



Department of
Mechanical Engineering
The University of Hong Kong



SEMINAR

Urban heat mitigation: Bridging thermodynamics with aerodynamics

Date: 25 August, 2023 (Friday)
Time: 1:30 pm to 3:00 pm
Venue: HW 7-35, Haking Wong Building, The University of Hong Kong

Speaker: Prof. Dan Li
Environmental Fluid Mechanics Group
Department of Earth and Environment
Boston University
Boston, Massachusetts, USA

Abstract:

As the climate warms and as the urban population continues to increase, heat becomes one of the most pressing environmental issues in cities. Various urban heat mitigation strategies such as white and green roofs have been proposed. From the physical science perspective, key questions to address include how effective these strategies are and where/when they are mostly effective. In this talk, I will first use two examples to demonstrate that the surface energy balance provides a strong constraint on the cooling effects of urban heat mitigation strategies at long-term scales. In both examples, the convective heat transfer efficiency plays an important role in controlling the effectiveness of urban heat mitigation strategies. I will then discuss the challenges in parameterizing flow and scalar (e.g., heat) transfer over complex urban environments and conclude my talk with some discussions on the role of atmospheric feedbacks.

Biography:

Dr. Dan Li is an Associate Professor in the Department of Earth and Environment at Boston University. He completed his Ph.D. in 2013 in the Department of Civil and Environmental Engineering at Princeton University. Prior to joining Boston University in 2016, he was a postdoctoral research associate in the Program of Atmospheric and Oceanic Sciences at Princeton University. His research focuses on improving the understanding of the dynamics and thermodynamics of the atmospheric boundary layer and applying the knowledge to addressing real world sustainability challenges. He is the recipient of Humboldt Fellowship for Experienced Researchers from the Alexander von Humboldt Foundation and the 2022 Timothy Oke Award for Original Research in the Field of Urban Climatology from the International Association for Urban Climate.



ALL INTERESTED ARE WELCOME

**For further information, please contact
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