

# CHONGXING FAN

[https://cxfan1997.github.io/cxfan\\_starfan/](https://cxfan1997.github.io/cxfan_starfan/)

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## EDUCATION

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**University of Michigan, Ann Arbor**

*September 2019 – Present*

Ph.D. Candidate in Climate and Space Sciences and Engineering

Certificate of Graduate Studies (Computational Discovery and Engineering; conferred in 2022)

GPA: 4.00/4.00 (*as of Fall 2023*)

**Nanjing University**

*September 2015 – July 2019*

Bachelor of Science in Atmospheric Sciences

GPA: 3.95/4.00

## HONORS AND AWARDS

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AGU Outstanding Student Presentation Award	2024
Richard and Eleanor Towner Prize for Distinguished Academic Achievement Award (UM)	2023
Future Investigators in NASA Earth and Space Science and Technology Fellowship (\$150,000, NASA)	2022
<i>Title: Impacts of Solar Farming on Surface Energy Budget and Climate from Long-Term NASA Satellite Observations</i>	
Rackham International Students Fellowship (UM)	2020
MICDE Fellowship (UM)	2019
Honorable Mention in the Mathematical Contest in Modeling (MCM, COMAP)	2018
Chow Tai Fook Scholarship (Top 1%, NJU)	2018
China's National Scholarship (Top 1%, NJU)	2017
Scholarship of Mr. Liao (Top 1%, NJU)	2016

## PEER-REVIEWED PUBLICATIONS

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- Fan, C., & Huang, X.** (2023). Infrared scattering of cloud in an isothermal atmosphere. *Journal of the Atmospheric Sciences*, 80(11), 2701-2710.  
<https://doi.org/10.1175/JAS-D-23-0050.1>.
- Fan, C.,** Chen, Y.-H., Chen, X., Lin, W., Yang, P., & Huang, X. (2023). A refined

understanding of the ice cloud longwave scattering effects in climate model. *Journal of Advances in Modeling Earth Systems*, 15, e2023MS003810.

<https://doi.org/10.1029/2023MS003810>.

3. Huang, X., Chen, X., **Fan, C.**, Kato, S., Loeb, N., Bosilovich, M., et al. (2022). A synopsis of AIRS global-mean clear-sky radiance trends from 2003 to 2020. *Journal of Geophysical Research: Atmospheres*, 127, e2022JD037598. <https://doi.org/10.1029/2022JD037598>.
4. **Fan, C.**, & Huang, X. (2021). Direct impact of solar farm deployment on surface longwave radiation. *Environmental Research Communications*, 3(12), 125006. <https://doi.org/10.1088/2515-7620/ac40f1>.
5. **Fan, C.**, & Huang, X. (2020). Satellite-observed changes of surface spectral reflectances due to solar farming and the implication for radiation budget. *Environmental Research Letters*, 15(11), 114047. <https://doi.org/10.1088/1748-9326/abbdea>.
6. **Fan, C.**, Wang, M., Rosenfeld, D., Zhu, Y., Liu, J., & Chen, B. (2020). Strong precipitation suppression by aerosols in marine low clouds. *Geophysical Research Letters*, 47(7), e2019GL086207. <https://doi.org/10.1029/2019GL086207>.

## PROFESSIONAL SERVICES

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1. **Peer reviewer** for *Advances in Atmospheric Sciences* (2022; 2023)
2. **Peer reviewer** for *Journal of Climate* (2023)
3. **Peer reviewer** for *Journal of Geophysical Research – Atmospheres* (2 manuscripts in 2023)
4. **Peer reviewer** for *Atmospheric Chemistry and Physics* (2023)
5. **Peer reviewer** for *Environmental Research: Climate* (2024; selected as **IOP Trusted Reviewer**)

## CONFERENCES, PROCEEDINGS, AND ABSTRACTS

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[O] Oral Talks; [P] Posters

1. [O] **Fan, C.**, Chen, Y.-H., Chen, X., Lin, W., Huang, X., & Yang, P. Address Climate Model Bias by Refining Radiation Scheme: Examples and Future Perspectives. AGU Fall Meeting 2023. San Francisco, CA, USA. December 11-15, 2023.
2. [O] Huang, X., Chen, X., Strow, L., **Fan, C.**, Loeb, N., Kato, S., Yue, Q. The Insights from Twenty Years of AIRS Radiances and an Outlook for the Incoming Decade: A Climate Perspective. 20<sup>th</sup> Annual Meeting of the Asia Oceania Geosciences Society. Singapore. July 30 - August 4, 2023.
3. [P] **Fan, C.**, & Huang, X. Understanding How Solar Farms Modify Radiation Budget and Regional Climate Based on Satellite-observation Constrained Climate Modeling. 20<sup>th</sup> Annual

- Meeting of the Asia Oceania Geosciences Society. Singapore. July 30 - August 4, 2023.
4. **[O] Fan, C.,** Chen, Y.-H., Chen, X., Lin, W., Huang, X, & Yang, P. Including Ice-cloud Longwave Scattering and Surface Spectral Emissivities in Climate Models Leads to More Impacts on Mean-state Climate Than Climate Feedbacks. 20<sup>th</sup> Annual Meeting of the Asia Oceania Geosciences Society. Singapore. July 30 - August 4, 2023.
  5. **[P] Fan, C.,** Chen, Y.-H., Chen, X., Lin, W., Huang, X, & Yang, P. Ice-Cloud Longwave Scattering in Climate Models Leads to More Impacts on Mean-State Climate than Climate Feedbacks. GRC Radiation and Climate. Lewiston, Maine, USA. July 23-28, 2023.
  6. **[O] Fan, C.,** Chen, Y.-H., Chen, X., Lin, W., Huang, X, & Yang, P. Including Ice-Cloud Longwave Scattering and Surface Spectral Emissivities in Climate Models Leads to More Impacts on Mean-State Climate than Climate Feedbacks. EGU General Assembly 2023. Vienna, Austria. April 23-28, 2023.
  7. **[O] Fan, C.,** Chen, Y.-H., Jing, X., Chen, X., Lin, W., Huang, X, & Yang, P. An Overall Assessment of the Ice-Cloud Longwave Scattering Effects on the Simulated Global Climate. 36th Conference on Climate Variability and Change, 103<sup>rd</sup> AMS Annual Meeting. Denver, CO, USA. January 8-12, 2023.
  8. **[O] Fan, C.,** & Huang, X., Satellite-observed changes of surface reflectance, emissivity, and temperature due to solar farming and the implication for radiation budget. 14th Conference on Weather, Climate, and the New Energy Economy, 103<sup>rd</sup> AMS Annual Meeting. Denver, CO, USA. January 8-12, 2023.
  9. **[O] Fan, C.,** Chen, Y.-H., Jing, X., Chen, X., Lin, W., Huang, X, & Yang, P. An Overall Assessment of the Ice-Cloud Longwave Scattering Effects on the Simulated Global Climate. AGU Fall Meeting 2022. Chicago, IL, USA. December 12-16, 2022.
  10. **[P] Fan, C.,** & Huang, X., Satellite-Observed Changes of Surface Radiative Properties due to Solar Farming and the Implication for Radiation Budget. Midwest Student Conference on Atmospheric Research 2022. Urbana, IL, USA. October 1-2, 2022.
  11. **[P] Fan, C.,** Chen, Y.-H., Jing, X., Chen, X., Lin, W., Huang, X., & Yang, P., Cloud scattering and surface spectral emissivities in climate model: Performance evaluation and feedback analysis. 2022 CFMIP Meeting on Clouds, Precipitation, Circulation and Climate Sensitivity. Seattle, WA, USA. July 19-22, 2022
  12. **[O] Fan, C.,** & Huang, X., Satellite-Observed Changes of Surface Radiative Properties due to Solar Farming and the Implication for Radiation Budget. 2022 International Radiation Symposium. Thessaloniki, Greece. July 4-8, 2022.
  13. **[P] Fan, C.,** & Huang, X., Solar Farm as an ideal test bed for satellite surface emissivity and temperature retrieval algorithms. AGU Fall Meeting 2021. New Orleans, LA, USA. December 13-17, 2021.

14. **[O] Fan, C., & Huang, X.,** Use different machine-learning algorithms for clear-sky detections in infrared hyperspectral observations: assessment and physical interpretability. 3rd NOAA Workshop on Leveraging AI in Environmental Sciences. Online. September 13-17, 2021.
15. **[P] Fan, C., & Huang, X.,** Satellite-observed changes of surface spectral reflectances due to solar farming and the implication for radiation budget. AGU Fall Meeting 2020. Online. December 1-17, 2020.

## INTERNSHIP EXPERIENCE

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**Globalink Research Internship** *July 2018 – October 2018*

- Project Title: Evaluation of quantitative precipitation estimation from model, satellite and radar
- Advisor: Prof. Yongsheng Chen (York University, Canada)

**Meteorological Bureau of Hunan Province, China** *February 2018*

- Weather forecast intern

## TEACHING EXPERIENCE

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**Grader for CLIMATE 586 (Advanced Data Analysis)** *September - December 2023*

- Responsibility: grading assignments; hosting office hours to answer students' questions

**Grader for CLIMATE 586 (Advanced Data Analysis)** *September - December 2022*

- Responsibility: grading assignments

## COMMUNITY SERVICES

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**CLaSP-Fate High School Outreach** *October 2023*

- Volunteered to host ~30 10th graders from the Jalen Rose Leadership Academy in the department for exciting hands-on activities and lab tours.
- Planned the event and proposed physics demonstrations.
- Conducted physical demonstrations and explained the physics to students.

**Daily Email Group for International Students** *October 2019 – October 2020*

- Created and organized the group where members write emails to other group members at any frequency they like to share their life, experiences, and stories.
- Named to be the English Language Institute (ELI) Student of the Month in December 2019. <https://lsa.umich.edu/eli/news-events/all-news/dec19studentofthemonth.html>

## SKILLS

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### Computer Skills

- Programming languages: C/C++, Fortran, Visual Basic, Python, NCL
- Platforms: Windows, Linux, macOS
- Applications: Excel, MindMaster, Git, Adobe Premiere Pro, Adobe Audition, OBS

### Certifications

- Jiangsu Computer Rank Examination Certificate of Level Two: C Language (Excellent Grade, 2017)
- National Computer Rank Examination Certificate of Level Two: C Language (Excellent Grade, 2017)
- Jiangsu Computer Rank Examination Certificate of Level Two: Visual Basic (Excellent Grade, 2016)