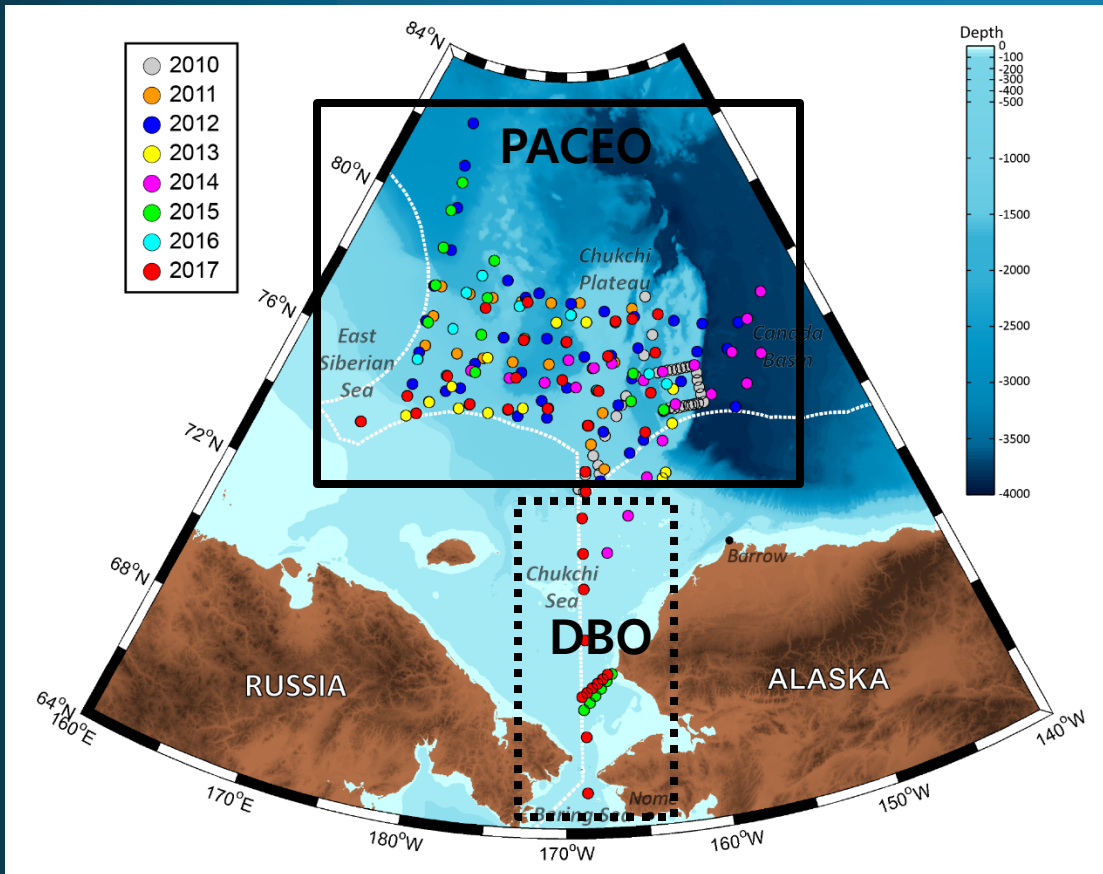


KOPRI Biological Oceanography (PACEO)



- **Phytoplankton** community structure, primary production, and **Physiology (F_v/F_m)**
- **Microzooplankton** community structure and grazing impact
- **Mesozooplankton** population and community structure
- **Bacteria and virus** abundance

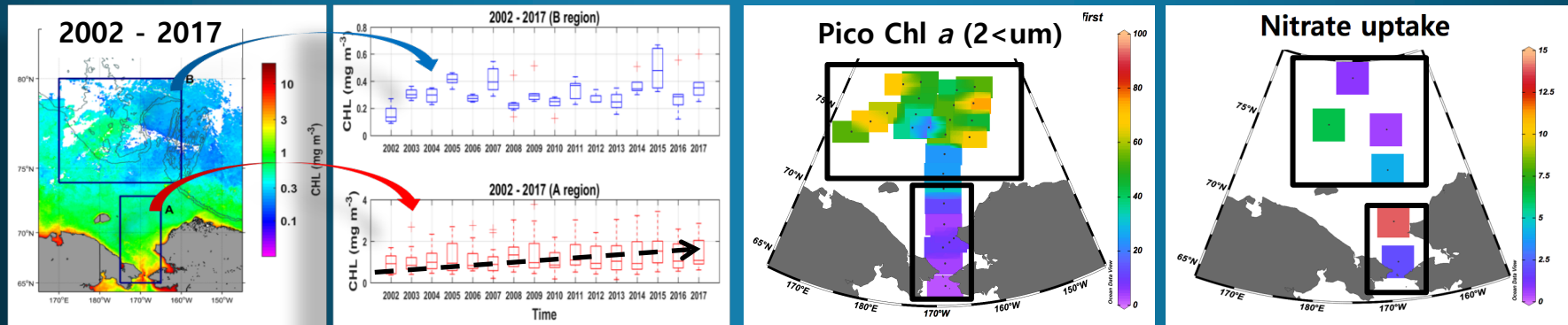


Pacific Arctic Group Spring meeting
June 18, 2018
Davos, Switzerland

Autotrophy in the food web

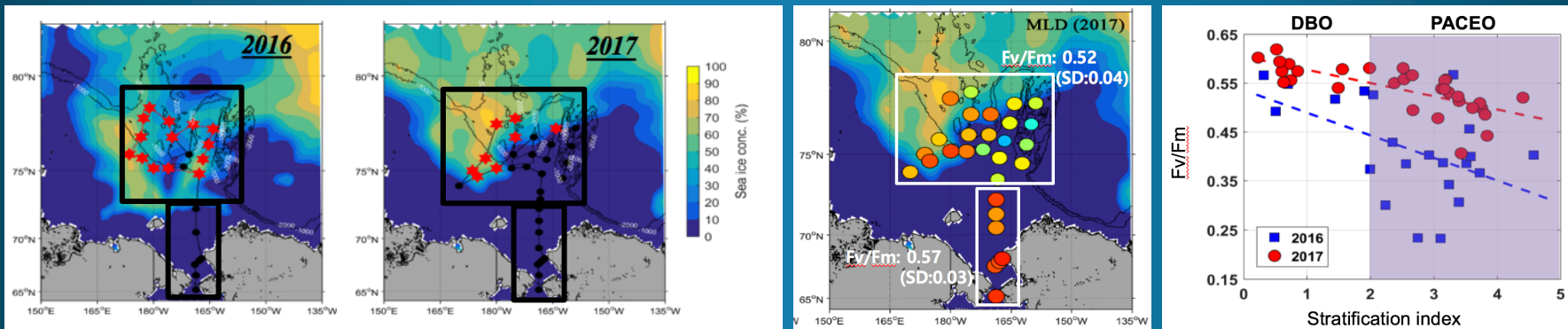
Phytoplankton community

- Uncertain temporal variation of Chl *a* in PACEO unlike the pattern in DBO
- Flagellates were dominant group of phytoplankton and C and N uptake rate were $30 \text{ mgCm}^{-2}\text{h}^{-1}$ and $3.61 \text{ mgNm}^{-2}\text{h}^{-1}$



Phytoplankton physiology (F_v/F_m)

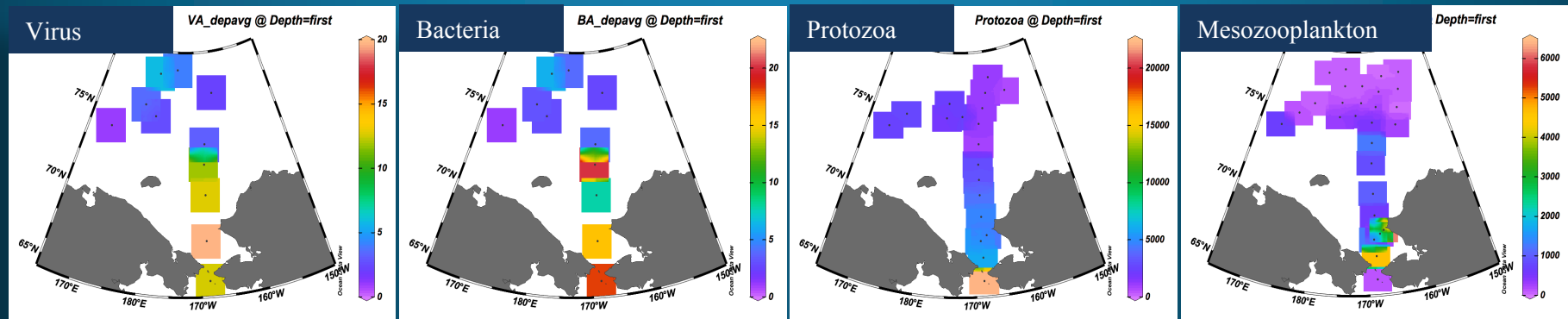
- Photochemical efficiency was similar between PACEO and DBO in 2017
- Phytoplankton community and nutrient supply might be the possible source.



Heterotrophy in the food web

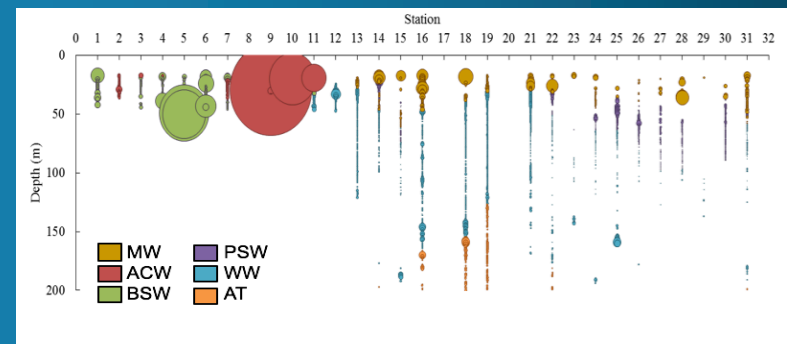
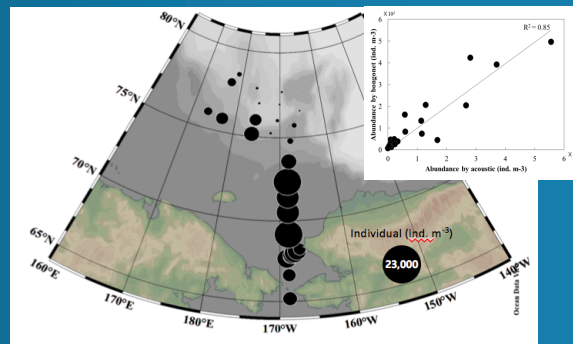
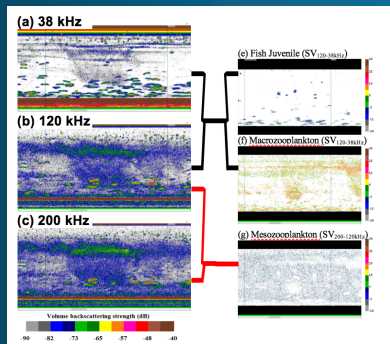
Virus, bacteria, and zooplankton

- Virus, bacteria, protozoa, and mesozooplankton were two times less abundant in PACEO than DBO



Copepod abundance

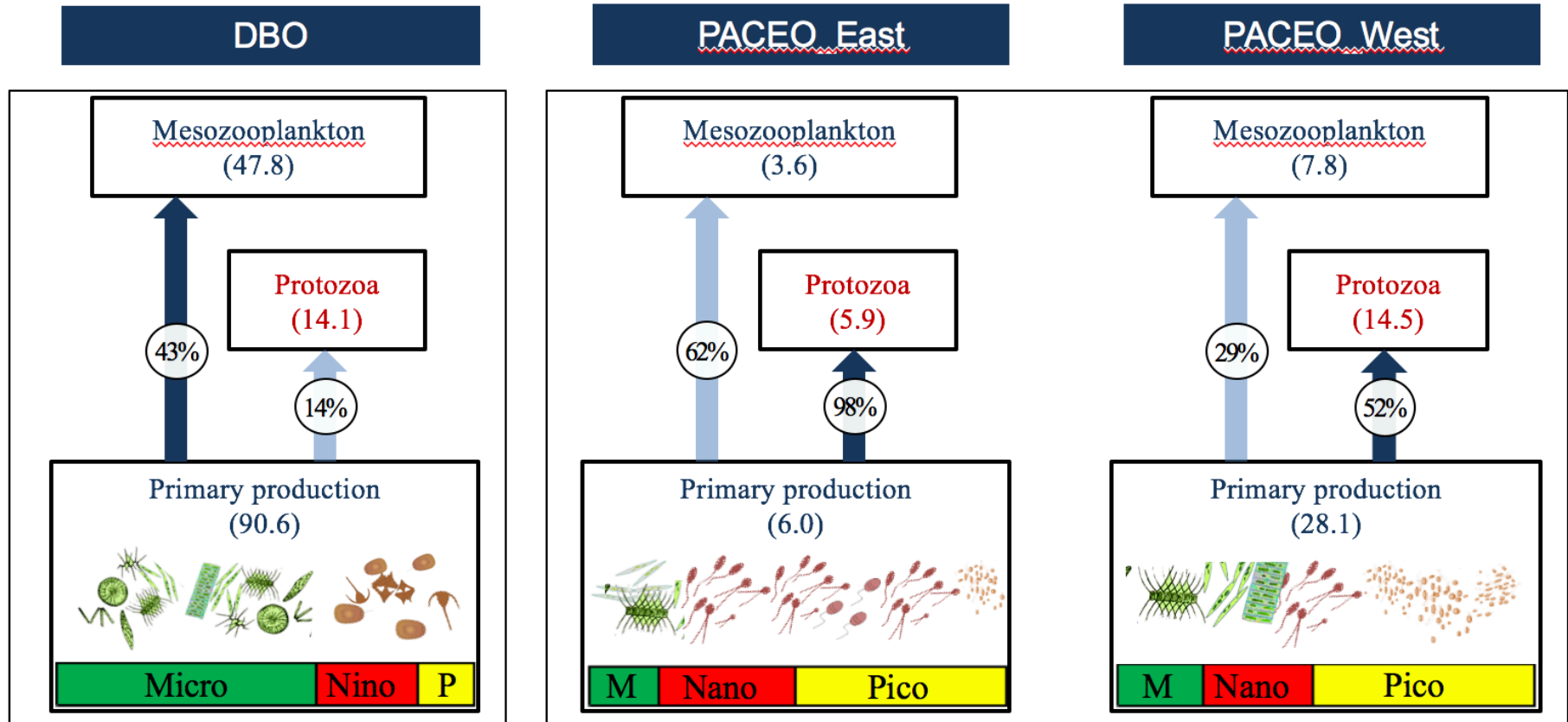
- Copepod abundance was tried to estimate with acoustic and net samples
- We expect to find a relationship between water masses and copepod habitats



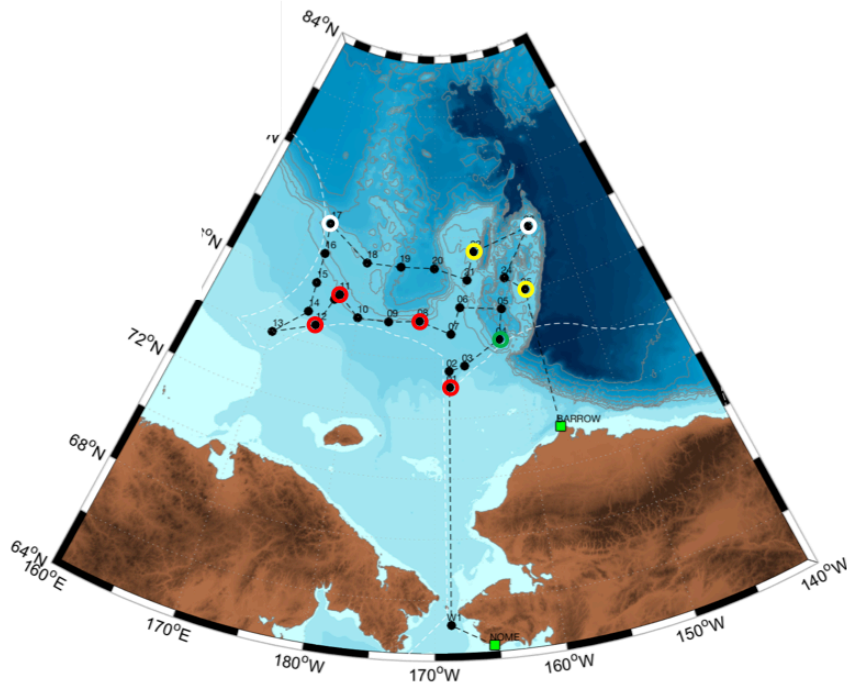
Food web structure

Low to mid-trophic level

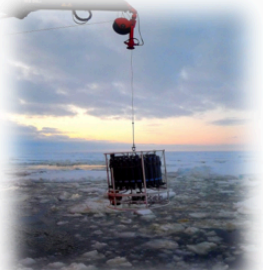
- Microbial food web play important role in PACEO while mesozooplankton grazing are important factor in DBO



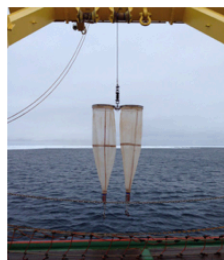
Coming cruise in 2018



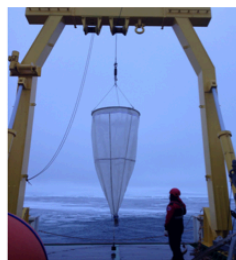
- **Phytoplankton** community structure (CHEMTAX and Fluorometry), primary production (^{13}C , ^{15}N), and Physiology (F_v/F_m)
- **Microzooplankton** community structure and grazing impact
- **Mesozooplankton** population and community structure
- **Bacteria** and **virus** abundance



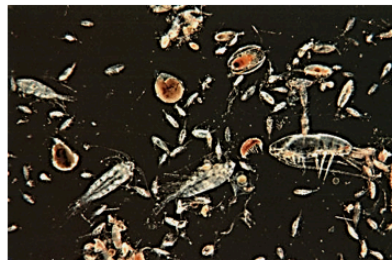
CTD & Water sampler



Bongo net



Ring net



Microscopy



NGS & Bioinformatics

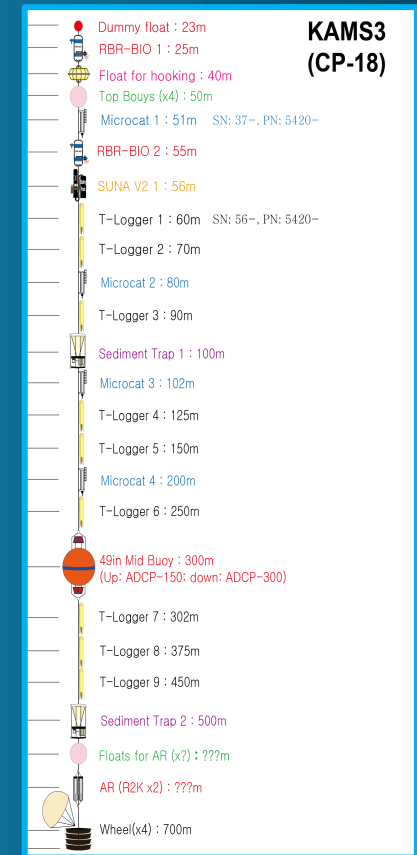
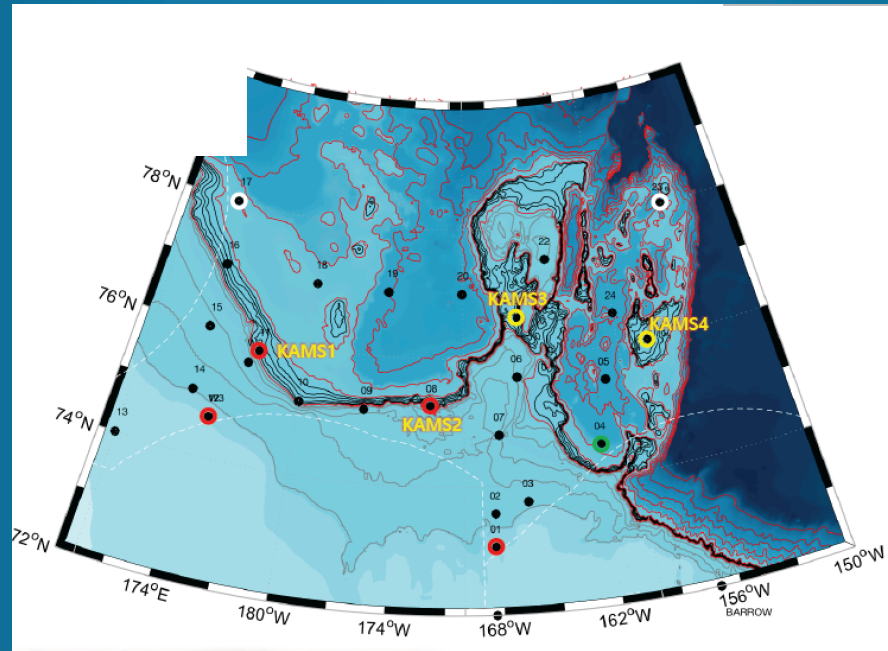
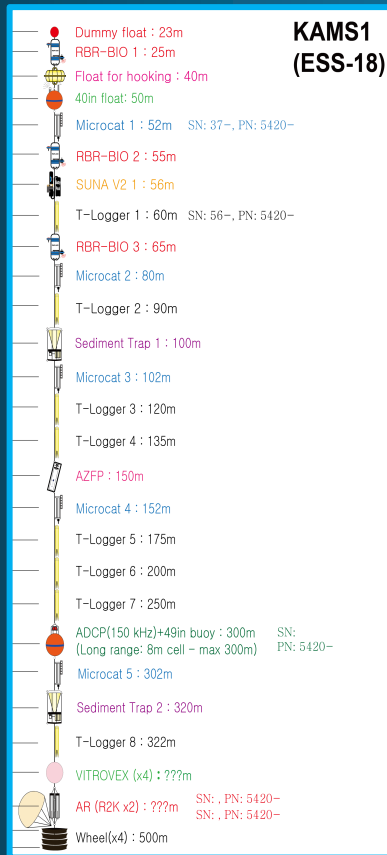


Scientific echosounder

Coming cruise in 2018

Physical-biogeochemical mooring

- Seasonal variability of SCM, zooplankton abundance and vertical behavior, and POC flux



Thank you

