Xinxuan Zhang

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Department of Civil and Environmental Engineering | Eversource Energy Center, University of Connecticut
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EDUCATION

2018 Ph.D. in Environmental Engineering, University of Connecticut, Storrs, CT

2012 M.S. in Environmental Engineering, University of Connecticut, Storrs, CT

2007 B.S. in Applied Meteorology, Nanjing University of Information Science & Technology (former Nanjing Institute of Meteorology), Nanjing, China

PROFESSIONAL EXPERIENCE

08/2021 – present	Assistant Research Professor, University of Connecticut – Eversource Energy Center
03/2018 – 08/2021	Post-Doctoral Research Fellow, George Mason University – Sid and Reva Dewberry Department of Civil, Environmental, and Infrastructure Engineering
08/2010 – 01/2018	Research Assistant, University of Connecticut – Department of Civil and Environmental Engineering
08/2016 – 12/2016	Teaching Assistant, University of Connecticut – Department of Civil and Environmental Engineering
06/2007 – 07/2010	Meteorologist and TV weather news editor, China Meteorological Administration

RESEARCH INTERESTS

- Numerical modeling and data assimilation of atmospheric and land surface processes
- Electric power outage prediction under weather events
- Analysis of coupling climate risk with infrastructure vulnerabilities
- Extreme weather analysis
- Remote sensing of precipitation

PROFESSINAL ACTIVITIES

Member:

American Geophysical Union (AGU); American Meteorological Society (AMS)

Associate Editor:

Journal of Hydrology, Elsevier

Reviewer:

Proposal for National Science Foundation (NSF)
JGR Atmospheres, AGU
Journal of Climate, AMS
Journal of Hydrometeorology, AMS
Journal of Hydrology, Elsevier
Frontiers in Climate, Frontiers
International Geoscience and Remote Sensing Symposium, IEEE
Transactions on Geoscience and Remote Sensing, IEEE
Applied sciences, MDPI
Atmosphere, MDPI
Hydrology, MDPI
Water, MDPI

PEER-REVIEWED PUBLICATIONS

Rahman, Azbina, Viviana Maggioni, **Xinxuan Zhang**, Paul Houser, Timothy Sauer, and David Mocko. "*The Joint Assimilation of Remotely Sensed Leaf Area Index and Surface Soil Moisture into a Land Surface Model*", Remote Sensing (2022) 14(3): 437. https://doi.org/10.3390/rs14030437

Rahman, Azbina, **Xinxuan Zhang**, Paul Houser, Timothy Sauer, and Viviana Maggioni. "*Global Assimilation of Remotely Sensed Leaf Area Index: The Impact of Updating More State Variables Within a Land Surface Model*", Frontiers in Water (2022): 3, p200. https://doi.org/10.3389/frwa.2021.789352

Zhang, Xinxuan, Viviana Maggioni, Paul Houser, Yuan Xue, and Yiwen Mei. "*The impact of weather condition and social activity on COVID-19 transmission in the United States*", Journal of environmental management 302 (2022): 114085. https://doi.org/10.1016/j.jenvman.2021.114085

Zhang, Xinxuan, Viviana Maggioni, Azbina Rahman, Paul Houser, Yuan Xue, Timothy Sauer, Sujay Kumar, and David Mocko. "*The influence of assimilating leaf area index in a land surface model on global water fluxes and storages.*", Hydrology and Earth System Sciences 24, no. 7 (2020): 3775-3788. https://doi.org/10.5194/hess-24-3775-2020

Rahman, Azbina, **Xinxuan Zhang**, Viviana Maggioni, Yuan Xue, Paul Houser, Timothy Sauer, Sujay Kumar, and David Mocko. "*A Synthetic Experiment to Investigate the Potential of Assimilating LAI through Direct Insertion in a Land Surface Model*", Journal of Hydrology X (2020): 100063 https://doi.org/10.1016/j.hydroa.2020.100063

Zhang, Xinxuan, Viviana Maggioni, and Azbina Rahman. "*Investigating the Assimilation of Leaf Area Index Products at Different Temporal Resolutions in a Land Surface Model*" IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium, 2020, pp. 3931-3934 https://ieeexplore.ieee.org/document/9324357

Cerrai, Diego, David W. Wanik, Md Abul Ehsan Bhuiyan, **Xinxuan Zhang**, Jaemo Yang, Maria EB Frediani, and Emmanouil N. Anagnostou. "*Predicting storm outages through new representations of weather and vegetation.*" IEEE Access 7 (2019): 29639-29654. https://ieeexplore.ieee.org/document/8656482

Zhang, Xinxuan, and Emmanouil N. Anagnostou. "*Evaluation of numerical weather model-based satellite precipitation adjustment in tropical mountainous regions.*" Journal of Hydrometeorology 20, no. 3 (2019): 431-445. https://doi.org/10.1175/JHM-D-18-0008.1

Zhang, Xinxuan, Emmanouil N. Anagnostou, and Craig Schwartz. "*NWP-based adjustment of IMERG precipitation for flood-inducing complex terrain storms: Evaluation over CONUS.*" Remote Sensing 10, no. 4 (2018): 642. https://doi.org/10.3390/rs10040642

Zhang, Xinxuan, Emmanouil N. Anagnostou, and Humberto Vergara. "*Hydrologic evaluation of NWP-adjusted CMORPH estimates of hurricane-induced precipitation in the southern Appalachians*." Journal of Hydrometeorology 17, no. 4 (2016): 1087-1099. https://doi.org/10.1175/JHM-D-15-0088.1

Zhang, Xinxuan, Emmanouil N. Anagnostou, Maria Frediani, Stavros Solomos, and George Kallos. "*Using NWP simulations in satellite rainfall estimation of heavy precipitation events over mountainous areas*." Journal of Hydrometeorology 14, no. 6 (2013): 1844-1858. https://doi.org/10.1175/JHM-D-12-0174.1

Zhang, Haidong, **Xinxuan Zhang**, Zhaobo Sun, and Guoli Tang. "*A study on degree-day's change in China in the past fifty years.*" Transactions of Atmospheric Sciences 33, no. 5 (2010): 593-599. https://en.cnki.com.cn/Article_en/CJFDTOTAL-NJQX201005011.htm

Zhang, Xinxuan, Haidong Zhang, and Shoudong Liu. "*Impact of temperature change on heating and cooling energy consumption in cities of China.*" Meteorological Monthly, Vol. 34 T1 (2008): 289-299. http://qxqk.nmc.cn/qx/ch/reader/view_abstract.aspx?file_no=2008T158&flag=1

CONFERENCES AND PRESENTATIONS

Maggioni, Viviana, Azbina Rahman, **Xinxuan Zhang**, Paul Houser, and Timothy Sauer. *"A Multiple Model Adaptive System for Assimilating Satellite-based Vegetation Observations."* 2022 AGU Fall Meeting, Oral session, Dec. 2022, Chicago, IL

Zhang, Xinxuan, Viviana Maggioni, Azbina Rahman, Paul Houser, and Timothy Sauer. "*A Multi-setting Ensemble Land Surface Modeling Framework for Assimilating Satellite Vegetation Observations*." 2021 AGU Fall Meeting, Poster session, Dec. 2021 Hybrid Meeting

Zhang, Xinxuan, Viviana Maggioni, Azbina Rahman, Yuan Xue, Paul Houser, and Timothy Sauer. "*Evaluation of*

a Multi-setting Ensemble Land Data Assimilation System for Merging Satellite Vegetation Observations." 2021 AMS Annual Meeting, Oral session, Jan. 2021, Online Meeting

Zhang, Xinxuan, Viviana Maggioni, Paul Houser, Yuan Xue, and Yiwen Mei. " *The effect of meteorological conditions on COVID-19 transmission*." 2020 AGU Fall Meeting, Poster session, Dec. 2020 Online Meeting

Zhang, Xinxuan, Viviana Maggioni, Azbina Rahman, Yuan Xue, Paul Houser, Timothy Sauer, Sujay Kumar and David Mocko. "Assimilation of Leaf Area Index in a Multi-Land Surface Model System to Improve Water Flux and Storage Estimations." 2020 AMS Annual Meeting, Poster session, Jan. 2020, Boston, MA

Zhang, Xinxuan, Viviana Maggioni, Azbina Rahman, Yuan Xue, Paul Houser, Sujay Kumar, and David Mocko. "*Assessing the performance of different LAI data assimilation techniques in a land surface model*." 2018 AGU Fall Meeting, Oral session, Dec. 2018, Washington, D.C.

Cerrai, Diego, M. S. Walters, Peter Watson, **Xinxuan Zhang**, Emmanouil N. Anagnostou. " *Power outage prediction models for mixed phase precipitation events: machine learning vs. statistical models*." 2018 AGU Fall Meeting, Oral session, Dec. 2018, Washington, D.C.

Zhang, Xinxuan, Emmanouil Anagnostou, and Craig Schwartz. "*Using NWP analysis in satellite rainfall estimation of heavy precipitation events over complex terrain*." 2017 AGU Fall Meeting, Oral session, Dec. 2017, New Orleans, LA

Zhang, Xinxuan and Emmanouil Anagnostou. "*Numerical Weather Model-based Satellite Precipitation Adjustment over Complex Terrain*" (Invited) Chinese Academy of Sciences, Institute of Atmospheric Physics, July 2017, Beijing, China

Zhang, Xinxuan, and Emmanouil N. Anagnostou. "*Demonstrating improvements of NWP-based satellite precipitation adjustment in tropical mountainous regions*." 2016 AGU Fall Meeting, Oral session, Dec. 2016, San Francisco, CA

Cerrai, Diego, Emmanouil N. Anagnostou, David Walter Wanik, Md Abul Ehsan Bhuiyan, **Xinxuan Zhang**, Jaemo Yang, Marina Astitha, Maria Eugenia Frediani, Craig S Schwartz and Maryam Pardakhti. "*Enhanced outage prediction modeling for strong extratropical storms and hurricanes in the Northeastern United States.*" 2016 AGU Fall Meeting, Poster session, Dec. 2016, San Francisco, CA

Anagnostou, Emmanouil N., Efthymios Nikolopoulos, **Xinxuan Zhang**, and Nikolaos Bartsotas. "*Advancing satellite-based flood prediction in complex terrain using high-resolution numerical weather prediction*." 2015 AGU Fall Meeting, Oral session (presenter), Dec. 2015, San Francisco, CA

Zhang, Xinxuan, Emmanouil N. Anagnostou, and Humberto Vergara. "*Hydrologic evaluation of numerical model-adjusted satellite rainfall over mountainous areas.*" 2015 AGU Fall Meeting, Oral session, Dec. 2015, San Francisco, CA

Zhang, Xinxuan, Emmanouil N. Anagnostou, Marina Astitha, Humberto Vergara, Jonathan Gourley, and Yang Hong. "*Adjusting satellite & radar rainfall bias over mountainous areas for flood modeling application*." 2014 AGU Fall Meeting, Poster session, Dec. 2014, San Francisco, CA

Zhang, Xinxuan, Emmanouil N. Anagnostou, and Yiwen Mei. "*Evaluating satellite precipitation products over complex terrain: preliminary results from the IPHEx and HyMeX field campaigns*." 2014 PMM Science Team Meeting, Aug. 2014, Baltimore, MD