

FRIDAYS AT 16:00 IN 3N01 - ALL ARE WELCOME!



ECOLOGY & BIODIVERSITY SEMINAR SERIES



MORIAKI YASUHARA

Moriaki Yasuhara is a professor in the School of Energy and Environment at City University of Hong Kong. He has broad interests in integrating organismal biology (ecology and evolutionary biology), paleontology, and paleoceanography/paleoclimatology, especially by using highly resolved micropaleontological records. His research has focused on the spatio-temporal dynamics of large-scale biodiversity patterns, the impact of climate on species diversity, and the controlling factor(s) of biodiversity pattern/change in deep-sea, shallow-marine and pelagic ecosystems. His specialties also include microfossil-based conservation paleobiology and paleontology of the Ostracoda in general. Recently, Moriaki is especially interested in the tropical biodiversity and Cenozoic deep-sea macroevolution.

Link to Yasuhara Lab website: <https://moriakiyasuhara.com>

Date: Fri, November 14th

Time: 16:00

Venue: 3N01

Social: 17:30 between Central Piers 3 & 4

Temperature tipping point and Cenozoic marine latitudinal diversity gradients

Recent macroecological and paleobiological studies have shown the major role of temperature in shaping global marine biodiversity patterns in the present day, and also at least for the last hundreds of thousands of years. Species track their thermal niches, and optimal temperature for the most species is $\sim 20^{\circ}\text{C}$, resulting in increasing diversity from the poles to lower latitudes. But present-day lowest latitudes have temperatures above 20°C and thus are suboptimal for marine species. More specifically, the major global diversity pattern of the latitudinal diversity gradient is being modified by ongoing warming from a unimodal to bimodal pattern with a strong equatorial diversity dip. While we may argue that temperature is the major driver of marine latitudinal diversity gradient on ecological timescales of the past hundreds of thousands of years, important open questions remain. Did temperature remain important for diversity on longer evolutionary time scales, e.g., throughout the Cenozoic? Or did other mechanisms (e.g., plate tectonics, biotic interaction) predominate in deeper times? Does temperature affect pelagic and coastal organisms similarly? How has temperature affected global-sum diversity?

