpolation of surface radiation temperature measured from polar orbiting satellites to a diurnal cycle. Part 1: Without Clouds. *Journal of Geophysical Research*, 104, 2105-2116.
1. **Jin, M.**, R.E. Dickinson, and A. M. Vogelmann, 1997: A Comparison of CCM2/BATS Skin Temperature and Surface-Air Temperature with Satellite and Surface Observations. *Journal of Climate*, 10, 1505-1524.

INVITED TALKS

16. Jin, M. 2011, "Skin Temperature in Land-Biosphere-Atmosphere Study", December 7, 2011, AGU Fall Meeting San Francisco
15. Jin, M. H. Bartholomew, and T. Mullen, 2011, Using ARM data to evaluate NCAR Land Surface Model. June 2-8, NCAR CSSM annual workshop.
14. Jin, M. 2011, "Climate Modeling on Regional Climate Change over CA" Seminar given April 20, 2011, University of Davis, Land, Atmosphere, Water Center (LAWR).
13. Jin, M. 2011:"Remote Sensing on Global Land-Atmosphere-Biosphere Variations", Feb, 23, 2011, New York State University Albany Department of Atmospheric and Environment Science.
12. Jin, M. 2011:"Climate Change from Remote Sensing and NCAR Climate Model", American University, Environmental Science, March 17, 2011. 11. Key note speaker on "Urban Prediction"" on International Workshop on Urban Climate Prediction at Univ. Tsukuba in Japan. June 3-4, 2010.
10. Invited talk on "Urban Climatology" 2/15/2010, Arizona State University, Department of Geography
9. NCAR, CGD January 6, 2009: "Land Skin Temperature Climatology", invited by Kevin Trenberth
8. Atmospheric, Earth and Energy Division, Lawrence Livermore National Laboratory, title:" Study urban effects from satellite observations and climate modeling". August 19, 2009.
7. University of Wisconsin - Madison, Department of Atmospheric and Oceanic Sciences, seminar "Land surface climate change and its mechanisms using satellite observations and GCM simulations". November 30, 2005.
6. University of East Carolina, Department of Geography, seminar "Land surface climate change and its mechanisms using satellite observations and GCM simulations". November 18, 2005.
5. COAA spring workshop "Urbanization effects from space", College Park, MD, April 2005
4. NOAA NCEP Seminar "Using MODIS Emissivity to Improve Land-Surface Variations in GCM", May 2004
3. University of New York, Stony Brook, Center for Marine Science, Seminar on "Detect and Simulate Land-Surface Warming", October 22, 2004
2. NASA GSFC Climate and Radiation branch Seminar "Global and regional land surface skin temperature variations", April 20, 2003
1. NOAA NESIDS Seminar "Skin Temperature Variations from AVHRR", October 14 2002

CONFERENCE PAPERS (Selected)

- 40: Mullens, T, M. Jin and H. Bartholomew, 2012: Evaluation CLM4 using ARM forcing and Evaluations Data set. 17th NCAR CESM annual workshop, June 18 – 21,2012 in Breckenridge, CO
- 39: Jin, M and H. Bartholomew, 2012: Soil Moisture Analysis for Lamont OK site. 17th NCAR CESM annual workshop, June 18 – 21,2012 in Breckenridge, CO
38. Bartholomew, Henry, Jin, M. T. Mullens, 2012: A AMR-based forcing and evaluation data set. 17th NCAR CESM annual workshop, June 18 – 21,2012 in Breckenridge, CO
37. Bartholomew, Henry, Jin, M. T. Mullens, 2011: Relations of ENSO and Land Skin Temperature and Vegetation at Global Scale. Poster presentation at 16th NCAR Annual CESM Workshop June 20-23 2011, Breckenridge, CO (poster can be found at <http://www.cesm.ucar.edu/events/ws.2011/Posters/bartholomew.pdf> , H. Bartholomew and T. Mullens are graduate students of SJSU)

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36. Jin, M., T. Mullens, H. Bartholomew, R. E. Dickinson, 2011: Using DOE ARM observations to Evaluate offline CLM. Oral presentation at 16th NCAR Annual CESM Workshop. June 20-23 2011, Breckenridge, CO.
35. Jin, M. and Marshall J. Shepherd, 2010: An new index for Urban Heat Island Effect Detaction. Jan. 22 -27, 91st AMS annual meeting, Seattle. WA.
34. Jin, M. and J. M. Shepherd, 2009: "Can Aerosol Offset Urban Heat Island Effect?" to session A17: Aerosols and Climate in Asia, Fall AGU annual Meeting, December 2009 for oral presentation.
33. Jin, M and J. M. Shepherd, 2008:"Urban aerosol direct effects on surface temperature" at the AGU fall annual meeting, December 2008.
32. Jin, M. and R. E. Dickinson 2008: "Developing long-term land skin temperature data set" at NOAA NESDIS workshop, October 2008
31. Attend the 4th Global Vegetation Workshop June 16-19, 2009, University of Montana
30. Atnd the NASA Earth System Science at 20 Symposium that was held on June 22-24, 2009 Washington D.C.
29. China Nanjing Technology Institute Remote sensing short course, July 4-6, 2008
28. China, ShangHai Weather Bureau, July3, 2008:"Urban system in modeling"
14. Jin, M. and R. E. Dickinson, 2003: Urban-induced climate variations detected from MODIS. 30th International Symposium on Remote Sensing of Environment, Honolulu, Hawaii, USA. November
13. Jin, M. 2003: Improve emissivity parameter in land surface model using MODIS observations: New results. NCAR annual meeting, Breckenridge, CO, USA. June
12. Jin, M. 2003: The importance of emissivity in land surface model NCAR and working group meeting, Boulder, CO, USA. February.
11. Jin, M. and R. E. Dickinson 2002: Satellite-observed urban variations over the globe. AGU fall meeting, San Francisco, USA. December.
10. Jin, M. 2002: Using AVHRR skin temperature to detect global and regional variations. AMS meeting, January, Orlando, USA. February.
9. Jin, M. 2002: How to simulate urban climate: observations. NCAR annual meeting, Breckenridge, CO, USA. June.
8. Jin, M. 2002: Using MODIS skin temperature to validate land surface model. NCAR land working group meeting, Boulder, CO, USA, March.
6. Jin, M. and E. Kalnay 2001: Satellite Skin Temperature Diurnal Cycle and its use on Land Climate Study. Spring American Geophysical Union Conference, Boston, USA. May 28 - June 2.
5. Jin, M. and E. Kalnay 2000: Using AVHRR observations to detect global warming. Spring American Geophysical Union Conference, Washington, D. C. USA. , May28 - June 2.
4. Dickinson, R.E., K. J. Schaudt, J.C. Morrill and M. Jin 1997b: Incorporation of BOREAL forest ecosystem description into climate modeling framework. Final report to National Aeronautics and Space Administration, Project Number NAG-5-2310.
3. Dickinson, R. E., K. J. Schaudt, J. Morrill, and M. Jin, 1997c: A BOREAS Study: Incorporation of BOREAL Forest Ecosystem Description into Climate Modeling Framework. BOREAS Conference, March 17-22, 1997, Canada.
2. Jin, M., R. E. Dickinson and X. Zeng, 1996: A dataset of land surface temperature diurnal cycle from MODIS data and CCM/BATS. The International Land Surface Temperature Workshop, Santa Barbara, USA. September 17-20.
1. Jin, M. and R. E. Dickinson, 1995: A Study of Surface Skin Temperature. American Geophysical Union Conference, San Francisco, USA. December 15-20.