TMSI Tropical Marine Science Institute
National University of Singapore

Changes in Extreme Precipitation across Multiple Scales and its Projection under Global Warming

By Associate Professor Li Xin, Hohai University

Date: Thursday 8 May 2025
Time: 3.30pm
Format: Hybrid.
In Person: TMSI S2S Building L1 Conference Room,
18 Kent Ridge Road, Singapore 119227
Host: Dr Serene Tay
Registration: https://shorturl.at/JmEz1

ABSTRACT:
This talk explores how extreme precipitation is changing across different geographical scales and what can be expected in a warming world. The presentation will first examine hourly precipitation extremes in the Huang-Huai-Hai and Jiang-Huai Plains, where analysis reveals distinct patterns in their distribution, trends, and relationships with atmospheric circulation. Then, the discussion will present statistical downscaling of CMIP6 model outputs for the Yangtze River Basin, showing projected rainfall changes under various climate scenarios. The findings highlight regional differences in extreme precipitation behavior and identify key atmospheric drivers influencing these patterns. This research provides important insights for understanding precipitation extremes in China's economically significant regions and informs climate adaptation and water management strategies in the face of ongoing climate change.

About the Speaker:
Dr. Li Xin is an Associate Professor in College of Hydrology and Water Resources at Hohai University in China and currently an Academic Visitor at the Department of Civil and Environmental Engineering at National University of Singapore. He obtained his Ph.D. degree in department of Civil and Environmental Engineering at National University of Singapore in 2018. Before joining Hohai University, he held a position as computing engineer at Hydroinformatics Institute in Singapore. He has been actively involved in interdisciplinary research in the fields of climate, meteorology, and hydrology. In the recent years, he has been actively involved in fields of climate downscaling, statistical modelling and analysis, extreme precipitation, and machine learning techniques.