Jianhao Zhang

Research Scientist I
NOAA Chemical Sciences Laboratory (CSL)/CIRES University of Colorado Boulder
325 Broadway, Boulder, CO 80305, USA

jianhao.zhang@noaa.gov **https://jianhaozhang.weebly.com/**

PROFESSIONAL APPOINTMENT

NOAA Chemical Sciences Laboratory, Boulder, CO *Sept. 2021 – present*
Research Scientist I, CIRES at the University of Colorado Boulder

NOAA Chemical Sciences Laboratory, Boulder, CO *Sept. 2020 – Aug. 2021*
NRC Research Associate (postdoc fellow hosted by Dr. Graham Feingold)

EDUCATION

University of Miami, Miami, FL *August 2020*
Ph.D. in Meteorology and Physical Oceanography
Dissertation: The interactions between light-absorbing smoke and marine boundary layer clouds over the remote southeast Atlantic
Committee: Dr. Paquita Zuidema (Chair), Dr. Brian Mapes, Dr. Brian Soden, Dr. Cassandra Gaston, Dr. David Turner & Dr. Takanobu Yamaguchi

Florida State University, Tallahassee, FL *May 2014*
B.S. in Meteorology (Magna cum laude)
Minor in Mathematics

Nanjing University of Information Science and Technology, Nanjing, China *May 2014*
Joint B.S. in Atmospheric Science

PEER-REVIEWED PUBLICATIONS

Published

Zhang, J., & Feingold, G. (2023). Distinct regional meteorological influences on low-cloud albedo susceptibility over global marine stratocumulus regions. *Atmos. Chem. Phys.*, *23*(2), 1073–1090. doi: 10.5194/acp-23-1073-2023

Barrett, P. A., Abel, S. J., Coe, H., Crawford, I., Dobracki, A., Haywood, J., Howell, S., Jones, A., Langridge, J., McFarquhar, G. M., Nott, G. J., Price, H., Redemann, J., Shinozuka, Y., Szpek, K., Taylor, J. W., Wood, R., Wu, H., Zuidema, P., Bauguitte, S., Bennett, R., Bower, K., Chen, H., Cochrane, S., Cotterell, M., Davies, N., Delene, D., Flynn, C., Freedman, A., Freitag, S., Gupta, S., Noone, D., Onasch, T. B., Podolske, J., Poellot, M. R., Schmidt, S., Springston, S., Sedlacek III, A. J., Trembath, J., Vance, A., Zawadowicz, M. A., & **Zhang, J.** (2022). Intercomparison of airborne and surface-based measurements during the clarify, oracles and lasic field experiments. *Atmos. Meas. Tech.*, *15*(21), 6329–6371. doi: 10.5194/amt-15-6329-2022

Diamond, M. S., Saide, P. E., Zuidema, P., Ackerman, A. S., Doherty, S. J., Fridlind, A. M., Gordon, H., Howes, C., Kazil, J., Yamaguchi, T., **Zhang, J.**, Feingold, G., & Wood, R. (2022). Cloud

adjustments from large-scale smoke–circulation interactions strongly modulate the southeastern atlantic stratocumulus-to-cumulus transition. *Atmos. Chem. Phys.*, *22*(18), 12113–12151. doi: 10.5194/acp-22-12113-2022

Zhang, J., Zhou, X., Goren, T., & Feingold, G. (2022). Albedo susceptibility of northeastern pacific stratocumulus: the role of covarying meteorological conditions. *Atmos. Chem. Phys.*, *22*(2), 861–880. doi: 10.5194/acp-22-861-2022

Zhou, X., **Zhang, J.**, & Feingold, G. (2021). On the importance of sea surface temperature for aerosol-induced brightening of marine clouds and implications for cloud feedback in a future warmer climate. *Geophys. Res. Lett.*, *48*(24), e2021GL095896. doi: https://doi.org/10.1029/2021GL095896

Zhang, J., & Zuidema, P. (2021). Sunlight-absorbing aerosol amplifies the seasonal cycle in low-cloud fraction over the southeast atlantic. *Atmos. Chem. Phys.*, *21* (14), 11179–11199. doi: 10.5194/acp-21-11179-2021

Abel, S. J., Barrett, P. A., Zuidema, P., **Zhang, J.**, Christensen, M., Peers, F., Taylor, J. W., Crawford, I., Bower, K. N., & Flynn, M. (2020). Open cells exhibit weaker entrainment of free-tropospheric biomass burning aerosol into the south-east Atlantic boundary layer. *Atmos. Chem. Phys.*, *20*(7), 4059–4084. doi: 10.5194/acp-20-4059-2020

Zhang, J., & Zuidema, P. (2019). The diurnal cycle of the smoky marine boundary layer observed during August in the remote southeast Atlantic. *Atmos. Chem. Phys.*, *19*(23), 14493–14516. doi: 10.5194/acp-19-14493-2019 *

Zuidema, P., Sedlacek III, A. J., Flynn, C., Springston, S., Delgadillo, R., **Zhang, J.**, Aiken, A. C., Koontz, A., & Muradyan, P. (2018). The Ascension island boundary layer in the remote southeast Atlantic is often smoky. *Geophys. Res. Lett.*, *45*(9), 4456–4465. doi: 10.1002/2017GL076926

Chandra, A. S., Zuidema, P., Krueger, S., Kochanski, A., de Szoeke, S. P., & **Zhang, J.** (2018). Moisture distributions in tropical cold pools from equatorial Indian ocean observations and cloud-resolving simulations. *J. Geophys. Res. Atmos.*, *123*(20), 11,445–11,465. doi: 10.1029/2018JD028634

Zhang, J., Zuidema, P., Turner, D. D., & Cadeddu, M. P. (2018). Surface-based microwave humidity retrievals over the equatorial Indian ocean: Applications and challenges. *J. Appl. Meteor. Climatol.*, *57*(8), 1765–1782. doi: 10.1175/JAMC-D-17-0301.1

PROFESSIONAL SERVICES & LEADERSHIP

Journal Editorship

- Frontiers in Remote Sensing: Satellite Missions [SI: Multi-Instrument Remote Sensing of Aerosol-Cloud Interactions] (Guest editor, Dec 2021 –)
- Atmosphere: Aerosols [SI: Effects of Aerosols on the Brightness of Marine Low Clouds: From Observations, Simulations, to Data-Driven Approaches] (Guest editor, Jul 2022 –)

Grant Reviewer

- University of Colorado AB Nexus Program (April 2022)

Journal Peer Reviewer

- Journal of Geophysical Research: Atmopshere (AGU)

*ACP Highlight Article

- Bulletin of the American Meteorology Society (AMS)
- Atmospheric Science Letters (RMetS)
- Journal of Applied Meteorology and Climatology (AMS)
- Atmospheric Chemistry and Physics (EGU)
- Journal of Climate (AMS)
- Climate Dynamics (Springer)
- Frontiers in Marine Science (Frontiers)
- Atmospheric Environment (Elsevier)
- Atmosphere, Climate, Energies, Remote Sensing, Sustainability (MDPI)

Conference Convener

- co-Chair, Aerosol-Cloud Indirect Effects session at the AMS's 16th Conference on Cloud Physics (Aug 2022, Madison, MI)

NOAA Office of Oceanic and Atmospheric Research (OAR) subject matter expert
Satellite Data *Feb 2022 –*

NOAA Hollings and EPP/MSI Undergraduate Scholarship Application reviewer
NOAA Office of Education (OED) Student Scholarship Programs *Mar 2022*

Judge of GLOBE International Virtual Science Symposium (IVSS) 2022
GLOBE Program, UCAR *Mar 2022*

Judge of Outstanding Student Presentation Award (OSPA) at AGU 2020 Dec 2020
2020 AGU Fall Meeting *Virtual*

RSMAS Student Seminar Committee Fall 2016
University of Miami *Miami, FL*

Intramural Basketball Official Spring 2014
Florida State University *Tallahassee, FL*

MENTORING & ADVISING

Tyler Tatro Summer 2022
Ph.D. student at University of Miami [committee chair: Paquita Zuidema]

Outreach Activities Jun 2022 –

- CIRES Education & Outreach: volunteer
- Climate Literacy and Energy Awareness Network (CLEAN): science reviewer

INVITED PRESENTATIONS

2022 AGU Fall Meeting, Chicago, IL oral presentation

"On the Conditionality of Marine Low Cloud Albedo Susceptibility: from Meteorological Conditions to Spatiotemporal Scales"

AWARDS, FELLOWSHIPS, & HONORS

National Research Council Postdoctoral Fellowship 2020
Research Associateship Programs, National Academies of Sciences, Engineering, Medicine

Hosted by Dr. Graham Feingold at NOAA CSL, Boulder CO

Finalist of Best Ph.D. Dissertation 2020
F. G. Walton Smith Prize for the Best Ph.D. Dissertation at RSMAS *University of Miami*

The nomination of MPO program by MPO faculty.

University of Miami Fellowship 2014 - 2016
University of Miami *Miami, FL*

The highest award offered by the University of Miami Graduate School. One of the eight university-wide recipients of the year.

NASA's Group Achievement Award 2019
ORACLES Team

President's list Fall 2012 & Fall 2013
Florida State University *Tallahassee, FL*

Dean's list Spring 2013 & Spring 2014
Florida State University *Tallahassee, FL*

Chi Epsilon Pi Honor Society 2014
Florida State University *Tallahassee, FL*

Golden Key Honor Society 2014
Florida State University *Tallahassee, FL*

Second Tier Scholarship (top 10% of grades ranking of the academic year) 2011 - 2012
Nanjing University of Information Science and Technology *Nanjing, China*

First Tier Scholarship (top 5% of grades ranking of the academic year) 2010 - 2011
Nanjing University of Information Science and Technology *Nanjing, China*

RESEARCH AND TEACHING EXPERIENCE

Field Campaigns September 2017 & August 2016

- NASA ORACLES-2017, São Tomé, São Tomé and Príncipe.
- NASA ORACLES-2016, Walvis Bay, Namibia.

Math Tutor 2017 - 2020
Tutorial Resources *Miami, FL*

AP calculus and college statistics

Teaching Assistant Fall 2015
University of Miami *Miami, FL*

Introduction to Weather and Climate by Dr. Brian Soden (ATM102).

Graduate Research Assistant August 2014 - present
University of Miami *Miami, FL*

Undergrad Research Assistant 2013 - 2014
Florida State University *Tallahassee, FL*

- Analyzing reanalysis and passive microwave remote sensing data from satellites at Dr. Guosheng Liu's lab.
- Poster presented at the AGU Fall Meeting (2013), "On the Sensitivity of Passive Microwave Observation to Overland Snowfall Detection."

On-camera weather-broadcasting 2013 - 2014
Florida State University *Tallahassee, FL*

Training given by Dr. Jon Ahlquist.

PROFESSIONAL SKILLS

Programming and data analyzing: IDL, Matlab, Fortran, LaTex, Unix Shell scripting, Python.

Experience with Bayesian Optimal Estimation Method, Newtonian Iteration Technique, Gaussian Process Emulation, Machine Learning with TensorFlow, System for Atmospheric Modeling (SAM), NOAA HYSPLIT Trajectory Model.