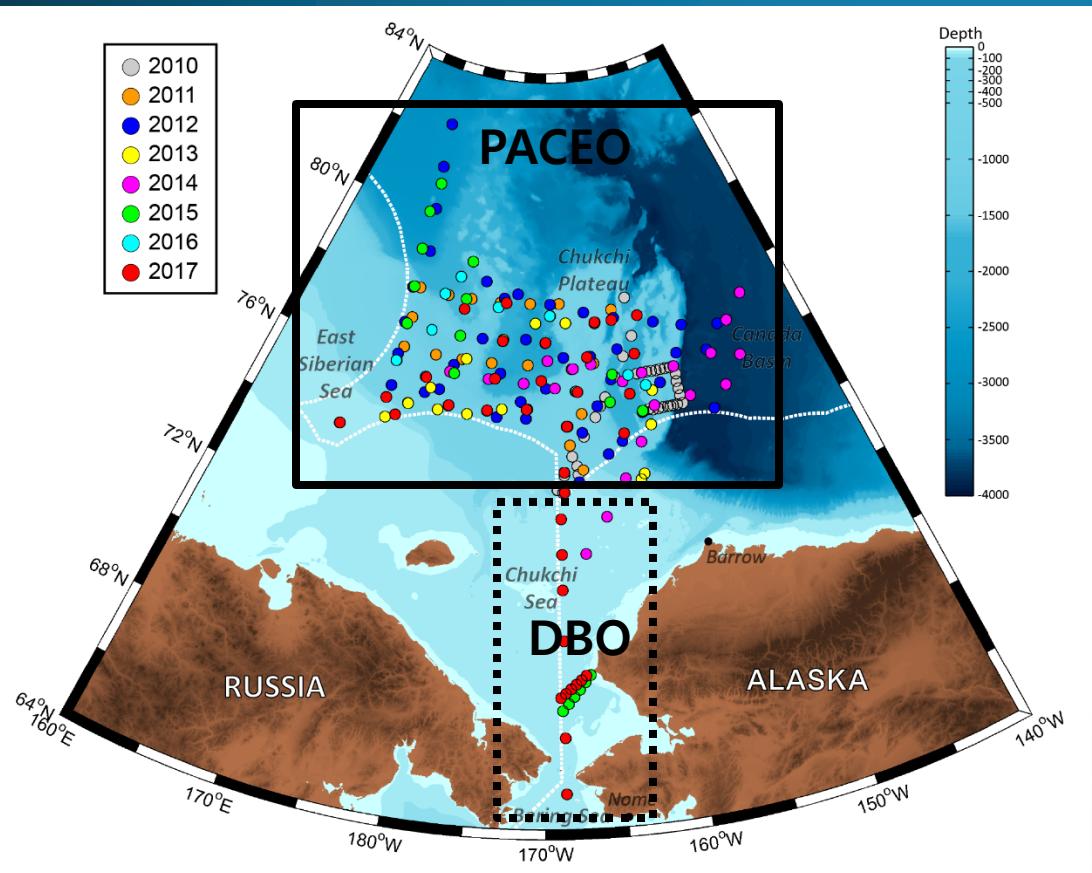


# KOPRI Biological Oceanography (PACEO)



- **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

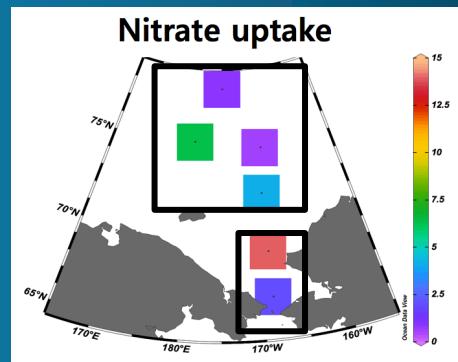
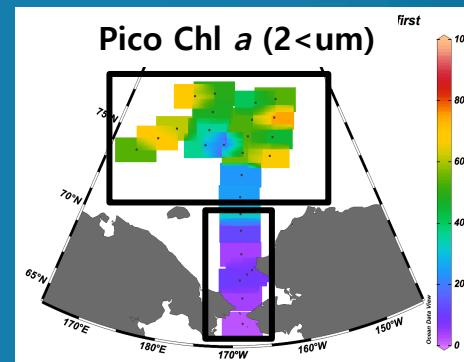
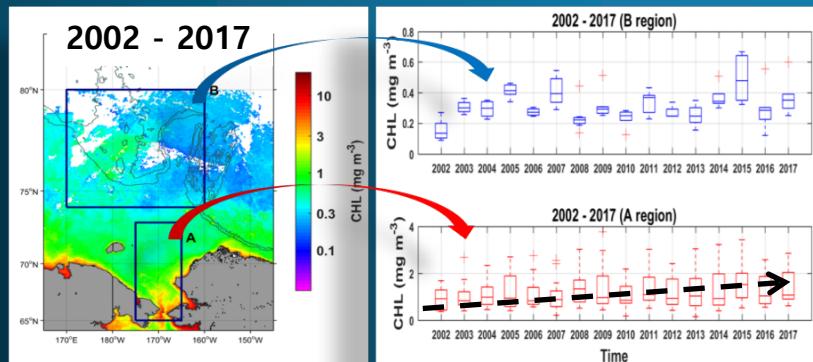


Pacific Arctic Group Spring meeting  
June 18, 2018  
Davos, Switzerland

# Autotrophy in the food web

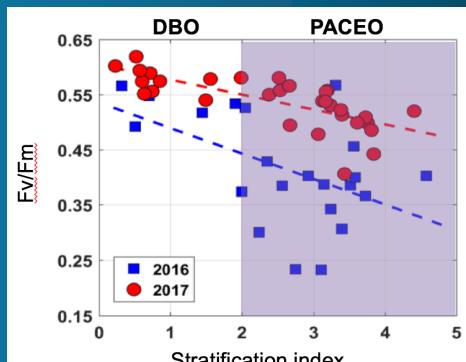
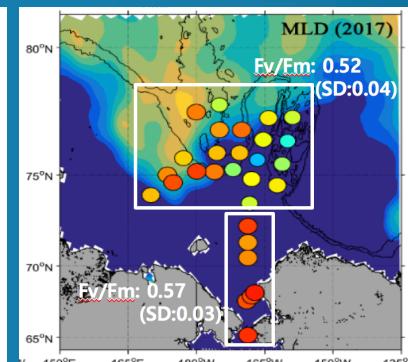
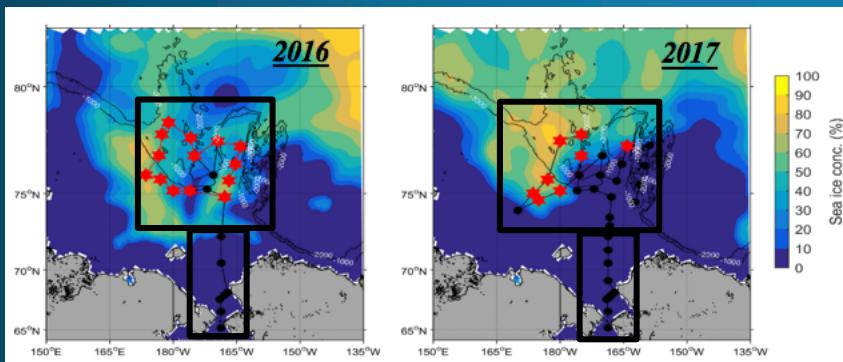
## Phytoplankton community

- 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 ( $F_v/F_m$ )

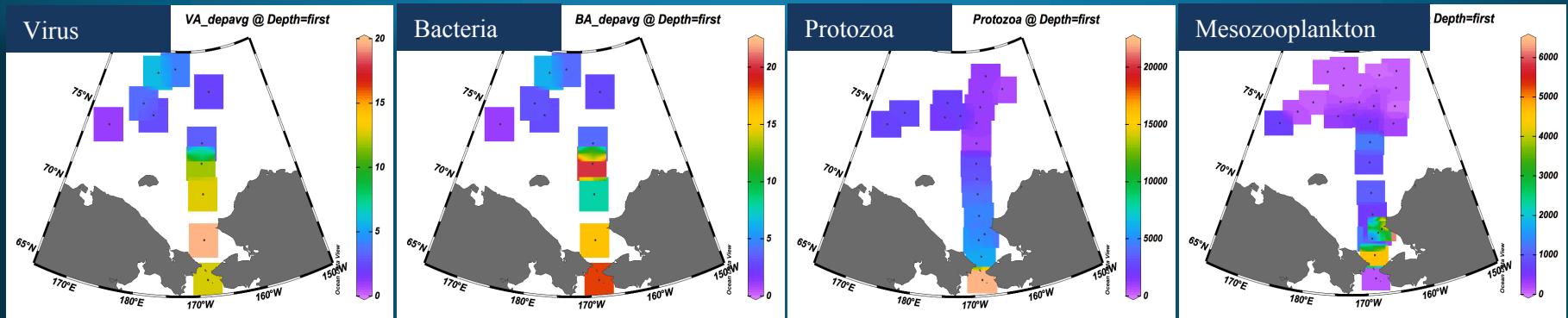
- Photochemical efficiency was similar between PACEO and DBO in 2017
- Phytoplankton community and nutrient supply might be the possible source.



# Heterotrophy in the food web

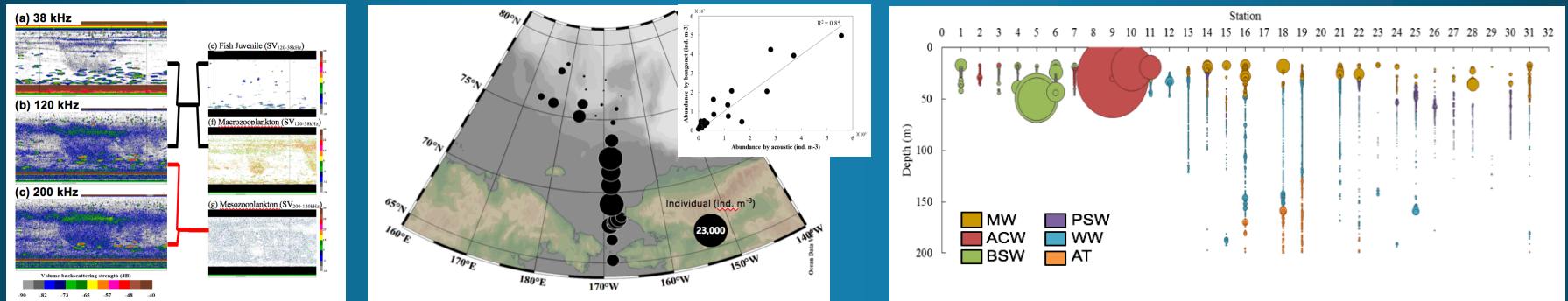
## Virus, bacteria, and zooplankton

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



## Copepod abundance

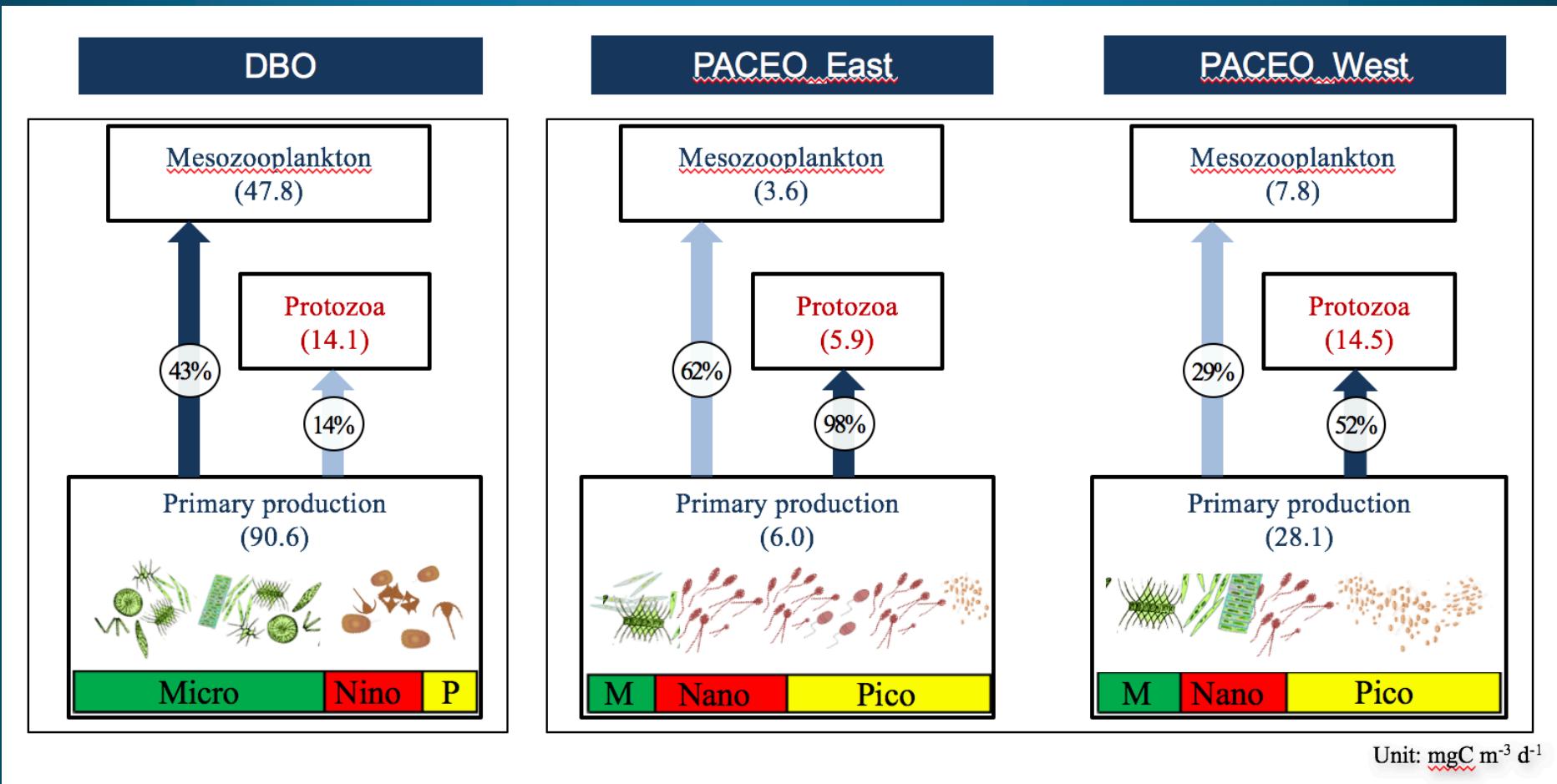
- Copepod abundance was tried to estimate with acoustic and net samples
- We expect to find a relationship between water masses and copepod habitats



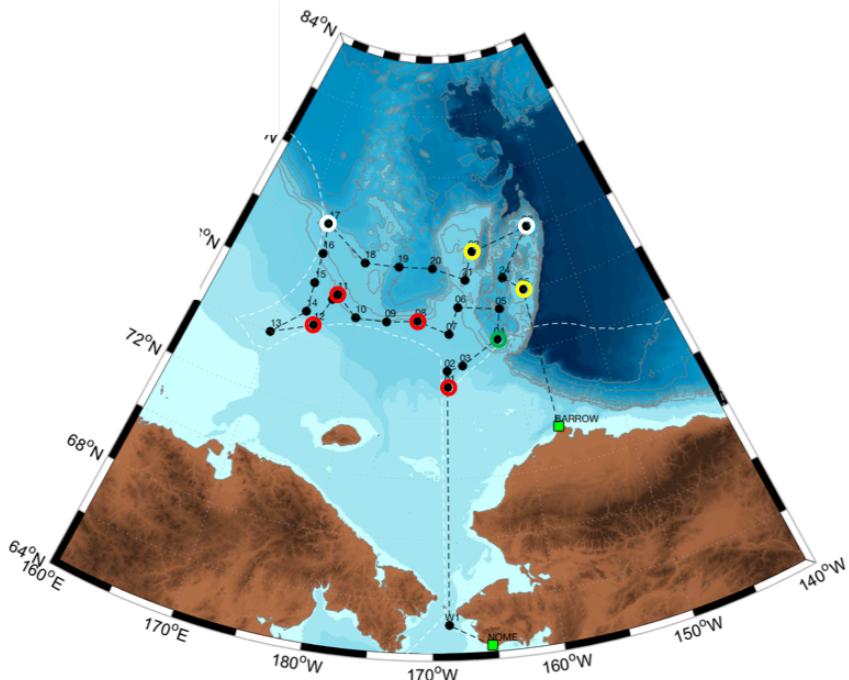
# Food web structure

## Low to mid-trophic level

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



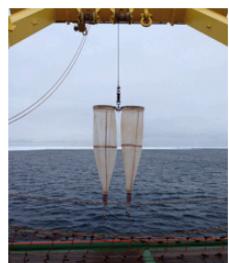
# Coming cruise in 2018



- **Phytoplankton** community structure (CHEMTAX and Fluorometry), primary production ( $^{13}\text{C}$ ,  $^{15}\text{N}$ ), 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



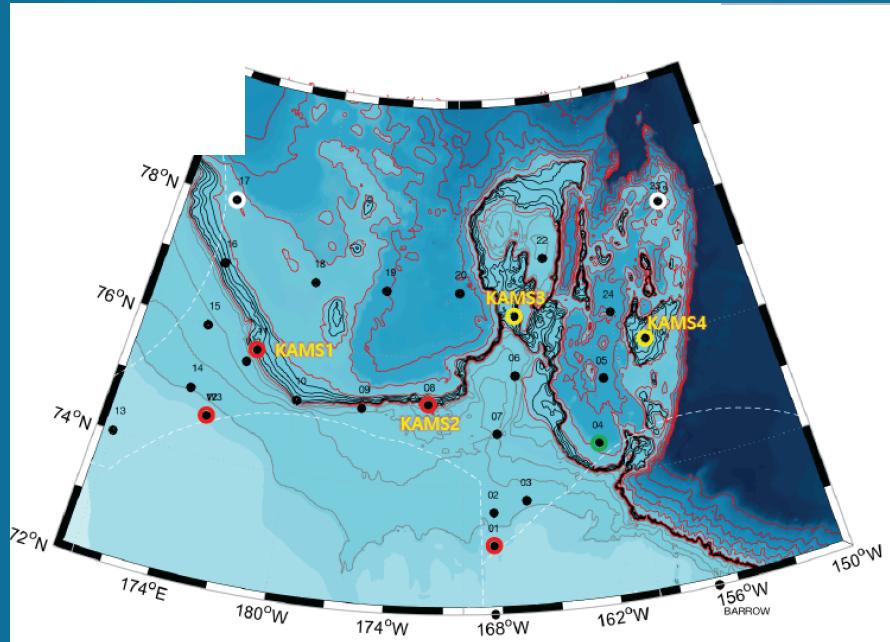
Scientific echosounder

# Coming cruise in 2018

## Physical-biogeochemical mooring

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

KAMS1 (ESS-18)	
Dummy float : 23m	
RBR-BIO 1 : 25m	
Float for hooking : 40m	
40in float : 50m	
Microcat 1 : 52m SN: 37-, PN: 5420-	
RBR-BIO 2 : 55m	
SUNA V2 1 : 56m	
T-Logger 1 : 60m SN: 56-, PN: 5420-	
RBR-BIO 3 : 65m	
Microcat 2 : 80m	
T-Logger 2 : 90m	
Sediment Trap 1 : 100m	
Microcat 3 : 102m	
T-Logger 3 : 120m	
T-Logger 4 : 135m	
AZFP : 150m	
Microcat 4 : 152m	
T-Logger 5 : 175m	
T-Logger 6 : 200m	
T-Logger 7 : 250m	
ADCP(150 kHz)+49in buoy : 300m SN: PN: 5420- (Long range: 8m cell - max 300m)	
Microcat 5 : 302m	
Sediment Trap 2 : 320m	
T-Logger 8 : 322m	
VITROVEX (x4) : ???m SN: ., PN: 5420-	
AR (R2K x2) : ???m SN: ., PN: 5420-	
Wheel(x4) : 500m	



KAMS3 (CP-18)	
Dummy float : 23m	
RBR-BIO 1 : 25m	
Float for hooking : 40m	
Top Buoys (x4) : 50m	
Microcat 1 : 51m SN: 37-, PN: 5420-	
RBR-BIO 2 : 55m	
SUNA V2 1 : 56m	
T-Logger 1 : 60m SN: 56-, PN: 5420-	
T-Logger 2 : 70m	
Microcat 2 : 80m	
T-Logger 3 : 90m	
Sediment Trap 1 : 100m	
Microcat 3 : 102m	
T-Logger 4 : 125m	
T-Logger 5 : 150m	
Microcat 4 : 200m	
T-Logger 6 : 250m	
49in Mid Buoy : 300m (Up: ADCP-150; down: ADCP-300)	
T-Logger 7 : 302m	
T-Logger 8 : 375m	
T-Logger 9 : 450m	
Sediment Trap 2 : 500m	
Floats for AR (x?) : ???m	
AR (R2K x2) : ???m	
Wheel(x4) : 700m	

*Thank you*

