

LIUTAO CHEN

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Civil and Environmental Engineering
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Working Experience

- 2023.9 – present *Post-doctoral researcher*, Civil and Environmental Engineering, Hong Kong University of Science and Technology (HKUST), Hong Kong SAR, China
Supervisor: Prof. Zhe Wang (cezhewang@ust.hk)
- 2019.9 – present *Teaching assistant*, Civil and Environmental Engineering, HKUST
- Provide guidance for 6 M.Sc. and 14 UG students in their final thesis, final year project, and Undergraduate Research Opportunities Program (UROP)
 - Responsible for conducting tutorials, grading assignments/exams, addressing student inquiries for three undergraduate courses:
CIVL 3510 - Hydrosystems Engineering (2020 Fall)
CIVL 2510 - Fluid Mechanics (2021 Spring, 2022 Spring)
CIVL 4560 - Urban Hydroclimate and the Built Environment (2021 Fall)

Education

- 2019.8 – 2023.8 Ph.D., Civil and Environmental Engineering, Hong Kong University of Science and Technology, Hong Kong SAR, China
Supervisor: Prof. Jiachuan Yang (cejcyang@ust.hk)
GPA: 3.922/4.3
- 2015.8 – 2019.6 B.E., Hydrology and Water Resources Engineering, School of Geography and Planning, Sun Yat-sen University, Guangzhou, China
Supervisor: Prof. Jianyao Chen (chenjyao@mail.sysu.edu.cn)
GPA: 91/100

Research Interests

Urban Heat Island; Urban Hydroclimate; Land-Atmosphere Interaction; Green Building and Sustainable Development; Impact assessment of renewable technology (e.g., Photovoltaic panel and Building – Integrated photovoltaic (BIPV) technology), and building energy simulation.

Selected Honors and Awards

- 2022 RedBird Academic Excellence Award, HKUST Fok Ying Tung Graduate School
- 2019 – 2023 Postgraduate Studentship, Hong Kong University of Science and Technology

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| 2019 | 11 th National Excellent Graduate in Hydraulic Engineering, China Association of Hydraulic Engineering Education |
| 2019 | Outstanding Undergraduate Graduates, Sun Yat-sen University |

Publications

- [1] **Chen, L.**, Yang, J., Zheng, X., Modelling the impact of building energy consumption on urban thermal environment: the bias of the inventory approach, *Urban Climate*, under 2nd review.
- [2] **Chen, L.**, Sun, Y., Zhang, N., Yang, J., & Wang, D. (2023). Quantifying the benefits of BIPV windows in urban environment under climate change: A comparison of three Chinese cities. *Renewable Energy*, 119740.
- [3] Zheng, X., **Chen, L.**, & Yang, J. (2023). Simulation framework for early design guidance of urban streets to improve outdoor thermal comfort and building energy efficiency in summer. *Building and Environment*, 228, 109815.
- [4] **Chen, L.**, Yang, J., & Li, P. (2022). Modelling the effect of BIPV window in the built environment: Uncertainty and sensitivity. *Building and Environment*, 208, 108605.
- [5] **Chen, L.**, Zheng, X., Yang, J., & Yoon, J. H. (2021). Impact of BIPV windows on building energy consumption in street canyons: Model development and validation. *Energy and Buildings*, 249, 111207.
- [6] Wang, Y., **Chen, L.**, Song, Z., Huang, Z., Ge, E., Lin, L., & Luo, M. (2019). Human-perceived temperature changes over South China: Long-term trends and urbanization effects. *Atmospheric Research*, 215, 116-127.
- [7] **Chen, L.**, Chen, X., Cheng, L., Zhou, P., & Liu, Z. (2019). Compound hot droughts over China: Identification, risk patterns and variations. *Atmospheric Research*, 227, 210-219.
- [8] Song, Z., **Chen, L.**, Wang, Y., Liu, X., Lin, L., & Luo, M. (2019). Effects of urbanization on the decrease in sunshine duration over eastern China. *Urban Climate*, 28, 100471.

Conference Presentation

- [1] 11th International Conference on Urban Climate (ICUC), The International Association for Urban Climate (IAUC), Oral, Sydney (Australia), Aug 2023.
- [2] 20th Annual Meeting, Asia Oceania Geosciences Society (AOGS). Oral, Singapore, Jul 2023.
- [3] 9th National Urban Meteorological Academic Forum. Chinese Meteorological Society. Oral, Xiong An (China), May 2023. Received **Best Paper Award**.
- [4] 2022 AGU Fall Meeting, American Geophysical Union (AGU). Poster, Chicago (US), Dec 2022.
- [5] 19th Annual Meeting, Asia Oceania Geosciences Society (AOGS). Poster, Online, Aug 2022.
- [6] 8th National Urban Meteorological Academic Forum, Chinese Meteorological Society. Oral, Online, Oct 2021.

Projects

- [1] Toward 2060 Carbon Neutrality: Life-cycle Planning and Design of Photovoltaic Integrated Green Roof (PVIGR) Systems for Hong Kong and the Greater Bay Area, Hong Kong Research Grant Committee, Collaborative Research Fund, C6003-22Y, 2023 – 2026, Collaborator.
- [2] Interaction mechanisms between building energy consumption and urban climate, National Natural Science Foundation of China, 2021 – present, Principal researcher.

Professional Memberships

- [1] Reviewer of Sustainable Cities and Society, Urban Climate.
- [2] Member of American Geophysical Union (AGU), since 2022.
- [3] Member of Asia Oceania Geosciences Society (AOGS), since 2022.
- [4] Member of International Association for Urban Climate (IAUC), since 2023.

Skills

Computer languages: Matlab, Fortran, Python.

Climate modelling tools: Urban canopy model coupled with building energy model, Weather Research and Forecasting model.

Building energy simulation tools: EnergyPlus, OpenStudio.

Others: ArcGIS, Microsoft Office, Sketchup, Adobe Illustrator.

Languages Chinese (Mandarin: native, Hakka: native, Cantonese: fluent)
 English: working proficiency

Updated by Dec 2023