

Land-Atmosphere Feedbacks and Implications for Urban Heat and Its Mitigation



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4:30 p.m.



**Conference Room, 3/F,
Mong Man Wai Building**



[Zoom Link](#) (Mixed-mode)

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As the climate warms and as the urban population continues to increase, heat becomes one of the most pressing environmental issues in cities. To quantify the biophysical processes controlling urban surface and near-surface air temperatures and to assess the effectiveness of urban heat mitigation strategies, it is important to understand the role of land-atmosphere feedbacks. In this talk, I will first show that a linearized surface energy balance equation provides a baseline framework for understanding surface temperature dynamics at long-term time scales. I will then discuss the role of surface-layer feedbacks and boundary-layer feedbacks in modulating the responses of urban surface and near-surface air temperatures to various forcing. The importance of better parameterizing turbulent heat transfer in the coupled urban-atmosphere system will be highlighted.



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