

Summary on DBO Survey during the 2014 ARAON Arctic Cruise



Presenter: Kyoung-Ho Cho

**2nd DBO Data Workshop
PMEL/NOAA, Seattle,
October 29 to 31, 2014**



Korea Polar Research Institute

2014 Arctic Cruise (ARAON)

1. Period:

Jul 31 to Aug 25, 2014

2. Areas:

- DBO line 3
- Chukchi Borderland
- Beaufort Sea (SIC)

3. Participants: 83

- Researcher: 44

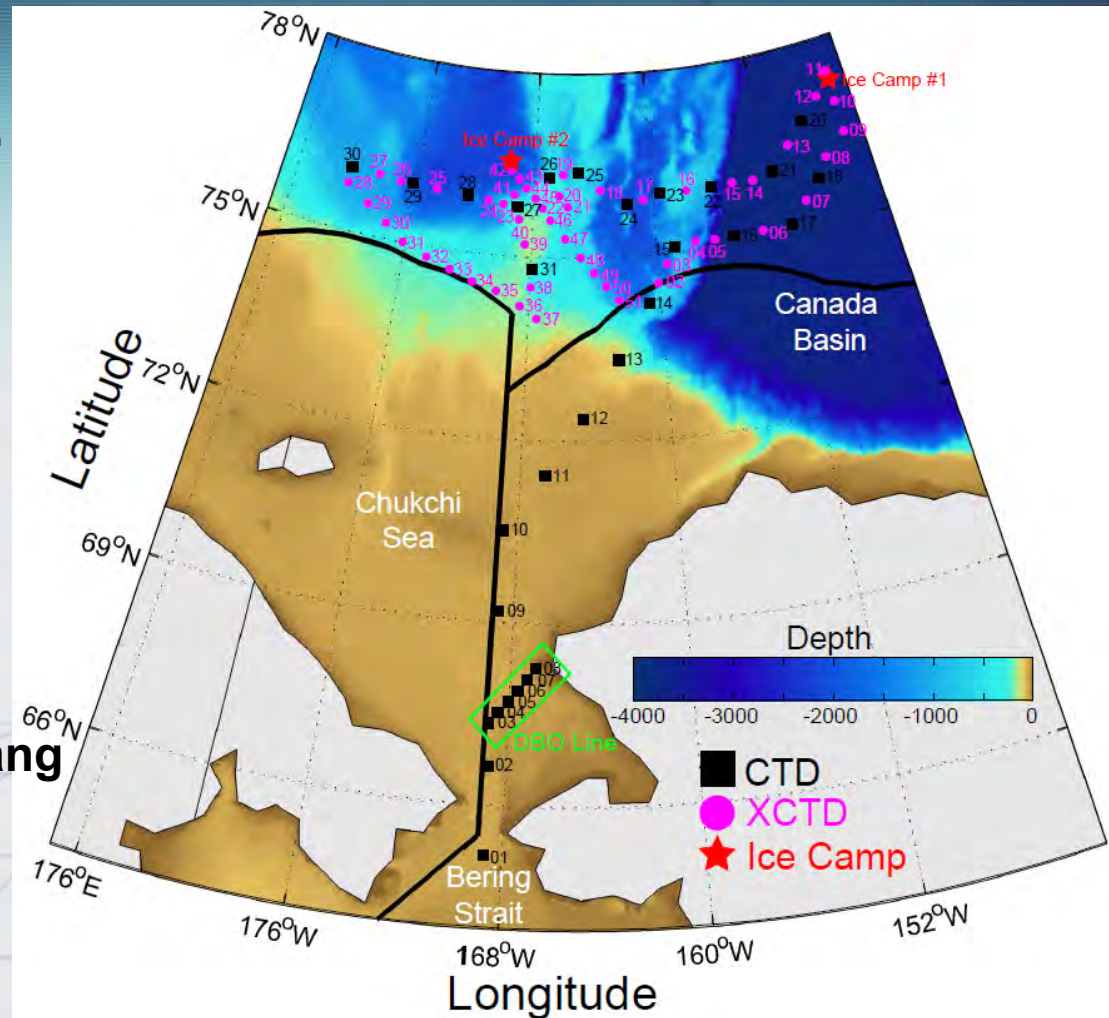
* Chief Scientist: Sung-Ho Kang

- Crew: 29

- Others: 10

(Heli pilot, Ice pilot,
bear guard, doctor, etc.)

- 17 institutes joined from 10 countries

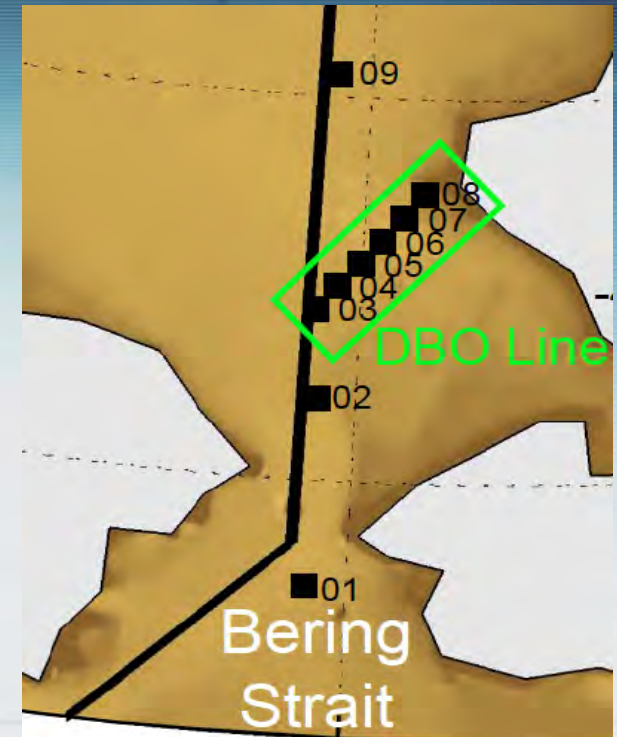


DBO-3 Observation

St.	Time (local)	St.	Time (local)
03	Aug 01 15:36~	06	Aug 01 23:32~
04	Aug 01 18:55~	07	Aug 02 02:02~
05	Aug 01 20:37~	08	Aug 02 04:08~

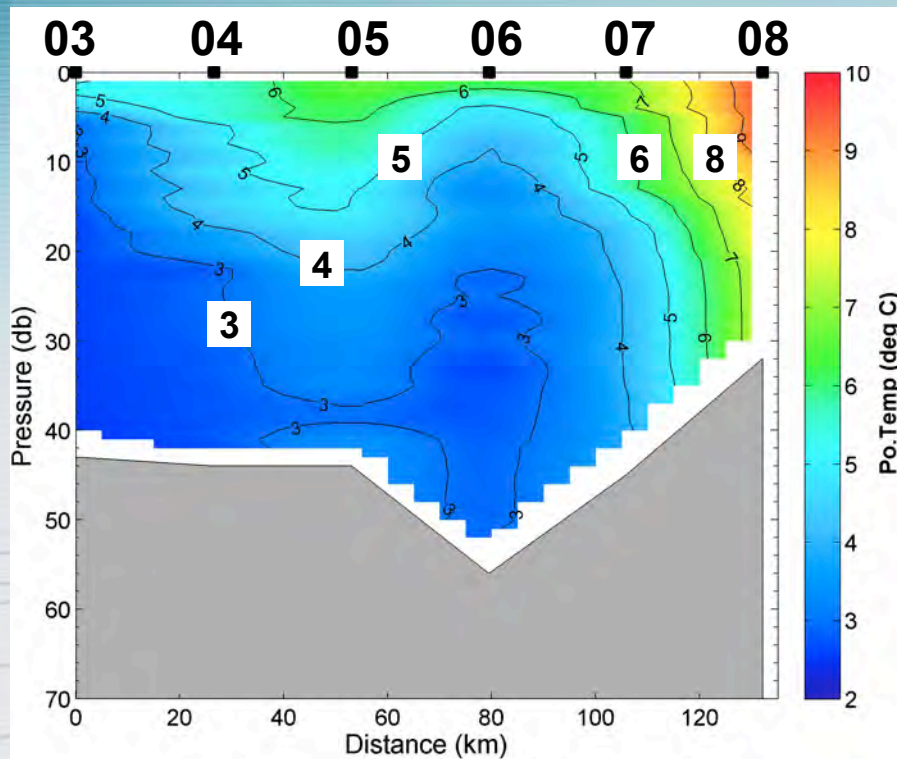
Observed Items

- Temperature, salinity, DO, fluorescence, PAR, transmission, backscatter, water velocity
- Primary production and new production,
- Phytoplankton composition,
- Chlorophyll-a and HPLC,
- Zooplankton composition and abundance
- Bacterial and virus biomass
- Micro-zooplankton biomass, composition, and grazing
- Nutrients, POC, PON, DOC, DON, DOP
- N₂O gas, pCO₂, DIC , pH, SS, TA
- Atmospheric components

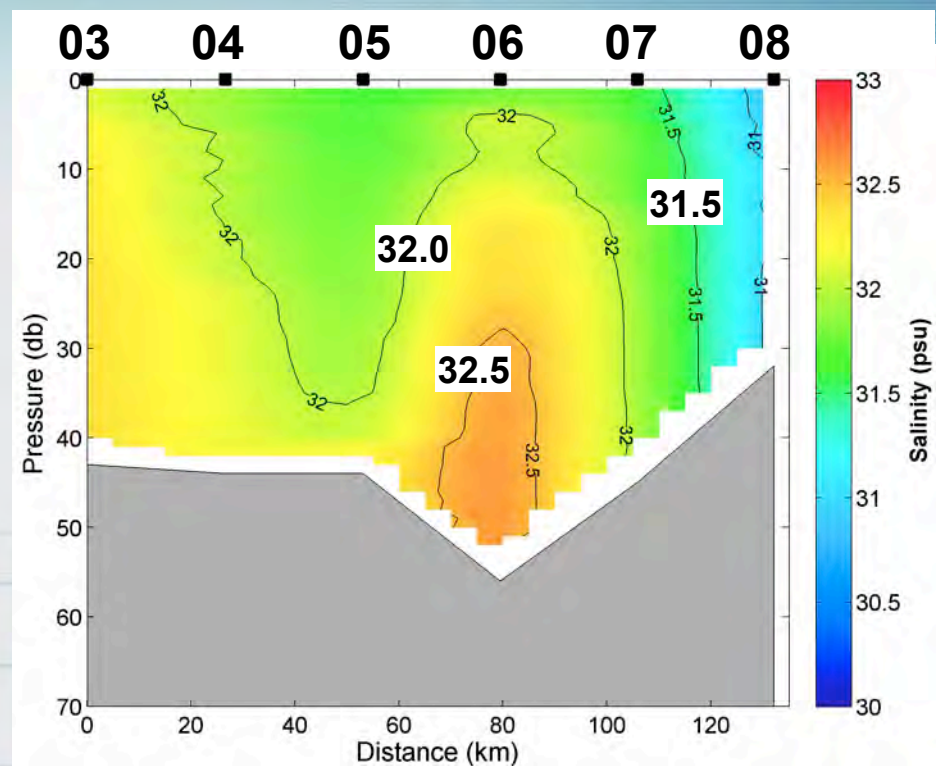


DBO-3 Observation (CTD-T, S)

Temperature



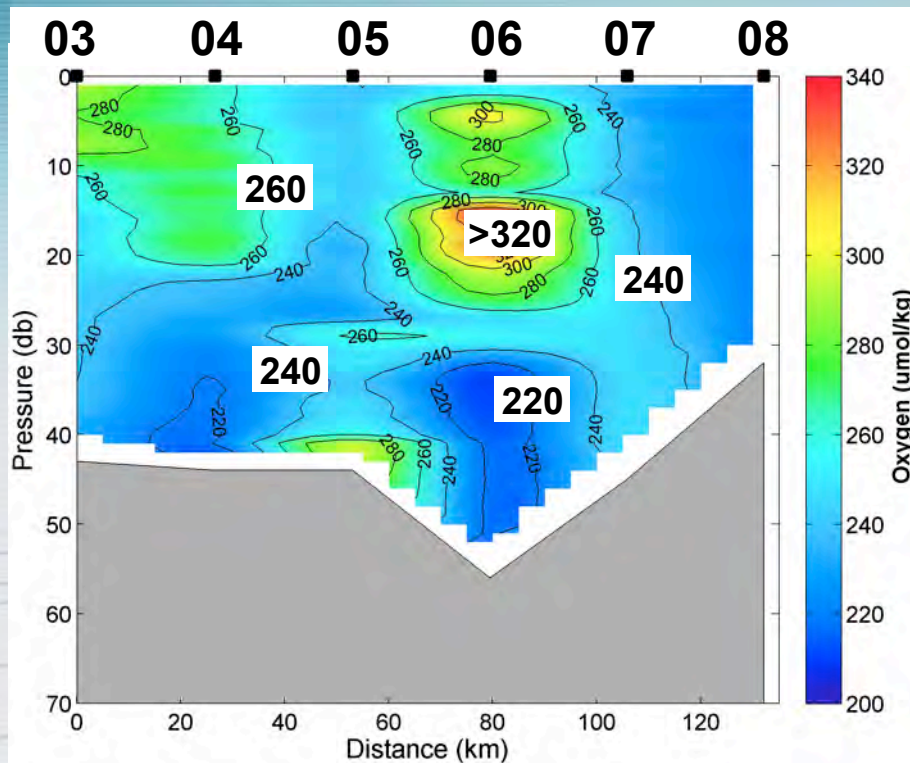
Salinity



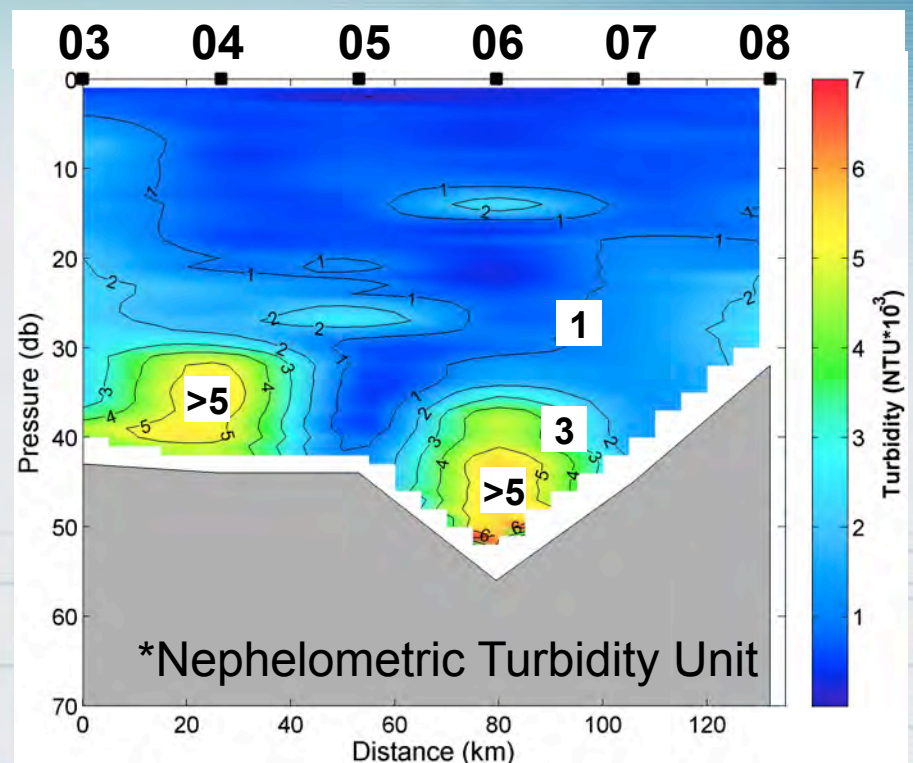
- ◆ Relatively cool, saline water on bottom of 03 ~ 06
- ◆ Relatively warm, fresh water nearshore (08)

DBO-3 Observation (DO & Scattering)

Dissolved Oxygen



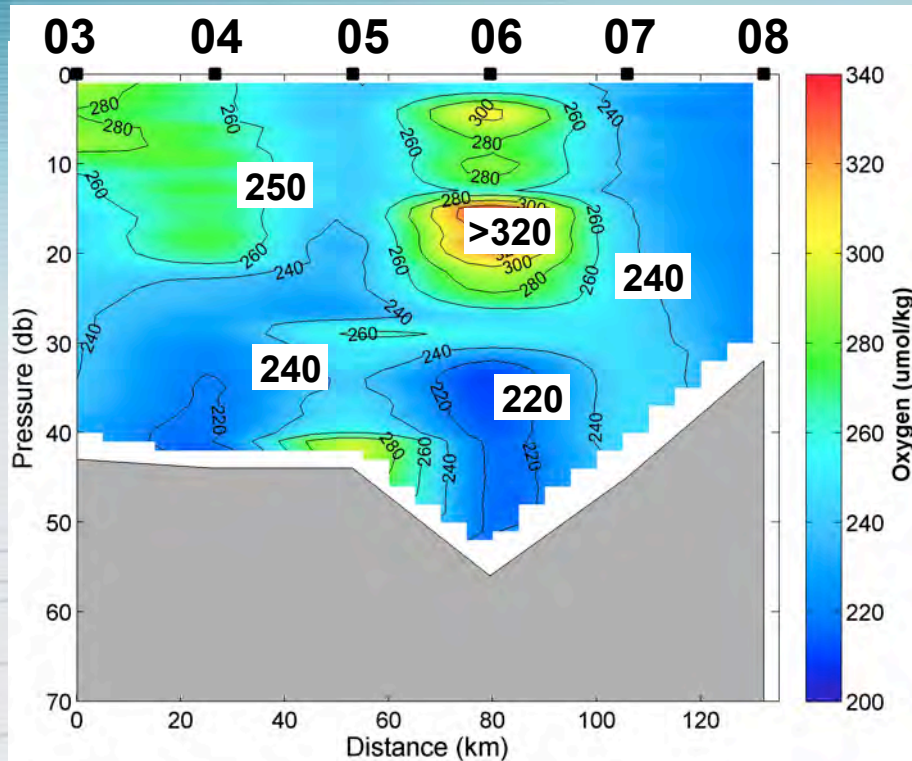
Turbidity



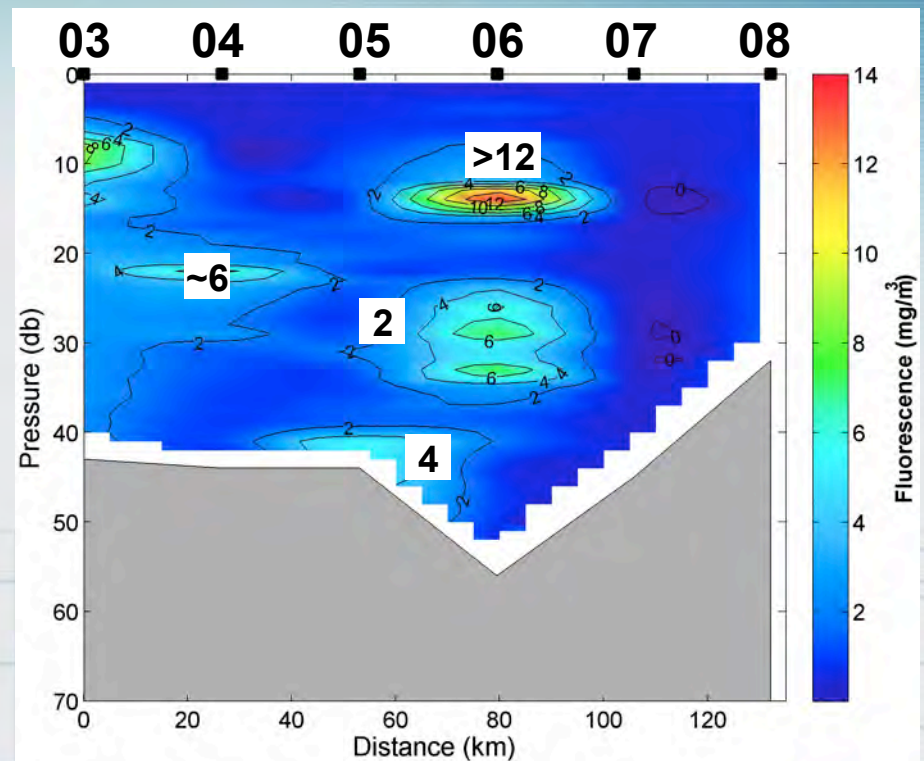
- ◆ Dissolved oxygen low on bottom of 04 and 06
- ◆ Turbidity max on bottom of 04 and 06

DBO-3 Observation (CTD-Fluorometer)

Dissolved Oxygen



Fluorescence



- ◆ Max fluorescence at mid-depth of 06 where max DO exists.

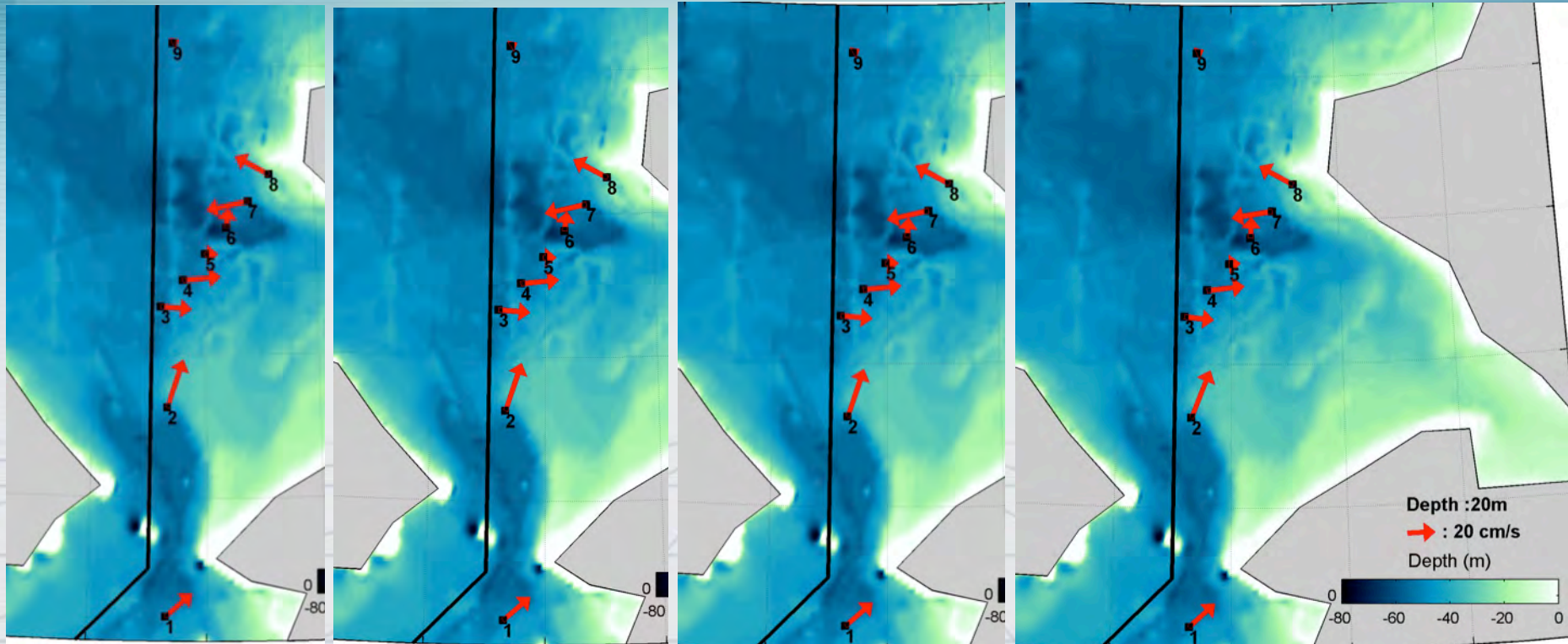
DBO-3 Observation (Lowered-ADCP)

5 m

10 m

15 m

20 m



- ◆ 03~05: eastward, 06: northward, 07: westward, 08: northwestward
- ◆ Raw data : without detiding

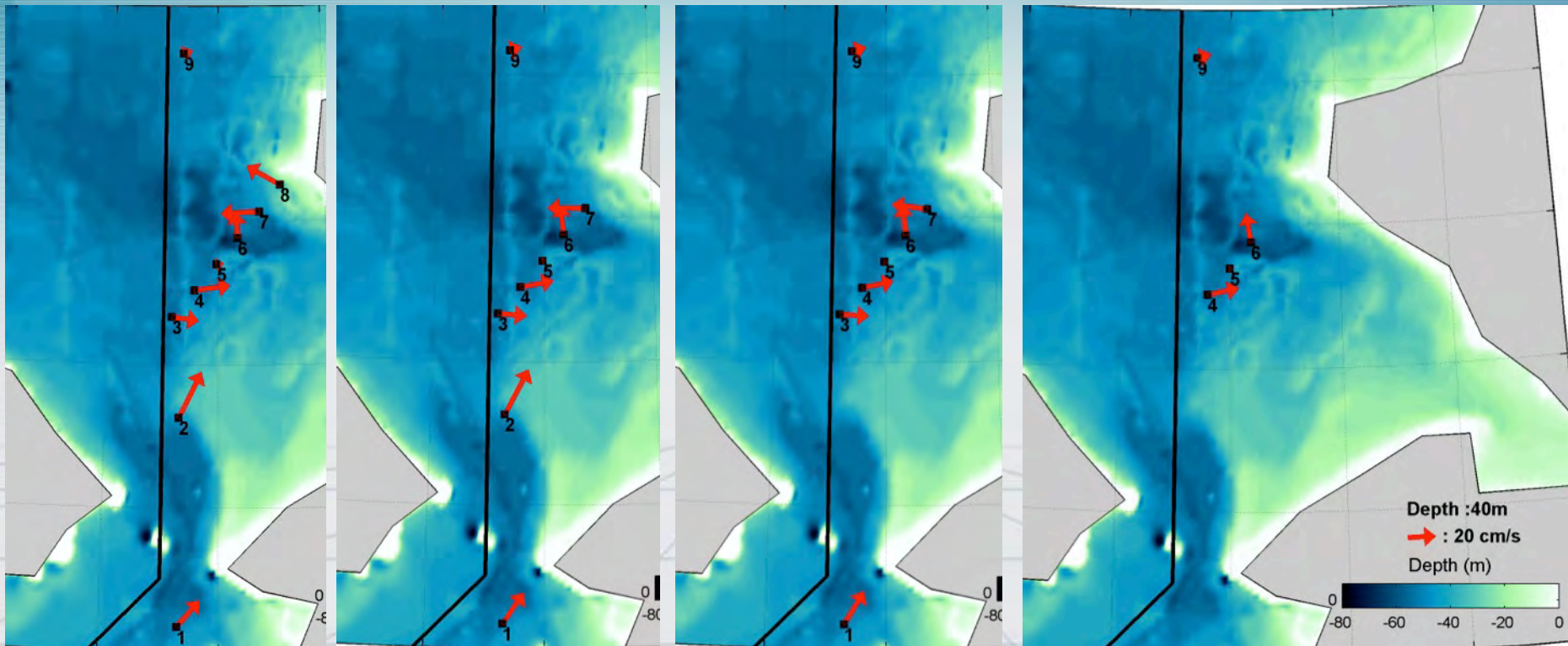
DBO-3 Observation (Lowered-ADCP)

25 m

30 m

35 m

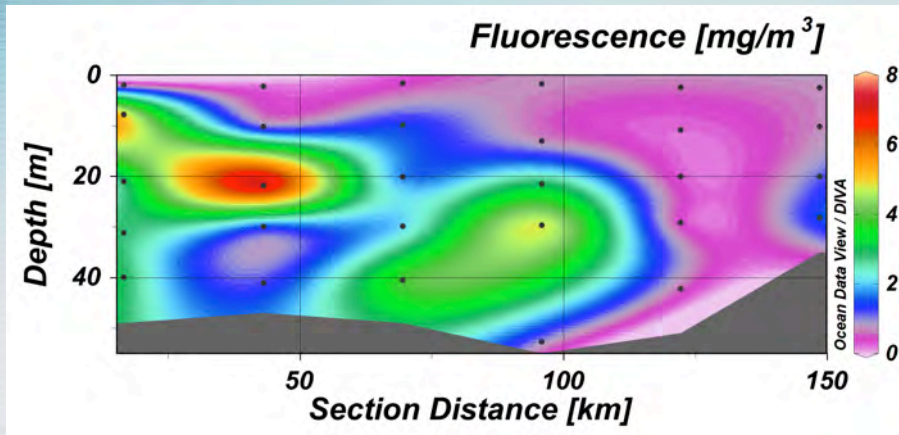
40 m



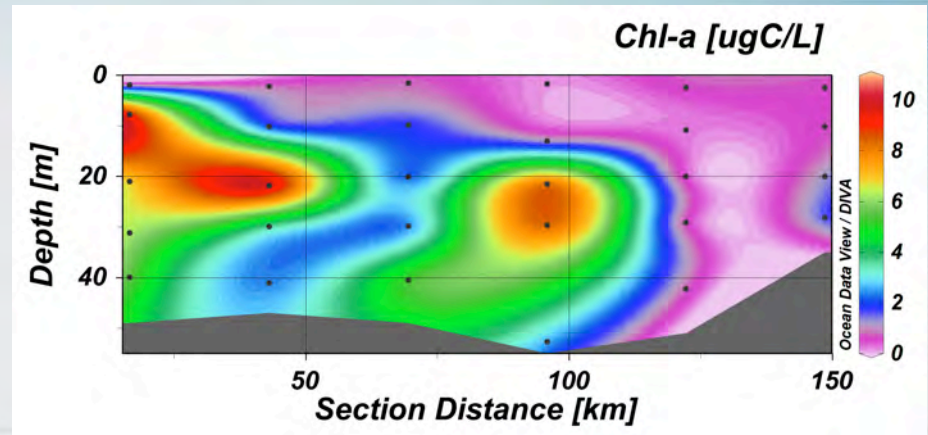
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DBO-3 Observation (Water Sampling)

Fluorescence

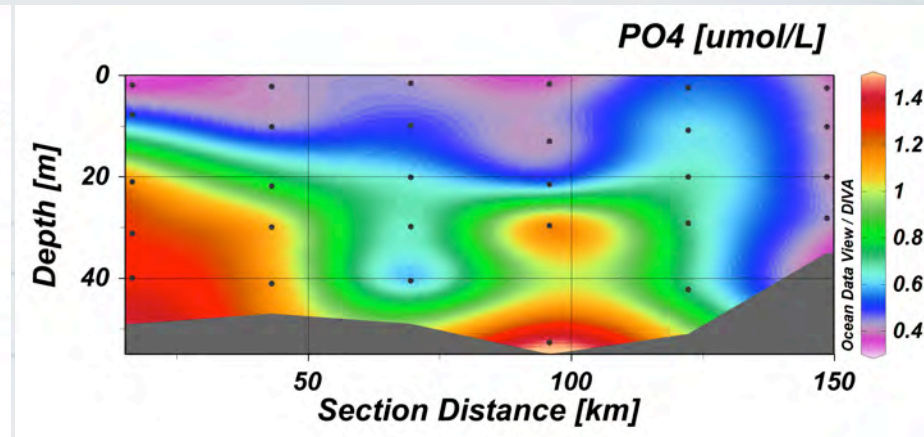
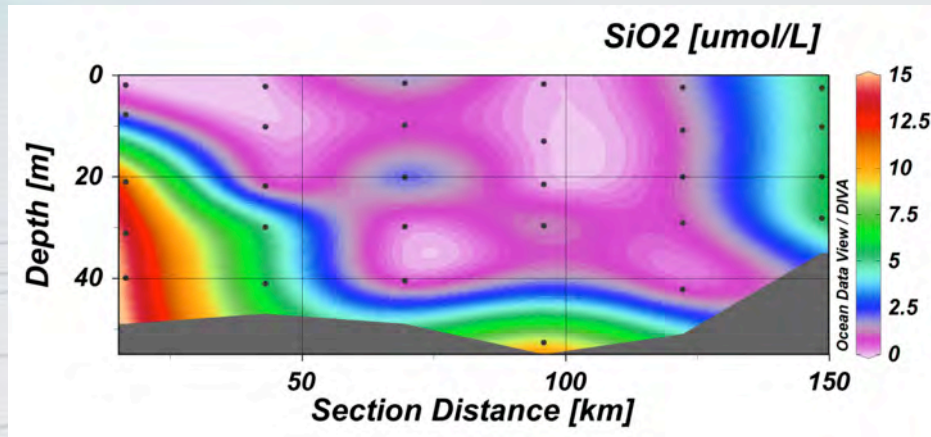
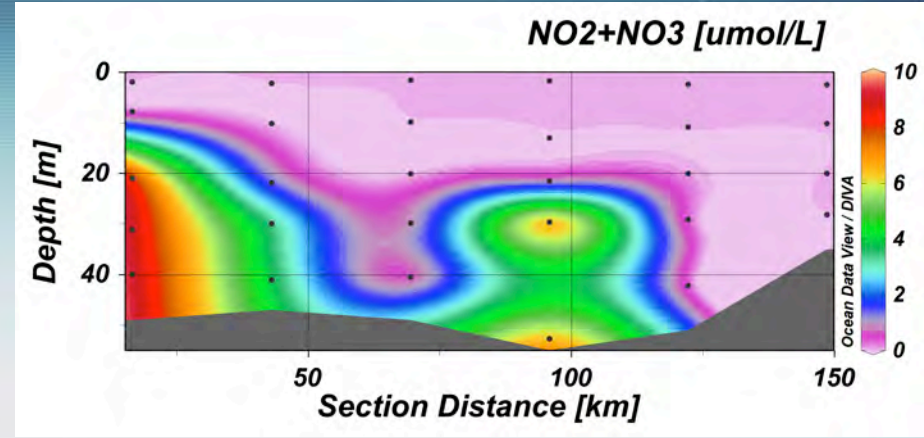
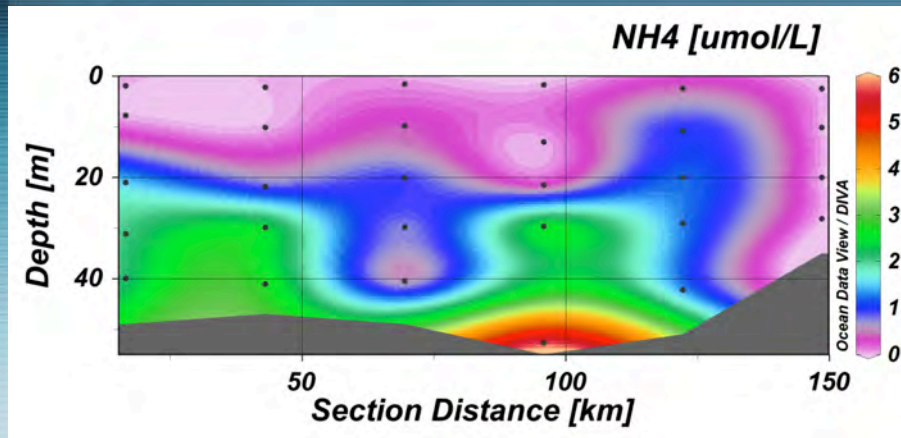


Chlorophyll-a



- ◆ Fluorescence and Chl-a are analyzed from water samples at several depths.

DBO-3 Observation (Water Sampling)



- ◆ Nutrients are analyzed from water samples at several depths.
- ◆ Phytoplankton, zooplankton, PP data are in process.