

CURRICULUM VITAE

Fei Chen

Address: National Center for Atmospheric Research
P.O. Box 3000
Boulder, CO 80307-3000
Phone: (303) 497-8454
Fax: (303) 497-8401
E-mail: feichen@ucar.edu
Web: <https://staff.ucar.edu/users/feichen>

EDUCATION

B.S. Nanjing National Institute of Meteorology, Nanjing, China, 1984
M.S. Blaise Pascal University, Clermont-Ferrand, France, 1986,
Ph.D. Blaise Pascal University, Clermont-Ferrand, France, 1990

APPOINTMENTS

Deputy Director, Hydrometeorology Applications Program, Research Applications Laboratory (RAL), National Center for Atmospheric Research (NCAR), Boulder, CO, 2015-present
Senior Scientist (Scientist IV), RAL, NCAR, 2010-present; **Scientist III**, 2004-2010; **Scientist II**, 2000-2004; **Scientist I**, 1997-2000
Visiting Professor, University of Tsukuba, Tsukuba, Japan, 2019
Visiting Professor, Chinese Academy of Meteorological Sciences, China Meteorological Administration, 2015-2019
Visiting Professor, Chinese Academy of Meteorological Sciences, Beijing, China, 2003-2007
Visiting Scientist, Environmental Modeling Center, National Centers for Environmental Prediction, National Oceanic and Atmospheric Administration (NOAA), Washington, DC, 1993-1997
Postdoctoral Research Associate, Department of Meteorology and Physical Oceanography, Rutgers University, New Brunswick, NJ, 1991-1993
Research Associate, Laboratory of Physical Meteorology, Blaise Pascal University, Clermont-Ferrand, France, 1990-1991

HONORS AND AWARDS

Outstanding Scientific and Technical Advancement Award, NCAR, 2001
Fellow, American Meteorological Society, 2013
Honorary Professorship, Chinese Academy of Meteorological Sciences, China Meteorological Administration, 2014
Board on the Urban Environment Award, American Meteorological Society, 2015
Outstanding Publication Award, NCAR, 2015
Scientific and Technical Achievement Award, NCAR/RAL, 2015
The Helmut E. Landsberg Award, American Meteorological Society, 2018
Outstanding Publication Award, NCAR/RAL, 2021

COMMITTEE WORK

- Member, Scientific Steering Group, My Climate Risk, World Climate Research Programme (WCRP), 2022-present
- Chair, Award Nomination Committee, American Meteorological Society (AMS), 2019-2021
- Member, Award Nomination Committee, American Meteorological Society (AMS), 2018-2021
- Member, Advisory Committee of the 2022 Winter Olympics Weather Support, China Meteorological Administration, Beijing, China, 2017-2020
- Member, Organizing Committee, 10th International Conference on Urban Climate (ICUC9), 6-10 August, New York, NY, USA, 2018
- Member, International Advisory Committee member, School of Geographic Sciences, East China Normal University, Shanghai, China, 2015-2019
- Elected Board Member, the International Association for Urban Climate (IAUC) Board, 2015-2018
- Member, Organizing Committee Member, 9th International Conference on Urban Climate (ICUC9), July 20-24, 2015, Toulouse, France.
- Co-Chair: AMS 11th Symposium on the Urban Environment, February 2-6, 2014, Atlanta, GA.
- Member, the Global Land/Atmosphere System Study (GLASS) Panel, Global Energy and Water Cycle Experiment (GEWEX), 2012-2017
- Chair, American Meteorological Society (AMS) Board on the Urban Environment, 2011-2013
- Member, American Meteorological Society (AMS) Board on the Urban Environment, 2010-2011
- Co-Chair: AMS Ninth Symposium on the Urban Environment, August 2010, Keystone, Colorado.
- Scientific Advisor, Institute of Urban Meteorology, Chinese Meteorological Agency, Beijing, China, 2009-2019
- Rapporteur and Committee member, “Habilitation à Diriger des Recherches”, Paul Sabatier University, Toulouse, France, 2009
- Member, Weather Research and Forecasting (WRF) Release Committee member, 2008-2011
- Member, NASA Soil Moisture Active Passive (SMAP) Applications Working Group, 2008-2013
- Member, External Advisory Committee of the U.S. Environmental Protection Agency (EPA) Community Modeling and Analysis System (CMAS), 2007-2010
- Co-Chair, WRF Model Working Group 14 (Land Surface Modeling), 2005-2014
- Member, Advisory Committee, Chinese Academy of Meteorological Sciences, China Meteorological Administration, 2003-2006
- Deputy Chair, Weather Research and Forecasting Model Working Group 14 (Land-Surface Modeling), 2000-2005
- Member, Advisory Committee for the ARM/GCIP NESOB Data Development, 1999-2000

Review Panels for NASA and NOAA, 2002 - present:

Organized special sessions, chaired sessions, and gave invited presentations at American Meteorological Society (AMS), American Geophysical Union (AGU), International Association of Meteorology and Atmospheric Sciences (IAMAS), Global Energy and Water Experiment (GEWEX), Asia Oceania Geosciences Society (AOGS), International Association for Urban Climate (IAUC), and European Geophysical Union (EGU) conferences.

RESEARCH INTERESTS

Studied land-surface processes and land atmospheric interactions and their impacts on boundary layer structures using various field observations. Organized and coordinated the surface, vegetation, and soil observation network for the IHOP_02 field experiment in 2002. Led a 4-day intensive field experiment to use radiosonde to measure the boundary layer structures over a burned forest site in Hayman and over a natural forest site in Colorado in 2010. <https://ral.ucar.edu/projects/ihop-soil-moisture-soil-temperature-and-vegetation-observation-network>

Examined feedback between soil moisture, vegetation conditions, and landscape change, and regional summer precipitation.

Led and participated in developing the community Noah and Noah-MP land surface models; Led the implementation of the Noah land model in the National Centers for Environmental Prediction (NCEP/NOAA) operational numerical prediction models; Led the implementation of Noah and Noah-MP land surface models in the community MM5 and WRF models. <https://ral.ucar.edu/solutions/products/noah-multiparameterization-land-surface-model-noah-mp-lsm>, <https://ral.ucar.edu/solutions/products/wrf-noah-noah-mp-modeling-system>

Led the development of a high-resolution land data assimilation system (HRLDAS) designed to initialize land state conditions for coupled numerical weather prediction and regional climate models. <https://ral.ucar.edu/solutions/products/high-resolution-land-data-assimilation-system-hrldas>

Led an international effort to develop and evaluate the integrated WRF-Urban modeling system. <https://ral.ucar.edu/solutions/products/urban-canopy-model>

Examined the effects of urbanization on the formation and evolution of urban heat islands and associated boundary layer structures, on summer precipitation, on local water resources, and possible mitigation strategies; and on regional air quality under future climate change scenarios.

Contributed to the NCAR Water System Program initiatives in developing and applying convection-permitting modeling for high-resolution regional climate simulations. <https://ral.ucar.edu/hap/water-systems-program>

For peer-reviewed publication citation and h-index information:

- Web of Science: <https://www.webofscience.com/wos/author/record/1002523>
- Google Scholar: <https://scholar.google.com/citations?user=fewIukcAAAAJ&hl=en&oi=ao>

WORKSHOPS ORGANIZED OR CO-ORGANIZED

- 1999: Special session on the Global Soil Wetness Project for the Third International Scientific Conference on the Global Energy and Water Cycle, 16-19 June, Beijing, China
- 1999: Workshop on Land-surface Modeling and Application to Mesoscale Models. 24-25 June, Boulder, CO
- 2001: 2nd WRF Land-Surface Modeling Workshop, 16-17 August, Boulder, CO
- 2002: 1st NCAR/CAMS Model Development Workshop, 8-9 May, Boulder, CO
- 2002: IHOP Surface Data Workshop, 5-6 August, Boulder, CO
- 2003: 2nd NCAR/CAMS Model Development Workshop, 1-3 April, Beijing, China
- 2003: 3rd WRF Land-Surface Modeling Workshop, 18-19 June, Boulder, CO
- 2004: International Workshop on Urban Meteorology, 12-14 October, Beijing, China
- 2005: 4th WRF Land-Surface Modeling Workshop, 13-15 September, Boulder, CO
- 2006: National Urban Morphological Database Workshop, 11-12 May 2006, Boulder, CO
- 2007: 5th WRF Land-Surface Modeling Workshop, June, Boulder, CO
- 2008: 6th WRF Land-Surface Modeling Workshop, June, Boulder, CO
- 2011: 7th WRF Land-Surface Modeling Workshop, June, Boulder, CO
- 2011: International Workshop on Urban Weather and Climate: observation and modeling. Beijing, China.
- 2013: Workshop on Urban Landscapes and Climate Change, Argonne National Laboratory, Lemont, IL
- 2014: 8th WRF Land-Surface Modeling Workshop, June, Boulder, CO
- 2015: Workshop on the Study of Urban Impacts on Rainfall and Fog/Haze (SURF) Institute of Urban Meteorology, 21-23 October, 2015.
- 2019: Workshop on Urban Scale Processes and their Representation in High Spatial Resolution Earth System Models, Argonne National Laboratory, Lemont, IL. May 22-24, 2019.
- 2023: International Workshop: Integration of WUDAPT with Modeling Systems, NCAR, Boulder, 13 January 2023.
- 2023: First Noah-MP Annual Users' Workshop, 23-25 May 2023, NCAR, Boulder.

GRANTS FUNDED

- NASA (PI), Using the CASES Observations to Assess and Parameterize the Impact of Land Surface Heterogeneity on Area-Average Surface Heat Fluxes for Large-Scale Coupled Atmosphere-Hydrology Models. 1998-2001
- NASA (NCAR PI), Land-Surface Modeling and Data Assimilation with In Situ and Remote Sensing Data from CASES-97, 1999-2002
- U.S. Air Force Weather Agency (PI), Improving Land-Surface Models for MM5 and WRF, 2001-2009
- NSF/U.S. Weather Research Program (PI), Land-Surface/Atmosphere Interactions and its Relationship to Improving Quantitative Precipitation Forecasting of Deep Convection in the Southern Great Plains, 2001-2003
- NSF (Co-PI), Education, Research and International Training for U.S. Students and Junior Scientists in Atmospheric Sciences, 2001-2004

NASA (NCAR PI), Temporal Variability of Plant Cover in Semiarid Environments and its Influence on Water and Energy Cycling Between the Land Surface and Atmosphere, 2004-2006

NOAA (NCAR PI), Impact of Transpiration Feedback on Land Atmosphere Water Vapor Exchange and Land-Surface Memory, 2004-2006

CFD Research Corporation (PI), Improved High-Fidelity Forecasting Capability Using Combined Mesoscale and Microscale Models. 2006-2008

NASA (Co-PI), A Soil Temperature and Moisture Decision Support System for Agriculture, 2006-2009

U.S. Air Force Weather Agency (PI), Coupling LIS with WRF, 2008-2010

NCAR Director Opportunity Funds (PI), Establish an Integrated Atmosphere/Urban/Chemistry/Aerosol Modeling Framework for Addressing Urban Environmental Issues, 2007-2009

Defense Threat Reduction Agency (PI), Developing Improved Meteorological Analyses and Forecasts for Metropolitan Areas in Coastal Zones, 2007-2009

NOAA (PI), Integrating Recent Remote Sensing Products to Improve the Representation of Vegetation and Transpiration Processes in the Noah Land Surface Model, 2007-2010

NASA (PI), Atmospheric Responses to Land Surface Forcing and Their Impact on Precipitation Processes in the Southern Great Plains, 2006-2009

NSF/U.S. Weather Research Program (PI), Impacts of Land/PBL Interactions on Short-Term Prediction of Precipitation: A Focused Study over the IHOP_2002 Region, 2007-2009

NOAA (NCAR PI), Improving Hydrological Representations in the Community Noah Land Surface Model for Intra-seasonal to Interannual Prediction Studies, 2007-2010

NSF (NCAR Co-PI), Collaborative Research: Arctic System Reanalysis, Period: 2007-2011

NOAA (PI), Including the Impacts of Forest Disturbances in Western North America in Climate Models, 2009-2012

NSF/U.S. Weather Research Program (PI), Impacts of Land-Surface Exchange Processes on Surface and Elevated Convection: A Contrasting Study on IHOP_2002 and BAMEX_2003, 2009-2012

U.S. Air Force Weather Agency (PI), Improving Noah LSM in WRF, 2009-2010

U.S. Air Force Weather Agency (PI), Improve and explore the use of the new prototype community Noah-MP LSM in WRF, 2010-2011

NSF (NCAR Co-PI), PIRE: Developing Low-Carbon Cities in the USA, China & India through Inter-Disciplinary Integration Across Engineering, Environmental Sciences, Social Sciences & Public Health, 2012-2014

U.S. Air Force Weather Agency (PI), Experimentally implement the new Noah-MP LSM in WRF, 2011-2012

NCAR/RAL Opportunity (PI), Developing the integrated WRF-Crop regional climate modeling system, 2012-2013

NOAA (PI), Improving the NCEP Climate Forecast System (CFS) through Enhancing the Representation of Soil-Hydrology-Vegetation Interactions, 2014-2016

U.S. Air Force Weather Agency (PI), Enhancing physical coupling between Noah-MP, surface layer, and planetary boundary layer (PBL) schemes in WRF, 2014-2015

Institute of Urban Meteorology (PI), Improving land and PBL schemes in the BJ-RUC, 2014-2015

NSF/USDA (Co-PI), Physics-Based Predictive Modeling for Integrated Agricultural and Urban Applications, 2015-2019

NCAR Strategic Capability (PI), High-Resolution Simulation of the Effects of Climate-Urbanization-Crop Interactions, 2016-2017

Institute of Urban Meteorology (PI), Improving the BJ-RUC operational model, 2017-2018

NSF (NCAR PI), WaterSmart, 2017-2020

NOAA (NCAR Co-PI), Exploring process and scale dependencies on the predictability and variability of drought in the United States, 2017-2020

Institute of Urban Meteorology (PI), Improving the representation of the land-surface/boundary layer in the BJ-RUC operational model, 2017-2018

NOAA (PI), Representing agricultural management processes in the National Water Model, 2018–2020

NASA (PI), Improved understanding and prediction of extreme precipitation in multiple urban regions, 2020-2023

NOAA (Co-PI), Disentangling complex interactions and feedbacks among droughts, fires, and snowpack in the western U.S. by integrating observations and models, 2020-2023

University of Tsukuba (PI), Urban extreme weather research collaboration, 2020-2023

NOAA (Co-I), Improving land-surface flux partitioning in operational short-range forecasts through integration of NOAA weather and water model, 2020-2023

U.S. Geological Survey (NCAR Co-PI), USGS Hydroclimate Testbed, 2020-2023

NOAA (Co-PI), Improve snowpack for NOAA UFS S2S prediction, 2022-2025

NASA (Co-PI), Strategic Partnering Collaborative Project: LIS-Noah-MP coupling and integration, 2022-2023

NSF (NCAR PI), Convergence Accelerator Track J: Building a digital twin for national-scale field-level crop monitoring, prediction, and decision support; Phase-1, 2022-2023

PUBLICATIONS

Theses

On the spectra of cloud drops in a convective region. 1986, M.S. thesis, Blaise Pascal University, Clermont-Ferrand, France, 89 pp.

Numerical study of the electrification processes of warm clouds. 1990, Ph.D. dissertation, Blaise Pascal University, Clermont-Ferrand, 193 pp.

Journal Articles

1. Avissar, R., and **F. Chen**, 1993: Development and analysis of prognostic equations for mesoscale kinetic energy and mesoscale (subgrid-scale) fluxes for large-scale atmospheric models. *J. Atmos. Sci.*, **50**, 3751-3774.
2. **Chen, F.**, and R. Avissar, 1994: The impact of land-surface wetness heterogeneity on mesoscale heat fluxes. *J. Appl. Meteorol.*, **33**, 1323-1340.
3. **Chen, F.**, and R. Avissar, 1994: Impact of land-surface moisture variability on local shallow convective cumulus and precipitation in large-scale models. *J. Appl. Meteorol.*, **33**, 1382-1401.
4. **Chen, F.**, K. Mitchell, J. Schaake, Y. Xue, H. Pan, V. Koren, Y. Duan, M. Ek, and A. Betts, 1996: Modeling of land-surface evaporation by four schemes and comparison with FIFE observations. *J. Geophys. Res.*, **101**, 7251-7268.
5. Schaake, J.C., V.I. Koren, Q.Y. Duan, K. Mitchell, and **F. Chen**, 1996: Simple water balance model (SWB) for estimating runoff at different spatial and temporal scales. *J. Geophys. Res.*, **101**, 7461-7475.
6. Betts, A., **F. Chen**, K. Mitchell, Z. Janjic, 1997: Assessment of land-surface and boundary-layer models in 2 operational versions of the Eta model using FIFE data. *Mon. Wea. Rev.*, **125**, 2896-2915.
7. Chen, T.H., A. Henderson-Sellers, P.C.D. Milly, A.J. Pitman, A.C.M. Beljaars, J. Polcher, F. Abramopoulos, A. Boone, S. Chang, **F. Chen**, Y. Dai, C.E. Desborough, R.E. Dickinson, L. Dümenil, M. Ek, J.R. Garratt, N. Gedney, Y.M. Gusev, J. Kim, R. Koster, E.A. Kowalczyk, K. Laval, J. Lean, D. Lettenmaier, X. Liang, J.F. Mahfouf, H.T. Mengelkamp, K. Mitchell, O.N. Nasonova, J. Noilhan, A. Robock, C. Rosenzweig, J. Schaake, C.A. Schlosser, J.P. Schulz, Y. Shao, A.B. Shmakin, D.L. Verseghy, P. Wetzal, E.F. Wood, Y. Xue, Z.L. Yang, and Q. Zeng, 1997: Cabauw experimental results from the Project for Intercomparison of Land-surface Parameterization Schemes (PILPS). *J. Climate*, **10**, 1194-1215.
8. **Chen, F.**, Z. Janjic, K. Mitchell, 1997: Impact of atmospheric surface layer parameterization in the new land-surface scheme of the NCEP mesoscale Eta numerical model. *Boundary Layer Meteorol.*, **85**, 391-421.
9. Qu, W., A. Henderson-Sellers, A.J. Pitman, T.H. Chen, F. Abramopoulos, A. Boone, S. Chang, **F. Chen**, Y. Dai, R.E. Dickinson, L. Dümenil, M. Ek, N. Gedney, Y.M. Gusev, J. Kim, R. Koster, E.A. Kowalczyk, J. Lean, D. Lettenmaier, X. Liang, J.F. Mahfouf, H.T. Mengelkamp, K. Mitchell, O.N. Nasonova, J. Noilhan, A. Robock, C. Rosenzweig, J. Schaake, C.A. Schlosser, J.P. Schulz, A.B. Shmakin, D.L. Verseghy, P. Wetzal, E.F. Wood, Z.L. Yang, and Q. Zeng, 1998: Sensitivity of latent heat flux from PILPS land-surface schemes to perturbations of surface air temperature. *J. Atmos. Sci.*, **55**, 1909-1927.
10. Wood, E., D.P. Lettenmaier, X. Liang, D. Lohmann, A. Boone, S. Chang, **F. Chen**, Y. Dai, C. Desborough, R. E. Dickinson, Q. Duan, M. Ek, Y. M. Gusev, F. Habets, P. Irannejad, R. Koster, K. E. Mitchell, O. N. Nasonova, J. Noilhan, J. Schaake, A. Schlosser, Y. Shao, A. B. Shmakin, D. Verseghy, J. Wang, K. Warrach, P. Wetzal, Y. Xue, Z. Yang, and Q. Zeng, 1998: The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2(c) Red-Arkansas River Experiment: 1. Experiment description and summary intercomparisons. *Global and Planetary Change*, **19**, 115-135.
11. Liang, X., E. Wood., D. Lettenmaier, D. Lohmann, A. Boone, S. Chang, **F. Chen**, Y. Dai, C. Desborough, R. E. Dickinson, Q. Duan, M. Ek, Y. M. Gusev, F. Habets, P. Irannejad, R. Koster, K. E. Mitchell, O. N. Nasonova, J. Noilhan, J. Schaake, A.

- Schlosser, Y. Shao, A. B. Shmakin, D. Verseghy, J. Wang, K. Warrach, P. Wetzel, Y. Xue, Z. Yang, and Q. Zeng, 1998: The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2(c) Red-Arkansas River Experiment: 2. Spatial and Temporal Analysis of Energy Fluxes. *Global and Planetary Change*, **19**, 137-159.
12. Lohmann, D., X. Liang, E. Wood, D.P. Lettenmaier, A. Boone, S. Chang, **F. Chen**, Y. Dai, C. Desborough, R. E. Dickinson, Q. Duan, M. Ek, Y. M. Gusev, F. Habets, P. Irannejad, R. Koster, K. E. Mitchell, O. N. Nasonova, J. Noilhan, J. Schaake, A. Schlosser, Y. Shao, A. B. Shmakin, D. Verseghy, K. Warrach, P. Wetzel, Y. Xue, Z. Yang, and Q. Zeng, 1998: The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2(c) Red-Arkansas River Experiment: 3. Spatial and Temporal Analysis of Water Fluxes. *Global and Planetary Change*, **19**, 161-179.
 13. Yucel, I., W.J. Shuttleworth, J. Washburne, and **F. Chen**, 1998: Evaluating NCEP Eta model derived data against observations. *Mon. Wea. Rev.*, **126**, 1977-1991.
 14. **Chen, F.**, and K. Mitchell, 1999: Using GEWEX/ISLSCP forcing data to simulate global soil moisture fields and hydrological cycle for 1987-1988. *J. of the Meteorological Society of Japan*, **77**, 1-16.
 15. Koren, V., J. Schaake, K. Mitchell, Q-Y. Duan, and **F. Chen**, 1999: A parameterization of snowpack and frozen ground intended for NCEP weather and climate models. *J. Geophys. Res.*, **104**, 19569-19585.
 16. Slater, A.G., C.A. Schlosser, C.E. Desborough, A.J. Pitman, A. Henderson-Sellers, A. Robock, K.Y. Vinnikov, K. Mitchell, A. Boone, H. Braden, **F. Chen**, P.M. Cox, P. de Rosnay, R.E. Dickinson, Y.J. Dai, Q. Duan, J. Entin, P. Etchevers, N. Gedney, Y.M. Gusev, F. Habets, J. Kim, V. Koren, E.A. Kowalczyk, O.N. Nasonova, J. Noilhan, S. Schaake, A.B. Shmakin, T.G. Smirnova, D. Verseghy, P. Wetzel, Y. Xue, Z.L. Yang, and Q. Zeng, 2001: The representation of snow in land-surface schemes: Results from PILPS2 (d). *J. Hydrometeorol.*, **2**, 7-25..
 17. **Chen, F.**, and J. Dudhia, 2001: Coupling an advanced land-surface/hydrology model with the Penn State/NCAR MM5 modeling system. Part I: Model implementation and sensitivity. *Mon. Wea. Rev.*, **129**, 569-585.
 18. **Chen, F.**, and J. Dudhia, 2001: Coupling an advanced land-surface/hydrology model with the Penn State/NCAR MM5 modeling system. Part II: Preliminary model validation. *Mon. Wea. Rev.*, **129**, 587-604.
 19. Yates, D.N., **F. Chen**, R. Qualls, M. LeMone, and S. Oncley, 2001: A Cooperative Atmosphere–Surface Exchange Study (CASES) Dataset for Analyzing and Parameterizing the Effects of Land Surface Heterogeneity on Area-Averaged Surface Heat Fluxes. *J. Appl. Meteorol.*, **40**, 921-937.
 20. **Chen, F.**, T. Warner, and K. Manning, 2001: Sensitivity of orographic moist convection to landscape variability: A Study of the Buffalo Creek, Colorado, flash-flood case of 1996. *J. Atmos. Sci.*, **58**, 3204-3223.
 21. Rife, D.L., T.T. Warner, **F. Chen**, and E. Astling, 2002: Mechanisms for diurnal boundary-layer circulations in the Great Basin Desert. *Mon. Wea. Rev.*, **130**, 921-939.
 22. LeMone, M., R. Grossman, R.T. McMillen, K.N. Liou, S. Ou, S. McKeen, W. Angevine, K. Ikeda, and **F. Chen**, 2002: CASES-97: Late morning warming and moistening of the convective mixed layer over the Walnut River watershed. *Boundary Layer Meteorol.*, **104**, 1-52.

23. Sridhar, V., R.L. Elliott, **F. Chen**, and J.A. Brotzge, 2002: Validation of the NOAA/OSU land surface model using surface flux measurements in Oklahoma. *J. Geophys. Res.*, **107**(D20), 4418, doi:10.1029/2001JD001306.
24. Sridhar, V., R.L. Elliott, and **F. Chen**, 2003: Scaling effects on modeling surface energy-balance components using the NOAA-OSU land surface model. *J. Hydrology*, **280**, 105-123.
25. **Chen, F.**, D. N. Yates, H. Nagai, M. A. LeMone, K. Ikeda, and R. L. Grossman, 2003: Land-surface heterogeneity in the Cooperative Atmosphere Surface Exchange Study (CASES-97). Part-I: Comparing modeled surface flux maps with surface-tower and aircraft measurements. *J. Hydrometeorol.*, **4**, 196-218.
26. Yates, D.N., **F. Chen**, and H. Nagai, 2003: Land-surface heterogeneity in the Cooperative Atmosphere Surface Exchange Study (CASES-97). Part-II: Analysis of spatial heterogeneity and their scaling. *J. Hydrometeorol.*, **4**, 219-234.
27. LeMone, M., R. Grossman, **F. Chen**, K. Ikeda, and D. Yates, 2003: Choosing the averaging interval for comparison of observed and modeled fluxes along aircraft transects over a heterogeneous surface. *J. Hydrometeorol.*, **4**, 179-195.
28. Trier, S., **F. Chen**, and K. Manning, 2004: A study of convection initiation in a mesoscale model using high-resolution land surface initiation conditions. *Mon. Wea. Rev.*, **132**, 2954-2976.
29. Niyogi, D.S., H.I. Chang, V. K. Saxena, T. Holt, K. Alapaty, F. Booker, **F. Chen**, K. Davis, B. Hobben, T. Matsui, T. Meyers, W.C. Oechel, R. A. Pielke Sr., R. Wells, K. Wilson, Y. Xue, 2004: Direct observations of the effects of aerosol loading on net ecosystem CO₂ exchanges over different landscapes, *Geophys. Res. Lett.*, **31**, L20506, doi:10.1029/2004GL020915.
30. **Chen, F.**, 2005: Variability in global land surface energy budgets during 1987-1988 simulated by an offline land surface model. *Climate Dynamics*, **24**, 667-684. doi: 10.1007/s00382-004-0439-4.
31. Wang, Y., J. Li, **F. Chen**, D. Lenschow, J. Sun, D. Niyogi, K. Lau, M. Zhou, W. Jiang, G. Ding, J. Chen, and D. Wu, 2005: Challenge and Opportunities in Urban Meteorology Research and Forecast. *Science Foundation in China*, **13**, No.1, 23-30.
32. Kusaka, H., **F. Chen**, M. Tewari, and H. Hirakuchi, 2005: Impact of the urban canopy model in the Next-Generation Numerical Weather Prediction Model WRF. *Environmental Systems Research*, **33**, 159-164 (in Japanese).
33. Holt, T., D. Niyogi, **F. Chen**, K. Manning, M. A. LeMone, A. Qureshi, 2006: Effect of Land - Atmosphere Interactions on the IHOP 24-25 May 2002 Convection Case. *Mon. Wea. Rev.*, **134**, 113-133.
34. Lo, J., A. Lau, Z. Yuan, J. Fung, and **F. Chen**, 2006: A physical modeling approach for identification of source regions of primary and secondary air pollutants. *Atmos. Chem. Phys. Discuss.*, **6**, 6467-6496.
35. Liu, Y., **F. Chen**, T. Warner, and J. Basara, 2006: Verification of a Mesoscale Data-Assimilation and Forecasting System for the Oklahoma City Area During the Joint Urban 2003 Field Project. *J. Appl. Meteorol.*, **45**, 912 - 929.
36. Lo, J., A. Lau, J. Fung, and **F. Chen**, 2006: Investigation of enhanced cross-city transport and trapping of air pollutants by coastal and urban land-sea breeze circulations. *J. Geophys. Res.*, D14104, doi:10.1029/2005JD006837.

37. Alfieri, J.G., D. Niyogi, M.A. LeMone, **F. Chen**, and S. Fall, 2007: A simple reclassification method for correcting uncertainty in land use/land cover datasets used with land surface models. *Pure and Appl. Geophys.*, **164**, 1789–1809, 0033–4553/07/091789–21, DOI 10.1007/s00024-007-0241-4.
38. **Chen, F.**, K. W. Manning, M.A. LeMone, S.B. Trier, J.G. Alfieri, R. Roberts, M. Tewari, D. Niyogi, T. W. Horst, S. P. Oncley, J. Basara, and P. D. Blanken, 2007: Description and Evaluation of the Characteristics of the NCAR High-Resolution Land Data Assimilation System During IHOP-02. *J. Appl. Meteorol. Climatol.*, **46**, 694-713.
39. LeMone, M.A., **F. Chen**, J. Alfieri, M. Tewari, B. Geerts, Q. Miao, R. Grossman, and R. Coulter, 2007: Influence of land cover, soil moisture, and terrain, on the horizontal distribution of sensible and latent heat fluxes and boundary layer structure in southeast Kansas during IHOP_2002. *J. Hydromet*, **8**, 68-87.
40. LeMone, M.A., **F. Chen**, J. Alfieri, R.H. Cuenca, Y. Hagimoto, P. Blanken, D. Niyogi, S. Kang, K. Davis, and R.L. Grossman, 2007: NCAR/CU Surface, Soil, and Vegetation Observations during the International H2O Project 2002 Field Campaign. *Bull. Amer. Meteor. Soc.*, **88**, 65-81.
41. Lo, J.C.F., A.K.H. Lau, **F. Chen**, J.C.H. Fung, and K.K.M. Leung, 2007: Urban Modification in a Mesoscale Model and the Effects on the Local Circulation in the Pearl River Delta Region. *J. Appl. Meteorol. Climatol.*, **46**, 457–476.
42. Niyogi, D., H.I Chang, **F. Chen**, L. Gu, A. Kumar, S. Menon, and R. A. Pielke Sr., 2007: Potential Impacts of Aerosol-Land-Atmosphere Interactions on the Indian Monsoonal Rainfall Characteristics. *Natural Hazards- Monsoon special issue*. DOI 10.1007/s11069-006-9085-y.
43. Zhang, C. L., S. Miao, Q. Li, **F. Chen**. 2007: Impacts of fine-resolution land use information of Beijing on a summer severe rainfall simulation. *Chinese J. Geophys.*, **50(5)**: 1172-1182
44. Gao Y., Liu, W., Y. Ran, M. Ma, G. Cheng, **F. Chen**, 2007: Vegetation Coverage Fraction Calculation and the Mesoscale Modeling in Heihe River Basin. *Plateau Meteorology*, **26(2)**, 264-278.
45. Alapaty K., D. Niyogi, **F. Chen**, P. Pyle, A. Chandrasekar, N. Seaman, 2008: Development of the Flux-Adjusting Surface Data Assimilation System for Mesoscale Models, *J. Appl. Meteorol. Climatol.*, **47**, 2331–2350.
46. Alfieri, J.G., D. Niyogi, P.D. Blanken, **F. Chen**, M.A. LeMone, M. Ek, K. Mitchell, and A. Kumar, 2008: Estimation of the Minimum Canopy Resistance for Croplands and Grasslands Using Data from the 2002 International H2O Project. *Mon. Wea. Rev.*, **136**, 4452-4469.
47. Gao, Y., **F. Chen**, M. Barlage, W. Liu, Y. Ran, H. Li, H. Peng, and M. Ma, 2008: Enhancement of Land Surface Information and its Impact on Atmospheric Modeling in the Heihe River Basin, Northwest China. *J. Geophys. Res.*, **113**, D20S90, doi:10.1029/2008JD010359.
48. Jiang, X.Y., C. Wiedinmyer, **F. Chen**, Z.L. Yang, and J. C. F. Lo, 2008: Predicted Impacts of Climate and Land-Use Change on Surface Ozone in the Houston, Texas, Area. *J. Geophys. Res.*, **113**, D20312, doi:10.1029/2008JD009820.
49. LeMone, M.A., M. Tewari, **F. Chen**, J. Alfieri, and D. Niyogi, 2008: Evaluation of the Noah land-surface model using data from a fair-weather IHOP_2002 day with heterogeneous surface fluxes. *Mon. Wea. Rev.*, **136**, 4915–4941.

50. Lin, C-Y, **F. Chen**, J.C. Huang, W-C. Chen, Y.-A. Liou, W.-N. Chen and Shaw-C. Liu, 2008: Urban Heat Island effect and its impact on boundary layer development and land-sea circulation over northern Taiwan, *Atmospheric Environment*, **42**, 5635-5649. [doi:10.1016/j.atmosenv.2008.03.015](https://doi.org/10.1016/j.atmosenv.2008.03.015)
51. Liu, Y., T.T. Warner, J. F. Bowers, L. P. Carson, **F. Chen**, C. A. Clough, C. A. Davis, C. H. Egeland, S. Halvorson, T.W. Huck Jr., L. Lachapelle, R.E. Malone, D. L. Rife, R.-S. Sheu, S. P. Swerdlin, and D.S. Weingarten, 2008: The operational mesogamma-scale analysis and forecast system of the U.S. Army Test and Evaluation Command. Part 1: Overview of the modeling system, the forecast products. *J. Appl. Meteorol. Climatol.*, **47**,1077-1093.
52. Liu, W., Y. Gao, H. Li, Y. Ran, G. Cheng, **F. Chen**, 2008: Landuse Patterns of Heihe River Basin and Its Impact Modeling. *Plateau Meteorology*, **26(2)**, 278-285.
53. Miao, S., and **F. Chen**, 2008: Formation of horizontal convective rolls in urban areas. *Atm. Res.*, **89**, 298-304.
54. Trier, S., **F. Chen**, K. Manning, M.A. LeMone, C. Davis, 2008: Sensitivity of the Simulated PBL and Precipitation to Land Surface Conditions for a 12-Day Warm-Season Convection Period in the Central United State. *Mon. Wea. Rev.*, **136**, 2321-2343.
55. Alfieri, J.G., X. Xiao, D. Niyogi, R.A. Pielke, **F. Chen**, and M.A. LeMone, 2009: Satellite-based modeling of transpiration and evaporation of grasslands and croplands in the Southern Great Plain, USA. *Global Planetary Changes*. **67**, 78-86. [doi:10.1016/j.gloplacha.2008.12.003](https://doi.org/10.1016/j.gloplacha.2008.12.003)
56. Alfieri, J.G., D. Niyogi, H. Zhang, M. A. LeMone, **F. Chen**, 2009: Quantifying the Spatial Variability of Airborne Surface Flux Measurements Using Data from the 2002 International H2O Project: Statistical Method, *Boundary Layer Meteorol.* 133: 323-341, DOI 10.1007/s10546-009-9406-2.
57. Chang, H.-I., D. Niyogi, A. Kumar, C. M. Kishtawal, J. Dudhia, **F. Chen**, U. C. Mohanty, and M. Shepherd, 2009: Possible relation between land surface feedback and the post-landfall structure of monsoon depressions, *Geophys. Res. Lett.*, **36**, L15826, [doi:10.1029/2009GL037781](https://doi.org/10.1029/2009GL037781).
58. Chang H., A. Kumar, D. Niyogi, U. C. Mohanty, **F. Chen**, and J. Dudhia, 2009: The Role of Land Surface Processes on the Mesoscale Simulation of the July 26, 2005 Heavy Rain Event over Mumbai, India. *Global Planetary Change*, [Doi:10.1016/j.gloplacha.2008.12.005](https://doi.org/10.1016/j.gloplacha.2008.12.005)
59. **Chen, F.**, and Y. Zhang, 2009: On the Coupling Strength Between the Land Surface and the Atmosphere: From Viewpoint of Surface Exchange Coefficients. *Geophys. Res. Lett.*, **36**, L10404, [doi:10.1029/2009GL037980](https://doi.org/10.1029/2009GL037980).
60. Ching, J., M. Brown, S. Burian, **F. Chen**, R. Cionco, A. Hanna, T. Hultgren, T. McPherson, D. Sailor, H. Taha, and D. Williams, 2009: National Urban Database and Access Portal Tool. *Bull. Amer. Meteor. Soc.*, **90**, 1157–1168.
61. Couvreux, F., F. Guichard, P. Austino, and **F. Chen**, 2009: Nature of the mesoscale boundary-layer height and water-vapor variability observed the 14 June 2002 during the IHOP 2002 campaign. *Mon. Wea. Rev.*, **137**, 414-432.
62. Hong, S., V. Lakshimi, E.E. Small, **F. Chen**, M. Tewari, and K. W. Manning, 2009: Effects of Vegetation and Soil Moisture on the Simulated Land Surface Processes from the Coupled WRF/Noah Model. *J. Geophys. Res.*, **114**, D18118, [doi:10.1029/2008JD011249](https://doi.org/10.1029/2008JD011249).
63. Kim J., **F. Chen**, and S. Kim, 2009: Foreword. *Asia-Pacific J. Atmos. Sci*, **45**, 109-111.

64. Miao, S., **F. Chen**, M.A. LeMone, M. Tewari, Q. Li, and Y. Wang, 2009: An Observational and Modeling Study of Characteristics of Urban Heat Island and Boundary Layer Structures in Beijing. *J. Appl. Meteor. Climatol.*, **48**, 484–501.
65. Niyogi, D., K. Alapaty, S. Raman and **F. Chen**, 2009: Development and evaluation of a coupled photosynthesis - based gas exchange evapotranspiration model (GEM). *J. Appl. Meteorol. Climatol.*, **48**, 349-368.
66. Wang, X.M., **F. Chen**, Z. Wu, M. Zhang, M. Tewari, A. Guenther, C. Wiedinmyer, 2009: Impacts of weather conditions modified by urban expansion on surface ozone over the Pearl River Delta and Yangtze River Delta regions, China. *Adv. Atmos. Sci.*, **26(5)**, 962-972. doi: 10.1007/s00376-009-8001-2.
67. Zhang, C.-L., **F. Chen**, S.-G. Miao, Q.-C. Li, X.-A. Xia, and C.-Y. Xuan, 2009: Impacts of Urban Expansion and Future Green-Planting on Summer Precipitation in the Beijing Metropolitan Area. *J. Geophys. Res.*, **114**, D02116, doi:10.1029/2008JD010328.
68. Barlage, M., **F. Chen**, M. Tewari, K. Ikeda, D. Gochis, J. Dudhia, R. Rasmussen, B. Livneh, M. Ek, and K. Mitchell, 2010: Noah Land Surface Model Modifications to Improve Snowpack Prediction in the Colorado Rocky Mountains. *J. Geophys. Res.*, **115**, D22101, doi:10.1029/2009JD013470.
69. Charusombat, U., D. Niyogi, A. Kumar, X. Wang, **F. Chen**, A. Guenther, A. Turnipseed, K. Alapaty, 2010: Evaluating a new deposition velocity module in the Noah land surface model, *Boundary-Layer Meteorology*, **137**:271–290. DOI 10.1007/s10546-010-9531-y
70. Grimmond, C.S.B., M. Blackett, M. Best, J. Barlow, J.J. Baik, S. Belcher, S.I. Bohnenstengel, I. Calmet, **F. Chen**, et al., 2010: The International Urban Energy Balance Models Comparison Project: First results from Phase 1. *J. Appl. Meteorol. Climatol.*, **49**, 1268-92, doi: 10.1175/2010JAMC2354.1.
71. Ikeda, K., R. Rasmussen, C. Liu, D. Gochis, D. Yates, **F. Chen**, M. Tewari, M. Barlage, J. Dudhia, K. Miller, K. Arsenault, V. Grubisic, G. Thompson, E. Guttman, 2010: Simulation of seasonal snowfall over Colorado. *Atm. Res.*, **97**, 462-477.
72. Li, Y., Z. Gao, D. Lenschow, and **F. Chen**, 2010: An Improved Approach for Parameterizing Surface-Layer Turbulent Transfer Coefficients in Numerical Models. *Boundary Layer Meteorol.*, **137**, 153-165.
73. LeMone, M., **F. Chen**, M. Tewari, J. Dudhia, B. Geerts, Q. Miao, R. Coulter, and R. Grossman, 2010a: Simulating the fair-weather convective boundary layer with the coupled WRF-Noah modeling system, Part 1: Surface fluxes and CBL structure and evolution along the eastern track. *Mon. Wea. Rev.* **138**: 722-744.
74. LeMone, M., **F. Chen**, M. Tewari, J. Dudhia, B. Geerts, Q. Miao, R. Coulter, and R. Grossman, 2010b: Simulating the fair-weather convective boundary layer with the coupled WRF-Noah modeling system, Part 2: Convective structure and mesoscale variability. *Mon. Wea. Rev.* **138**: 745-764.
75. Loridan, T., C.S.B. Grimmond, S. Grossman-Clarke, **F. Chen**, M. Tewari, K. Manning, A. Martilli, H. Kusaka, and M. Best, 2010: Trade-offs and responsiveness of the urban parameterization in WRF: An offline evaluation using the MOSCEM optimization algorithm. *Q. J. Roy. Meteorol. Soc.*, **136 (649)**: 997-1019.
76. Miao, S., **F. Chen**, Q. Li, and S. Fan, 2010: Monthly-averaged impacts of urbanization on atmospheric boundary layer structures and precipitation in summer in Beijing area. *J. Geophys. (Chinese Edition)*, **53**, 1580-1593.

77. Tewari, M., H. Kusaka, **F. Chen**, W.J. Coirier, S. Kim, A.A. Wyszogrodzki, T.T. Warner, 2010; Impact of coupling a Microscale Computational Fluid Dynamics Model with a Mesoscale Model on Urban Scale Contaminant Transport and Dispersion. *Atm. Res.*, 96, 656-664.
78. **Chen**, F., H. Kusaka, R. Bornstain, J. Ching, C.S.B. Grimmond, S. Grossman-Clarke, T. Loridan, K. Manning, A. Martilli, S. Miao, D. Sailor, F. Salamanca, H. Taha, M. Tewari, X. Wang, A. Wyszogrodzki, and C. Zhang, 2011: The integrated WRF/urban modeling system: development, evaluation, and applications to urban environmental problems. *International Journal of Climatology*, **31**, 273-288. DOI: 10.1002/joc.2158.
79. **Chen**, F., S. Miao, M. Tewari, J-W. Bao, and H. Kusaka, 2011: A Numerical Study of Interactions Between Surface Forcing and Sea-Breeze Circulations and their Effects on Stagnant Winds in the Greater Houston Area. *J. Geophys. Res.* doi:10.1029/2010JD015533.
80. Grimmond, C.S.B., M. Blackett, M. Best, J. Barlow, J.J. Baik, S. Belcher, S.I. Bohnenstengel, I. Calmet, **F. Chen**, et al., 2011: Initial results from Phase 2 of the international urban energy balance model comparison. *International Journal of Climatology*, 31, 244-272. DOI: 10.1002/joc.2227.
81. Kumar, A., **F. Chen**, D. Niyogi, J.G. Alfieri, K. Mitchell, and M. Ek, 2011: Evaluation of a photosynthesis-based canopy resistance formulation in the Noah land surface model. *Boundary Layer Meteorol.*, 138:263–284. DOI 10.1007/s10546-010-9559-z
82. Miao, S., **F. Chen**, Q. Li, and S. Fan, 2011: Impacts of Urban Processes and Urbanization on Summer Precipitation: A Case Study of Heavy Rainfall in Beijing on 1 August 2006. *J Appl. Meteorol. Climatol.*, 50 (4), 806-825 DOI: 10.1175/2010JAMC2513.1.
83. Niu, G.-Y., Z.-L. Yang, K. E. Mitchell, **F. Chen**, M. B. Ek, M. Barlage, L. Longuevergne, A. Kumar, K. Manning, D. Niyogi, E. Rosero, M. Tewari, and Y. Xia, 2011: The Community Noah Land Surface Model with Multi-Parameterization Options (Noah-MP): 1. Model Description and Evaluation with Local-scale Measurements. *J. Geophys. Res.*, doi:10.1029/2010JD015139.
84. Niyogi, D., Pyle P., M. Lei, S. P. Arya, C. H. Kishtawal, M. Shepherd, **F. Chen**, B. Wolfe, 2011: Urban modification of thunderstorms - An Observational Storm Climatology and Model Case Study for the Indianapolis Urban Region *J. Appl. Meteorol. Climatol.*, 50, 1129-1144.
85. Rasmussen, R., C. Liu, K. Ikeda, D. Gochis, D. Yates, **F. Chen**, M. Tewari, M. Barlage, J. Dudhia, W. Yue, K. Miller, K. Arsenault, V. Grubisic, G. Thompson, E. Guttman, 2011: High-Resolution Coupled Climate Runoff Simulations of Seasonal Snowfall over Colorado: A Process Study of Current and Warmer Climate. *J. Climate*, 24, 3015-3048.
86. Trier, S.B., M. A. LeMone, **F. Chen**, and K. W. Manning, 2011: Effects of surface heat and moisture exchange on ARW-WRF/Noah model 0-24-h warm-season precipitation forecasts over the central United States. *Wea Forecasting*, 26, 3-25.
87. Salamanca, F., A. Martilli, M. Tewari, and **F. Chen**, 2011: A study of the urban boundary layer using different urban parameterizations and high-resolution urban canopy parameters with WRF. *J. Appl. Meteor. Climatol.*, 50, 1107–1128. doi: 10.1175/2010JAMC2538.1.
88. Wu, Z., X. Wang, **F. Chen**, A. Turnipseed, A. B. Guenther, D. Niyogi, U. Charusombat, B. Xia, J.W. Munger, and K. Alapaty, 2011: Evaluating the calculation of dry

- deposition velocities for reactive nitrogen oxides and ozone from two community dry deposition models for a temperate deciduous forest. *Atm. Environ.*, 45 (16): 2663-2674.
89. Wang, X., S. Situ, A. Guenther, **F. Chen**, Z. Wu, B. Xia, T. Wang, 2011: Study of spatiotemporal variability of biogenic terpenoid emissions in Pearl River Delta, China, with high-resolution land-cover and meteorological data. *Tellus*, 63 (2), 241-254. DOI: 10.1111/j.1600-0889.2010.00523.x
 90. Yang, Z.-L., G.-Y. Niu, K. E. Mitchell, **F. Chen**, M. B. Ek, M. Barlage, K. Manning, D. Niyogi, M. Tewari, and Y. Xia, 2011: The Community Noah Land Surface Model with Multi-Parameterization Options (Noah-MP): 2. Evaluation over Global River Basins. *J. Geophys. Res.*, doi:10.1029/2010JD015140.
 91. Zhang, D.L, Y.X. Shou, R. Dickerson, and **F. Chen**, 2011: Impact of Upstream Urbanization on the Urban Heat Island Effects along the Washington-Baltimore Corridor. *J Appl. Meteorol. Climatol.*, Vol. 50, No. 10., 2012-2029.
 92. Lakshmi, V., S. Hong, E. E. Small, **F. Chen**, 2011: The influence of the land surface on hydrometeorology and ecology: new advances from modeling and satellite remote sensing. *Hydrology Research*, Vol 42, 95-112.
 93. Wiedinmyer, C., M. Barlage, M. Tewari, **F. Chen**, 2012: Meteorological Impacts of Forest Mortality due to Insect Infestation in Colorado. *Earth Interact.*, 16, 1–11. doi: <http://dx.doi.org/10.1175/2011EI419.1>
 94. Charusombat U., D. Niyogi, S. Garrigues, A. Olioso, M. Barlage, **F. Chen**, M. Ek, X. Wang, Z. Wu, 2012: Noah-GEM and Land Data Assimilation System (LDAS) based downscaling of Global Reanalysis surface fields: Evaluations using observations from a CarboEurope agricultural site. *Computers and Electronics in Agriculture*, doi: <http://dx.doi.org/10.1016/j.compag.2011.12.001>.
 95. Wu, Z., X. Wang, A. Turnipseed, **F. Chen**, A. B. Guenther, T. Karl, L. G. Huey, D. Niyogi, B. Xia, 2012: Evaluation and improvements of two community models in simulating dry deposition velocities for peroxyacetyl nitrate (PAN) over a coniferous forest. *J. Geophys. Res.*, 117, D04310, 2012, doi:10.1029/2011JD016751.
 96. Kusaka, H., **F. Chen**, M. Tewari, J. Dudhia, D. Gill, M. G. Duda, W. Wang, and Y. Miya, 2012: Numerical Simulation of Urban Heat Island Effect by the WRF Model with 4-km Grid Increment: An Inter-Comparison Study between the Urban Canopy Model and Slab Model. *J Met Soc Japan*. 90B, 33–46.
 97. Miao, S.G, J.X Dou, **F. Chen**, J. Li, and A.G. Li, 2012: Analysis of observations on the urban surface energy balance in Beijing. *Sci China Earth Sci*, doi: 10.1007/s11430-012-4411-6
 98. **Chen, F.**, R. Bornstein, S. Grimmond, J. Li, X. Liang, A. Martilli, S. Miao, J. Voogt, Y. Wang, 2012: Research priorities in observing and modeling urban weather and climate. *Bull. Amer. Meteor. Soc.*, 93, 1725–1728.
 99. Wyszogrodzki, A., S. Miao, **F. Chen**, 2012: Evaluation of the coupling between mesoscale-WRF and LES-EULAG models for the fine-scale urban dispersion. *Atm. Res.*, 118, 324-345.
 100. Wang, Y., X. Liang, S. Miao, J. Li, **F. Chen**, W. Liu, 2012: Perspective and Prospect of Urban Meteorology Research. *Meteorological Monthly*, 38(10):1232-1237. doi: 10.7519/j.issn.1000-0526.2012.10.009
 101. LeMone, M., M. Tewari, **F. Chen**, and J. Dudhia, 2013: Objectively-determined fair-weather convective boundary layer depths in the ARW-WRF NWP model and their

- comparison to CASES-97 observations. *Mon. Wea. Rev.*, 141, 30–54. doi: <http://dx.doi.org/10.1175/MWR-D-12-00106.1>
102. Meng, C.L., C.L. Zhang, S.G Miao, **F. Chen**, 2013: Localization and validation of an urbanized high-resolution land data assimilation system (u-HRLDAS). *Sci China Earth Sci*, doi: 10.1007/s11430-012-4500-6.
 103. Wang, X., Z. Wu, M. Shao, Y. Fang, L. Zhang, **F. Chen**, P.W. Chan, Q. Fan, Q. Wang, S. Zhu, R. Bao, 2013: Atmospheric nitrogen deposition to forest and estuary environments in the Pearl River Delta (PRD) region, southern China. *Tellus B*, **65**, 20480, <http://dx.doi.org/10.3402/tellusb.v65i0.20480>.
 104. Li, D., E.Bou-Zeid, M. Barlage, **F. Chen**, J.A. Smith, 2013: Development and evaluation of a mosaic approach in the WRF-Noah framework. *J. Geophys. Res.*, 118, 11,918–11,935, doi: [10.1002/2013JD020657](http://dx.doi.org/10.1002/2013JD020657).
 105. Giovannini, L., D. Zardi, M. de Franceschi, **F. Chen**, 2014: Numerical simulations of boundary-layer processes and urban-induced alterations in an Alpine valley. *International Journal of Climatology* doi: 10.1002/joc.3750.
 106. Zhang, G., G. Zhou, **F. Chen**, and Y. Wang, 2014: Analysis of the Variability of Canopy Resistance over a Desert Steppe Site in Inner Mongolia, China. *Advances in Atmospheric Sciences*, DOI: 10.1007/s00376-013-3071-6.
 107. Rasmussen R, K. Ikeda, C. Liu, D. Gochis, M. P. Clark, A. Dai, E. Gutmann; J. Dudhia, **F. Chen**, M. Barlage, D. Yates, and G. Zhang, 2014: Climate Change Impacts on the Water Balance of the Colorado Headwaters: High-Resolution Regional Climate Model Simulations. *J. Hydromet*, 1091–1116. doi: <http://dx.doi.org/10.1175/JHM-D-13-0118.1>.
 108. Zhang, G., G. Zhou, **F. Chen**, M. Barlage, and L. Xue, 2014: A trial to improve surface heat exchange simulation through sensitivity experiments over a desert steppe site. *J. Hydrometeorol*, **15**, 664–684. doi: <http://dx.doi.org/10.1175/JHM-D-13-0113.1>
 109. Kumar, A., **F. Chen**, M. Barlage, M. Ek, and D. Niyogi, 2014: Assessing Impacts of Integrating MODIS Vegetation Data in the Weather Research and Forecasting (WRF) Model Coupled to Two Different Canopy-Resistance Approaches. *J. Appl. Meteorol. Climatol.*, 53, 1362–1380. doi: <http://dx.doi.org/10.1175/JAMC-D-13-0247.1>.
 110. LeMone, M., M. Tewari, **F. Chen**, and J. Dudhia, 2014: Objectively-Determined Fair-Weather NBL Features in the ARW-WRF Model and their Comparison to CASES-97 Observations. *Mon. Wea. Rev.*, 142, 2709-2732. <http://dx.doi.org/10.1175/MWR-D-13-00358.1>
 111. Miao, S., and **F. Chen**, 2014: Enhanced modeling of latent heat flux from urban surfaces in the Noah/single-layer urban canopy coupled model. *Science China Earth Sciences*, Doi: 10.1007/s11430-014-4829-0
 112. Yates, D, B. Q. Luna, R. Rasmussen, D. Bratcher, L. Garrè, **F. Chen**, M Tewari, and P. Friis-Hansen, 2014: Assessing climate change hazards to electric power infrastructure: A Sandy Case Study. *IEEE Special Issue on Climate Change Adaptation*. DOI: [10.1109/MPE.2014.2331901](http://dx.doi.org/10.1109/MPE.2014.2331901).
 113. **Chen, F.**, M. Barlage, M. Tewari, R. Rasmussen, J. Jin, D. Lettenmaier, B. Livneh, C. Lin, G. Miguez-Macho, G.-Y. Niu, L. Wen, and Z.-L Yang, 2014: Modeling seasonal snowpack evolution in the complex terrain and forested Colorado Headwaters region: A model inter-comparison study. *J. Geophys. Res.*, 119, 13,795–13,819, doi:10.1002/2014JD 022167.

114. Barlage, M., M. Tewari, **F. Chen**, G. Miguez-Macho, Zong-Liang Yang, and G.Y. Liu, 2015: The Effect of Groundwater Interaction in North American Regional Climate Simulations with WRF/Noah-MP. *Climatic Change*, DOI 10.1007/s10584-014-1308-8
115. Yang, J., Z.-H Wang, **F. Chen**, S. Miao, M. Tewari, J.A. Voogt, S. Myint, 2015: Enhancing hydrologic modeling in the coupled WRF-urban modeling system. *Boundary Layer Meteorol.*, 155, 87–109, DOI 10.1007/s10546-014-9991-6.
116. **Chen, F.**, G. Zhang, M. Barlage, Y. Zhang, J. A. Hicke, A. Meddens, G. Zhou, W. J. Massman, and J. Frank, 2015: An Observational and Modeling Study of Impacts of Beetle-caused Mortality on Surface Energy and Hydrological Cycles. *J. Hydrometeor.* doi: <http://dx.doi.org/10.1175/JHM-D-14-0059.1>.
117. Li, Y., Z. Gao, D. Li, **F. Chen**, Y. Yang, L. Sun, 2015: An update of non-iterative solutions for surface fluxes under unstable conditions. *Boundary Layer Meteorol.*, 156, 501-511.
118. Li, K., Y. Gao, **F. Chen**, J. Xu, Y. Jiang, L. Xiao, R. Li, and Y. Pan, 2015: Simulation of Impact of Roots on Soil Moisture and Surface Fluxes over Central Qinghai—Xizang Plateau. *Plateau Meteorology*, 34(3): 642-652.
119. Lee, X., Z. Gao, C. Zhang, F. Chen, Y. Hu; W. Jiang; S. Liu; L. Lu; J. Sun; J. Wang; Z. Zeng; Q. Zhang; M. Zhao; M. Zhou, 2015: Priorities for Boundary-Layer Meteorology Research in China. *Bull. Amer. Meteor. Soc.*, 96, ES149–ES151. doi: <http://dx.doi.org/10.1175/BAMS-D-14-00278.1>.
120. Gao, Y., K. Li, **F. Chen**, Y. Jiang, and C. Lu, 2015: Assessing and improving Noah-MP land model simulations for the central Tibetan Plateau. *J. Geophys. Res.*, DOI: 10.1002/2015jd023404.
121. Cai, X., Z.-L. Yang, J. B. Fisher, X. Zhang, M. Barlage, and **F. Chen**, 2016: Integration of nitrogen dynamics into the Noah-MP land surface model for climate and environmental predictions. *Geoscientific Model Development*, 9, 1–15, doi:10.5194/gmd-9-1-2016.
122. Yang, J., Z-H Wang, M. Georgescu, **F. Chen**, M. Tewari, 2016: Assessing the impact of hydrological processes on urban meteorology using an integrated WRF-Urban modelling system. *J. Hydrometeorol.*, 17, 1031-1046.
123. Yang, L., D. Niyogi, M. Tewari, D. Aliaga, **F. Chen**, F. Tian, and G. Ni, 2016: Contrasting Impacts of Urban Forms on Future Thermal Environment: Example of Beijing Metropolitan Area. *Environ. Res. Lett.*, DOI: 10.1088/1748-9326/11/3/034018
124. Chen, L., Y. Li, **F. Chen**, A. Barr, M. Barlage, and B. Wan, 2016: The incorporation of an organic soil layer in the Noah-MP Land Surface Model and its evaluation over a Boreal Aspen Forest. *Atmospheric Chemistry and Physics*, 16, 8375-8387, doi:10.5194/acp-16-8375-2016.
125. Sharma, A., P. Conry, H. Fernando, A. Hamlet, J. Hellmann, and **F. Chen**, 2016: Green and Cool Roofs to Mitigate Urban Heat Island Effects in Chicago Metropolitan Area: Evaluation with a Regional Climate Model, *Environ. Res. Lett.*, doi: 10.1088/1748-9326/11/6/064004.
126. Barlage, M., S. Miao, and **F. Chen**, 2016: Impact of physics parameterizations on high-resolution weather prediction over complex urban areas. *J. Geophys. Res.*, 121, 4487–4498, doi:10.1002/2015JD024450.

127. Liu, X., **F. Chen**, M. Barlage, G. Zhou, D. Niyogi, 2016: Noah-MP-Crop: Introducing Dynamic Crop Growth in the Noah-MP Land-Surface Model. *J. Geophys. Res.*, doi:10.1002/2016JD025597.
128. Zhang, G., **F. Chen**, and Y. Gan, 2016: Assessing uncertainties in the Noah-MP ensemble simulations of a cropland site during the Tibet Joint International Cooperation program (JICA) field campaign. *J. Geophys. Res.*, 121, doi:10.1002/2016JD024928.
129. Li, Y., Z. Gao, D. Li, **F. Chen**, Y. Yang, L. Sun, 2016: Erratum to: An update of non-iterative solutions for surface fluxes under unstable conditions. *Boundary Layer Meteorol.*, 161, 225-228.
130. Li, Y., S. Miao, **F. Chen**, Y. Liu, 2016: Introducing and evaluating a new building-height categorization based on the fractal dimension into the Coupled WRF/urban Model. *Int. J. Climatol.*, doi:10.1002/joc.4903
131. Liu, C., K. Ikeda, R. Rasmussen, M. Barlage, A. Newman, A. Prein, **F. Chen**, L. Chen, M. Clark, A. Dai, J. Dudhia, T. Eidhammer, D. Gochis, E. Gutman, S. Kurkute, Y. Li, G. Thompson, and D. Yates, 2017: Continental-Scale Convection-Permitting Modeling of the Current and Future Climate of North America. *Climate Dynamics*, doi:10.1007/s00382-016-3327-9.
132. Gao, Y., X. Xiao, D. Chen, **F. Chen**, J. Xu, and Y. Xu, 2017: Quantification of the relative role of land surface processes and large scale forcing in dynamic downscaling over the Tibetan Plateau. *Climate Dynamics*, doi:10.1007/s00382-016-3168-6.
133. Osuri, K., R. Nadimpalli, U. C. Mohanty, **F. Chen**, and D. Niyogi, 2017: Improved prediction of severe thunderstorms over the Indian Monsoon region using high resolution soil moisture and temperature initialization. *Scientific Reports*. doi:10.1038/srep41377.
134. LeMone, M. A., B. Wan, M. Barlage, and **F. Chen**, 2017: The influence of fire-induced surface changes on the diurnal temperature change over the Hayman fire scar. *J. Appl. Meteorol. Climatol.* doi: 10.1175/JAMC-D-16-0132.1
135. Sharma, A., H.J.S. Fernando, J.J. Hellmann, M. Baralge, and **F. Chen**, 2017: Urban meteorological modeling using WRF: A sensitivity study. *International Journal of Climatology*. doi : 10.1002/joc.4819.
136. Huang, M., Z. Gao, S. Miao, **F. Chen**, M.A. LeMone, J. Li, F. Hu, 2017: Estimate of boundary-layer depths over Beijing, China, using Doppler Lidar data during SURF-2015. *Boundary Layer Meteorol.*, doi:10.1007/s10546-016-0205-2.
137. Powers, J.G., J.B. Klemp, W.C. Skamarock, C.A. Davis, J. Dudhia, D.O. Gill, J.L. Coen, D.J. Gochis, R.Ahmadov, S.E. Peckham, G.A. Grell, J. Michalakes, S. Trahan, S.G. Benjamin, C.R. Alexander, G.J. DiMego, W. Wang, C.S. Schwartz, G.S. Romine, Z.Liu, C. Snyder, **F. Chen**, M.J. Barlage, W. Yu, M.G. Duda, 2017: The Weather Research and Forecasting (WRF) Model: Overview, System Efforts, and Future Directions. *Bull. Amer. Meteor. Soc.*, 98, 1717–1737. DOI: <http://dx.doi.org/10.1175/BAMS-D-15-00308.1>.
138. Wan, B.; Z. Gao; **F. Chen**; C. Lu, 2017: Impact of Tibetan-Plateau Surface Heating on Persistent Extreme Precipitation Events in Southeastern China. *Mon. Wea. Rev.*, doi.org/10.1175/MWR-D-17-0061.1
139. He, C., Y. Takano, K.N. Liou, P. Yang, Q. Li, and **F. Chen**, 2017: Impact of Snow Grain Shape and Internal Mixing with Black Carbon Aerosols: Parameterizations for Climate Models. *J. Climate*, doi.org/10.1175/JCLI-D-17-0300.1

140. Zhang, G., G. Zhou, **F. Chen**, 2017: Analysis of Parameter Sensitivity on Surface Heat Exchange in the Noah Land Surface Model at a Temperate Desert Steppe Site in China. *J. Meteorol. Res.*, Vol: 31, 1167-1182.
141. Salamanca, F., Zhang Y., M. Barlage, **F. Chen**, A. Mahalov, and S. Miao, 2018: Evaluation of the Noah-MP land surface model coupled to WRF in a semiarid urban environment. *J. Geophys. Res.*, DOI: [10.1002/2018JD028377](https://doi.org/10.1002/2018JD028377)
142. Zhao, P., X. Xu, **F. Chen**, X. Guo, X. Zheng, L. Liu, Y. Hong, Y. Li, Z. La, H. Peng, L. Zhong, Y. Ma, S. Tang, Y. Liu, H. Liu, Y. Li, Q. Zhang, Z. Hu, J. Sun, S. Zhang, L. Dong, H. Zhang, X. Yan, A. Xiao, X. Zhou, 2018: The Third Tibetan Plateau Atmospheric Scientific Experiment (TIPEX-III): An Integrated Land-Troposphere-Stratosphere Observation Network. *Bull. Amer. Meteor. Soc.*, <https://doi.org/10.1175/BAMS-D-16-0050.1>
143. Gao, Y., **F. Chen**, D. Lettenmaier, L. Xiao, X. Li, 2018: Does the elevation-dependent warming still hold true above 5000m altitude? *npj Atmospheric Science and Climate*, DOI: [10.1038/s41612-018-0030-z](https://doi.org/10.1038/s41612-018-0030-z).
144. Xin, Y., **F. Chen**; P. Zhao; M. Barlage; Y-L Chen; B. Chen; Y-J Wang, 2018: Surface Energy Balance Closure at ten Sites over the Tibetan Plateau and Implication to Land Modeling. *Agricultural and Forest Meteorology*, **259**, 317-328.
145. Liang, X., S. Miao, J. Li, R. Bornstein, ... **F. Chen**, et al., 2018: SURF: understanding and predicting urban convection and haze. *Bull. Amer. Meteor. Soc.*, <https://doi.org/10.1175/BAMS-D-16-0178.1>
146. Xu, X., **F. Chen**, S. Shen, S. Miao, M. Barlage, W. Guo, and A. Mahalov, 2018: Using WRF-Urban to assess summertime air conditioning electric loads and their impacts on urban weather in Beijing. *J. Geophys. Res.*, *123*, <https://doi.org/10.1002/2017JD028168>
147. He, C., K. N. Liou, Y. Takano, P. Yang, L. Qi, and **F. Chen**, 2018: Impact of grain shape and multiple black carbon internal mixing on snow albedo: parameterization and radiative effect analysis, *J. Geophys. Res.-Atmos*, *123*. <https://doi.org/10.1002/2017JD027752>
148. **Chen**, F., X. Xu, M. Barlage, R. Rasmussen, S. Shen, S. Miao, G. Zhou, 2018: Memory of irrigation effects on hydroclimate and its modeling challenge. *Environ. Res. Lett.*, <https://doi.org/10.1088/1748-9326/aab9df>
149. He, C., M. Flanner, **F. Chen**, M. Barlage, K.-N. Liou, S. Kang, J. Ming, and Y. Qian, 2018: Black carbon-induced snow albedo reduction over the Tibetan Plateau: Uncertainties from snow grain shape and aerosol-snow mixing state based on an updated SNICAR model. *Atmospheric Chemistry and Physics*, *18*, 11507-11527, <https://doi.org/10.5194/acp-18-11507-2018>.
150. Ribeiro, F., A. de Oliveira, J. Soares, R. de Miranda, M. Barlage and **F. Chen**, 2018: Characterization of sea breeze circulation effects on the urban boundary layer of the metropolitan region of Sao Paulo, Brazil, *Atmospheric Research*, *214*, 174-188.
151. Yao, T., Y. Xue, ... **F. Chen**, ... 2018: Recent Third Pole's rapid warming accompanies cryospheric melt and water cycle intensification and interactions between monsoon and environment: multi-disciplinary approach with observation, modeling and analysis. *Bull. Amer. Meteor. Soc.*, DOI: [10.1175/BAMS-D-17-0057.1](https://doi.org/10.1175/BAMS-D-17-0057.1).
152. Zhang, Z., Y. Li, **F. Chen**, M. Barlage, Z. Li, 2018: Evaluation of WRF CONUS on the relationship between soil moisture and heatwaves. *Climate Dynamics*., <https://doi.org/10.1007/s00382-018-4508-5>

153. Sharma, A., S. Woodruff, M. Budhathoki, H.J.S. Fernando, A. Hamlet, and **F. Chen**, 2018: Role of green roofs in reducing heat stress in vulnerable urban communities - A multidisciplinary approach. *Environ. Res. Lett.*, 13(9), 094011.
154. Li, J., **F. Chen**, G. Zhang, M. Marlage, Y. Gan, Y. Xin, W. Chen, 2018: Impacts of land cover and soil texture uncertainty on land model simulations over the central Tibetan Plateau. *J. Adv. Model. Earth Syst.*, <https://doi.org/10.1029/2018MS001377>.
155. Ching, J., G. Mills, ... **F. Chen**, ..., 2018: World Urban Database and Access Portal Tools (WUDAPT), an urban weather, climate and environmental modeling infrastructure for the Anthropocene. *Bull. Amer. Meteor. Soc.*, 99(9), 1907-1924
156. Nayak, H., K. K. Osuri, P. Sinha, U. Mohanty, **F. Chen**, M. Rajeevan, and D. Niyogi, 2018: High resolution gridded soil moisture and soil temperature datasets for the Indian monsoon region. *Scientific Data*, 5, 180264. 10.1038/sdata.2018.264
157. Huang, M., Z. Gao, S. Miao, **F. Chen**, 2019: Sensitivity of Urban Boundary Layer Simulation to Urban Canopy Models and PBL Schemes in Beijing. *Meteorology and Atmospheric Physics*, <https://doi.org/10.1007/s00703-018-0634-1>.
158. Ching, J., ..., **F. Chen**, ..., 2019: Pathway using WUDAPT's Digital Synthetic City tool towards generating urban canopy parameters for multi-scale urban atmospheric modeling. *Urban Climate*, <https://doi.org/10.1016/j.uclim.2019.100459>.
159. Xu, X., **F. Chen**, M. Barlage, D. Gochis, S. Miao, and S. Shen, 2019: Lessons learned from modeling irrigation from field to regional scales. *J. Adv. Model. Earth Syst.*, DOI:10.1029/2018MS001595
160. Li, J., G. Zhang, **F. Chen**, X. Peng, and Y. Gan, 2019: Evaluation of land surface sub-processes and their impacts on model performance with global flux data. *J. Adv. Model. Earth Syst.*, <https://doi.org/10.1029/2018MS001606>.
161. Gan, Y., X. Liang, Q. Duan, **F. Chen**, J. Li, 2019: Assessment and Reduction of the Physical Parameterization Uncertainty for Noah-MP Land Surface Model. *Water Resources Research*, <https://doi.org/10.1029/2019WR024814>.
162. Wu, M., Y. Luo, **F. Chen**, W.K. Wong, 2019: Observed Link of Extreme Hourly Precipitation Changes to Urbanization over Coastal South China. *J. Appl. Meteorol. Climatol.*, 58(8), 1799-1819.
163. Chen, L., Y. Li, **F. Chen**, M. Barlage, Z. Zhang, Z. Li, 2019: Using 4-km WRF CONUS Simulations to Diagnose Surface Coupling Strength. *Climate Dynamics.*, <https://doi.org/10.1007/s00382-019-04932-9>.
164. Jiang, Y., **F. Chen**, Y. Gao, M. Barlage; J. Li, 2019: Using multi-source satellite data to assess recent snow-cover change in the Qinghai-Tibet Plateau and its uncertainty. *J. Hydromet*, <https://doi-org.cuucar.idm.oclc.org/10.1175/JHM-D-18-0220.1>
165. Gao, M., **F. Chen**, H. Shen, M. Barlage, X. Tan, and L. Zhang, 2019: Efficacy of Possible Strategies to Mitigate the Urban Heat Island Based on Urbanized High-Resolution Land Data Assimilation System (u-HRLDAS). *J. Meteorolo. Soc. of Japan*, 97, 1075–1097, doi:10.2151/jmsj.2019-060.
166. He, C., K.N. Liou, Y. Takano, **F. Chen**, M. Barlage, 2019: Enhanced snow absorption and albedo reduction by dust-snow internal mixing: modeling and parameterization. *J. Adv. Model. Earth Syst.*, <https://doi.org/10.1029/2019MS001737>.
167. Liu, X., **F. Chen**, M. Barlage, and D. Niyogi, 2020: Implementing Dynamic Rooting Depth for Improved Simulation of Soil Moisture and Surface Fluxes in Noah-MP-Crop. *J. Adv. Model. Earth Syst.*, DOI: 10.1029/2019MS001786
168. He, C., **F. Chen**, M. Barlage, C. Liu, A. Newman, W. Tang, K. Ikeda, and R. Rasmussen, 2019: Can convection-permitting modeling provide decent precipitation

- for high-resolution snowpack simulations over mountains? *J. Geophys. Res.-Atmos.*, DOI: 10.1029/2019JD030823.
169. Zhang, Z., Y. Li, M. Barlage, **F. Chen**, G. Miguez-Macho, A. Ireson, and Z. Li, 2020: Modeling groundwater responses to climate change in the Prairie Pothole Region. *Hydrol. Earth Syst. Sci.*, DOI: 10.5194/HESS-24-655-2020.
 170. He, X., Xu, T., Bateni, S.M., Ek, M., Liu, S. and **F. Chen**, 2020: Mapping Regional Evapotranspiration in Cloudy Skies via Variational Assimilation of All-Weather Land Surface Temperature Observations. *J. of Hydrology*, <https://doi.org/10.1016/j.jhydrol.2020.124790>
 171. Zhang, G., **F. Chen**, Y. Chen, J. Li, X. Peng, 2020: Evaluation of Noah-MP land-model uncertainties over sparsely vegetated sites on the Tibet Plateau. *Atmosphere*, 11(5), 458; <https://doi.org/10.3390/atmos11050458>.
 172. Li, J., **F. Chen**, X. Lu, W. Gong, G. Zhang, and Y. Gan, 2020: Quantify contributions of uncertainties in physical parameterization schemes and model parameters to overall errors in Noah-MP dynamic vegetation modeling. *J. Adv. Model. Earth Syst.*, DOI: 10.1029/2019MS001914.
 173. Zhang, Z., Y. Li, M. Barlage, **F. Chen**, Y. Li, W. Helgason, X. Xu, X. Liu, and Z. Li, 2020: Joint modeling of crop and irrigation in Central U.S. using Noah-MP land surface model. *J. Adv. Model. Earth Syst.*, DOI: 10.1029/2020MS002159.
 174. Gao, Y., **F. Chen**, and Y. Jiang, 2020: Evaluation of a convection-permitting simulation of precipitation over the Tibetan Plateau and its influences on the simulation of snow-cover fraction. *J. Hydromet.*, <https://doi.org/10.1175/JHM-D-19-0277.1>
 175. Yun, Y, C. Liu, Y. Lu, X. Liang, L. Huang, F. Chen, R. Rasmussen, 2020: Convection-permitting regional climate simulation of precipitation over Eastern China. *Climate Dynamics*, DOI:10.1007/s00382-019-05070-y.
 176. Gao, Y., **F. Chen**, G. Miguez-Macho, X. Li, 2020: Understanding precipitation recycling over the Tibetan Plateau using tracer analysis with WRF. *Climate Dynamics*, 55, 2921–2937.
 177. Valayamkunnath, P., M. Barlage, **F. Chen**, D. Gochis, K. Franz, 2020: High-resolution mapping of tile drained croplands using a geospatial modeling approach. *Scientific Data*, <https://doi.org/10.1038/s41597-020-00596-x>.
 178. Jiang, Y., **F. Chen**, Y. Gao, C. He, M. Barlage, W. Huang, 2020: Assessment of uncertainty sources in snow cover simulation in the Qinghai-Tibet Plateau. *J. Geophys. Res.-Atmos.* <https://doi.org/10.1029/2020JD032674>.
 179. Gao, M., **F. Chen**, H. Shen, and H. Li, 2020: A tale of two cities: different urban heat mitigation efficacy with the same strategies. *Theoretical and Applied Climatology*, <https://doi.org/10.1007/s00704-020-03390-2>.
 180. Wu, B., S, P. Oncley, H. H. Yuan, **F. Chen**, 2020: Ground Heat Flux Determination Based on Near-Surface Soil Hydro-Thermodynamics. *J. Hydrology*, <https://doi.org/10.1016/j.jhydrol.2020.125578>.
 181. Garratt, J., Wilczak, J., Holtslag, A.m ... **F. Chen**, et al., 2020: Commentaries on Top-Cited Boundary-Layer Meteorology Articles. *Boundary-Layer Meteorol.*, 177, 169–188. <https://doi.org/10.1007/s10546-020-00563-4>
 182. Huo, F., L. Xu, Y. Li, J. S. Famiglietti, Z. Li, T. Kajikawa, **F. Chen**, 2020: Using big data analytics to synthesize research domains and identify emerging fields in urban climatology. *WIREs: Climate Change*. <https://doi.org/10.1002/wcc.688>

183. Mu, X., M., S. P. Mahanama, Y. Xue; **F. Chen**, D.P. Lettenmaier, 2021: Modeling snow ablation over the Western United States Mountains: Patterns and Controlling Factors. *J. Hydromet.*, <https://doi.org/10.1175/JHM-D-19-0198.1>.
184. Wang, J., **F. Chen**, Q.V. Doan, and Y. Xu, 2021: Exploring the effect of urbanization on hourly extreme rainfall over Yangtze River Delta of China. *Urban Climate*, 36, 100781. <https://doi.org/10.1016/j.uclim.2021.100781>.
185. Doan, Q-V, H. Kusaka, T. Sato, **F. Chen**, 2021: S-SOM v1.0: A structural self-organizing map algorithm for weather typing. *Geoscientific Model Development*. <https://doi.org/10.5194/gmd-2020-278>
186. Barlage, M., **F. Chen**, R. Rasmussen, Z. Zhang, G. Miguez-Macho, 2021: The importance of scale-dependent groundwater processes in land-atmosphere interactions over the central United States. *Geophys. Res. Lett.*, doi:10.1029/2020GL092171
187. Ikeda, K., R. Rasmussen, C. Liu, A. Newman, **F. Chen**, M. Barlage, A. Newman, E. Guttman, J. Dudhia, D. Gochis, A. Dai, C. Luce, and K. Musselman, 2021: Snowfall and Snowpack in the Western U.S. as Captured by Convection Resolving Current Climate and Pseudo Global Warming Future Climate Simulations, *J. Climate.*, <https://doi.org/10.1007/s00382-021-05805-w>
188. Xu, T., **F. Chen**, X. He, M. Barlage, Z. Zhang, S. Liu, and X. He, 2021: Improve the performance of the Noah-MP-Crop model by jointly assimilating soil moisture and vegetation phenology data, *J. Adv. Model. Earth Syst.*, <https://doi.org/10.1029/2020MS002394>
189. Abolafia-Rosenzweig, R., C. He, S. Burns, and **F. Chen**, 2021: Implementation and evaluation of a unified turbulence parameterization throughout the canopy and roughness sublayer in Noah-MP. *J. Adv. Model. Earth Syst.*, <https://doi.org/10.1029/2021MS002665>
190. He, C., **F. Chen**, R. Abolafia-Rosenzweig, K. Ikeda, C. Liu, R. Rasmussen, 2021: What causes the unobserved early-spring snowpack ablation in convection-permitting WRF modeling over Utah mountains? *J. Geophys. Res.-Atmos.* <https://doi.org/10.1029/2021JD035284>.
191. Zonato, A., A. Martilli, E. Gutierrez, **F. Chen**, M. Barlage, D. Zardi, C. He, and L. Giovannini, 2021: Exploring the effects of rooftop mitigation strategies on urban temperatures and energy consumption. *J. Geophys. Res.-Atmos.* <https://doi.org/10.1029/2021JD035002>.
192. González, J. E., Ramamurthy, P., Bornstein, R. D., **Chen, F.**, Bou-Zeid, E. R., Ghandehari, M., ... Niyogi, D., 2021: Urban climate and resiliency: A synthesis report of state of the art and future research directions. *Urban Climate*, 38, 100858. doi:10.1016/j.uclim.2021.100858
193. Zhang, Z., **F. Chen**, M. Barlage, L.E. Bortolotti, J. Famiglietti, Z. Li, X. Ma, Y. Li, 2021: Cooling effects of wetlands to mitigate climate change – a study of the Prairie Pothole Region. *Water Resources Research*, 10.1029/2021WR030573
194. Yun, Q., T.C. Chakraborty, T.C., J. Li, D. Li, C. He, C. Sarangi, **F. Chen**, X. Yang, and L.R Leung, 2022: Urbanization Impact on Regional Climate and Extreme Weather: Current Understanding, Uncertainties, and Future Research Directions. *Adv. Atmos. Sci.*, <https://doi.org/10.1007/s00376-021-1371-9>
195. Patel, P., S. Jamshidi, R. Nadimpalli, D.G. Aliaga, G. Mills, **F. Chen**, M. Demuzere, D. Niyogi, 2022: Modeling Large-Scale Heatwave by Incorporating Enhanced Urban Representation, *J. Geophys. Res.-Atmos.* 10.1029/2021JD035316

196. Valayamkunnath, P., D. Gochis, **F. Chen**, M. Baralge, and K.J. Franz, 2022: Modeling the hydrologic influence of subsurface tile drainage using the National Water Model. *Water Resources Research*, <https://doi.org/10.1029/2021WR031242>.
197. Tewari, M., **F. Chen**, J. Dudhia, P. Ray, S. Miao, E. Nikolopoulos, L. Treinish, 2022: Understanding the sensitivity of WRF hindcast of Beijing extreme rainfall of 21 July 2012 to microphysics and model initial time. *Atm., Res.*, <https://doi.org/10.1016/j.atmosres.2022.106085>.
198. Abolafia-Rosenzweig, R., C. He, and **F. Chen**, 2022: Winter and spring climate explains a large portion of interannual variability and trend in western U.S. summer fire burned area. *Environ. Res. Lett.*, <https://doi.org/10.1088/1748-9326/ac6886>
199. Doan, Q-V, **F. Chen**, H. Kusaka, A. Dipankar, A. Khan, R. Hamdi, M. Roth, D. Niyogi, 2022: Increased Risk of Extreme Precipitation over an Urban Agglomeration with Future Global Warming. *Earth's Future*, <https://doi.org/10.1029/2021EF002563>
200. Molla, A., L. Di, L. Guo, C. Zhang, **F. Chen**, 2022: Spatio-temporal Responses of Precipitation to Urbanization with Google Earth Engine: A Case Study for Lagos, Nigeria. *Urban Science*, <https://doi.org/10.3390/urbansci6020040>.
201. Abolafia-Rosenzweig, R., C. He, and **F. Chen**, 2022: For Western Wildfires, the Immediate Past is Prologue. *AGU EOS, Eos*, 103, <https://doi.org/10.1029/2022EO220319>.
202. Abolafia-Rosenzweig, R., C. He, **F. Chen**, D. Gochis, 2022: Evaluation and optimization of snow albedo scheme in Noah-MP land surface model using in-situ spectral observations in the Colorado Rockies. *J. Adv. Model. Earth Syst.*, <http://dx.doi.org/10.1029/2022MS003141>.
203. Guo, L., L. Di, C. Zhang, L. Lin, **F. Chen**, A. Molla, 2022: Evaluating contributions of urbanization and global climate change to urban land surface temperature change: a case study in Lagos, Nigeria. *Scientific Reports*, <https://doi.org/10.1038/s41598-022-18193-w>
204. Tian, Y., T. Xu, **F. Chen**, X. He, S. Li, 2022: Can data assimilation improve short-term forecasts of land surface variables? *Remote Sensing*, <https://doi.org/10.3390/rs14205172>.
205. Ghude, S., A.N. Parde, M.Tech; A. Sharma, N.G. Dhangar, G. Govardhan, S. Wagh, R.K. Jenamani, P. Pithani, **F. Chen**, C. Charlton-Perez, M. Rajeevan, D. Niyogi, 2022: Improving simulation of the fog life cycle with high-resolution land data assimilation: A case study from WiFEX. *Atm., Res.*, 278, 106331. doi:10.1016/j.atmosres.2022.106331
206. Doan, Q-V, **F. Chen**, Y. Asano, Y. Gu, A.Nishi, H. Kusaka1, and D. Niyogi, 2022: Causes for asymmetric warming of sub-diurnal temperature responding to global warming. *Geophys. Res. Lett.*, <http://dx.doi.org/10.1029/2022GL100029>.
207. Doan, Q-V, **F. Chen**, H. Kusaka, J. Wang, M. Kajino, T.Takemi, 2022: Identifying a new normal in extreme precipitation at a city scale under global warming. *J. Geophys. Res.-Atmos*, 10.1029/2022JD036810
208. Wang, J., S. Miao, Q-V Doan, **F. Chen**, L. Yang, G. Zhang, Y. Zhang, J. Dou, and Y. Xu, 2023: Quantifying the impacts of high-resolution urban information on the urban thermal environment. *J. Geophys. Res.-Atmos*, doi: 10.1029/2022JD038048
209. Abolafia-Rosenzweig, R., C. He, **F. Chen**, K. Ikeda, T. Schneider, R. Rasmussen, 2023: High Resolution Forecasting of Summer Drought in the Western United States. *Water Resources Research*, DOI: 10.1029/2022WR033734

Book Chapters

1. Avissar, R., and **F. Chen**, 1995: An approach to represent mesoscale (subgrid-scale) fluxes in GCMs demonstrated with simulations of local deforestation in Amazonia. *Space and Time Scale Variability and Interdependencies in Hydrological Processes International Hydrology Series*, A. Feddes (Editor), Cambridge University Press, 89-109.
2. **Chen, F.**, R. Pielke, Sr., and K. Mitchell, 2001: Development and application of land-surface models for mesoscale atmospheric models: Problems and Promises. *Observation and Modeling of the Land Surface Hydrological Processes.*, V. Lakshmi, J. Alberston, and J. Schaake (Editors), American Geophysical Union, 107-135.
3. Ching, J., A. Hanna, **F. Chen**, S. Burian, and T. Hultgren, 2009: Facilitating advanced urban meteorology and air quality modeling capabilities with the high resolution urban database and access portal tools. *Meteorological and Air Quality Models for Urban Areas*. A. Baklanov, C.S.B. Grimmond, M. Alexander, M. Athanassiadou (Editors), Springer-Verlag, 3-9.
4. C.S.B. Grimmond, M. Best, J. Barlow, A.J. Arnfield, J.J Baik, A. Baklanov, S. Belcher, M. Bruse, I. Calmet, and **F. Chen**, et al., 2009: Urban Surface Energy Balance Models: Model Characteristics and Methodology for a Comparison Study. *Meteorological and Air Quality Models for Urban Areas*. A. Baklanov, C.S.B. Grimmond, M. Alexander, M. Athanassiadou (Editors), Springer-Verlag, 97-123.
5. Ching, J., and **F. Chen**, 2014: Modeling the urban boundary and canopy layers. *Handbook of Environmental Fluid Dynamics*. H. Fernando (Editor), Taylor and Francis Books, Inc.
6. LeMone M.,A., W. Angevine, C. Bretherton, **F. Chen**, J. Dudhia, E. Fedorovich, K. Katsaros, D. Lenschow, L. Mahrt, N. Patton, J. Sun, M. Tjernstrom, 2019: 100 Years Of Progress: In Boundary-Layer Meteorology, *AMS Monograph 100 years of Scientific Research at AMS*. <https://doi.org/10.1175/AMSMONOGRAPHS-D-18-0013.1>
7. Haupt, S.E., B. Kosovic, S. McIntoch, **F. Chen**, K. Miller, M. Shepherd, M. Williams, S. Drobot, 2019: 100 years of Progress in Applied Meteorology Part III: Additional Applications, *AMS Monograph 100 years of Scientific Research at AMS*. <https://doi.org/10.1175/AMSMONOGRAPHS-D-18-0012.1>
8. Barlage, M., and **F. Chen**, 2021: Human Impacts on Land Surface-Atmosphere Interactions. AGU book “Fast Physics in Large Scale Atmospheric Models: Parameterization, Evaluation, and Observations”, edited by Yangang Liu and Pavlos Kollias. In press.

NCAR Technical Note

- Gochis, D. and **F. Chen**, 2003: Hydrological Enhancements to the Community Noah Land Surface Model. NCAR Technical Note. NCAR/TN-454+STR
- He, C., P. Valayamkunnath, M. Barlage, **F. Chen**, D. Gochis, R. Cabell, T. Schneider, R. Rasmussen, G.-Y. Niu, Z.-L. Yang, D. Niyogi, and M. Ek, 2023: The Community Noah-MP Land Surface Modeling System Technical Description Version 5.0. NCAR Technical Note NCAR/TN-575+STR, doi:10.5065/ew8g-yr95

Non-refereed Publications and presentations (conferences and workshops, over 200)

EDUCATION ACTIVITIES

Gave numerous seminars as a guest lecturer at U.S. universities and federal agencies, as well as for foreign universities and research institutes in France, England, Sweden, China, Japan, Hong Kong, Spain, Taipei, and South Korea.

Thesis committees: Sun Yat- Sen University (Guangzhou, China), Purdue University (West Lafayette, IN), Chinese Academy of Meteorological Sciences (Beijing, China), Yon-Sei University (Seoul, Korea), University of South Carolina (Columbia, SC), University of Colorado (Boulder, CO), Hong Kong University of Science and Technology (Hong Kong), North Carolina State University (Raleigh, NC), Oklahoma State University (Stillwater, OK)

GRADUATE AND POST-GRADUATE ADVISEES, AND STUDENT VISITORS

- Dr. Song-Lak Kang: NCAR Advanced Study Program (ASP) post-doc.
- Dr. Cenlin He: NCAR ASP post-doc.
- Dr. Zhe Zhang: NCAR ASP post-doc.
- Mr. Joseph Alfieri: Ph.D. student, Department of Earth and Atmospheric Science, Purdue University, West Lafayette, IN
- Mr. Allen Chang: Ph.D. student, Hong Kong University of Science and Technology, Hong Kong
- Ms. Kristi Arsenault, Ph.D. student, George Mason University, Arlington, VA
- Ms. XiaoYan Jiang, Ph.D. student, University of Texas, Austin, TX
- Ms. Umarporn Charusombat: Ph.D. student, Department of Earth and Atmospheric Science, Purdue University West Lafayette, IN
- Ms. Becky Eager: M.S. student, Dept. of Marine, Earth, and Atmospheric Sciences, North Carolina State University, Raleigh, NC
- Mr. Ethan Gutmann: Ph.D. student, Dept. of Geology, University of Colorado, Boulder, CO
- Mr. Seugbum Hong: Ph.D. student, Dept. of Geology, University of South Carolina, Columbia, SC
- Mr. Yoon-Jin Lim: Ph.D. student, Dept. of Atmospheric Sciences, Yonsei University, Korea
- Ms. Xing Liu, Ph.D. student, Department of Agronomy, Purdue University, West Lafayette, IN
- Mr. Jeff Fung Lo: Ph.D. student, Center for Coastal and Atmospheric Research, Hong Kong University of Science and Technology, Hong Kong
- Mr. Enrique Rosero: Ph.D. student, Dept. of Geological Sciences, University of Texas, Austin, TX
- Mr. Andrew Schmit: M.S. student, Dept. of Geology, University of Colorado, Boulder, CO
- Mr. Laurent Saussol: M.S. student, School of Meteorology, Toulouse, France

- Mr. Sridhar Venkataramana: Ph.D. student, Dept. of Biosystems and Agricultural Engineering, Oklahoma State University, Stillwater, OK
- Mr. Seugbum Hong, Ph.D. student, Dept. of Geology, University of South Carolina, SC
- Mr. Francisco Salamanca, Ph.D. student, Center for Research on Energy, Environment and Technology. Madrid, Spain
- Mr. Antoine Verrelle, M.S. student, School of Meteorology, Toulouse, France
- Mr. ZhiYong Wu: Ph.D. student, Dept. of Environmental Science, Sun Yat-Sen University, Guangzhou, China
- Mr. Lorenzo Giovannini: Ph.D. student, Department of Civil, Environmental and Mechanical Engineering, University of Trento, Trento, Italy.
- Mr. Zhiyong Wu, Ph.D. student, Dept. of Environmental Science, Sun Yat-Sen University, Guangzhou, China
- Mr. Estatio Gutierrez, Ph.D. student, Dept. of Mechanical Engineering, CUNY, New York, NY
- Mr. Xiaoming Sun, Ph.D student, Duke University, Durham, NC
- Mr. Timothy Glotfelty, Ph.D student, North Carolina State University, Raleigh, NC
- Mr. Jiachuan Yang, Ph.D. student, Arizona State University, Tempe, AZ
- Ms. Guo Zhang, Ph.D. student, Chinese Academy of Meteorological Sciences, Beijing, China
- Mr. Bingcheng, Wan, Ph.D. student, Institute of Atmosphere Physics, Chinese Academy of Sciences, Beijing China.
- Mr. Bo Dan, Ph.D. student, Beijing Normal University, Beijing, China.
- Mr. Xitian Cai, Ph.D. student, Department of Geological Sciences, the University of Texas at Austin, Austin, TX
- Ms. Meng Huang, Ph.D. student, Institute of Atmosphere Physics, Chinese Academy Sciences, Beijing, China.
- Ms. Yingsha Jiang, Ph.D. student, Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, Lanzhou, China,
- Ms. Li Zhang, Ph.D. student, Institute of Botany, Chinese Academy of Sciences, Beijing, China
- Ms. Xueyang Ma, Ph.D. student, Chinese Academy of Meteorological Sciences, Chinese Meteorological Administration, Beijing, China
- Mr. Bo Dan, Ph.D student, Beijing Normal University, China.
- Ms. XiaoYu Xu, Ph.D. student, Nanjing University of Information Science & Technology /Institute of Urban Meteorology, China.
- Mr. Baoqiang Wu, Ph.D. student, Nanjing University, China.
- Ms. Meiling Gao, Ph.D. student, Wuhang University, China.
- Mr. Zhe Zhang, Ph.D. student, University of Saskatchewan, Canada
- Mr. Jie Wang, Ph.D. student, Nanjing University, China
- Mr. Yong Chen, Ph.D. student, Nanjing University, China.
- Mr. Andreas Zonato, Ph.D. student, University of Trento, Italy

- Ms. Danqiong Dai, Ph.D. student, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China
- Mr. Xinlei He, Ph.D. student, Beijing Normal University, Beijing, China
- Mr. Sergi Ventura Caballé, Ph.D. student, Institute of Environmental Science and Technology, Spain
- Mr. Lukas Pilz, Ph.D. student, Heidelberg University, Germany