CHENGFENG FENG

Research Associate
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PROFESSIONAL EXPERIENCE

7/2024 - Present **Research Associate, Atmospheric Sciences, University of Utah**, Salt Lake City, Utah, United States
Advisor: Dr. Zhaoxia Pu

EDUCATION

9/2018 - 6/2024 **Ph.D., Atmospheric Sciences, University of Utah**, Salt Lake City, Utah, United States
Dissertation: Assimilation of All-Sky GOES-16 Water Vapor Channels, Aeolus Satellite Winds, and Airborne Lidar Observations for Improved Numerical Simulations of Tropical Cyclones and Convections Link
Advisor: Dr. Zhaoxia Pu

9/2015 - 8/2018 **M.S., Meteorology, Key Laboratory of Mesoscale Severe Weather, Nanjing University**, Nanjing, China
Thesis: Interdecadal Change of Tropical Cyclone Activity in the Western North Pacific Link
Advisor: Dr. Juan Fang

9/2011 - 8/2015 **B.S., Atmospheric Sciences, Kuang Yaming Honors Class'11, Nanjing University**, Nanjing, China

RESEARCH INTEREST

Data Assimilation Investigate the impacts of assimilating **satellite and aircraft-based observations** on simulations of **Tropical Cyclones and African Easterly Waves** with data processing techniques, such as quality control, data thinning, **bias correction, and interchannel correlations**

Cold Fog Understand and improve simulations of **cold fogs** over complex terrains with comprehensive observations, including their microphysics properties and visibility calculation

FIRST-AUTHORED PUBLICATIONS

2025 **Feng, C.**, and Z. Pu, 2025: All-sky Assimilation of GOES-16 Water Vapor Channels in Consideration of Cloud-Dependent Interchannel Observation-Error Correlations. Monthly Weather Review, 153(1), 23-47, https://doi.org/10.1175/MWR-D-24-0038.1. [*Modeling and understanding the interchannel observation-error correlations of GOES-16 water vapor channels, critical for assimilation and verification of infrared channels*]

Feng, C., Z. Pu, A. R. Nehrir, K. M. Bedka, and J. Doyle, 2025: Benefits of Assimilating DAWN and HALO Observations for Numerical Simulations of Tropical Convective Systems Associated with African Easterly Waves during NASA's CPEX-AW and CPEX-CV. Journal of Atmospheric and Oceanic Technology, 42(11), 1419-1444, https://doi.org/10.1175/JTECH-D-24-0138.1. [*First attempt to assimilate DAWN and HALO data simultaneously.*]

2023 **Feng, C.**, and Z. Pu, 2023: The Impacts of Assimilating Aeolus Horizontal Line-of-Sight Winds on Numerical Predictions of Hurricane Ida (2021) and a Mesoscale Convective System over the Atlantic Ocean. Atmospheric Measurement Techniques, 16(10), 2691-2708, https://doi.org/10.5194/amt-16-2691-2023. [*Exploring how assimilation of Aeolus data improves hurricane and MCS forecasts; Pre-experiments for assimilation of DAWN winds during CPEX field campaigns.*]

2022 **Feng, C.**, and Z. Pu, 2022: A Bias Correction Scheme with the Symmetric Cloud Proxy Variable and Its Influence on Assimilating All-Sky GOES-16 Brightness Temperatures. Monthly Weather Review, 150(12), 3305-3323, https://doi.org/10.1175/MWR-D-21-0333.1. [*Examining the VarBC with symmetric cloud proxy variable for GOES-16 water vapor channels closely.*]

In Review **Feng, C.**, Z. Pu, and O. Ge: Sensitivity of Numerical Simulations of Ephemeral Shallow Cold Radiation Fog to Snow Cover in Initial Conditions During the CFACT Field Campaign. Submitted to Weather and Forecasting.

In Preparation **Feng, C.**, and Z. Pu: Influence of Time and Vertical Resolution and Soil Thermal Conductivity on Simulating Cold Fogs During CFACT

Feng, C., Z. Pu., and I. Gultepe: Microphysics and Visibility of the Simulations of Two Cold Fog Cases During CFACT

CO-AUTHORED PUBLICATIONS

2022 Wei, Y., F. Liu, H. Ren, G. Chen, **C. Feng**, and B. Chen, 2022: Western Pacific Premoistening for Eastward-Propagating BSISO and Its ENSO Modulation. Journal of Climate, 35(15), 4979–4996, https://doi.org/10.1175/JCLI-D-21-0923.1.

In Preparation Pu, Z., and **C. Feng**, and Z. Pu: Assimilation of TROPICS temperature and moisture retrievals in the Hurricane Analysis and Forecast System (HAFS): Assessment through Two Atlantic Hurricane Cases

Stoddard, J., **C. Feng**, and Z. Pu: Assimilating CYGNSS Ocean Surface Winds to Improve the Numerical Prediction of Tropical Cyclones Using the Hurricane Analysis and Forecast System (HAFS).

SELECTED HONORS AND AWARDS

2025 **Group Achievement Award** to NASA's Convective Processes Experiment-AW and -CV for exceptional accomplishments of the Convective Processes Experiment (CPEX) team and their contribution to atmospheric and weather research

2023 **First Place Oral Presentation** at the 27th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS) during the 103rd AMS annual meeting: A bias correction scheme with the symmetric cloud proxy variable and its influence on assimilating all-sky GOES-16 brightness temperatures

Edward J. Zipser Award for Excellence in Graduate Research Award in the Department of Atmospheric Sciences at the University of Utah

2016, 2017 The First-Class Graduate Student Scholarship

PROFESSIONAL SERVICE AND MEMBERSHIPS

2025 Session Co-Chair at the AMS's 29th Conference on IOAS-AOLS

2023 - Present Reviewer for Weather and Forecasting, Journal of Advances in Modeling Earth Systems, The Quarterly Journal of the Royal Meteorological Society, Modeling Earth Systems and Environment

2018 - Present Member of American Meteorological Society (AMS)

PRESENTATIONS

2025 **Feng, C.**, and Z. Pu, 2025: All-Sky Assimilation of GOES-16 Water Vapor Channels in Consideration of Cloud-Dependent Interchannel Observation-Error Correlations. 105th AMS Annual Meeting, 29th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), New Orleans, Louisiana, 12 - 16 January 2025.

Feng, C., Z. Pu, A. R. Nehrir, K. M. Bedka, and J. Doyle, 2025: Impacts of Assimilating DAWN and HALO Observations on Numerical Simulations of Tropical Convective Systems Associated with African Easterly Waves During NASA's CPEX-AW and CPEX-CV. 105th AMS Annual Meeting, 4th Symposium on Mesoscale Processes, New Orleans, Louisiana, 12 - 16 January 2025.

2024 **Feng, C.**, and Z. Pu, 2024: All-Sky Assimilation of GOES-16 Water Vapor Channels with Accounting for Cloud-Dependent Interchannel Correlations. 104th AMS Annual Meeting, 28th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), Baltimore, Maryland, 28 January - 1 February 2024.

2023 **Feng, C.**, and Z. Pu, 2023: A Bias Correction Scheme with the Symmetric Cloud Proxy Variable and Its Influence on Assimilating All-Sky GOES-16 Brightness Temperatures. 103rd AMS Annual Meeting, 27th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), Denver, Colorado, 8 - 12 January 2023.

2021 **Feng, C.**, and Z. Pu, 2021: Bias Correction for All-Sky Satellite Data Assimilation with GOES-R Using Symmetric Cloud Proxy Variables. 101st AMS Annual Meeting, 25th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), Virtual Meeting, 10-15 January 2021.

Feng, C., and Z. Pu, 2021: Bias Correction with the Symmetric Cloud Proxy Variable and its Influence on Assimilating All-Sky GOES-16 Brightness Temperatures. 34th Conference on Hurricanes and Tropical Meteorology, AMS, Virtual Meeting, 10 - 14 May 2021.