



The University of Hong Kong
School of Biological Sciences

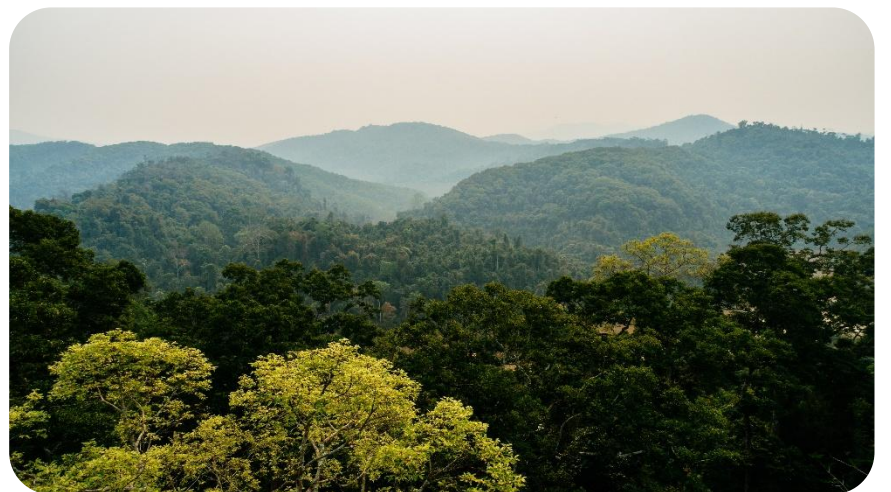
Qualifying
Seminar

From individual to continent: informing trait-based ecology with remotely sensed foliar functional traits and functional diversity

Date: 24th April 2025

Time: 9:00 AM

Venue: Room 6N-11 & Zoom



About the speaker:

Shuwen Liu is a PhD student in the Global Ecology and Remote Sensing (GEARS) lab. His research focuses on how to use state-of-the-art remote sensing techniques to derive plant foliar traits and use trait-based approach to better understand the mechanisms by which biodiversity influences ecosystem function.



Abstract:

Understanding the impact of biodiversity changes on ecosystem functioning is a key task in ecology. The trait-based approach is of special interest because of functional traits response to environmental conditions and direct relationship with growth, reproduction, and survival. Experimental studies at a local scale dominate the understanding of functional diversity–ecosystem function relationships. It is unknown whether functional diversity–ecosystem function relationships at fine scales differ systematically from those at larger spatial scales. Quantifying the effects of functional diversity on ecosystem functions over a large spatial extent is not feasible using field-based approaches alone. Remote sensing is a tool with the potential to help address this challenge. My PhD research aims to use remote sensing to decipher the functional diversity–ecosystem function relationships at a large spatial extent and at landscape scale. Specifically, I will (1) develop a method for deriving key foliar physiological traits at individual tree scale; (2) develop a method generate trait maps across U.S. using time-series satellite data; (3) test to what degree functional traits and functional diversity are related to ecosystem productivity at large spatial extent and landscape scale.