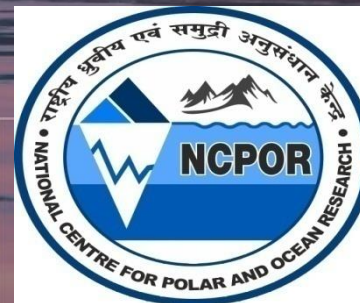


# SIOS Marine Infrastructure Workshop

IndARC- Indian mooring in Kongsfjorden

10. desember 2021

Divya David T, Goa, India



# Overview of marine infrastructure / time series

➤ **Objective: Long term monitoring**

➤ **CTD depth profiles in summer (June-October, 2011 to 2021)**

Variables: Temperature (T), Salinity (S), Dissolved Oxygen (DO), Photosynthetically Active radiation (PAR) and Chlorophyll\_a (Chl\_a)

➤ **Indian mooring 'IndARC'**

• **23 July 2014-30 August 2021 at 78° 56' N and 12° E, hourly data**

• T, S, Currents, and DO

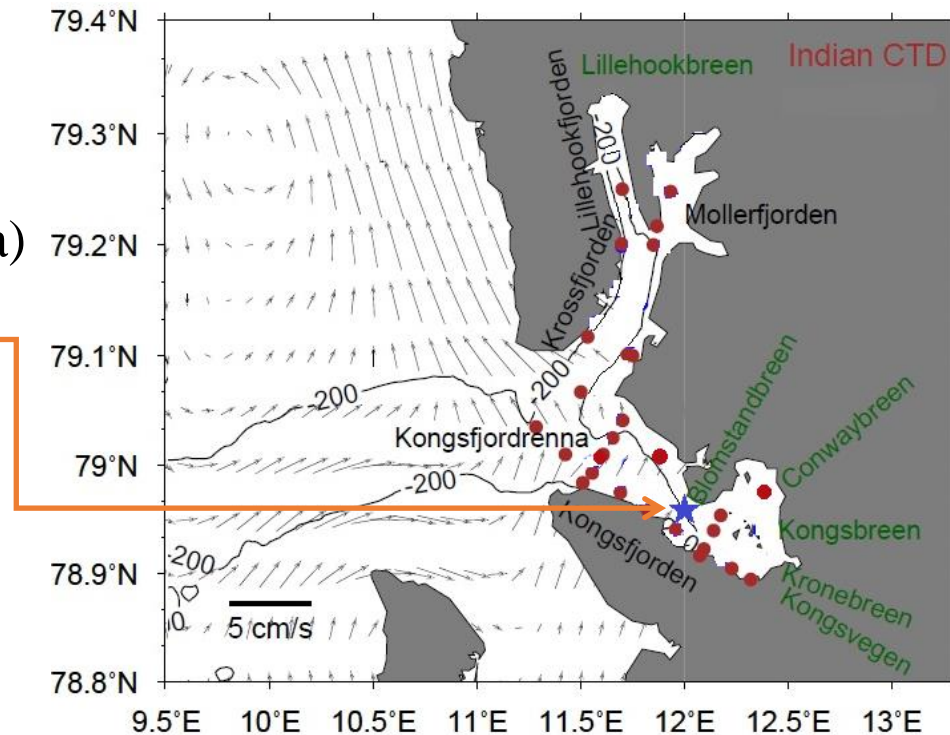
• NO<sub>3</sub>, PAR, Chl\_a, Turbidity

• Ambient noise system data

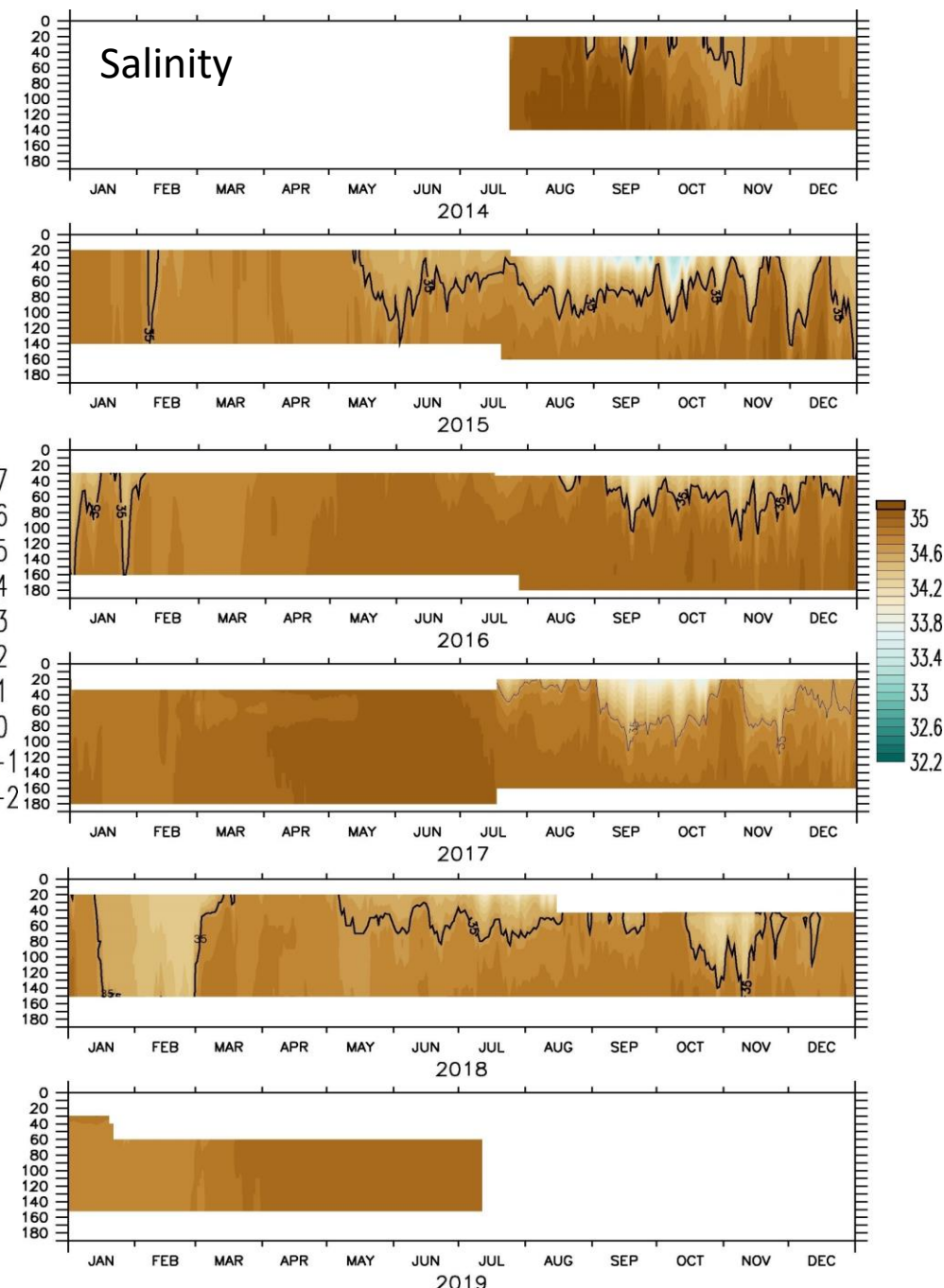
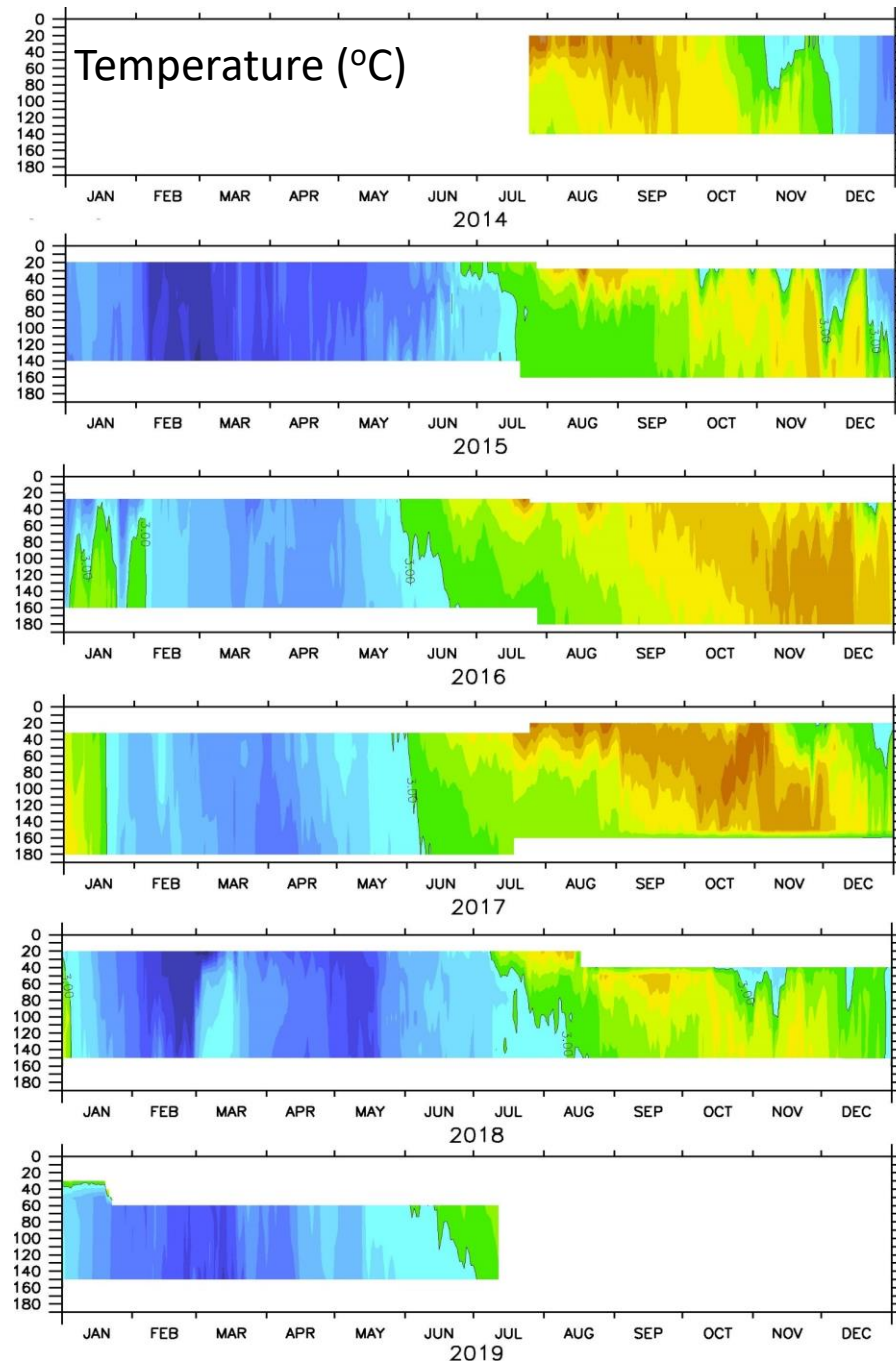
• pCO<sub>2</sub> data by NPI and Institute for Marine Research [Dr. Agneta Fransson] during 2016-17 and 2019-21

**More details :** <https://sios-svalbard.org/node/965> **Data at :** <http://data.ncaor.gov.in/newhtml>

• Gap in 2021; Hope to deploy in 2022, in collaboration

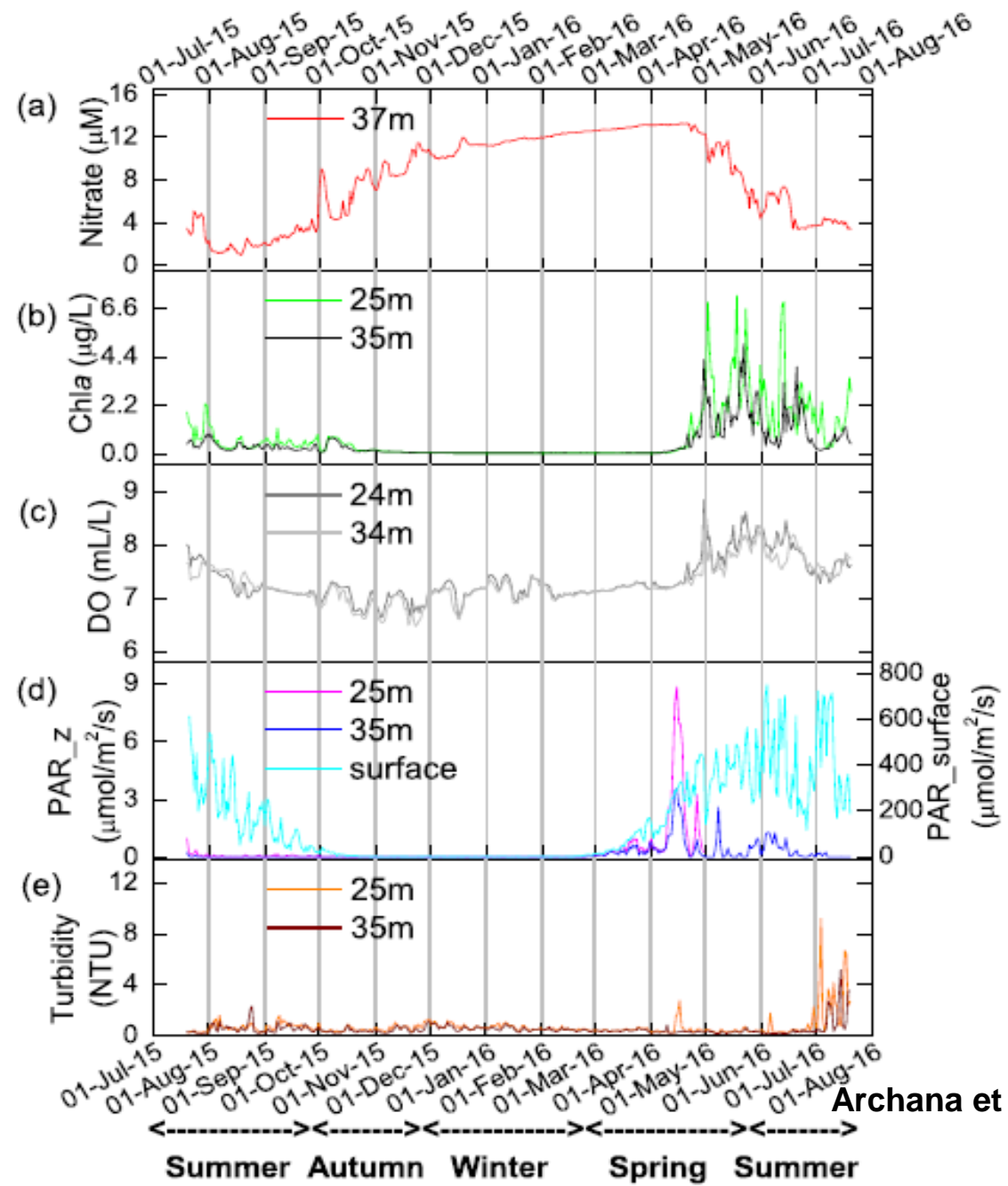


# Inter-annual variability observed in Kongsfjorden (2014-2019)





# Sensor based fjord biogeochemical variables (2015-2016)



Archana et al. 2020, ECSS

# Outlook, future perspectives

- Continuation of monitoring of physical and biogeochemical variables at Kongsfjorden.
- A collaborative platform for visibility of the data collected by different groups. Scientific utilisation of such long term time-series observations in the region, not only to come up with detailed and updated knowledge of the system, but also for other groups to utilise it for addressing larger questions.
- Monitor more variables to fill in existing gaps.
- Expand time-series mooring measurements in other parts, especially in the open ocean side in the Svalbard region and also on other parts of the Arctic.

# Main logistical challenges and wishes

## ➤ Present day **Challenges:**

1. Approvals with restricted international travels
2. Team movement for data collection, especially for mooring retrieval-deployment
3. Even with maximum cooperation from other scientific groups, the timely activities suffer

## ➤ **Wishes:**

1. A collaborative system for the mooring maintenance, alternate years handled by different groups involved in the region.
2. A platform to plan prior to the long term activities

# What you hope to get out of a Svalbard marine infrastructure network

- SIOS (Inger Jennings and Dr. Shridhar Jawak) has helped us find a way and to successfully execute our mooring retrievals in August 2021 with strong help from the Italian scientific team led by Dr. Manuel Bensi (OGS, CNR), and logistical support from Christian, NPI, UNiS, Kingsbay AS, Ny-Ålesund, and IG PAS.
- A platform for prior planning of similar data collection between groups to identify key locations and avoid duplication of data
- Possible formation of a collaborative system for the long term scientific infrastructure maintenance by scientific groups themselves on an alternate year basis after formulation of how it can work.