

# INTEGRATION OF ELECTRIC VEHICLE CHARGING INFRASTRUCTURE WITH SOLAR RESOURCES

Speaker

**Dr. Wei Wei**

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**CANCELLED**

## Abstract

Electric vehicles (EVs) coupled with renewable energy supply have the potential to achieve deep decarbonization of transportation and energy systems with strategic charging infrastructure placement, coordinated expansion of EVs and renewables, and demand management. In this talk, we will discuss 1) coordination between light-duty personal electric vehicle charging with utility-scale solar expansion considering demand management and 2) integration of heavy-duty electric truck battery swapping stations with onsite solar panels. The first work considers the perspective of electricity peak and valley load under different scenarios of solar penetration and EV adoption. The second work focuses on the optimal configurations of batteries and chargers in battery swapping stations and solar installation areas. We will also discuss the simulation results' implications for electricity grid planners and operators, and EV battery charging/swapping infrastructure operators.

## Biography

Dr. Wei Wei is an assistant professor at HKUST(GZ)'s intelligent transportation thrust and carbon neutrality and climate change thrust. Her research direction is on transportation and energy system modeling and analysis with implications for infrastructure planning, operation management and demand response. Her work uses various data-informed methods including simulation, optimization, machine learning and GIS-based methods. Her work has been published in Nature Energy and Cell Reports Physical Science and presented at TRB annual meetings.



**7 May 2025  
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**3:00 pm - 4:00 pm**



**Room 3584A (Lift 27/28)  
Academic Building  
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