

# Jing Wei, Ph.D. (Updated to 2/2024)

Earth System Science Interdisciplinary Center, University of Maryland, College Park, MD 20740, USA

Tel: 571-685-0209, Email: [weijing@umd.edu](mailto:weijing@umd.edu), Homepage: <https://weijing-rs.github.io/index.html>

## Biography

I specialize in air quality, focusing on aerosols, particulate matter and chemical composition, and trace (polluted and greenhouse) gases utilizing satellite remote sensing, big data, and artificial intelligence (machine and deep learning), and assessing the impacts of air pollution and extreme weather on the environment, health, and climate. I have authored over **80** papers as (co-) first or corresponding authors in leading journals like *Nature Communications*, *The Lancet Planetary Health*, *Remote Sensing of Environment*, and *Environmental Science & Technology*, including **7 ESI Hot (Top < 0.1%) papers** and **15 ESI Highly Cited (Top < 1%) papers** indicated by the *Web of Science*, and 9 papers have been cited 100+ times, including one first-author paper cited over **470** times. My total citations are **6300+** times with an H-index of **42**. I was the sole recipient of the **AGU James R. Holton Award (2022)**, **Remote Sensing Young Investigator Award (2023)**, ranked in the top **0.1%** highly cited authors (Atmospheric Sciences) over the past decade (OpenAlex), and on the Stanford University List of the **World's Top 2% Scientists (2022, 2021, 2020)**. I have served as an Editor of *Earth System Science Data*, and Associate Editor of *JGR: Atmospheres*. I have generated high-resolution and high-quality datasets of air pollutants for the Global World (GHAP), China (CHAP), and the United States (USHAP), which have been widely used, leading to **330+** applied publications.

## Employment

2024–Present: Assistant Research Scientist, Department of Atmospheric and Oceanic Science, Earth System Science Interdisciplinary Center, University of Maryland, College Park, USA.

2022–2023: Postdoctoral (Faculty Research) Associate, Department of Atmospheric and Oceanic Science, Earth System Science Interdisciplinary Center, University of Maryland, College Park, USA.

2021–2022: Postdoctoral Research Scholar, Department of Chemical and Biochemical Engineering, University of Iowa, USA.

2017–2018: Research Assistant, Center for Earth System Science, Tsinghua University, China.

2017: Research Assistant, Institute of Space and Earth Information Science, Chinese University of Hong Kong, China.

## Education

2019–2021: Joint Ph.D. in Atmospheric Sciences, University of Maryland, College Park, USA.

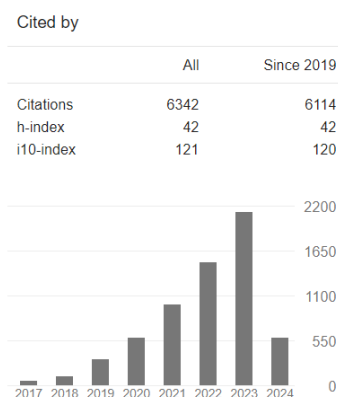
2018–2021: Ph.D. in Global Environmental Change (Geography), Beijing Normal University, China.

## Research Interests

- Atmospheric aerosols, particulate matter (PM) and chemical composition
- Atmospheric trace (polluted and greenhouse) gases (e.g., O<sub>3</sub>, NO<sub>2</sub>, SO<sub>2</sub>, and CO)
- Air pollutant modelling and health exposure assessment
- Impacts of air pollution and extreme weather on environmental health
- Cloud and cloud shadow detection for satellite remote sensing imagery
- (Explainable) Artificial Intelligence (machine, deep, and transfer learning)
- Big data (e.g., satellite, ground, reanalysis, and model data)

## Publications and Citations

- First/corresponding author: **84** (A full list is provided on Pages 5–10)
- Book Chapters: 2
- [Google Scholar](#): *H-index* = 42, *Total Citations* = 6,342
- [Web of Science](#): *H-index* = 38, *Total Citations* = 5,042
- [Scopus](#): *H-index* = 39, *Total Citations* = 5,793



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### Awards and Honors

- 2023: Young Investigator Award, *Remote Sensing* (**Awarded to one young scientist worldwide annually**): For exceptional contributions to atmospheric aerosols, clouds, particulate matter, and trace gases using remote sensing, big data, and artificial intelligence
- 2022: James R. Holton Award, American Geophysical Union (AGU) (**Usually awarded to one young scientist worldwide annually**): For exceptional contributions to satellite remote sensing of aerosols, gases, and clouds, and assessing the impacts of air pollution, weather, and climate
- 2022: Best Paper Award, Earth System Science Interdisciplinary Center, University of Maryland
- 2021: Zhou Tingru Geography Youth Award, Zhou Tingru Scholarship Secretariat
- 2020: Gao Tingyao Environmental Protection Outstanding Youth Award, Gaotingyao Environmental Protection Technology Development Foundation
- 2019: Li Xiaowen Remote Sensing Science Youth Award, Li Xiaowen Foundation Council

### Authorship Recognitions

- Top **0.1%** highly cited authors (Atmospheric Sciences) over the past decade, OpenAlex
- 2022, 2021, 2020: World's Top 2% Scientists (Earth & Environmental Sciences), Stanford University
- ESI Hot Papers (Top < 0.1%), *Web of Science* [7]:
  - *Remote Sensing of Environment* (Wei et al., 2022, 2021, 2019)
  - *Environmental Science & Technology* (Wei et al., 2019)
  - *Atmospheric Chemistry and Physics* (Wei et al., 2023, 2020)
  - *Atmospheric Environment* (Wei et al., 2019)
- ESI Highly Cited Papers (Top < 1%), *Web of Science* [18]:
  - *Remote Sensing of Environment* (Wei et al., 2022, 2021, 2019)
  - *Environmental Science & Technology* (Wei et al., 2022; 2019)
  - *Environment International* (Wei et al., 2021)
  - *Atmospheric Chemistry and Physics* (Wei et al., 2021, 2020, 2019)
  - *Atmospheric Environment* (Wei et al., 2019, 2018)
  - *Journal of Cleaner Production* (Xu et al., 2021; Xue et al., 2021)
  - *Science of The Total Environment* (Liu et al., 2021)
  - *BMC Medicine* (Cai et al., 2023)
  - *Science of The Total Environment* (Cai et al., 2023; Liu et al., 2021)
  - *Remote Sensing* (He et al., 2018)
- Journal rankings, *Exaly* [3]:
  - 1<sup>st</sup> most cited paper, *Remote Sensing of Environment* (Wei et al., 2021)
  - 1<sup>st</sup> most cited paper, *Atmospheric Environment* (Wei et al., 2019)
  - 1<sup>st</sup> most cited author, *Atmospheric Environment* (Wei et al., 2019)
- Journal Most Cited Articles [3] published in:
  - *Remote Sensing of Environment* since 2019 (Wei et al., 2021, 2019)
  - *Remote Sensing of Environment* since 2018 (Wei et al., 2019)
  - *Atmospheric Environment* since 2018 (Wei et al., 2019)
- Journal Highlight or High Impact Article [3]:
  - *Journal of Geophysical Research Atmospheres* (Wei et al., 2018)
  - *Hypertension* (Xu et al., 2021)
  - *Atmospheric Chemistry and Physics* (Liu et al., 2020)
- Top 100 Most Cited Chinese Papers Published in International Journals, Institute of Scientific and Technology Information of China, published in *Remote Sensing of Environment* (Wei et al., 2021)

### Research Grants

- NASA Earth Sciences' Applied Science Program:
  - *Generation of Integrated Aerosol Fine-Mode Fraction and Surface Particulate Matter from LEO- and GEO Satellites in Asia Using Machine-Learning Models* [80NSSC21K1980], 2021–Present, Co-Investigator
  - *Enrich and enhance the application of TEMPO and GEOS data products for regional air quality and public health management under smoke conditions* [80NSSC21K0428], 2021–Present, Co-Investigator

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### Professional Service

- Editorship
  - Editor, *Earth System Science Data* (IF = 11.4), 2022–Present
  - Associate Editor, *Journal of Geophysical Research: Atmospheres* (IF = 4.4), 2023–Present
  - Associate Editor, *Remote Sensing* (IF = 5.0), 2022–Present
  - Youth Editor, *The Innovation* (IF = 32.1), 2022–Present
  - Editorial Board Member: *International Journal of Digital Earth*, *Big Earth Data* (2021–2023)
  - Youth Editorial Board Member: *Remote Sensing Technology and Application* (2022–Present); *Journal of Atmospheric and Environmental Optics* (2022–Present); *Journal of Environmental Hygiene* (2022–Present)
  - Guest Editor: *Remote Sensing* (2021–Present); *Atmospheric Measurement Techniques* (2021–Present); *Sustainability* (2021–Present); *Frontiers in Earth Science* (2021–2022); *Frontiers in Environmental Science* (2021–2022); *Frontiers in Public Health* (2022); *Atmosphere* (2022); *National Remote Sensing Bulletin* (2021–2022)
- Scientific committee:
  - Executive Secretary, Chinese-American Oceanic and Atmospheric Association (COAA), 2023–Present
  - Co-Chair, Working Group-8 (WG-8): Air Quality & Health, Atmospheric Environmental Remote Sensing Society (AERSS), 2023–Present
  - Co-Chair, Early Career and Postgraduate Committee, Atmospheric Environmental Remote Sensing Society (AERSS), 2022–2023
- Chair/Convener of award or conference symposium/session:
  - Chair, ESSIC Best First-Author Paper Award Committee, University of Maryland, 2023
  - Co-Convener/Co-Chair, Asia Oceania Geosciences Society (AOGS) Section, 2022 (**Top Conveners**)
- Journal Reviewer (200+ peer reviews for 50+ journals):
  - Remote Sensing: *Remote Sensing of Environment*, *IEEE Transactions on Geoscience and Remote Sensing*, *ISPRS Journal of Photogrammetry and Remote Sensing*, *International Journal of Remote Sensing*, et al.
  - Atmospheric Science: *Journal of Geophysical Research: Atmospheres*, *Geophysical Research Letters*, *Atmospheric Chemistry and Physics*, *npj Climate and Atmospheric Science*; et al.
  - Environmental Science: *Environmental Science & Technology*, *Environment International*, *Environmental Pollution*, *Science of the Total Environment*, *Environmental Research Letters*, et al.
  - Public health and others: *The Innovation*, *Environmental Health Perspectives*, *The Lancet Regional Health - Americas*, *Earth System Science Data*, *Energy Economics*; et al.

### Selected Invited Seminars [Total seminars: 27 talks (1 Chair)].

- Wei, J. AeroCenter-CPC Seminar, NASA, USA, February 6, 2024.
- Wei, J. Atmospheric Science Early Career Seminar, American Geophysical Union (AGU), June 15, 2023.
- Wei, J. AOSC Department Seminar, University of Maryland, College Park, November 3, 2022.
- Wei, J. University of Science and Technology of China, China, October 21, 2022.
- Wei, J. MDPI *Remote Sensing* Seminar, June 25, 2022. (**Chair**)
- Wei, J. China Research Academy of Environmental Sciences, July 8, 2021.
- Wei, J. China Clean Air Policy Partnership, Tsinghua University, China, April 6, 2021.
- Wei, J. Lanzhou University, China, March 26, 2021.
- Wei, J. University of Maryland, College Park, MD USA, February 5, 2021.
- Wei, J. Nanjing University of Information Science and Technology, China, December 29, 2020.
- Wei, J. Goddard Space Flight Center, NASA, USA, December 1, 2020.
- Wei, J. Ministry of Ecology and Environment Center for Satellite Application on Ecology and Environment, China, November 25, 2020.
- Wei, J. Zhejiang University, China, September 20, 2020.
- Wei, J. Peking University, China, July 8, 2019.

### Selected Presentations [Conference Presentations: 20 talks (3 invited), 8 posters]

- Wei, J. Separating Daily 1 km PM<sub>2.5</sub> Inorganic Chemical Composition from Space in China since 2000 via Deep Learning. AGU Fall Meeting, December 11–15 2023, San Francisco, USA. (**Highlighted Talk**)

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- **Wei, J.** Wildfire emissions disrupt PM<sub>2.5</sub>, BC, and mortality burden trends across the continental US. AGU Fall Meeting, December 11-15 2023, San Francisco, USA.
- **Wei, J.** Tracking daily 1 km PM<sub>2.5</sub> chemical composition in China since 2000 from space via deep learning, International Society of Exposure Science (ISES) Annual Meeting, August 28, 2023, Chicago, USA.
- **Wei, J.** Tracking Air Pollution in China from Space Using Artificial intelligence, Asia Oceania Geosciences Society (AOGS) Annual Meeting, August 1, 2023, Singapore. **(Invited Talk)**
- **Wei, J.** Tracking Ambient Particulate Matter and Chemical Composition from Space using AI, MODIS/VIRS Science Team Meeting, May 3, 2023, College Park, MD, USA.
- **Wei, J.** ChinaHighAirPollutants (CHAP) dataset driven by multi-source satellite remote sensing, Land Remote Sensing Products Frontier Dynamics and Data Use Learning Conference, February 19, 2023. **(Invited Talk)**
- **Wei, J.** Two-decade fine-scale surface PM<sub>2.5</sub> estimates and spatiotemporal variations in China using machine learning, American Meteorological Society (AMS) Annual Meeting, January 10, 2023, online.
- **Wei, J.** Tracking ambient air pollution from space integrating Big Data and artificial intelligence. AGU Fall Meeting, December 12–16, 2022, Chicago, IL, USA. **(Invited Talk)**
- **Wei, J.** Satellite-derived daily fine-scale surface NO<sub>2</sub> concentrations in China by combing machine and deep learning models. American Geophysical Union (AGU) Fall Meeting, December 12–16, 2022, Chicago, USA.
- **Wei, J.** Hourly PM<sub>2.5</sub> estimations from Himawari-8/AHI aerosol products across China via machine learning. Advancement of POLarimetric Observations (APOLO), August 9-12, 2022, Washington D.C., USA.
- **Wei, J.** Full-coverage daily ground-level ozone (O<sub>3</sub>) estimation from Bigdata using machine learning across China. Asia AOGS, August 1–5, 2022, Online.
- **Wei, J.** Ground-level NO<sub>2</sub> surveillance derived from the Sentinel-5P TROPOMI satellite across China using remote sensing and machine learning. Asia Oceania Geosciences Society (AOGS), August 1–6, 2021, Online.

### Teaching Experience

- Teaching Assistant, AOSC625: *Remote Sensing of Atmospheric Properties by Satellite*, University of Maryland.
- Teaching Assistant, AOSC424: *Remote Sensing of the Atmosphere and Ocean*, University of Maryland.

### Student Guidance

- Tianshu Xu (Postgraduate student, 2023–Present): 1 paper in preparation
- Zeyu Yang (Postgraduate student, 2022–Present): 1 paper in preparation
- Fan Cheng (Postgraduate student, 2022–Present): 1 paper under review in *Remote Sensing of Environment*
- Zihui Wang (Postgraduate student, 2022–2023): 1 paper major revised in *Remote Sensing of Environment*
- Zhongyan Tian (Postgraduate student, 2022–2023): 1 paper published in *Remote Sensing* (2023)
- Shulin Pang (Postgraduate student, 2022–2023): 1 paper published in *Remote Sensing* (2023)
- Xinyao Li (Postgraduate student, 2021–2022): 1 paper published in *Journal of Cleaner Production* (2022)
- Zhendong Sun (Postgraduate student, 2020–2021): 1 paper published in *Remote Sensing* (2021)

### Publications with first/corresponding authors [Full list at: <https://weijing-rs.github.io/publication.html>]

(Note \*: Corresponding author; #: Co-first author) [Citations > 100]

[Particulate Matter \(PM\) and Chemical Composition \(11\)](#)

[Aerosol Optical Depth: Algorithms, Products, and Improvements \(18\)](#)

❖ [Algorithm Development \(8\)](#)

❖ [Product Evaluation and Fusion \(10\)](#)

[Atmospheric Trace \(Polluted and Greenhouse\) Gases \(4\)](#)

[Remote Sensing Image Classification and Identification \(5\)](#)

[Impacts of Air Pollution and Extreme Weather \(46\)](#)

❖ [Public Health \(41\)](#)

❖ [Environment, Economy, and Others \(5\)](#)

[Book Chapters \(2\)](#)

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### Particulate Matter (PM) and Chemical Composition (13)

1. **Wei, J.\***, Li, Z., Lyapustin, A., Wang, J., Dubovik, O., Schwartz, J., Sun, L., Li, C., Liu, S., and Zhu, T. First close insight into global daily gapless 1 km PM<sub>2.5</sub> pollution, variability, and health impact. *Nature Communications*, 2023, 14, 8349. **Media Outlets (Nature Communities, UMD)**
2. **Wei, J.\***, Wang, J., Li, Z., Kondragunta, S., Anenberg, S., Wang, Y., Zhang, H., Diner, D., Hand, J., Lyapustin, A., Kahn, R., Colarco, P., da Silva, A., and Ichoku, C. Long-term mortality burden trends attributed to black carbon and PM<sub>2.5</sub> from wildfire emissions across the continental US from 2000-2020: a deep learning modelling study. *The Lancet Planetary Health*, 2023, 7, e963–e975. **Media Outlets Media Outlets (CBS News, Yahoo News, The Hill, U.S. News, et al.)**
3. **Wei, J.**, Li, Z., Lyapustin, A., Sun, L., Peng, Y., Xue, W., Su, T., and Cribb, M. Reconstructing 1-km-resolution high-quality PM<sub>2.5</sub> data records from 2000 to 2018 in China: spatiotemporal variations and policy implications. *Remote Sensing of Environment*, 2021, 252, 112136. **(ESI Hot and Highly Cited Paper, Journal Most Cited Articles since 2019, Top 100 Most Cited Chinese Papers Published in International Journals, ESSIC 2022 Best Paper Award) [Citations = 465]**
4. **Wei, J.**, Huang, W., Li, Z., Xue, W., Peng, Y., Sun, L., and Cribb, M. Estimating 1-km-resolution PM<sub>2.5</sub> concentrations across China using the space-time random forest approach. *Remote Sensing of Environment*, 2019, 231, 111221. **(ESI Hot and Highly Cited Paper, Journal Most Cited Articles since 2018) [Citations = 375]**
5. **Wei, J.**, Li, Z., Cribb, M., Huang, W., Xue, W., Sun, L., Guo, J., Peng, Y., Li, J., Lyapustin, A., Liu, L., Wu, H., and Song, Y. Improved 1 km resolution PM<sub>2.5</sub> estimates across China using enhanced space-time extremely randomized trees. *Atmospheric Chemistry and Physics*, 2020, 20(6), 3273–3289. **(ESI Hot and Highly Cited Paper) [Citations = 332]**
6. **Wei, J.**, Li, Z., Guo, J., Sun, L., Huang, W., Xue, W., Fan, T., and Cribb, M. Satellite-derived 1-km-resolution PM<sub>1</sub> concentrations from 2014 to 2018 across China. *Environmental Science & Technology*, 2019, 53(22), 13265–13274. **(ESI Hot and Highly Cited Paper) [Citations = 198]**
7. **Wei, J.\***, Li, Z., Xue, W., Sun, L., Fan, T., Liu, L., Su, T., and Cribb, M. The ChinaHighPM<sub>10</sub> dataset: generation, validation, and spatiotemporal variations from 2015 to 2019 across China. *Environment International*, 2021, 146, 106290. **(ESI Highly Cited Paper) [Citations = 170]**
8. **Wei, J.\***, Li, Z., Pinker, R., Wang, J., Sun, L., Xue, W., Li, R., and Cribb, M. Himawari-8-derived diurnal variations of ground-level PM<sub>2.5</sub> pollution across China using the fast space-time Light Gradient Boosting Machine (LightGBM). *Atmospheric Chemistry and Physics*, 2021, 21, 7863–7880. **(ESI Highly Cited Paper)**
9. **Wei, J.\***, Li, Z., Chen, X., Li, C., Sun, Y., Wang, J., Lyapustin, A., Brasseur, G., Jiang, M., Sun, L., Wang, T., Jung, C., Qiu, B., Fang, C., Liu, X., Hao, J., Wang, Y., Zhan, M., Song, X., and Liu, Y. Separating daily 1 km PM<sub>2.5</sub> inorganic chemical composition in China since 2000 via deep learning integrating ground, satellite, and model data. *Environmental Science & Technology*, 2023, 57(46), 18282–18295.
10. **Wei, J.\***, Li, Z., Sun, L., Xue, X., Ma, Z., Liu, L., Fan, T., and Cribb, M. Extending the EOS long-term PM<sub>2.5</sub> data records since 2013 in China: application to the VIIRS Deep Blue aerosol products. *IEEE Transactions on Geoscience and Remote Sensing*, 2022, 60, 4100412.
11. Lu, D., Mao, W., Zheng, L., Xiao, W., Zhang, L., and **Wei, J.\*** Ambient PM<sub>2.5</sub> estimates and variations during COVID-19 pandemic in the Yangtze River Delta using machine learning and big data. *Remote Sensing*, 2021, 13(8), 1423.
12. Tian, Z., **Wei, J.#**, and Li, Z. How important is satellite-retrieved aerosol optical depth in deriving surface PM<sub>2.5</sub> using machine learning? *Remote Sensing*, 2023, 15(15), 3780.
13. Xue, W., **Wei, J.#**, Zhang, J., Sun, L., Che, Y., Yuan, M., and Hu, X. Inferring near-surface PM<sub>2.5</sub> concentrations from the VIIRS Deep Blue aerosol product in China: A spatiotemporally weighted random forest model. *Remote Sensing*, 2021, 13, 505.

### Aerosol Optical Depth: Algorithms, Products, and Improvements (18)

#### Algorithm Development:

14. **Wei, J.**, Sun, L., Peng, Y., Wang, L., Zhang, Z., Bilal, M., and Ma., Y. An improved high-spatial-resolution aerosol retrieval algorithm for MODIS images over land. *Journal of Geophysical Research Atmospheres*, 2018, 123(21), 12291–12307. **(Journal Highlight)**

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15. **Wei, J.**, Huang, B., Sun, L., Zhang, Z., Wang, L., and Bilal, M. A simple and universal aerosol retrieval algorithm for Landsat series images over complex surfaces. *Journal of Geophysical Research Atmospheres*, 2017, 122(24), 13338–13355.
16. **Wei, J.**, Li, Z., Peng, Y., Sun, L., and Yan, X. A regionally robust high-spatial-resolution aerosol retrieval algorithm for MODIS images over Eastern China. *IEEE Transactions on Geoscience and Remote Sensing*, 2019, 57(7), 4748–4757.
17. **Wei, J.**, Li, Z., Sun, L., Yang, Y., Zhao, C., and Cai, Z. Enhanced aerosol estimations from Suomi-NPP VIIRS images over heterogeneous surfaces. *IEEE Transactions on Geoscience and Remote Sensing*, 2019, 57(12), 9534–9543.
18. Sun, L., **Wei, J.\***, Bilal, M., Tian, X., Jia, C., Guo, Y., and Mi, X. Aerosol optical depth retrieval over bright areas using Landsat 8 OLI images. *Remote Sensing*, 2016, 8(1), 23. [\[Citations = 122\]](#)
19. Sun, Z., **Wei, J.#**, Zhang, N., He, Y., Sun, Y., Liu, X., Yu, H., and Sun, L. Retrieving high-resolution aerosol optical depth from GF-4 PMS imagery in Eastern China. *Remote Sensing*, 2021, 13, 3752.
20. Tian, X., Liu, Q., Gao, Z., Wang, Y., Li, X., and **Wei, J.\*** Improving MODIS aerosol estimates over land with the surface BRDF reflectances using the 3-D discrete cosine transform and RossThick-LiSparse models. *IEEE Transactions on Geoscience and Remote Sensing*, 2021, 59(12), 9851–9860.
21. Yang, D., **Wei, J.\***, and Zhong, Y. Aerosol optical depth retrieval over Beijing using MODIS satellite images. *Spectroscopy and Spectral Analysis*, 2018, 38(11), 3464–3469.

### Product Evaluation and Fusion:

22. **Wei, J.**, Li, Z., Peng, Y., and Sun, L. MODIS Collection 6.1 aerosol optical depth products over land and ocean: validation and comparison. *Atmospheric Environment*, 2019, 201, 428–440. **(ESI Hot and Highly Cited Paper, Journal Most Cited Articles since 2018)** [\[Citations = 243\]](#)
23. **Wei, J.**, Peng, Y., Mahmood, R., Sun, L., and Guo, J. Intercomparison in spatial distributions and temporal trends derived from multi-source satellite aerosol products. *Atmospheric Chemistry and Physics*, 2019, 19, 7183–7207. **(ESI Highly Cited Paper, Cited By IPCC AR6)**
24. **Wei, J.\***, Sun, L., Huang, B., Bilal, M., Zhang, Z., and Wang, L. Verification, improvement and application of aerosol optical depths in China. Part 1: Inter-comparison of NPP-VIIRS and Aqua-MODIS. *Atmospheric Environment*, 2018, 175, 221–233. **(ESI Highly Cited Paper)**
25. **Wei, J.**, Li, Z., Sun, L., Peng, Y., Zhang, Z., Li, Z., Su, T., Feng, L., Cai, Z., and Wu, H. Evaluation and uncertainty estimate of the next-generation geostationary meteorological Himawari-8/AHI aerosol products. *Science of the Total Environment*, 2019, 692, 879–891.
26. **Wei, J.\***, Li, Z., Sun, L., Peng, Y., Liu, L., He, L., Qin, W., and Cribb, M. MODIS Collection 6.1 3 km resolution aerosol optical depth product: global evaluation and uncertainty analysis. *Atmospheric Environment*, 2020, 240, 117768.
27. **Wei, J.**, Li, Z., Sun, L., Peng, Y., and Wang, L. Improved merge schemes for MODIS Collection 6.1 Dark Target and Deep Blue combined aerosol products. *Atmospheric Environment*, 2019, 202, 315–327.
28. **Wei, J.**, Peng, Y., Guo, J., and Sun, L. Performance of MODIS Collection 6.1 Level 3 aerosol products in spatial-temporal variations over land. *Atmospheric Environment*, 2019, 206, 30–44.
29. **Wei, J.**, and Sun, L. Comparison and evaluation of different MODIS aerosol optical depth products over Beijing-Tianjin-Hebei region in China. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 2017, 10(3), 835–844.
30. He, L., Wang, L., Li, Z., Jiang, D., Sun, L., Liu, D., Liu, L., Yao, R., Zhou, Z., and **Wei, J.\*** VIIRS Environmental Data Record and Deep Blue aerosol products: validation, comparison, and spatiotemporal variations from 2013 to 2018 in China. *Atmospheric Environment*, 2021, 250, 118265.
31. Zhang, T., **Wei, J.\***, Gan, J., Zhu, Q., and Yang, D. Precipitable water vapor retrieval with MODIS near infrared data. *Spectroscopy and Spectral Analysis*, 2016, 36(8), 2378–2383.

### Atmospheric Trace (Polluted and Greenhouse) Gases (4)

32. **Wei, J.\***, Li, Z., Li, K., Dickerson, R., Pinker, R., Wang, J., Liu, X., Sun, L., Xue, W., and Cribb, M. Full-coverage mapping and spatiotemporal variations of ground-level ozone (O<sub>3</sub>) pollution from 2013 to 2020 across China. *Remote Sensing of Environment*, 2022, 270, 112775. **(ESI Hot and Highly Cited Paper)** [\[Citations = 198\]](#)



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33. **Wei, J.\***, Liu, S., Li, Z., Liu, C., Qin, K., Liu, X., Pinker, R., Dickerson, R., Lin, J., Boersma, K., Sun, L., Li, R., Xue, W., Cui, Y., Zhang, C., and Wang, J. Ground-level NO<sub>2</sub> surveillance from space across China for high resolution using interpretable spatiotemporally weighted artificial intelligence. *Environmental Science & Technology*, 2022, 56(14), 9988–9998. **(ESI Highly Cited Paper)**
34. **Wei, J.\***, Li, Z., Wang, J., Li, C., Gupta, P., and Cribb, M. Ground-level gaseous pollutants (NO<sub>2</sub>, SO<sub>2</sub>, and CO) in China: daily seamless mapping and spatiotemporal variations. *Atmospheric Chemistry and Physics*, 2023, 23, 1511–1532. **(ESI Hot and Highly Cited Paper)**
35. Xue, W., Zhang, J., Hu, X., Yang, Z., and **Wei, J.\*** Hourly seamless surface O<sub>3</sub> estimates by integrating the chemical transport and machine learning models in the Beijing-Tianjin-Hebei region. *International Journal of Environmental Research and Public Health*, 2022, 19, 8511.

## Remote Sensing Image Classification and Identification (5)

36. **Wei, J.**, Huang, W., Li, Z., Sun, L., Zhu, X., Yuan, Q., Liu, L., and Cribb, M. Cloud detection for Landsat imagery by combining the random forest and super-pixels extracted via energy-driven sampling segmentation approaches. *Remote Sensing of Environment*, 2020, 248, 112005.
37. **Wei, J.\***, Ming, Y., Jia, Q., and Yang, D. Simple mineral mapping algorithm based on multi-type spectral diagnostic absorption features: a case study at Cuprite, Nevada. *Journal of Applied Remote Sensing*, 2017, 11(2).
38. **Wei, J.\***, Ming, Y., Han, L., Ren, Z., and Guo, Y. Method of remote sensing identification for mineral types based on multiple spectral characteristic parameters matching. *Spectroscopy and Spectral Analysis*, 2015, 35(10), 2862–2866.
39. Sun, L., **Wei, J.\***, Wang, J., Mi, X., Guo, Y., Lv, Y., Yang, Y., Gan, P., Zhou, X., Jia, C., and Tian, X. A universal dynamic threshold cloud detection algorithm (UDTCDA) supported by a prior surface reflectance database. *Journal of Geophysical Research Atmospheres*, 2016, 121(12), 7172–7196.
40. Pang, S., Sun, L., Tian, Y., Ma, Y., and **Wei, J.\***. Convolutional neural network-driven improvements in global cloud detection for Landsat 8 and transfer learning on Sentinel-2 imagery. *Remote Sensing*, 2023, 15(6), 1706.

## Impacts of Air Pollution and Extreme Weather (46)

### Public Health:

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