TMSI
Tropical Marine Science Institute
National University of Singapore

RESEARCH SEMINAR

Beyond Trajectory Forecasts: How Oil Spill Models Support Environmental Decision-Making

By Dr Haiwei Shen
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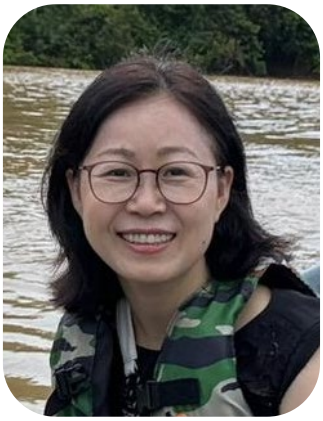
Date: Tuesday, 30 June 2026
Time: 2 – 3 pm
Format: Hybrid – Attend in person at TMSI Conference Room, S2S Building, No. 18 Kent Ridge Road, Singapore 119227
Host: Dr. Pavel Tkalich
Please Register: https://nus-sg.zoom.us/webinar/register/WN_xrGjOE_tS-mGb5lxIg0LoA



ABSTRACT:

Oil spill models are often associated with predicting the movement of oil at sea, but their role extends far beyond trajectory forecasting. This seminar explores how modelling supports decision-making across the spill management cycle, from preparedness and contingency planning to emergency response, EIA, damage assessment, and restoration planning. Using examples from major spill events and practical applications, the presentation will examine how models are used to predict oil fate and transport, identify vulnerable resources, assess environmental exposure, and evaluate management and response options. The seminar will also provide a high-level overview of the key processes represented in modern oil spill models and highlight how these tools support environmental management decisions before, during, and after spill incidents.

About the Speaker:

Dr Haiwei Shen is a Senior Research Fellow at the Tropical Marine Science Institute (TMSI), National University of Singapore. She holds a PhD in Oceanography from the Graduate School of Oceanography, University of Rhode Island, USA, and has been working in oil spill modelling and environmental risk assessment since 2009. Her experience spans oil/chemical spill modelling, contingency planning, spill response support, post-spill environmental impact assessment, litigation support, and the development of web-based spill management systems. Her current research applies numerical modelling to understand pollutant fate and transport, assess environmental risks associated with planned discharges and unplanned releases of oil and chemicals, forecast water quality and harmful algal bloom conditions, and support decision-making for coastal environmental management.