

2022 Report of WG 50 on *Sub-mesoscale Processes and Marine Ecosystems*

The kick-off meeting of the Working Group on *Sub-mesoscale Processes and Marine Ecosystems* (WG 50) was held online in July 20, 2022 (see *WG 50 Endnote 4*) and later at the PICES 2022 Annual Meeting, the members had a mixed online and on-site meeting on September 29. Drs. Yisen Zhong and Bo Qiu co-chaired these two meetings. Dr. Zhong briefly described the establishment process of this group. Every member then made a self-introduction.

AGENDA ITEM 1

Group intention and tasks

The members were made clear with the goals and tasks of this group. The members also discussed how to proceed to reach the goals, including task assignments and periodic meetings.

AGENDA ITEM 2

Appointment of a co-chair

All members agree with the appointment of Dr. Yisen Zhong as a Co-Chair from the western side of the Pacific, acknowledging his contribution to establish this group.

AGENDA ITEM 3

New members

WG members agreed it was essential to enlarge the group but to limit the size to 2–3 persons for each member country. Preference is to involve some scientists doing research on biophysical interactions. In October, two new members, Jody Klymak (Canada) and Ha Joon Song (Korea), were appointed to the group.

AGENDA ITEM 4

Session proposal for PICES-2023

All members agree to submit a topic session proposal on “*Multi-scale ocean processes and their impacts on marine ecosystems*” for PICES-2023 (*WG 50 Endnote 3*), which was approved by Science Board.

WG 50 Endnote 1

WG 50 participation list

Members

Bo Qiu (USA, Co-Chair)
 Yisen Zhong (China, Co-Chair)
 Tetjana Ross (Canada)
 Fangli Qiao (China)
 Yusuke Uchiyama (Japan)
 Sung Yong Kim (Korea)
 Annalisa Bracco (USA)

WG 50 Endnote 2

WG 50 meeting agenda

1. Revisiting the group intention and tasks
2. Appointment of a co-chair
3. Inviting new members
4. Preparing a session proposal for PICES-2023

WG 50 Endnote 3

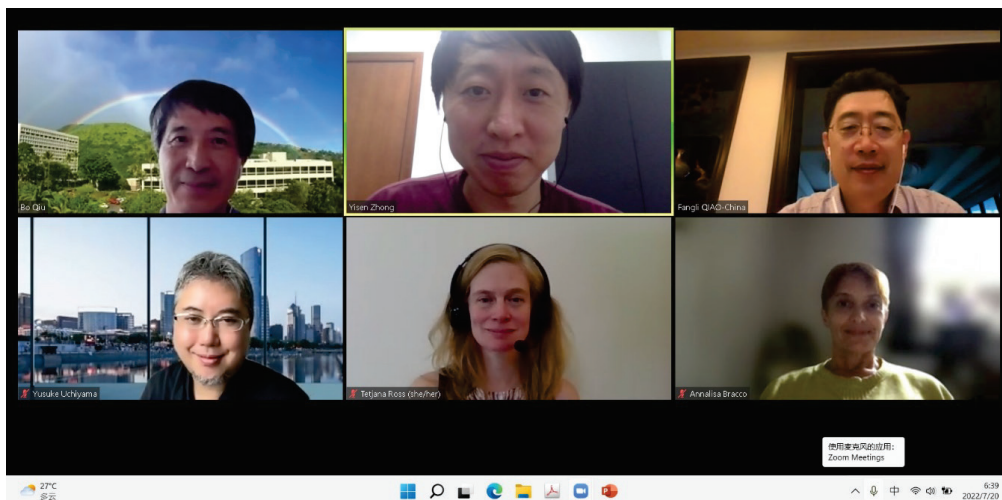
**Proposal for a Topic Session on
“Multi-scale ocean processes and their impacts on marine ecosystems”
at PICES-2023**

Co-Convenors: Yisen Zhong (China), Bo Qiu (U.S.A.), Sung Yong Kim (Korea), Tetjana Ross (Canada)

Duration: 1 day

Oceanic processes exhibit distinct characteristics on different temporal and spatial scales, spanning from chaotic turbulence, intense internal waves, complex fronts and filaments to energetic mesoscale eddies and basin-wide circulations. The unique properties of different processes can impact the distribution, transport, and conversion of various biogeochemical tracers as well as the microscopic marine organisms that form the base of the marine food web. In recent decades, many studies have been devoted to this interdisciplinary field, especially focusing on the oceanic meso- and submesoscales, but there are still knowledge gaps in understanding how these multi-scale oceanic processes-configure marine ecosystems, *i.e.*, building the connection between the physical environment and sustainable use of the marine resources, which is in alignment with the UN Decade’s SDG 14. We invite general studies providing new insights on multi-scale physical processes, scale interactions, and their impacts on the marine ecosystem. Biogeochemical studies related to the physics are also strongly encouraged in this session.

WG 50 Endnote 4



Group photo of WG 50’s July 20, 2022 meeting.