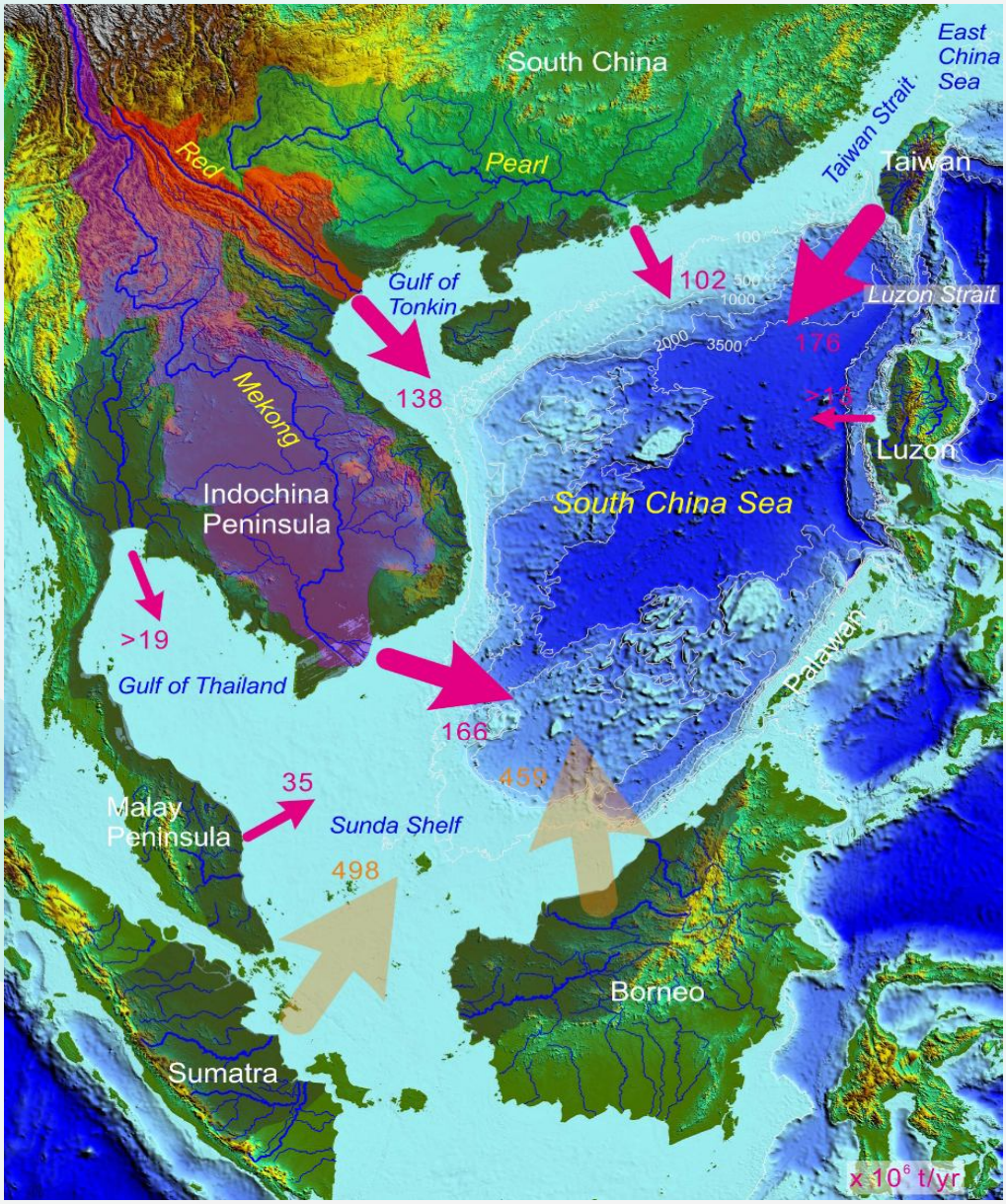
16TH

INTERNATIONAL WORKSHOP ON THE FLUVIAL SEDIMENT SUPPLY TO THE SOUTH CHINA SEA

6-7 November 2023, Shanghai

PROGRAM & ABSTRACTS



Venue

Room B200, Ocean Building, Tongji University (1239 Siping Road, Shanghai)

WORKSHOP PROGRAM

November 6 (Monday)

Opening Session, Chair: Zhifei Liu			
08:30-08:50	Welcome speech		
08:50-09:10	Zhifei Liu	Tongji University	Sixteen years of cooperative research on South China Sea fluvial sediments (FluSed): Review and prospects
Weathering/erosion Session, Chair: Edlic Sathiamurthy			
09:10-09:30	Fernando Siringan	University of the Philippines Diliman	Coastal erosion along the northwest coast of Luzon: Trends and causes
09:30-09:50	Pham Nhu Sang	Tongji University	Effects of grain size, sedimentary recycling, and lithology on the chemical weathering index: A case study of river sediments in the lower Mekong River basin
09:50-10:10	Maria Gracia C. Padrique	University of the Philippines Diliman	Investigating the use of image segmentation and random forest classifier for textural analysis of the conglomerate unit of lagdo formation, Southwest Panay, Philippines
10:10-10:30			Coffee Break
Source-to-sink Session, Chair: Fernando Siringan			
10:30-10:50	Hoang Van Long	Vietnam Petroleum Institute	Holocene sedimentation of the Mekong River Prodelta
10:50-11:10	Mingyang Yu	Tongji University	Low sediment transport efficiency from Tibetan Plateau to Indian Ocean through the Yarlung Zangbo-Brahmaputra-Ganges system
11:10-11:30	H.M. Zakir Hossain	Jashore University of Science and Technology	Distribution of major, trace, and rare earth elements in a transect of cores in the Bay of Bengal offshore Bangladesh
11:30-11:50	Tiffany Ashley F. Uy	University of the Philippines Diliman	Determining geologic controls of submarine groundwater discharge (SGD) through low-cost acoustic mapping
11:50-12:10	Penjai Sompongchaiyakul	Chulalongkorn University	Abundance and composition of microplastics in Mekong River's sediment
12:10-13:30			Lunch

Effects of grain size, sedimentary recycling, and lithology on the chemical weathering index: A case study of river sediments in the lower Mekong River basin

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Although the Chemical Index of Alteration (CIA) has been applied widely to estimate the intensity of chemical weathering in river basins, but grain size, sedimentary recycling, and lithology can significantly impact the chemical weathering proxy. In this study, major and trace element geochemistry of clay, silt, and sand-fraction sediments in the lower Mekong River basin (Cambodia and Vietnam) have been utilized to investigate the effects of grain size, sedimentary recycling, and lithology on the chemical weathering index. Al_2O_3/SiO_2 versus CIA, WIP versus CIA, and Sc/Th versus CIA have been extensively used to estimate the influence of grain size, sedimentary recycling, and lithology on the chemical weathering proxy, respectively. The diagrams of Al_2O_3/SiO_2 versus CIA in most silt and sand-fraction sediments display strong positive correlations (average 0.666 and 0.778), while clay-fraction sediments present very weak correlations between Al_2O_3/SiO_2 and CIA (average 0.011). Very weak correlations between WIP and CIA are found in most silt and sand-fraction sediments (average 0.042 and 0.037), whereas clay-fraction sediments show very strong negative correlations in the diagrams of WIP versus CIA (average 0.953). However, all clay, silt, and sand-fraction sediments display weak or very weak correlations (average 0.288, 0.168, and 0.027, respectively) in the diagrams of Sc/Th versus CIA. These indicate that silt and sand-fraction sediments in the lower Mekong River basin are strongly influenced by grain size and sedimentary recycling, but not clay-fraction sediments, and most clay, silt, and sand-fraction sediments are principally independent of the lithology in the source regions. In the region, clay-fraction sediments are, therefore, first-cycle rather than polycyclic sediments, and their element geochemistry can be used as relevant proxies of chemical weathering intensity.

Keywords: grain size; sedimentary recycling; lithology; chemical weathering; Mekong River