



SEMINAR

Tues, 4 Nov 2025 | 5 pm | S3-05-02 Conference Room 1

Hosted by Associate Professor Lau On Sun

Assessing and comparing mercury cycling across vegetated landscapes

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About the Speaker

Martin TSUI is currently an Associate Professor jointly appointed by the School of Life Sciences and Department of Earth and Environmental Sciences, The Chinese University of Hong Kong. Martin graduated with his Ph.D. in Water Resources Science from the University of Minnesota. Martin has extensive research interests on environmental pollution, ecosystem ecology, stable isotope applications, and environmental human health. He has authored and/or co-authored about 80 publications and he is currently an editorial board member in the journal - Environmental Toxicology and Chemistry. His environmental research has been previously supported by the National Science Foundation (U.S.A.), and currently supported by the Research Grants Council (Hong Kong), etc.

Mercury is a gaseous pollutant of worldwide concern and can be sequestered by vegetation, which can elevate its level in the soils across terrestrial landscapes. However, the most critical step is when deposited mercury can be transformed to the organic, highly toxic methylmercury, with the latter capable of being extensively bioaccumulated and biomagnified in natural food webs, leading to enhanced exposures to high trophic level animals including humans. In this talk, I will give a brief overview on global Hg cycling and my current research across different vegetated ecosystems, and I will compare our data across these ecosystems of different settings. My research has been conducted in polar, temperate, and subtropical biomes while we have observed elevated methylmercury production in terrestrial ecosystems which may contradict the common notion that aquatic ecosystems are predominantly the biogeochemical hotspots of methylmercury production. If this is true across diverse terrestrial biomes on the planet, this may imply an underestimated exposure of terrestrial ecosystems to this natural but potent toxicant.