

Low Frequency Variability of Sea Level Change in the Maritime Continent Using a Regional Ocean Model

By Dr Ma Peifeng

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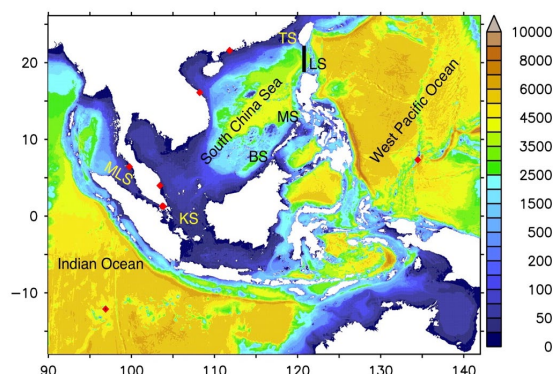
Date: Friday 24th January 2025

Time: 3- 4 PM

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In Person: TMSI Conference Room,
S2S Level 1, 18 Kent Ridge Road,
Singapore 119227

Host: Dr Pavel Tkalich



Registration: <https://shorturl.at/LNN1L>



ABSTRACT:

Coastal zones in the Maritime Continent (MC) are globally among the most vulnerable regions to sea level rise and other climate-related hazards. Ocean circulations play a crucial role in transporting mass, salt, and heat through the South China Sea (SCS) and Southeast Asian Seas (SEAS), linking the western tropical Pacific and Indian Oceans. These processes significantly influence regional sea-level changes, often resulting in higher rates of sea-level rise compared to the global average. Using a high-resolution regional ocean model (NEMO), this study carries out detailed simulations of oceanic processes during both historical periods and future projections. The simulation results are utilized to examine low-frequency sea level trends and variability driven by dominant climate modes in the region. Additionally, this study investigates the contributions of ocean mass redistribution and steric sea level changes, providing insights into the mechanism of sea level variability in the region.

About the Speaker:

Dr Ma Peifeng is joint appointed as a Senior Scientist at TCOMS and Senior Research Fellow at TMSI. His research focuses on coastal and ocean dynamics and modelling, as well as ocean climate modeling. He obtained his PhD from NUS in 2009 and subsequently worked as a postdoc at the Singapore-MIT Alliance for Research and Technology Centre. Before joining TCOMS/TMSI in 2023, Peifeng spent approximately 10 years engaged in research and development within the marine, offshore, and building industries.