

Dr. Hailing Jia

SRON Space Research Organisation Netherlands
Niels Bohrweg 4, 2333 CA Leiden
Tel: +31887775741
E-Mail: h.jia@sron.nl



Professional career

2023.09 – Present	Tenure-track Scientist Space Research Organization Netherlands (SRON)
2020.10 – 2023.08	Postdoctoral Researcher Clouds and Global Climate working group (Prof. Johannes Quaas) Institute for Meteorology, University of Leipzig
2018.12 – 2019.12	Visiting scholar Atmospheric Sciences Research Center State University of New York at Albany

Education

2015.09 – 2020.06	Ph.D., Atmospheric Physics and Environment Science, Nanjing University of Information Science and Technology, China
2011.09 – 2015.06	B.S., Atmospheric Physics, Nanjing University of Information Science and Technology, China

Research Focus

-
- Aerosol-cloud-radiation interactions
 - Cloud processes and cloud-climate feedback
 - Climate modeling
 - In situ and satellite observations

National Funding

-
- 2023.09 – 2028.09 NWO (Dutch Research Council) WISE Fellowship
 - 2025.09 – 2029.09 NWO ENW-M1 grant (**PI**): *Tackling Challenges in Aerosol–Cloud InterACTIONS with a Novel Framework and New Satellites (ACIaction, €0.34 M)*

Publications

2026

1. **Jia, H.***, Neubauer, D., Bhatti, Y., Watson-Parris, D., Stier, P., Quaas, J., Partridge, D., Arifi, A., Kubin, A., Nenes, A., Irfan, M., Im, U., Svenhag, C., Schutgens, N., van Dierenhoven, B., Ferrachat, S., Lohmann, U., Tegen, I., Henkes, A., Fu, G., and Hasekamp, O.: [Process-level contributions to uncertainty in aerosol effective radiative forcing: a perturbed parameter ensemble with the aerosol–climate model ICON–HAM](#), EGU sphere [preprint], 2026.
2. **Jia H.***, Quaas J., Kroese W., Dierenhoven B., Gryspeerd E., Bohm C., Block K., and Hasekamp O.: [Optimal choice of proxy for cloud condensation nuclei reduces uncertainty in aerosol–cloud–climate forcing](#), *Science Advances*, 12(8), 2026.
3. Bhatti, Y. A., Watson-Parris, D., Regayre, L. A., **Jia, H.**, Neubauer, D., Im, U., Svenhag, C., Schutgens, N., Tsikerdekis, A., Nenes, A., Irfan, M., van Dierenhoven, B., Arifi, A., Fu, G., and Hasekamp, O. P.: [Uncertainty in aerosol effective radiative forcing from anthropogenic and natural aerosol parameters in ECHAM6.3-HAM2.3](#), *Atmos. Chem. Phys.*, 26, 269–293, 2026.
4. Zhu Y., **Jia H.**, Li H., Wang H., Wang P., Liao H, and Ynag Y.: [Strategizing Emission Cuts to Mitigate short-term warming from clean air policies](#), *Nat. Commun.*, 2026.
5. CLÉMENT N., Bellouin N., Boucher O., Quaas J., **Jia H.** and Tegen I.: [Aerosol and Non-Aerosol Drivers of Regional Trends in Top-of-Atmosphere Albedo over 2002–2020](#), *Environ. Res. Lett.*, 31, 104012, 2026.
6. Hannadige N., Fu G., Dierenhoven B., **Jia H.**, and Hasekamp O.: [Estimation of Cloud Condensation Nuclei \(CCN\) using a neural network retrieval algorithm—A synthetic study for SPEXone on the NASA PACE mission](#), *J. Quant. Spectrosc. Radiat. Transfer*, 354, 2026.
7. Liu, Y., Jia, H., and Han, Y.: [Susceptibility of marine warm clouds to aerosols in different monsoon periods over the South China Sea](#), *Atmos. Chem. Phys.*, 26, 9373–9392, 2026.
8. Sun Y., Zhao C., **Jia H.** and Yang Y.: Absorbing aerosols exacerbating the heterogeneity of precipitation profiles, *npj Clim. Atmos. Sci.*, in revision.
9. Wang H., Peng Y., **Jia H.**, Huang J., Zhao Y., Shi C., Shang H., Baran A., Yin S., Riedi J., Quaas J.: Constraining Aerosol–Cloud Interactions via the Droplet–Aerosol Trends Discrepancy, *Science Advances*, in revision.
10. Wang Y., Fang F., Li J., Zhang P., Zhao J., **Jia H.**, Huang J.: Overestimation of the Twomey Effect in Orographic Clouds over the Southern Tibetan Plateau Due to Neglected Dynamical Constraints, *Geophys. Res. Lett.*, in review.

2025

11. Henkes A., **Jia H.**, Kretschmar J., Hörnig S., and Quaas J.: [Hemispheric contrast in aerosol-cloud interactions: an attempt for detection and attribution](#), *Tellus B: Chem. phys. Meteorol.*, 77(1), p. 41–58, 2025.

2024

12. Hodnebrog Ø., Myhre G., Jouan C., Andrews T., Forster P., **Jia H.**, Loeb N., Olivie D., Paynter D., Quaas J., Raghuraman S. and Schulz M.: Recent reductions in aerosol emissions have increased Earth's energy imbalance, *Commun. Earth Environ.*, 5, 166, 2024.
13. **Jia H.***, Hasekamp O. and Quaas J.: [Revisiting aerosol–cloud interactions from weekly cycles](#), *Geophys. Res. Lett.*, 51, e2024GL108266, 2024.
14. Quaas J., Andrews T., Bellouin N., Block K., Boucher O., Ceppi P., Dagan G., Doktorowski S., Eichholz M., Forster P., Goren T., Gryspeerdt E., Hodnebrog O., **Jia H.**, Kramer R., Lange C., Maycock A., M Mülmenstädt J., Myhre G., Pincus R., Samset B., Senf F., Shine K. and Wall C.: [Adjustments to climate perturbations—mechanisms, implications, observational constraints](#), *AGU Adv.*, 5, e2023AV001144.
15. Wang Y., **Jia H.**, Zhang P., Fang F., Li J., Zhu, L., Wang, Y., Wang, T., Li, J.: [Sensitivity of cloud microphysics to aerosol is highly associated with cloud water content: Implications for indirect radiative forcing](#), *Atmos. Res.*, 309, 107552, 2024.
16. Wang Y., Li J., Fang F., Zhang P., He J., Pöhlker M., Henning S., Tang C., **Jia H.**, Wang Y., Jian B., Shi J., Huang J.: In-situ observations reveal weak hygroscopicity in the Southern Tibetan Plateau: implications for aerosol activation and indirect effects, *npj Clim. Atmos. Sci.*, 7, 77, 2024.
17. Zhao, J., Ma, X., Quaas, J., and **Jia, H.**: [Exploring aerosol–cloud interactions in liquid-phase clouds over eastern China and its adjacent ocean using the WRF-Chem–SBM model](#), *Atmos. Chem. Phys.*, 24, 9101–9118, 2024.

2023

18. **Jia H.*** and Quaas J.: [Non-linearity of the cloud response postpones climate penalty of mitigating air pollution in polluted regions](#), *Nat. Clim. Change*, 13, 943–950, 2023.
19. Rosenfeld D., Kokhanovsky A., Goren T., Gryspeerdt E., Hasekamp O., **Jia H.**, Lopatin A., Quaas J., Sourdeval O., and Pan Z.: [Frontiers in satellite-based estimates of cloud-mediated aerosol forcing](#), *Reviews of Geophysics*, 61, e2022RG000799, 2023.
20. Stjern, C. W., P. M. Forster, **H. Jia**, C. Jouan, M. R. Kasoar, G. Myhre, D. Olivie, J. Quaas, B. H. Samset, M. Sand, T. Takemura, A. Voulgarakis, and C. D. Wells: [The timescales of climate responses to carbon dioxide and aerosols](#). *J. Clim.*, 36, 3537–3551, 2023.

2022

21. Goren, T., Feingold, G., Gryspeerdt, E., Kazil, J., Kretschmar, J., **Jia, H.**, & Quaas, J. [Projecting stratocumulus transitions on the albedo—cloud fraction relationship reveals linearity of albedo to droplet concentrations](#). *Geophys. Res. Lett.*, e2022GL101169, 2022.
22. **Jia H.***, Quaas J., Gryspeerdt, E., Böhm, C., and Sourdeval, O.: [Addressing the difficulties in quantifying droplet number response to aerosol from satellite observations](#). *Atmos. Chem. Phys.*, 22, 7353–7372, 2022.
23. Quaas, J., **Jia, H.**, Smith, C., Albright, A. L., Aas, W., Bellouin, N., Boucher, O., Doutriaux-Boucher, M., Forster, P. M., Grosvenor, D., Jenkins, S., Klimont, Z., Loeb, N. G., Ma, X., Naik, V., Paulot, F., Stier, P., Wild, M., Myhre, G., and Schulz, M.: [Robust evidence for reversal of the trend in aerosol effective climate forcing](#), *Atmos. Chem. Phys.*, 22, 12221–12239, 2022.

2021

24. **Jia H.**, Ma X., Yu F., Quaas J.: [Significant underestimation of radiative forcing by aerosol–cloud interactions derived from satellite-based methods](#). *Nat. Commun.* 12, 3649, 2021.

2016 – 2020

25. Chaibou A. A. S., Ma X., Kumar K. R., **Jia H.**, Tang Y., & Sha T.: Evaluation of dust extinction and vertical profiles simulated by WRF-Chem with CALIPSO and AERONET over North Africa. *J. Atmos. Sol.-Terr. Phys.*, 199:105213, 2020.
26. **Jia H.**, Ma X., Yu F., Liu Y., and Yin Y.: Distinct Impacts of Increased Aerosols on Cloud Droplet Number Concentration of Stratus/Stratocumulus and Cumulus, *Geophys. Res. Lett.*, 46, 13517–13525, 2019.
27. **Jia H.**, Ma X., Quaas J., Yin Y., and Qiu T.: Is positive correlation between cloud droplet effective radius and aerosol optical depth over land due to retrieval artifacts or real physical processes?, *Atmos. Chem. Phys.*, 19, 8879–8896, 2019.
28. **Jia H.**, Ma X., and Liu Y.: Exploring aerosol–cloud interaction using VOCALS-REx aircraft measurements, *Atmos. Chem. Phys.*, 19, 7955–7971, 2019.
29. **Jia H.**, Ma X., and Xiong F.: Spatial and temporal distributions of warm cloud properties in eastern China and its adjacent ocean and their relationships with meteorological conditions, *Climatic and Environmental Research* (in Chinese), 23(6): 737-748, 2018.
30. Li R., Ma X., Xiong F., **Jia H.**, Sha T., & Tian R.: Comparisons and evaluation of aerosol burden and optical depth in CMIP5 simulations over East Asia. *J. Atmos. Sol.-Terr. Phys.*, 105315, 2020.
31. Lü R., Yu X., **Jia H.**, and Xiao S.: Aerosol optical properties and direct radiative forcing at Taihu. *Appl. Opt.*, 56(25), 7002-7012, 2017.
32. Ma X., **Jia H.**, Yu F., and Quaas J.: Opposite aerosol index-cloud droplet effective radius correlations over major industrial regions and their adjacent oceans, *Geophys. Res. Lett.*, 45, 5771–5778, 2018.
33. Ma X., **Jia H.**, Sha T., An J., and Tian R.: Spatial and seasonal characteristics of particulate matter and gaseous pollution in China: Implications for control policy, *Environ. Pollut.*, 2019.
34. Ma X., and **Jia H.**: Particulate matter and gaseous pollutions in three megacities over China: Situation and implication, *Atmos. Environ.*, 140, 476-494, 2016.
35. Ma X., Sha T., Wang J., **Jia H.**, and Tian R.: Investigating impact of emission inventories on PM_{2.5} simulations over North China Plain by WRF-Chem. *Atmos. Environ.*, 195, 125-140, 2018.
36. Ma X., Wang J., Yu F., **Jia H.**, and Hu Y.: Can MODIS AOD be employed to derive PM_{2.5} in Beijing-Tianjin-Hebei over China?. *Atmos. Res.*, 181, 250-256, 2016.
37. Sha T., Ma X., **Jia H.**, Ding J., Zhang Y., and Chang Y.: Exploring the influence of two inventories on simulated air pollutants during winter over the Yangtze River Delta. *Atmos. Environ.*, 206, 170-182, 2019.
38. Sha T., Ma X., **Jia H.**, Tian R., Chang Y., Cao F., and Zhang Y.: Aerosol chemical component: Simulations with WRF-Chem and comparison with observations in Nanjing. *Atmos. Environ.*, 218, 116982, 2019.
39. Tian R., Ma X., **Jia H.**, Yu F., Sha T., and Zan Y.: Aerosol radiative effects on tropospheric photochemistry with GEOS-Chem simulations. *Atmos. Environ.*, 208, 82-94, 2019.
40. Niu X., Ma X., and Jia H.: Analysis of cloud-type distribution characteristics over major aerosol emission regions in the Northern Hemisphere by using CloudSat/CALIPSO satellite data, *Journal of the Meteorological Sciences*, 42(4):467-480, 2022.

Teaching/Supervising Experience

2025 – Present Supervising PhD, Chenwei Li, Space Research Organization Netherlands (SRON)

Project: *Tackling Challenges in Aerosol–Cloud InterACTIONS with a Novel Framework and New Satellites (ACIaction)*

- 2024 – Present Supervising PhD, Ardit Arifi, Space Research Organization Netherlands (SRON)
 Project: *Joint Use of Aerosol and Cloud Products to Quantify Emissions and Radiative Forcing*
- 2024 – present Co-supervising PhD, Elise Devigne, Université de Lille
 Project: *Interactions between clouds and above-cloud aerosols*
- 2022 – 2023 Supervising Bachelor thesis, University of Leipzig
 Aerosol cloud-albedo effect observed from satellite
- 2022 – 2023 Teaching assistant, University of Leipzig
 Course: *Thermodynamics*

Academic Service

- **Lead** of AeroCom Phase 4 Multi-Model PPE (MMPPE) experiment
- **Lead** of CMIP7 ACI-PPEMIP experiment
- **Board member** of working group “Clouds and Radiation” of the International Radiation Commission (IRC; since 2025)
- **Board member** of AeroCom Science Steering Committee
- **Board member** of HAMMOZ model Science Steering Committee
- **Editorial board member** of ‘Atmospheric Chemistry and Physics’
- **Convener** of the session ‘Clouds, Aerosol, Radiation and Precipitation Interactions’ EGU 2025&2026
- **Convener** of the session ‘Current progress on Aerosol Cloud Interactions’ IAC 2026
- **Convener** of the session ‘Perturbed parameter ensembles’ 24th AeroCom / 13th AeroSat workshop
- **Organizer** of CleanCloud Seminar Series (<https://projects.au.dk/cleancloud/news/seminars>)
- Reviewer for Journal: *Nature Climate Change* | *Nature Communications*
 Atmospheric Chemistry and Physics | *Geophysical Research Letters*
 npj Climate and Atmospheric Science | *npj Climate Action*
 Geoscientific Model Development | *Earth System Science Data*
 Journal of Advances in Modeling Earth Systems
 Journal of Geophysical Research: Atmospheres
 Environmental Research Letters | *Atmospheric Research*
 Atmospheric Environment | *Remote Sensing* | *Earth and Space Science*
 Scientific Reports | *Atmospheric Science Letters*
 Pure and Applied Geophysics | *Geoscience Letters* | *Atmosphere etc.*
- Reviewer for Funding: *Swiss National Science Foundation (SNSF)*
- Reviewer for Fellowship: *Marie Skłodowska-Curie Postdoctoral Fellowship Programme, 2025*

Conference Presentations

Talks

- 2026/05 HAMMOZ Annual meeting (Leipzig, Germany)
- 2026/05 EGU General Assembly (Vienna, Austria) ***Solicited Talk***
- 2025/12 AeroCom Forum (online) ***Invited Talk***
- 2025/10 24th AeroCom workshop/ 11th AeroSAT workshop (Paris, France)
- 2025/01 105th AMS Annual Meeting (New Orleans, USA) ***Invited Talk***
- 2024/05 EGU General Assembly (Vienna, Austria) ***Highlight Talk***
- 2022/10 21th AeroCom workshop/ 9th AeroSAT workshop (Oslo, Norway)
- 2022/09 11th International Aerosol Conference (Athens, Greece)
- 2022/05 EGU General Assembly 2022 (Vienna, Austria)
- 2022/05 Aerosol, Cloud, Precipitation and Climate (ACPC) workshop (online)
- 2021/10 20th AeroCom workshop/ 8th AeroSAT workshop (online)
- 2019/12 UAlbany ASRC Colloquium (Albany, USA) ***Invited Talk***

Posters

- 2026/04 EGU General Assembly (Vienna, Austria)
- 2025/04 EGU General Assembly (Vienna, Austria)
- 2024/05 EGU General Assembly (Vienna, Austria)
- 2022/03 DA-CH Meteorology Conference (Leipzig, Germany)
- 2019/12 American Geophysical Union Fall Meeting (San Francisco, USA)
- 2019/05 International GEOS-Chem Meeting (IGC9) (Boston, USA)
- 2018/12 American Geophysical Union Fall Meeting (Washington DC, USA)
- 2018/10 AGU|CAS Joint Meeting (Shannxi, China)
- 2018/05 Regional GEOS-Chem Asia Meeting (GCA1) (Nanjing, China)