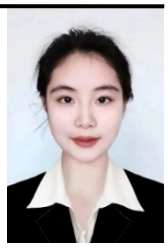
Yun Sun 孙赟

Tel: +8618222783631; +4407553198671
Email: yunna@tju.edu.cn
Address: Yaguan Road 135, Jinnan District, Tianjin, China
Research gate: https://www.researchgate.net/profile/Yun-Sun-21



RESEARCH INTERESTS

Air pollution: embodied air pollutant emission transfer in urban agglomeration and economic environmental imbalance analysis, cost and benefit analysis of emission reduction based on regional cooperative reduction game model.

Water footprints: city-level virtual water trade and water scarcity under climate change

Carbon emissions: near-real-time daily estimates of CO_2 emissions of residential sector in Chinese cities, global embodied carbon transfer and the impact of international trade on carbon emissions.

Renewable electricity: residents' willingness to pay for renewable electricity based on contingent valuation method

LANGUAGES & SKILLS

Language: Chinese (native), English (IELTS/Overall score of 6.5 and a minimum of 6.0 in each component)

Research Skills: Input-output analysis (proficient), machine learning (Basic), ArcGIS (proficient), Matlab (skilled), Python (Basic)

EDUCATION

Tianjin University — **Tianjin, China**
Ph.D. in Environmental Science — 2019 – present
B.S. in Environmental Science — 2015 – 2019
B.M. in Financial Management (Miner) — 2015 – 2019

Tsinghua University — **Beijing, China**
Guest student of Zhu Liu's research group (Carbon Monitor) — 2021 – 2022

King's College London — **London, UK**
Visit Ph.D. Student in Geography — 2023 – 2024

SELECTED RESEARCH

1. **Sun, Y.**; Wang, Y.; Zheng, H.; Zhang, Z.; Wang, Y.; Li, H.; Lu, Y., Critical supply chains of NOx emissions in the Beijing-Tianjin-Hebei urban agglomeration. *Journal of Cleaner Production* **2022,** *362*, 132379.

2. **Sun, Y.**; Wang, Y.; Zhang, Z., Economic environmental imbalance in China — Inter-city air pollutant emission linkage in Beijing-Tianjin-Hebei (BTH) urban agglomeration. *Journal of Environmental Management* **2022,** *308*, 114601.

3. **Sun, Y.**; Chen, D.; Wang, C.; Xie, B.-C.; Shan, M.; Wang, Y. Residents' willingness to pay for renewable electricity can bridge the gap in financing for renewable electricity development in China. *Journal of Cleaner Production* **2023**, *427*, 139216.

4. **Sun, Y.**; Wang, Z.; Lee, L.-C.; Li, X.; Wang, Y. A bibliometrics review of hotspots in water footprint research based on co-words network analysis. *Frontiers in Environmental Science* **2022**, *10*.

5. Wang, Y.; Li, X.; **Sun, Y.**; Zhang, L.; Qiao, Z.; Zhang, Z.; Zheng, H.; Meng, J.; Lu, Y.; Li, Y., Linkage analysis of economic consumption, pollutant emissions and concentrations based on a city -level multi-regional input-output (MRIO) model and atmospheric transport. *Journal of Environmental Management* **2020,** *270*, 110819.

6. Huo, D., Liu, K., Liu, J., Huang, Y., Sun, T., **Sun, Y**., Si, C., Liu, J., Huang, X., Qiu, J., Wang, H., Cui, D., Zhu, B., Deng, Z., Ke, P., Shan, Y., Boucher, O., Dannet, G., Liang, G., . . . Liu, Z.. Near-real-time daily estimates of fossil fuel CO2 emissions from major high-emission cities in China. *Scientific Data* **2022**, *9*(1), 684.

7. Dou, X.; Hong, J.; Ciais, P.; Chevallier, F.; Yan, F.; Yu, Y.; Hu, Y.; Huo, D.; **Sun, Y.**; Wang, Y.; et al. Near-real-time global gridded daily CO2 emissions 2021. *Scientific Data* **2023**, *10* (1), 69.

8. Lu, C.; Huang, Y.; Yu, Y.; Hu, J.; Mo, H.; Li, Y.; Huo, D.; Song, X.; Huang, X.; Sun, Y.; et al. Health co-benefits of post-COVID-19 low-carbon recovery in Chinese cities. *Nature Cities* **2024**, *1* (10), 695-705.

9. Lee, L.-C.; Wang, Y.; Mao, G.; Zuo, J.; Wang, Z.; Sanyang, M. J.; Zillante, G.; **Sun, Y.**; Xu, T., Spatial characteristic of environmental protection businesses: a study of A-Share Listed Environmental Companies in China. *Environment, Development and Sustainability* **2021**, *23*, (12), 18598-18617.

10. Shan, M.; Wang, Y.; Wang, Y.; Qiao, Z.; Ping, L.; Lee, L.-C.; **Sun, Y**.; Pan, Z. Health burden evaluation of industrial parks caused by PM2.5 pollution at city scale. *Environmental Science and Pollution Research* **2023**.

11. Liang, C.; Wang, Y.; Zuo, J.; Wang, T.; Shan, M.; **Sun, Y**. Promoting inter-regional

cooperation to reduce CO_2 abatement cost in China. *Sustainable Production and Consumption* **2023**, *42*, 23-32.

12. Wang, T; Wang, Y.; Zhang, Z.; Liang, C.; Shan, M.; **Sun,** Y. A regional cooperative reduction game model for air pollution control in North China. *Journal of Environmental Management* **2023**, *346*, 118949.

13. Shan, M., Xu, Y., **Sun, Y.**, Wang, Y., Li, L., Qiao, Z., Zuo, J. Deep-Learning-Based Evaluation of Rooftop Photovoltaic Deployment in Tianjin, China. *ISPRS International Journal of Geo-Information* **2025**, *14*, 101.

CONFERENCE REPORT

2020 Annual Conference of Environmental Economics Branch, Chinese Society of Environmental Sciences 5/11/2020

Title: Analysis of air pollutant transfer between cities driven by consumption: A case study of Beijing – Tianjin – Hebei Urban agglomeration

2021 International Conference on Climate and Energy Finance (ICEF) 25/4/2021

Title: Provincial Willingness to Pay for Green Electricity in China: A Comparative Analysis of Voluntary and Mandatory Payments

2022 International Conference on Climate and Energy Finance (ICEF) 25/4/2021

Title: Residents' willingness to pay for renewable electricity and the spatial heterogeneity analysis of influencing factors: A 31 Chinese provinces study

RESEARCH PROJECT WORK

1. **National Natural Science Foundation of China: Cost-benefit study of Air pollution Reduction based on interregional natural and economic linkages, No. 41871211.**
   My research part: Cost and health benefit analysis of NO_x emission reduction in Beijing-Tianjin-Hebei urban agglomeration

2. **National Natural Science Foundation of China: Research on Driving Forces of Air Pollutant Emission based on Regional industry Correlation, No. 41571522.**
   My research part: consumption-based NO_x emissions accounting from the city and sector perspectives, illustrate the embodied NO_x in supply chains and its transfer patterns in Beijing-Tianjin-Hebei urban agglomeration

3. **National Key Research and Development Program of China: Research on Regional Joint Prevention and control System and Management technology System of Air Pollution, No. 2018YFC0213600.**
   My research part: Linkage analysis of economic consumption, pollutant emissions and

concentrations based on a city-level multi-regional input–output (MRIO) model and atmospheric transport, zoning of joint prevention and control of air pollution in Beijing-Tianjin-Hebei urban agglomeration

4. **Chinese Academy of Environmental Planning Project: Survey Data Summary Analysis and third-party evaluation Technical support, No. 2019A102**
   My research part: Analysis of NO_x control technology and cost optimization of urban emission reduction

5. **City-level real-time carbon neutral pathway simulation in China, Alibaba Damo Institute (Hangzhou) Technology Co., LTD**
   My research part: near-real-time daily estimates of CO_2 emissions of residential sector in Chinese cities

SELECTED HONORS & AWARDS

National Scholarship 2016, 2017

First-class Academic Scholarship 2019

Silver Award, The 2nd National College Student Sports Industry Innovation and Entrepreneurship Competition 2020

Third prize, the 7th National College Students Academic Creativity Competition on Energy Economy 2021

Third prize, the 14th "Challenge Cup" College Students Extracurricular Academic Science and Technology Works Competition of Tianjin University 2021

First prize, "Jijia Cup" Intellectual Property Science Popularization Pioneer Competition 2022

Second prize, the 5th National Competition in Science & Technology on Renewable Energy for College Students 2023

Excellent Report Award, The 2nd National Environmental Postdoctoral Forum 2025

ACADEMIC ACTIVITIES & SOCIAL PRACTICE

Internet editor, WeChat public platform for *Resources, Conservation and Recycling* 2019 – present

President of PhD. Student Council 2020

President of Peiyang Sports New Media Center, Tianjin University 2017 – 2019

Assistant, Development Strategy Research Center of Tianjin University 2017 – 2018

Environmental volunteer, Rural environmental protection publicity 2017