

The second workshop of WESTPAC WG006 was held.

Nineteen experts from five countries in the East and Southeast Asia gathered in Qingdao, China along with a remote participant from US, on 17 and 18 December 2018, for the second workshop of WESTPAC WG006 “A framework for cooperative studies in the Western Pacific Marginal Seas: Energy and materials exchange between land and open ocean”.

The objectives of this workshop are mainly to exchange information and to discuss the future cooperative studies:

1. Share current information of national scientific activities, including international cooperative research programs on-going and/or being planned for the future, in and around the marginal seas in East and Southeast Asia, which would be expected to progress significantly with international cooperative research.
2. Exchange relevant information about research cruises in the marginal seas and available berths for scientists conducting cooperative research.
3. Find potential common interests and create various international cooperative research programs.
4. Exchange information on the scientific activities of the young generation scientists in each country, particularly for field studies.

At the beginning of the meeting, comments from Advisory Group of WESTPAC on the mid-term report of WG006 were reported, and it was confirmed that five sub-groups based on the geographical area proposed in the first workshop should be a framework to discuss cooperative research activities in this WG. Then research activities in each sub-group were introduced by the participants. It was reported that various international cooperative research cruises were carried out in the MSJRK, ECS and Kuroshio region, by scientists from China, Korea, Japan, Malaysia, Philippines, and Russia as well as approval of international cooperative research funds between China and Malaysia, and between US and Japan.

More detailed discussion was done in two sub-sessions. Two topics, which are chosen from common interests through the sub-groups, were ocean mixing processes associated with internal gravity waves and ocean tracers: regional GEOTRACES activities in the East China Sea and West Pacific Ocean. Both sub-sessions were led by young scientists who were interested in the topics, to progress international scientific relationship in young generation.

In the sub-session of ocean mixing processes, following issues were discussed.

- 1) Processes through which internal gravity waves can lead enhanced mixing, e.g. shear and/or convective instability, breaking of internal gravity waves on the shallow regime etc.,
- 2) Regions/areas suitable to observe the processes,
- 3) Quantities to be measured,
- 4) Instrumentation necessary for measuring the quantities and
- 5) Possible collaboration.

In the sub-session of regional GEOTRACES activities, it was discussed what we can learn from ocean tracers, particularly in the East China Sea and West Pacific Ocean.

Ocean tracers mentioned in the sub-session were 1) Fe, Al, Mn; 2) REEs, Nd isotope; 3) Ra, Rn; 4) Hg; 5) paleo proxies; 6) others.

Based on the discussion in both sub-sessions, it was confirmed that participants in the workshop were commonly interested in the material and energy exchange between the marginal seas and open ocean, which is the main theme of this WG, and it was agreed that energy source of vertical mixing, such as topography-induced internal waves, wind-induced near-inertial waves, typhoon, Internal tides, solitary waves were important to be investigated, as well as understanding of material transport using multi-chemical tracers was also important.



Group photo at the meeting site

Concerning membership, associate steering members were nominated from young generation from each country.

Venue and hosts of the next workshop were discussed at the end of the workshop. Guebuem Kim from Seoul National Univ. (SNU), Korea agreed to host the meeting in Seoul, Korea in 2019. WESTPAC 3rd workshop will be held on May 2019 in SNU combining with PEACE meeting. (After the workshop, it was postponed to June, caused by no availability of the expected meeting room in SNU.)