



Department of Data Science

香港城市大學
City University of Hong Kong

DS SEMINAR

China's Fine-grained Prediction of Solar-wind Deployment Pathway and Associated Climate and Economic Benefit Assessment Driven by Big-data Analysis

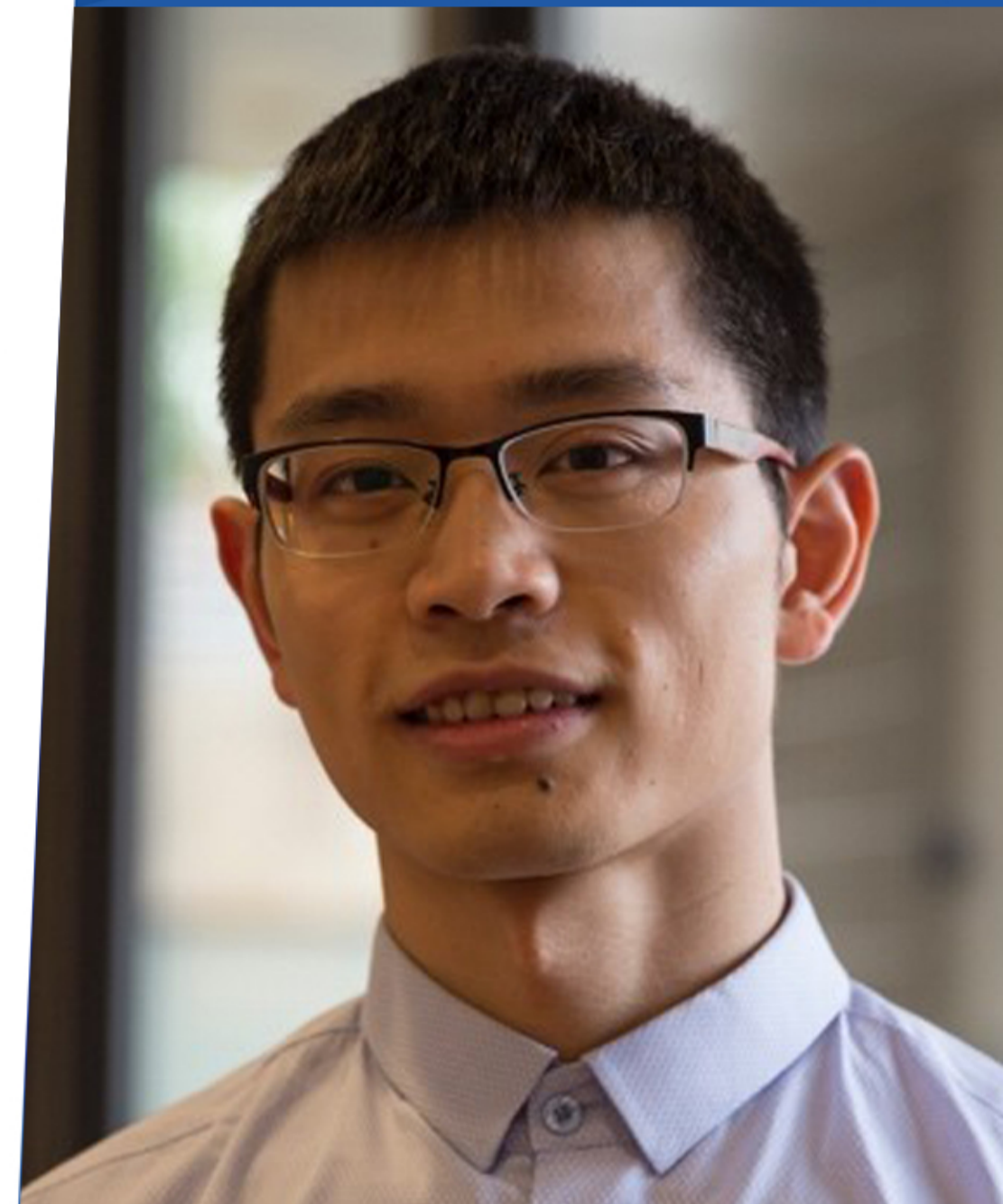
Date: 29 August 2025 (Friday)

Time: 3:30pm - 4:30pm

Venue: LI-5401, Li Dak Sum Yip Yio Chin Academic Building, City University of Hong Kong

ABSTRACT

The global transition from fossil fuels to renewable energy is vital for mitigating climate change, yet plans to transition China are generally coarsely resolved. This talk introduces the China New Energy Database, offering the first 10-km resolution feasibility ranking for wind and solar installations across China. By incorporating land-use regulations and construction constraints, this talk presents an optimized development pathway from 2022 to 2060. The results highlight substantial climate and economic benefits of renewable energy deployment, with wind and solar energy reducing up to 16.9 billion tons of carbon dioxide emissions and generating 12.8 trillion CNY economic benefits by 2060. Regions with abundant renewable resources show significant potential for economic gains, demonstrating that reasonable strategic deployment could effectively “turn resources into gold”. These insights serve as a valuable reference for countries like India, Saudi Arabia, and South Africa in their transition to renewable energy, contributing to global progress in sustainable energy systems.



Prof. Li ZHANG

GUEST SPEAKER'S PROFILE

Li Zhang is a Qualificatory Professor in School of the Environment and Safety Engineering at Jiangsu University. He was a research assistant at Chinese Academy of Environmental Planning, Ministry of Ecology and Environment, China and post doctor at Tsinghua University. He received his master degree from Department of Environmental Health at Harvard University and his doctor degree from Institute of Environment and Sustainability at University of California, Los Angeles. He won the T.H.Chan Central Grant from Harvard University and the Student Research Supplement Award from Tobacco-Related Disease Research Program. He is mainly engaged in research on climate change mitigation, multi-scale greenhouse gas emission control and reduction pathways, climate and environmental policy assessment and design, energy and environmental economics and system modeling, big data analysis, and regional empirical analysis. He has published more than 30 peer-reviewed papers in journals such as Energy & Environmental Science, Cell Reports Sustainability, Applied Energy, Environmental Science and Ecotechnology, and Engineering. He supported China's top-level policy documents such as “China Methane Emissions Control Action Plan” (MEE [2023] No. 67) and the “Implementation Plan on Accelerating the Establishment of a Unified and Standardized Carbon Emission Statistical Accounting System” (NDRC [2023] No.622). He participated in the national research on the “China's Nationally Determined Contribution (NDC) Target Report for 2035” and “15th Five Year Plan for Ecological Environment Protection”.

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All are welcome