



The University of Hong Kong
School of Biological Sciences

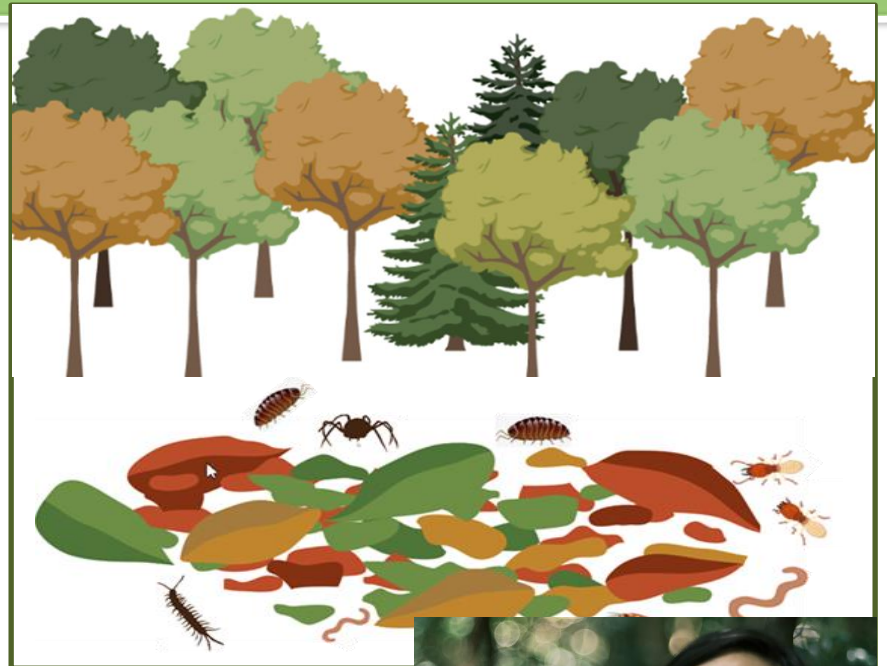
Qualifying
Seminar

Ecological functions of soil fauna on leaf litter decomposition

Date: 27th April 2022

Time: 11:00 AM

Venue: Zoom



About the speaker:

Xiaoyi Zeng is a PhD student in Dr Louise Ashton's lab. Her research focuses on soil invertebrate effects on forest leaf litter decomposition and stable isotope tracer.



Abstract:

Plant decomposition is the primary process of converting dead organic material to inorganic forms, which governs global carbon budget and replenishes the available nutrient pool for living plants. Soil fauna such as termites, beetles, and earthworms can contribute to plant litter decomposition by directly enzymatic consumption and indirectly facilitate microbial decay via physical fragmentation or bioturbation. But the magnitude of soil fauna decomposition effects have been poorly understood historically, leading to low accuracy of soil organic matter dynamics predicting models.

Using meta-analysis and data integration based on published data, I will estimate global mean and the spatial variation of soil fauna effects on plant litter mass decomposition and litter carbon and nitrogen release. Using nitrogen stable isotope labelled leaf litter, I will experimentally measure the net soil fauna effect on leaf litter decomposition and the knock-on effects on living plant growth in tropical, subtropical, and temperate forests.