

Thur. 15 May (UTC+8) 08:30-10:00 3rd floor Ballroom

Convenors: Ning Zhao and Kai Deng

Rapporteur: Xiaoyue Wei

1. One or two major highlights from each presentation

➤ Oral Presenter 1: Gisèle Flodore Ghepdeu Youbouni [1-7]

(1) The report tells us that *Chimaerus Palmatus* is abundant during the warmer period of the year, with high levels of salinity, conductivity, and TDS. And temperature is the main driver of *Chimaerus Palmatus* seasonal abundance and size variation. So *Chimaerus Palmatus* population dynamics can be considered a biological indicator of climate change within the region.

➤ Oral Presenter 2: Sheng Zeng [DF-1]

(1) The report shows that residence time and dominant factor of radionuclides in river lake system, lake system and river systems, and they are dominated from different factors. When the residence time of a radionuclide is close to that of the water body, its dominant influencing factors cannot be definitively identified.

➤ Oral Presenter 3: Tingli Yan [DF-3]

(1) The coral reefs' role in moderating global climate through CO₂ regulation will be lost due to ocean acidification. The erosion rate caused by coral reef dissolution is projected to be less than 0.5 mm/year during this century, but coral reef dissolution may increase the risk of physical erosion.

➤ Oral Presenter 4: Miaomiao Zhang [DF-6]

(1) Strong DIP Enrichment Capacity: Benthic foraminifera exhibit exceptionally high DIP enrichment in marine environments with intracellular concentrations 4-5 orders of magnitude higher than ambient porewater

(2) Storage Pattern: A negative exponential relationship exists between test volume and intracellular DIP concentration, indicating body size is the primary regulator of DIP storage.

(3) Ecological Significance in Jiaozhou Bay: Foraminiferal DIP storage surpass porewater levels by 5-45 times, demonstrating their critical role in marine phosphorus

cycling.

➤ Oral Presenter 5: Baker Matovu [3-6]

(1) The report shows that the BE promises to be a novel paradigm for coastal communities' empowerment in the Global South and India. But developing sustainable WE interventions in the BE/coastal activities is complex.

(2) An opportunity for WE in the BE is emerging, especially in jobs/coastal activities where women have historical knowledge, gained skills or capacity building. In the short run, this could be through market analyses and the development of innovative seafood value chain services under existing self-help groups or projects in Alappad. This can be a strong basis for individual and household-level WE.

➤ Oral Presenter 6: Liuting Yuan [DF-5]

(1) The report shows whether submarine groundwater discharge a major pathway of carbon and nutrients into the coastal ocean. And the study region is the Pearl River Estuary. However, the study cannot show that SGD is a major source of carbon, nutrients, or excess ^{26}Ra in coastal waters.

➤ Oral Presenter 6: Xueyang Chen [DF-8]

(1) The report explains two modes that one is a strengthening of winter-like front, another is a transition from a spring-like to a winter-like pattern. By stepwise multiple linear regression fitting of GM PCs and those of climate factors, it explains relationships between the variations of fronts and climate factors.

2. One paragraph of session summary

This section focuses on the impacts of global change on marine biogeochemistry, covering the population dynamics and potential impacts of marine organisms, the impacts of ocean acidification on coral reefs, and the response of ocean fronts to climate change, all of which are related to global change. Moreover, the session shows some terrigenous material transportation, such as DF-1 and DF-5. They gave us a clear picture of how land-based sources are transported, covering both the Yangtze River Basin and the Pearl River Estuary. All of research interests are diverse, effectively linking the oceans as an ecosphere.

3. Suggestions for IMBeR 3.0 from this session (one or two bullet points):

(1) The theme of this section could be a little clearer, like 3-6 this report doesn't quite fit with the theme of other people's reports, and the subsequent organization of the reports could make the theme a little clearer.