

# Jing Wei, Ph.D. (Updated to 11/2023)

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 (co-) corresponding authors in leading journals like *Nature Communications* and *The Lancet Planetary Health*, including **7 ESI Hot (Top < 0.1%) papers** and **15 ESI Highly Cited (Top < 1%) papers** indicated by the *Web of Science*, including one first-author paper cited over **400** times. My total citations are **5700+** times with an H-index of **40**. I was the sole recipient of the **AGU James R. Holton Award, Remote Sensing Young Investigator Award**, 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 an Associate Editor of *Journal of Geophysical Research: Atmospheres*, and *Remote Sensing*. I have generated the 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 more than **240** applied publications.



## Employment

2023/09–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.

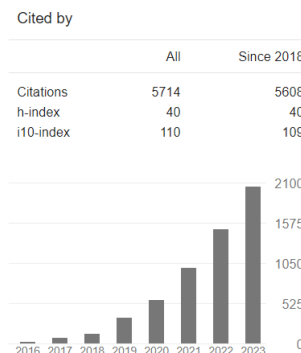
2018–2021: Ph.D. in Global Environmental Change (Geography), Beijing Normal University, China.

## Research Interests

- Atmospheric aerosols, particulate matter (PM) and chemical composition
- Atmospheric trace (ambient 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 (e.g., hot waves) 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: **82** (A full list is provided on Page 4–10)
- Book Chapters: 2
- [Google Scholar](#): **H-index** = 40, **Total Citations** = 5,714
- [Web of Science](#): **H-index** = 36, **Total Citations** = 4,514
- [Scopus](#): **H-index** = 38, **Total Citations** = 5,243



## Jing Wei, Ph.D. (Updated to 11/2023)

### Awards and Honors

- 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*
- 2023: *Remote Sensing* Young Investigator Award (**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: 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

- 2023, Top **0.1%** highly cited authors (Atmospheric Sciences) over the past decade, OpenAI's Semantic Scholar Percentiles (OpenAlex)
- 2022, 2021, 2020: World's Top 2% Scientists (Earth & Environmental Sciences), Stanford University Analysis & Mendeley
- 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* [17]:
  - *Remote Sensing of Environment* (Wei et al., 2022, 2021, 2019)
  - *Environmental Science & Technology* (Wei et al., 2022; 2019)
  - *Journal of Cleaner Production* (Xue et al., 2022)
  - *Environment International* (Wei et al., 2021)
  - *Atmospheric Chemistry and Physics* (Wei et al., 2021, 2020, 2019)
  - *Science of The Total Environment* (Liu et al., 2021)
  - *Atmospheric Environment* (Wei et al., 2019, 2018)
  - *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 [4] published in:
  - *Remote Sensing of Environment* since 2020 (Wei et al., 2021)
  - *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

## Jing Wei, Ph.D. (Updated to 11/2023)

- *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

### 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
- Convener/ Chair of conference symposium/session:
  - Co-Convener/Co-Chair, Asia Oceania Geosciences Society (AOGS) Section, 2022 (**Top Conveners**)
- Journal Reviewer (190+ 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*, *Agricultural and Forest Meteorology*; 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*; *The Lancet Regional Health - Americas*; *Earth System Science Data*; *Energy Economics*; *Journal of Quantitative Spectroscopy and Radiative Transfer*; et al.

### Selected Invited Seminars [Total seminars: 24 talks (1 Chair)].

- 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. Lanzhou University, China, March 26, 2021.
- Wei, J. Nanjing University of Information Science and Technology, China, December 29, 2020.
- Wei, J. NASA Goddard Space Flight Center, Greenbelt, 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: 18 talks (3 invited), 8 posters]

- 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**)

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- **Wei, J.** Tracking Ambient Particulate Matter and Chemical Composition from Space using AI, MODIS/VIIIRS 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. American Geophysical Union (AGU) Fall Meeting, December 12–16, 2022, Chicago, IL, USA. (**Invited Talk**)

### Teaching Experience

- Teaching Assistant, AOSC625: *Remote Sensing of Atmospheric Properties by Satellite*, University of Maryland, College Park, USA.

### 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*
- Zhihui Wang (Postgraduate student, 2022–2023): 1 paper under review 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**]

#### 2024 (1)

1. Wu, W., Wu, G., **Wei, J.**<sup>#</sup>, Lawrence, W., Deng, X., Zhang, Y., Chen, S., Wang, Y., Lin, X., Chen, D., Ruan, X., Lin, Q., Li, Z., Lin, Z., Hao, C., Du, Z., Zhang, W., and Hao, Y. Potential causal links and mediation pathway between urban greenness and lung cancer mortality: result from a large cohort (2009 to 2020). *Sustainable Cities and Society*, 2024, 101, 105079. <https://doi.org/10.1016/j.scs.2023.105079>

#### 2023 (25)

2. **Wei, J.**<sup>\*</sup>, 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, In Press.
3. **Wei, J.**<sup>\*</sup>, 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. [https://doi.org/10.1016/S2542-5196\(23\)00235-8](https://doi.org/10.1016/S2542-5196(23)00235-8)
4. **Wei, J.**<sup>\*</sup>, 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. <https://doi.org/10.5194/acp-23-1511-2023> (**ESI Hot and Highly Cited Paper**)
5. **Wei, J.**<sup>\*</sup>, 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. <https://doi.org/10.1021/acs.est.3c00272>
6. Cai, M., **Wei, J.**<sup>#</sup>, Zhang, S., Liu, W., Wang, L., Qian, Z., Lin, H., Liu, E., McMillin, S., Cao, Y., and Yin, P. Short-term air pollution exposure associated with death from kidney diseases: a nationwide time-stratified

case-crossover study in China from 2015 to 2019. *BMC Medicine*, 2023, 21, 32. <https://doi.org/10.1186/s12916-023-02734-9> **(ESI Highly Cited Paper)**

7. Cai, M., Lin, X., Wang, X., Zhang, S., Qian, Z., McMillin, S., Aaron, H., Lin, H., **Wei, J.\***, Zhang, Z., and Pan, J. Ambient particulate matter pollution of different sizes associated with recurrent stroke hospitalization in China: A cohort study of 1.07 million stroke patients. *Science of The Total Environment*, 2023, 856, 159104. <https://doi.org/10.1016/j.scitotenv.2022.159104> **(ESI Highly Cited Paper)**
8. Chen, S., Zhang, Y., Wang, Y., Lawrence, W., Rhee, J., Guo, T., Chen, S., Du, Z., Wu, W., Li, Z., **Wei, J.\***, Hao, Y., and Zhang, W. Long-term particulate matter exposure and the risk of neurological hospitalization: Evidence from causal inference of a large longitudinal cohort in South China. *Chemosphere*, 2023, 345, 140397. <https://doi.org/10.1016/j.chemosphere.2023.140397>
9. Hu, M., **Wei, J.#**, Hu, Y., Guo, X., Li, Z., Liu, Y., Li, S., Xue, Y., Li, Y., Liu, M., Wang, L., and Liu, X. Long-term effect of submicronic particulate matter (PM<sub>1</sub>) and intermodal particulate matter (PM<sub>1-2.5</sub>) on incident dyslipidemia in China: A nationwide 5-year cohort study. *Environmental Research*, 2023, 216, 114860. <https://doi.org/10.1016/j.envres.2022.114860>
10. Li, M., Edgell, R., **Wei, J.#**, Li, H., Qian, Z., Feng, J., Tian, F., Wang, X., Xin, Q., Cai, M., and Lin, H. Air pollution and stroke hospitalization in the Beibu Gulf Region of China: A case-crossover analysis. *Ecotoxicology and Environmental Safety*, 2023, 255, 114814. <https://doi.org/10.1016/j.ecoenv.2023.114814>
11. Li, S., **Wei, J.#**, Hu, Y., Liu, Y., Hu, M., Shi, Y., Xue, Y., Liu, M., Xie, W., Guo, X., and Liu, X. Long-term effect of intermediate particulate matter (PM<sub>1-2.5</sub>) on incident asthma among middle-aged and elderly adults: A national population-based longitudinal study. *Science of The Total Environment*, 2023, 859, 160204. <https://doi.org/10.1016/j.scitotenv.2022.160204>
12. Lin, X., Cai, M., Tan, K., Liu, E., Wang, X., Song, C., **Wei, J.\***, Lin, H., and Pan, J. Ambient particulate matter and in-hospital case fatality of acute myocardial infarction: A multi-province cross-sectional study in China. *Ecotoxicology and Environmental Safety*, 2023, 268, 115731. <https://doi.org/10.1016/j.ecoenv.2023.115731>
13. Liu, C., Yu, B., Liu, C., Tang, L., Zhao, K., Zhang, P., He, F., Wang, M., Shi, C., Lu, Z., Zhang, B., **Wei, J.\***, Xue, F., Guo, X., and Jia, X. Effect of neighbourhood greenness on the association between air pollution and risk of stroke first onset: A case-crossover study in shandong province, China. *International Journal of Hygiene and Environmental Health*, 2023, 254, 114262. <https://doi.org/10.1016/j.ijheh.2023.114262>
14. Liu, W., Cai, M., Long, Z., Tong, X., Li, Y., Wang, L., Zhou, M., **Wei, J.\***, Lin, H., and Yin, P. Association between ambient sulfur dioxide pollution and asthma mortality: Evidence from a nationwide analysis in China. *Ecotoxicology and Environmental Safety*, 2023, 249, 114442. <https://doi.org/10.1016/j.ecoenv.2022.114442>
15. 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. <https://doi.org/10.3390/rs15061706>
16. Tian, Y., Wu, J., Wu, Y., Wang, M., Wang, S., Yang, R., Wang, X., Wang, J., Yu, H., Li, D., Wu, T., **Wei, J.\***, and Hao, Y. Short-term exposure to reduced specific-size ambient particulate matter increase the risk of cause-specific cardiovascular disease: A national-wide evidence from hospital admissions. *Ecotoxicology and Environmental Safety*, 2023, 263, 115327. <https://doi.org/10.1016/j.ecoenv.2023.115299>
17. 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. <https://doi.org/10.3390/rs15153780>
18. Wang, L., Xu, T., Wang, Q., Ni, H., Yu, X., Song, C., Li, Y., Li, F., Meng, T., Sheng, H., Cai, X., Dai, T., Xiao, L., Zeng, Q., Guo, P., **Wei, J.\***, and Zhang, X. Exposure to fine particulate matter constituents and human semen quality decline: a multicenter study. *Environmental Science & Technology*, 2023, 57(35), 13025–13035. <https://doi.org/10.1021/acs.est.3c03928>
19. Wang, Y., Jiang, J., Chen, L., Guo, T., Chen, S., Du, Z., **Wei, J.\***, Zhang, W., and Hao, Y. Is COPD mortality in South China causally linked to the long-term PM<sub>1</sub> exposure? Evidence from a large community-based cohort. *Ecotoxicology and Environmental Safety*, 2023, 263, 115299. <https://doi.org/10.1016/j.ecoenv.2023.115299>
20. Wang, Y., Liu, Q., Tian, Z., Cheng, B., Guo, X., Wang, H., Zhang, B., Xu, Y., Sun, L., Hu, B., Chen, G., Sheng, J., Liang, C., Tao, F., **Wei, J.\***, and Yang, L. Short-term effects of ambient PM<sub>1</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> on internal metal/metalloid profiles in older adults: A distributed lag analysis in China. *Environment International*, 2023, 182, 108341. <https://doi.org/10.1016/j.envint.2023.108341>
21. Wang, Y., **Wei, J.#**, Zhang, Y., Guo, T., Chen, S., Wu, W., Chen, S., Li, Z., Qu, Y., Xiao, J., Deng, X., Liu, Y., Du, Z., Zhang, W., and Hao, Y. Estimating causal links of long-term exposure to particulate matters with all-cause mortality in South China. *Environment International*, 2023, 171, 107726. <https://doi.org/10.1016/j.envint.2022.107726>



## Jing Wei, Ph.D. (Updated to 11/2023)

22. Xu, R., Huang, S., Shi, C., Wang, R., Liu, T., Li, Y., Zheng, Y., Lv, Z., **Wei, J.\***, Sun, H., and Liu, Y. Extreme temperature events, fine particulate matter, and myocardial infarction mortality. *Circulation*, 2023, 148, 312–323. <https://doi.org/10.1161/CIRCULATIONAHA.122.063504>
23. Zhang, F., Tang, H., Zhao, D., Zhang, X., Zhu, S., Zhao, G., Zhang, X., Li, T., **Wei, J.\***, Li, D., and Zhu, W. Short-term exposure to ambient particulate matter and mortality among HIV/AIDS patients: Case-crossover evidence from all counties of Hubei province, China. *Science of The Total Environment*, 2023, 857, 159410. <https://doi.org/10.1016/j.scitotenv.2022.159410>
24. Zhang, X., Zhang, F., Gao, Y., Zhong, Y., Zhang, Y., Zhao, G., Zhu, S., Zhang, X., Li, T., Chen, B., Han, A., **Wei, J.\***, Zhu, W., and Li, D. Synergic effects of PM<sub>1</sub> and thermal inversion on the incidence of small for gestational age infants: a weekly-based assessment. *Journal of Exposure Science & Environmental Epidemiology*, 2023, 1–11. <https://doi.org/10.1038/s41370-023-00542-0>
25. Zhang, Y., **Wei, J.#**, Liu, C., Cao, W., Zhang, Z., Li, Y., Zeng, Q., and Sun, S. Association between ambient PM<sub>1</sub> and semen quality: A cross-sectional study of 27,854 men in China. *Environment International*, 2023, 175, 107919. <https://doi.org/10.1038/s41370-023-00542-0>
26. Zhou, W., Wen, Z., Peng, W., Wang, X., Wang, W., **Wei, J.\***, and Xiong, H. Association of ambient particulate matter with hospital admissions, length of hospital stay, and hospital costs due to cardiovascular disease: time-series analysis based on data from the Shanghai Medical Insurance System from 2016 to 2019. *Environmental Sciences Europe*, 2023, 46, 46. <https://doi.org/10.1186/s12302-023-00754-z>

## 2022 (19)

27. **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. <https://doi.org/10.1016/j.rse.2021.112775> **(ESI Hot and Highly Cited Paper)** [Citations = 164]
28. **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. <https://doi.org/10.1021/acs.est.2c03834> **(ESI Highly Cited Paper)**
29. **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. <https://doi.org/10.1109/TGRS.2021.3050999>
30. Chen, L., Gao, D., Ma, T., Chen, M., Li, Y., Ma, Y., Wen, B., Jiang, J., Wang, X., Zhang, J., Chen, S., Wu, L., Li, W., Liu, X., Guo, X., Huang, S., **Wei, J.\***, Song, Y., Ma, J., and Dong, Y. Ambient gaseous pollutant exposure and incidence of visual impairment among children and adolescents: findings from a longitudinal, two-center cohort study in China. *Environmental Science and Pollution Research*, 2022, 29, 73262–73270. <https://doi.org/10.1007/s11356-022-20025-3>
31. He, F., **Wei, J.#**, Dong, Y., Liu, C., Zhao, K., Peng, W., Lu, Z., Zhang, B., Xue, F., Guo, X., and Jia, X. Associations of ambient temperature with mortality for ischemic and hemorrhagic stroke and the modification effects of greenness in Shandong Province, China. *Science of The Total Environment*, 2022, 851, 158046. <https://doi.org/10.1016/j.scitotenv.2022.158046>
32. Li, X., Xue, W., Wang, K., Che, Y., and **Wei, J.\*** Environmental regulation and synergistic effects of PM<sub>2.5</sub> control in China. *Journal of Cleaner Production*, 2022, 337, 130438. <https://doi.org/10.1016/j.jclepro.2022.130438>
33. Lin, H., Zhu, J., Jiang, P., Cai, Z., Yang, X., Zhou, Z., and **Wei, J.\*** Assessing drivers of coordinated control of ozone and fine particulate pollution: Evidence from Yangtze River Delta in China. *Environmental Impact Assessment Review*, 2022, 96, 106840. <https://doi.org/10.1016/j.eiar.2022.106840>
34. Liu, W., **Wei, J.#**, Cai, M., Qian, Z., Long, Z., Wang, L., Vaughn, M., Aaron, H., Tong, X., Li, Y., Yin, P., Lin, H., and Zhou, M. Particulate matter pollution and asthma mortality in China: A nationwide time-stratified case-crossover study from 2015 to 2020. *Chemosphere*, 2022, 308, 136316. <https://doi.org/10.1016/j.chemosphere.2022.136316>
35. Song, J., Du, P., Yi, W., **Wei, J.#**, Fang, J., Pan, R., Zhao, F., Zhang, Y., Xu, Z., Sun, Q., Liu, Y., Chen, C., Cheng, J., Liu, Y., Li, T., Su, H., and Shi, X. Using an exposome-wide approach to explore the impact of urban environments on blood pressure among adults in Beijing–Tianjin–Hebei and surrounding areas of China. *Environmental Science & Technology*, 2022, 56, 8395–8405. <https://doi.org/10.1021/acs.est.1c08327>

## Jing Wei, Ph.D. (Updated to 11/2023)

36. Song, J., Ding, Z., Zheng, H., Xu, Z., Cheng, J., Pan, R., Yi, W., **Wei, J.\***, and Su, H. Short-term PM<sub>1</sub> and PM<sub>2.5</sub> exposure and asthma mortality in Jiangsu Province, China: What's the role of neighborhood characteristics? *Ecotoxicology and Environmental Safety*, 2022, 241, 113765. <https://doi.org/10.1021/acs.est.1c08327>
37. Wang, L., Zhang, J., **Wei, J.#**, Zong, J., Lu, C., Du, Y., and Wang, Q. Role of liver enzymes in the relationship between particulate matter exposure and diabetes risk: a longitudinal cohort study. *Environmental Pollution*, 2022, 312, 120020. <https://doi.org/10.1016/j.envpol.2022.120020>
38. Wang, X., Guo, B., Yang, X., Li, J., Baima, Y., Yin, J., Yu, J., Xu, H., Zeng, C., Feng, S., **Wei, J.\***, Hong, F., and Zhao, X. Role of liver enzymes in the relationship between particulate matter exposure and diabetes risk: a longitudinal cohort study. *Journal of Clinical Endocrinology & Metabolism*, 2022, 107, e4086–e4097. <https://doi.org/10.1210/clinem/dgac438>
39. Wang, Y., Cao, R., Xu, Z., Jin, J., Wang, J., Yang, T., **Wei, J.\***, Huang, J., and Li, G. Long-term exposure to ozone and diabetes incidence: A longitudinal cohort study in China. *Science of the Total Environment*, 2022, 816, 151634. <https://doi.org/10.1016/j.scitotenv.2021.151634>
40. Wu, H., Zhang, B., **Wei, J.#**, Lu, Z., Zhao, M., Liu, W., Bovet, P., Guo, X., and Xi, B. Short-term effects of exposure to ambient PM<sub>1</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> on ischemic and hemorrhagic stroke incidence in Shandong Province, China. *Environmental Research*, 2022, 212, 113350. <https://doi.org/10.1016/j.envres.2022.113350>
41. Wu, H., Zhang, Y., Zhao, M., Liu, W., Magnussen, C., **Wei, J.\***, and Xi, B. Short-term effects of exposure to ambient PM<sub>1</sub> on blood pressure in children and adolescents aged 9 to 18 years in Shandong Province, China. *Atmospheric Environment*, 2022, 283, 119180. <https://doi.org/10.1016/j.atmosenv.2022.119180>
42. Xiong, J., Li, J., Wu, X., Wolfson, J., Lawrence, J., Stern, R., Koutrakis, P., **Wei, J.\***, and Huang, S. The association between daily-diagnosed COVID-19 morbidity and short-term exposure to PM<sub>1</sub> is larger than associations with PM<sub>2.5</sub> and PM<sub>10</sub>. *Environmental Research*, 2022, 210, 113016. <https://doi.org/10.1016/j.envres.2022.113350>
43. Xu, R., **Wei, J.#**, Liu, T., Li, Y., Yang, C., Shi, C., Chen, G., Zhou, Y., Sun, H., and Liu, Y. Association of short-term exposure to ambient PM<sub>1</sub> with total and cause-specific cardiovascular disease mortality. *Environment International*, 2022, 169, 107519. <https://doi.org/10.1016/j.envint.2022.107519>
44. 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. <https://doi.org/10.3390/ijerph19148511>
45. Yan, M., Hou, F., Xu, J., Liu, H., Liu, H., Zhang, Y., Liu, H., Lu, C., Yu, P., **Wei, J.\***, and Tang, N. The impact of prolonged exposure to air pollution on the incidence of chronic non-communicable disease based on a cohort in Tianjin. *Environmental Research*, 2022, 215, 114251. <https://doi.org/10.1016/j.envres.2022.114251>

## 2021 (14)

46. **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. <https://doi.org/10.1016/j.rse.2020.112136> (**ESI Hot and Highly Cited Paper, Journal Most Cited Articles since 2019 and 2020, Top 100 Most Cited Chinese Papers Published in International Journals, ESSIC 2022 Best Paper Award**) [406]
47. **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. <https://doi.org/10.1016/j.envint.2020.106290> (**ESI Highly Cited Paper**) [144]
48. **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. <https://doi.org/10.5194/acp-21-7863-2021> (**ESI Highly Cited Paper**)
49. Guo, H., Li, X., Li, W., Wu, J., and **Wei, J.\*** Climatic modification effects on the association between PM<sub>1</sub> and lung cancer incidence in China. *BMC Public Health*, 2021, 21, 880. <https://doi.org/10.1186/s12889-021-10912-8>
50. 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. <https://doi.org/10.1016/j.atmosenv.2021.118265>

## Jing Wei, Ph.D. (Updated to 11/2023)

51. 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. <https://doi.org/10.3390/rs13081423>
52. 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. <https://doi.org/10.3390/rs13183752>
53. 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. <https://doi.org/10.1109/TGRS.2020.3048109>
54. Wang, X., Xu, Z., Ho, H., Song, Y., Zheng, H., Hossain, M., Khan, M., Bogale, D., **Wei, J.\***, and Cheng, J. Ambient particular matters (PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>) and childhood pneumonia: the smaller particle, the greater short-term impact? *Science of the Total Environment*, 2021, 772, 145509. <https://doi.org/10.1016/j.scitotenv.2021.145509>
55. Xue, W., Zhang, J., Zhong, C., Li, X., and **Wei, J.\*** Spatiotemporal PM<sub>2.5</sub> variations and its response to the industrial structure from 2000 to 2018 in the Beijing-Tianjin-Hebei region. *Journal of Cleaner Production*, 2021, 279, 123742. <https://doi.org/10.1016/j.jclepro.2020.123742> (**ESI Highly Cited Paper**)
56. Xue, W., Zhang, J., Ji, D., Che, Y., Lu, T., Deng, X., Li, X., Tian, Y., and **Wei, J.\*** Aerosol-induced direct radiative forcing effects on terrestrial ecosystem carbon fluxes over China. *Environmental Research*, 2021, 200, 111464. <https://doi.org/10.1016/j.envres.2021.111464>
57. 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. <https://doi.org/10.3390/rs13030505>
58. Zhang, Y., **Wei, J.#**, Shi, Y., Quan, C., Ho, H., Song, Y., and Zhang, L. Effects of early-life exposure to submicron particulate air pollution on asthma development in Chinese preschool children. *Journal of Allergy and Clinical Immunology*, 2021, 148, 771-782.E12. <https://doi.org/10.1016/j.jaci.2021.02.030>
59. Zheng, H., Yi, W., Ding, Z., Xu, Z., Ho, H., Cheng, J., Hossain, M., Song, J., Fan, Y., Ni, J., Wang, Q., Xu, Y., **Wei, J.\***, and Su, H. Evaluation of life expectancy loss associated with submicron and fine particulate matter (PM<sub>1</sub> and PM<sub>2.5</sub>) air pollution in Nanjing, China. *Environmental Science and Pollution Research*, 2021, 28, 68134–68143. <https://doi.org/10.1007/s11356-021-15244-z>

### 2020 (3)

60. **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. <https://doi.org/10.5194/acp-20-3273-2020> (**ESI Hot and Highly Cited Paper**) [302]
61. **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. <https://doi.org/10.1016/j.rse.2020.112005>
62. **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. <https://doi.org/10.1016/j.atmosenv.2020.117768>

### 2019 (9)

63. **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. <https://doi.org/10.1016/j.rse.2019.111221> (**ESI Hot and Highly Cited Paper, Journal Most Cited Articles since 2018/2019**) [364]
64. **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. <https://doi.org/10.1016/j.atmosenv.2018.12.004> (**ESI Hot and Highly Cited Paper, Journal Most Cited Articles since 2018**) [231]



## Jing Wei, Ph.D. (Updated to 11/2023)

65. **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. <https://doi.org/10.1021/acs.est.9b03258> (**ESI Hot and Highly Cited Paper**) [183]
66. **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. <https://doi.org/10.5194/acp-19-7183-2019> (**ESI Highly Cited Paper, Cited By IPCC AR6**)
67. **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. <https://doi.org/10.1109/TGRS.2019.2892813>
68. **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. <https://doi.org/10.1109/TGRS.2019.2927432>
69. **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. <https://doi.org/10.1016/j.scitotenv.2019.07.326>
70. **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. <https://doi.org/10.1016/j.atmosenv.2019.01.016>
71. **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. <https://doi.org/10.1016/j.atmosenv.2019.03.001>

### 2018 (3)

72. **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. <https://doi.org/10.1029/2017JD027795> (**Journal Highlight**)
73. **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. <https://doi.org/10.1016/j.atmosenv.2017.11.048> (**ESI Highly Cited Paper**)
74. 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.

### 2017 (3)

75. **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. <https://doi.org/10.1002/2017JD026922>
76. **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. <https://doi.org/10.1109/JSTARS.2016.2595624>
77. **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). <https://doi.org/10.1117/1.JRS.11.026015>

### Before 2016 (5)

78. **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.
79. 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. <https://doi.org/10.1002/2015JD024722>
80. 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. <https://doi.org/10.3390/rs8010023> [122]

## **Jing Wei, Ph.D. (Updated to 11/2023)**

81. Sun, L., **Wei, J.\***, Duan, D., Guo, Y., Yang, D., Jia, C., and Mi, X. Impact of land-use and land-cover change on urban air quality in representative cities of China. *Journal of Atmospheric and Solar-Terrestrial Physics*, 2016, 142, 43–54. <https://doi.org/10.1016/j.jastp.2016.02.022> [125]
82. 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.

## **Book Chapters (2)**

1. **Wei, J.**, and Sun, L. Cloud detection and Aerosol Optical Depth Retrieval from MODIS Satellite Imagery, in 3S Technology Applications in Meteorology: Observations, Methods and Modelling, *Taylor & Francis Group/CRC Press, Boca Raton, FL, USA*, ISBN: 9781032425139, 2023.
2. Ming, Y., Chen, Y., **Wei, J.**, and Zhou, H. Remote Sensing Identification Method for Mineral Types based on Cooperative Spectral Feature Parameters. *China University of Mining and Technology Press, China*, ISBN: 978756464658540(8), 2020.