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Education

2018 Ph.D., Atmospheric Sciences, The Pennsylvania State University
2012 M.S., Atmospheric Sciences, North Carolina State University
2008 M.S., Environmental Engineering, Tsinghua University, China
2005 B.S., Environmental Engineering, Tsinghua University, China

Professional Appointment

2021– Research Scientist II, *Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder and NOAA Chemical Sciences Laboratory*

2018–2021 Research Scientist I, *Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder and NOAA Chemical Sciences Laboratory*

Selected Peer-Reviewed Journal Publications

Chen, Y.-S., T. Yamaguchi, P. A. Bogenschutz, and G. Feingold (2021). Model evaluation and intercomparison of marine warm low cloud fractions with neural network ensembles. *J. Adv. Model. Earth Syst.*, 13(11), e2021MS002625, doi:10.1029/2021MS002625

Schrom, R. S., M. van Lier-Walqui, M. R. Kumjian, J. Y. Harrington, A. A. Jensen, and **Y.-S. Chen** (2021). Radar-based Bayesian estimation of ice crystal growth parameters within a microphysical model. *J. Atmos. Sci.*, 78(2), 549–569, doi:10.1175/JAS-D-20-0134.1

Bogenschutz, P. A., S. Tang, P. M. Caldwell, S. Xie, W. Lin, and **Y.-S. Chen** (2020). The E3SM version 1 single-column model. *Geosci. Model Dev.*, 13(9), 4443–4458, doi:10.5194/gmd-13-4443-2020

Chen, Y.-S., J. Y. Harrington, J. Verlinde, F. Zhang, and M. Oue (2020). Dynamical response of an Arctic mixed-phase cloud to ice precipitation and downwelling longwave radiation from an upper-level cloud. *J. Geophys. Res. Atmos.*, 125(2), e2019JD031089, doi:10.1029/2019JD031089

Silber, I., A. M. Fridlind, J. Verlinde, A. S. Ackerman, **Y.-S. Chen**, D. H. Bromwich, S.-H. Wang, M. Cadeddu, and E. W. Eloranta (2019). Persistent supercooled drizzle at temperatures below −25 °C observed at McMurdo Station, Antarctica. *J. Geophys. Res. Atmos.*, 124(20), 10878–10895, doi:10.1029/2019JD030882

Simpfendoerfer, L. F., J. Verlinde, J. Y. Harrington, M. D. Shupe, **Y.-S. Chen**, E. E. Clothiaux, and J.-C. Golaz (2019). Formation of Arctic stratocumuli through atmospheric radiative cooling. *J. Geophys. Res. Atmos.*, 124(16), 9644–9664, doi:10.1029/2018JD030189

Chen, Y.-S., J. Verlinde, E. E. Clothiaux, A. S. Ackerman, A. M. Fridlind, M. Chamecki, P. Kollias, M. P. Kirkpatrick, B.-C. Chen, G. Yu, and A. Avramov (2018). On the forward modeling of radar Doppler spectrum width from LES: Implications for model evaluation. *J. Geophys. Res. Atmos.*, 123(14), 7444–7461, doi:10.1029/2017JD028104

Wang, Y., B. Geerts, and **Y. Chen** (2016). Vertical structure of boundary layer convection during cold-air outbreaks at Barrow, Alaska. *J. Geophys. Res. Atmos.*, 121(1), 399–412, doi:10.1002/2015JD023506

Yu, G., J. Verlinde, E. E. Clothiaux, and **Y.-S. Chen** (2014). Mixed-phase cloud phase partitioning using millimeter wavelength cloud radar Doppler velocity spectra. *J. Geophys. Res. Atmos.*, 119(12), 7556–7576, doi:10.1002/2013JD021182

Invited Presentations

Chen, Y.-S., T. Yamaguchi, P. A. Bogenschutz, and G. Feingold (2022). Model evaluation and intercomparison of marine warm low cloud fractions with neural network ensembles, keynote presentation at the 6th WGNE Workshop on Systematic Errors in Weather and Climate Models, October 31–November 4, 2022, Reading, UK.

Chen, Y.-S., F. Glassmeier, F. Hoffmann, T. Yamaguchi, and G. Feingold (2022). Understanding the properties and evolution of subtropical marine stratocumulus with an LES ensemble and Gaussian process emulation, invited presentation at the WCRP Analysis of PPEs in Atmospheric Research (APPEAR) Virtual Workshop, October 18–19, 2022.

Other Presentations (First-Author, Recent)

Chen, Y.-S., J. Zhang, F. Glassmeier, F. Hoffmann, T. Yamaguchi, X. Zhou, G. Feingold (2023). Explore aerosol-cloud-interactions using a LES ensemble of stratocumulus, oral presentation at the 2023 AGU Fall Meeting, December 11–15, 2023, San Francisco, CA.

Chen, Y.-S., T. Yamaguchi, G. Feingold (2023). Interactions between Arctic mixed-phase clouds and land-surface in a Large-eddy Simulation (LES) model, oral presentation at the 103rd AMS Annual Meeting, January 8–12, 2023, Denver, CO.

Other Presentations (Contributed, Recent)

Gristey, J. J., G. Feingold, W. M. Angevine, **Y.-S., Chen** (2023). The impact of heterogeneous surface solar heating on shallow cumulus clouds in the Southern Great Plains, poster presentation at the 2023 AGU Fall Meeting, December 11–15, 2023, San Francisco, CA.

Zhang, J., **Y.-S., Chen**, T. Yamaguchi, and G. Feingold (2023). Addressing the detectability of an MCB type of perturbation over the Northeastern Pacific with a data-driven approach, poster presentation at the 2023 AGU Fall Meeting, December 11–15, 2023, San Francisco, CA.

Feingold, G., J. Zhang, X. Zhou, **Y.-S., Chen**, T. Yamaguchi (2023). Cloud adjustments in response to aerosol based on large ensembles of LES and satellite data, poster presentation at the 2023 Joint Atmospheric Radiation Measurement (ARM) User Facility and Atmospheric System Research (ASR) Principal Investigator (PI) Meeting, August 7–10, 2023, Rockville, MD.

Zhou, X., **Y.-S., Chen**, T. Yamaguchi, A. Fridlind, A. Ackerman, G. Feingold (2023). Correlating stratocumulus organizational characteristics and aerosol–cloud interactions in observations and LES emulators, oral presentation at the 2023 Joint Atmospheric Radiation Measurement (ARM) User Facility and Atmospheric System Research (ASR) Principal Investigator (PI) Meeting, August 7–10, 2023, Rockville, MD.

Zhou, X., **Y.-S., Chen**, T. Yamaguchi, A. Fridlind, A. Ackerman, G. Feingold (2023). Correlating stratocumulus organizational characteristics and aerosol–cloud interactions in observations and LES emulators, oral presentation at the 2023 Gordon Research Seminar on Radiation and Climate, July 22–23, 2023, Lewiston, ME.

Yamaguchi, T., **Y.-S., Chen**, J. Zhang, F. Glassmeier, R. Yoshida, and G. Feingold (2023). Process level

understanding gained with geophysical variable maps, oral presentation at International Core-to-Core Project on Global Storm Resolving Analysis (ICCP-GSRA) Workshop 2023 and 2nd EarthCARE Modeling Workshop, March 27–30, 2023, Izu, Shizuoka, Japan.

Zhang, J., **Y.-S., Chen**, T. Yamaguchi, and G. Feingold (2023). Time-dependent cloud adjustments to aerosol in non-precipitating stratocumulus: Diurnal cycle and MCB implications, oral presentation at 2023 Aerosol, Cloud, Precipitation, and Climate (ACPC) Initiative Meeting, May 17–19, 2023, Houston, TX.

Zhou, X., G. Feingold, D. Painemal, A. Gettelman, **Y.-S. Chen**, T. Yamaguchi (2023). Exploring low cloud and aerosol interactions in geostationary satellite observations, LES and CESM2: Causal relationships and timescales, oral presentation at 2023 Aerosol, Cloud, Precipitation, and Climate (ACPC) Initiative Meeting, May 17–19, 2023, Houston, TX.

Zhang, J., **Y.-S., Chen**, G. Feingold (2023). The roles of meteorology and aerosol in controlling marine low cloud fraction: A data-driven approach, poster presentation at the 103rd AMS Annual Meeting, January 8–12, 2023, Denver, CO.

Funded Project

2023.09 Aerosol-cloud interactions centered on MAGIC: Insights from measurements and Lagrangian large eddy simulation, U.S. Department of Energy (DOE) Atmospheric Systems Research (ASR) program, $670,445, 3-year. Co-Investigator.

2020.09 Evaluating biases in aerosol-cloud interaction metrics using ARM data and models, U.S. Department of Energy (DOE) Atmospheric Systems Research (ASR) program, $510,472, 3-year. Co-Investigator.

Professional Activities

Reviewing

- Peer-reviewed journals: *Atmos. Chem. Phys.*, *Geophys. Res. Lett.*, *J. Appl. Meteor. Climatol.*, *J. Atmos. Sci.*, *Mon. Wea. Rev.*

Chairing

- Session chair, The Stable and Polar Boundary Layers III, the 24th Symposium on Boundary Layers and Turbulence of the 103rd AMS Annual Meeting, January 8–12, 2023, Denver, CO

Other activities

- Associate editor, Journal of the Atmospheric Sciences, since September, 2023
- Member, the Organizing Committee of Analysis of PPEs in Atmospheric Research (APPEAR) Virtual Seminar Series, since March, 2023