



The University of Hong Kong
School of Biological Sciences

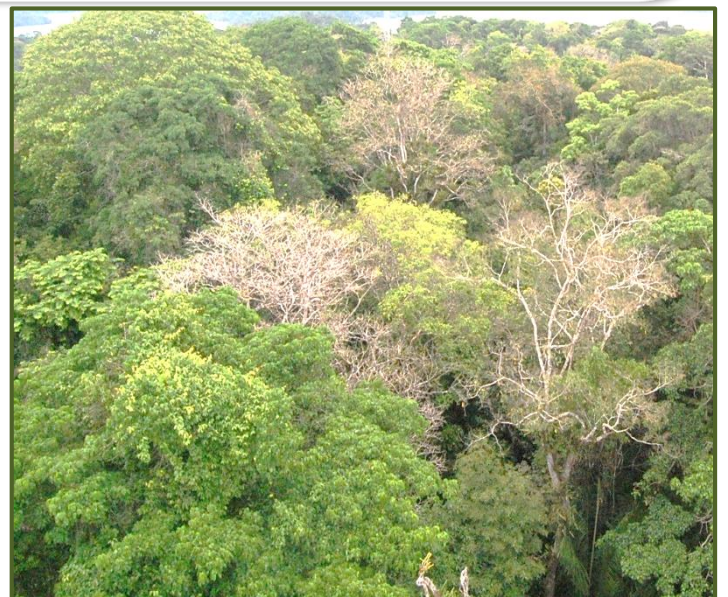
**Qualifying
Seminar**

Decoding tropical deciduousness: patterns, drivers and implications to regional carbon cycle

Date: 26 Jan. 2022 (Wed.)

Time: 3:00 p.m.

Venue: KSBS 3N-01 & Zoom



About the speaker:

Guangqin Song is a PhD student in Dr. Jin Wu's lab. His research focuses on monitoring global tropical phenology and understanding its drivers and impacts on key ecosystem processes in the tropics.



Abstract:

Tropical forests process around one-third of annual terrestrial photosynthesis, importantly regulating large-scale carbon cycles and climate. Understanding how tropical forests respond to climate change has been a central topic in many ecology-related fields. The response of tropical forests to climate change can be gradual. But the common approach that analyses the climate change impact at the forest type (e.g. evergreen vs. deciduous) level often fails to capture such a slow and gradual impact, resulting in large uncertainty in projecting future tropical forest composition and functioning. Here I hypothesize that forest deciduousness (approximated by the monthly percentage of leafy and leafless phenophases within a forest across annual cycles) is a more accurate metric to study climate change impact. During my PhD research, I will first develop novel multi-scale remote sensing techniques, by which I aim to reveal the patterns of deciduousness variability across various scales from sites to the pan-tropics. I will then combine the derived metrics with environmental data to test the water supply and demand theory for exploring the drivers of deciduousness variability across large tropical landscapes. Last, I will integrate the derived deciduousness metrics with ecosystem modelling by which I can assess its impacts on large-scale photosynthesis modelling, a key component of global carbon cycle.