

RESEARCH SEMINAR

DEPARTMENT OF GEOGRAPHY & RESOURCE MANAGEMENT
THE CHINESE UNIVERSITY OF HONG KONG

Terrestrial Ecosystems in the Fight Against Climate Change

28 November 2024 (Thu)
4:30 – 6:00 pm (UTC+8)
Rm 221, Chen Kou Bun
Building, CUHK

Terrestrial ecosystems are essential for CO₂ sequestration, land surface cooling, and food and water security. However, ongoing anthropogenic warming threatens the sustainability of these ecosystem services. Evidence from site-level to global scales shows that warming accelerates greenhouse gas emissions through non-linear ecosystem processes, and reduces water availability which impairs ecosystem functions. Although ecosystems have evolved various climate adaptation strategies, such as diurnal circadian regulation and seasonal acclimation, the extent to which these mechanisms mitigate the impacts of climate change remains uncertain. Nature-based climate solutions offer low-cost managed alterations to increase ecosystem carbon sequestration, along with various ecological co-benefits. Long-term ground-based measurements in Hong Kong suggest that preventing the conversion of coastal wetlands to aquaculture ponds is among the most effective solutions. Emerging tools like remote sensing, machine learning, and big data analytics are proving critical insights into the fight of terrestrial ecosystems against climate change.



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I am an ecosystem ecologist. My interests are centered on understanding the response and adaptation of terrestrial ecosystems to climate change and exploring nature-based climate solutions. I leverage field measurements, big data analytics (ecological datasets and remote sensing), machine learning, and optimality-based models of ecosystem function. Through my interdisciplinary work, I aim to gain mechanistic understanding of biological and physical processes and contribute to effective solutions for fighting climate change and enhancing human well-being.



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