

# YAOSHENG CHEN

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## PROFESSIONAL HISTORY AND EDUCATION

- 2021– *Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder and NOAA Chemical Sciences Laboratory*
- Research Scientist II
  - Arctic mixed-phase clouds
  - Aerosol–cloud interactions
- 2018–2021 *Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder and NOAA Chemical Sciences Laboratory*
- Research Scientist I
  - Improving the representation of shallow clouds in E3SM
  - Emulation of microphysical processes
- 2012–2018 *Department of Meteorology and Atmospheric Science, The Pennsylvania State University*
- Graduate Research/Teaching Assistant
  - Ph.D. in Atmospheric Sciences (2018)
- 2008–2012 *Department of Marine, Earth, and Atmospheric Sciences, North Carolina State University*
- Graduate Research/Teaching Assistant
  - M.S. in Atmospheric Sciences (2012)
- 2001–2007 *Department of Environmental Science and Engineering, Tsinghua University, China*
- Undergraduate and Graduate Research Assistant (2004–2007)
  - M.S. in Environmental Engineering (2008)
  - B.S. in Environmental Engineering (2005)

## SELECTED PEER-REVIEWED JOURNAL PUBLICATIONS

- Chen, Y.-S.**, T. Yamaguchi, P.A. Bogenschutz, and G. Feingold (2021). Model evaluation and intercomparison for 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, 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. Cadetdu, and E.W. Eloranta (2019). Persistent supercooled drizzle at temperatures below  $-25^{\circ}\text{C}$  observed at McMurdo Station, Antarctica. *J. Geophys. Res. Atmos.*, 124(20), 10878–10895, doi:10.1029/2019JD030882

Simpfendorfer, 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 PRESENTATION**

**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.**, T. Yamaguchi, P.A. Bogenschutz, and G. Feingold (2022). Model evaluation and intercomparison for marine warm low cloud fractions with neural network ensembles, oral presentation at the 2022 AMS Collective Madison Meeting, August 8–12, 2022, Madison, WI.

**Chen, Y.-S.**, T. Yamaguchi, and G. Feingold (2022). Sensitivity of Arctic mixed-phase cloud life cycle to environmental factors, poster presentation at the 2022 AMS Collective Madison Meeting, August 8–12, 2022, Madison, WI.

**Chen, Y.-S.**, T. Yamaguchi, P.A. Bogenschutz, and G. Feingold (2021). Model evaluation and intercomparison for marine warm low cloud fractions with neural network ensembles, poster presentation at the 2021 AGU Fall Meeting, December 13–17, 2021, New Orleans, LA.

### **OTHER PRESENTATIONS (CONTRIBUTED, RECENT)**

Feingold, G., X. Zhou, J. Zhang, **Y.-S. Chen**, and T. Yamaguchi (2022). New insights into aerosol–cloud interactions using large eddy simulation and satellite remote sensing, poster presentation at the 2022 Joint Atmospheric Radiation Measurement (ARM) User Facility and Atmospheric System Research (ASR) Principal Investigator (PI) Meeting, October 24–27, 2022, Rockville, MD.

Feingold, G., J. Zhang, X. Zhou, **Y.-S. Chen**, and T. Goren (2021). Quantifying the aerosol radiative effect using reanalysis and satellite observations in the Eastern North Atlantic and North East Pacific, poster presentation at the 2021 Joint Atmospheric Radiation Measurement (ARM) User Facility and Atmospheric System Research (ASR) Principal Investigator (PI) Meeting, June 21–24, 2021.

Yamaguchi, T., P.A. Bogenschutz, D.F. Martin, H.-H. Lee, P. Schwartz, **Y.-S. Chen**, R. Yoshida, and G. Feingold (2020). Enhanced low cloud representation in E3SM with Framework for Improvement by Vertical Enhancement and future plan, oral presentation at the 2020 Earth System Model Development

(ESMD) program area – Energy Exascale Earth System Model (E3SM) Principal Investigator (PI) Meeting, October 26–29, 2020.

### **FUNDED PROJECT**

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, \$510,500, 3-year. Co-Investigator.

### **PROFESSIONAL ACTIVITIES**

Reviewer for peer-reviewed journals

- Atmospheric Chemistry and Physics
- Journal of Applied Meteorology and Climatology
- Journal of the Atmospheric Sciences
- Monthly Weather Review