

Few days in the Bay of Bengal



Ocean Mixing and Monsoon research cruise. 23rd January – 8th February, 2016

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Acknowledgements: INCOIS, NIOT, WHOI

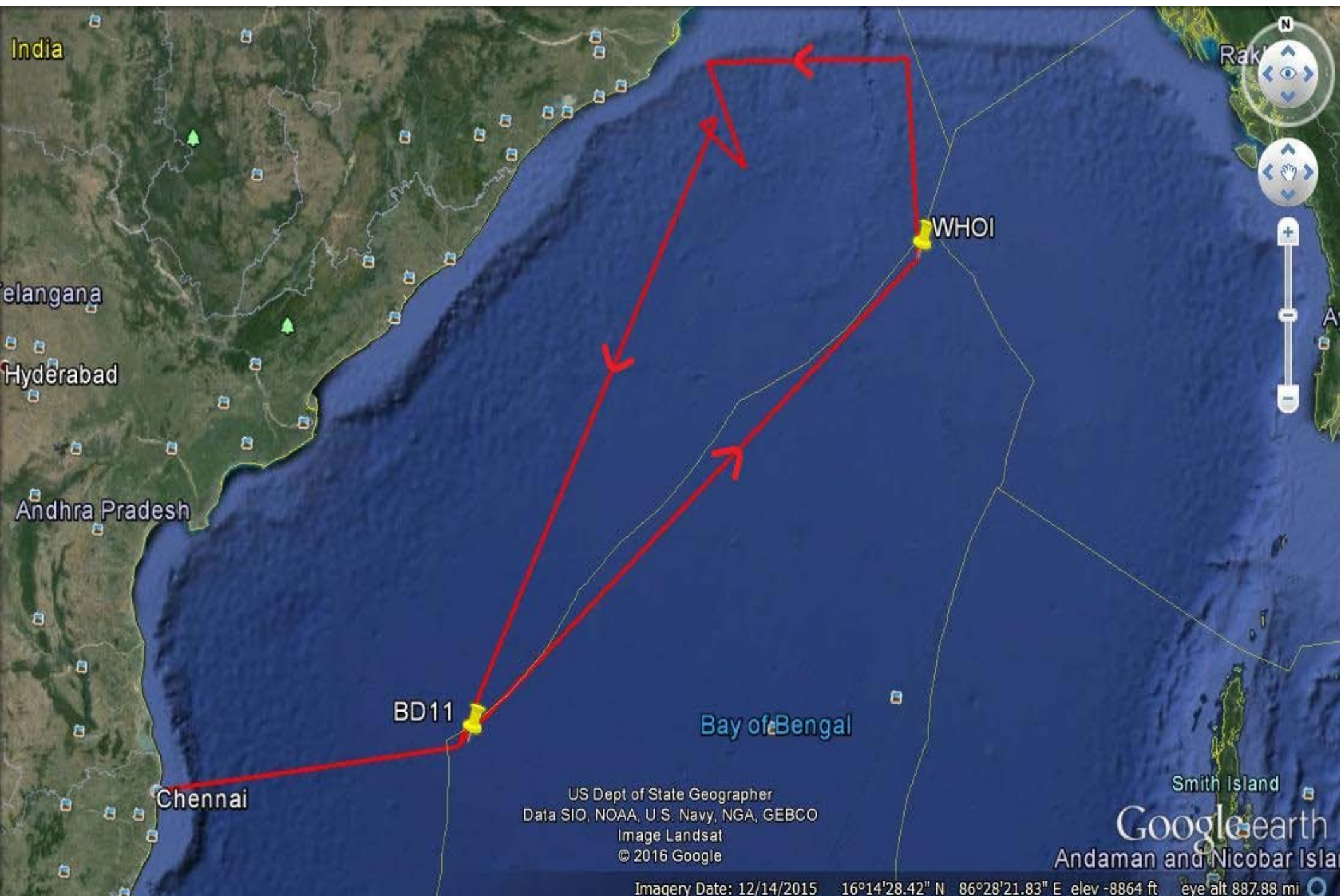
Contents

- The cruise experience
- Motivation and open questions



सागर कन्या
SAGAR KANYA

The Cruise Track



Instruments

- Acoustic Doppler Current Profiler
- Conductivity-Temperature-Depth probe
- Underwater CTD
- Thermosalinograph



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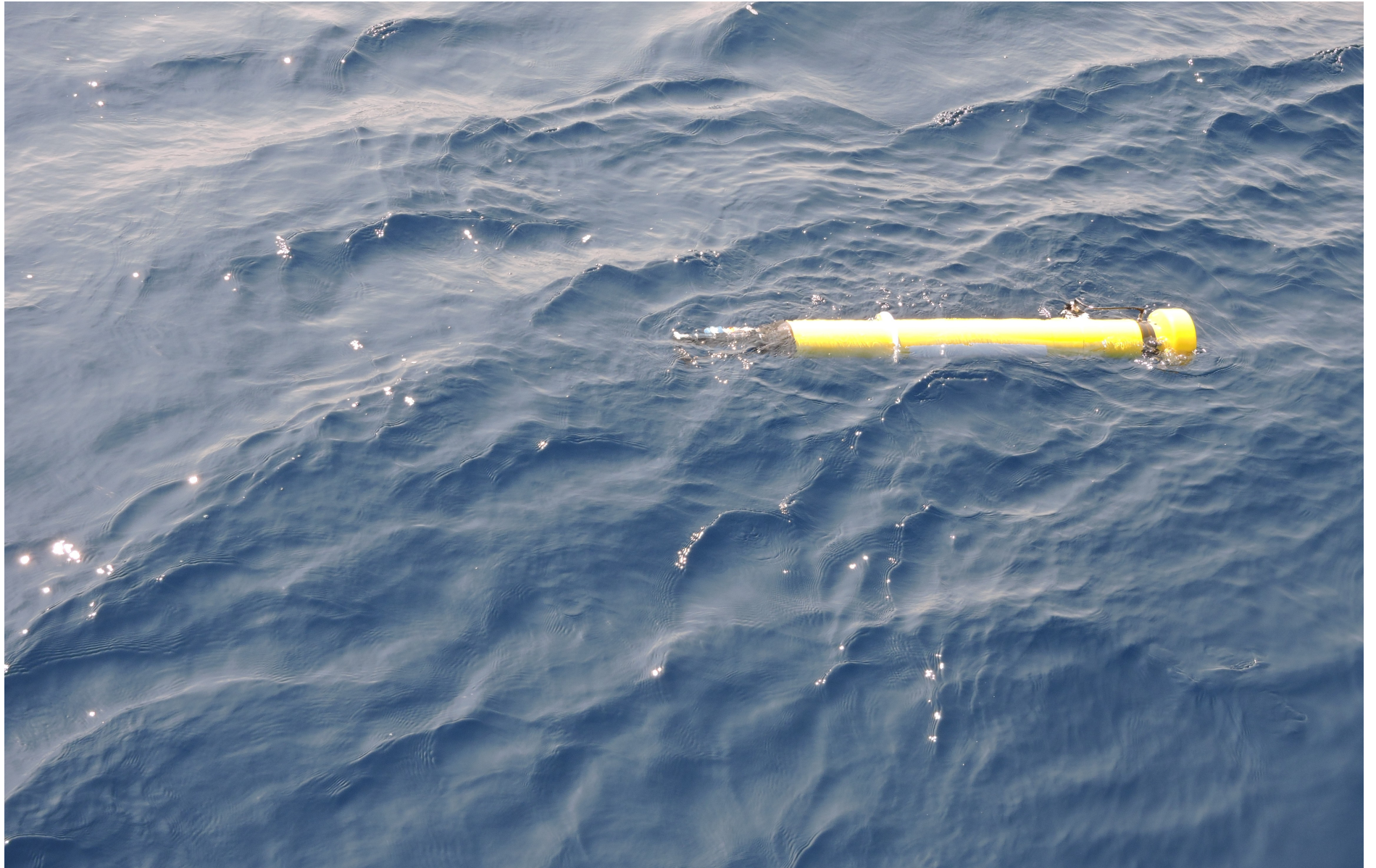


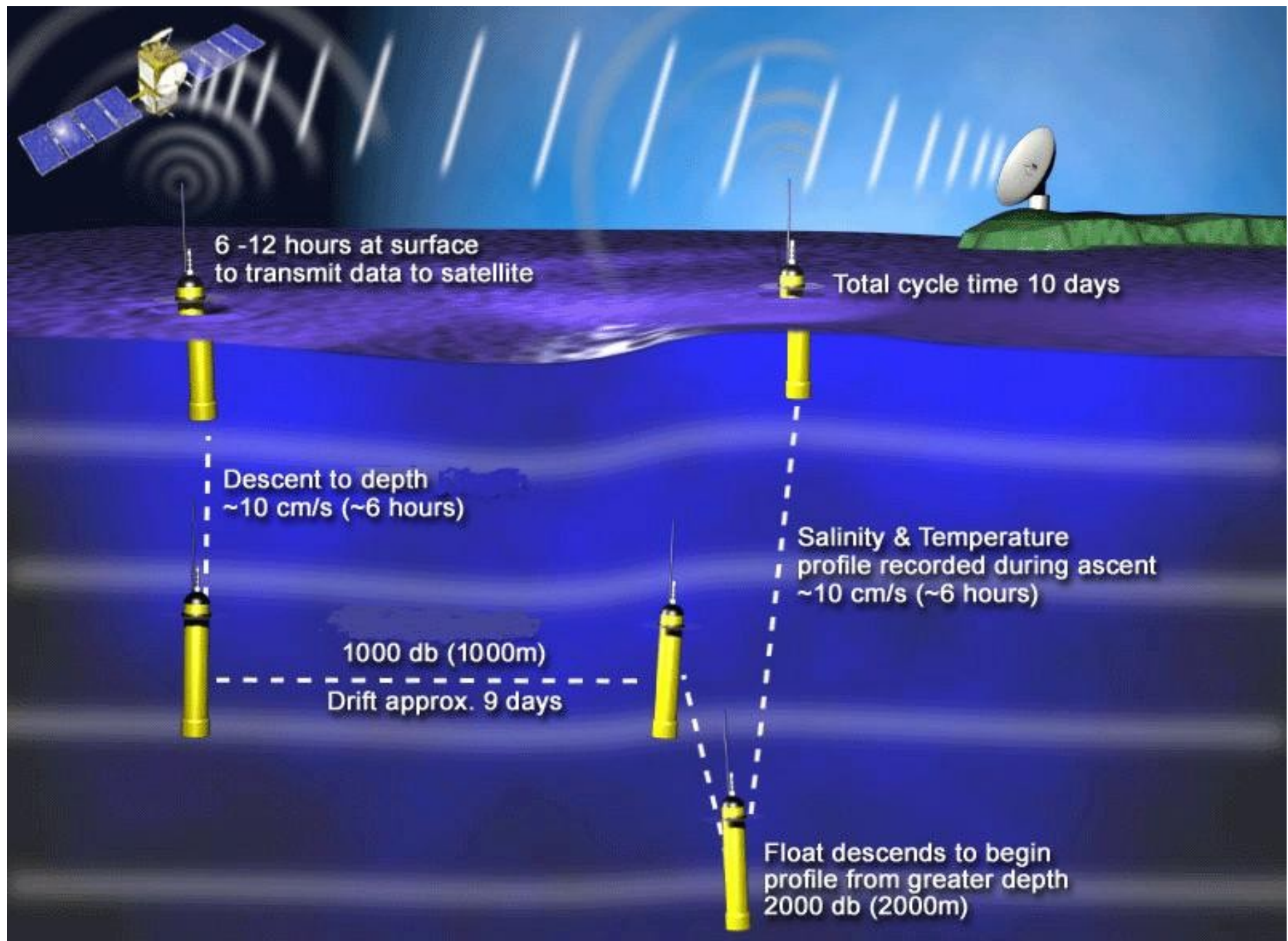


Current Profiler



Argo Float





Niskin Water Sample bottles



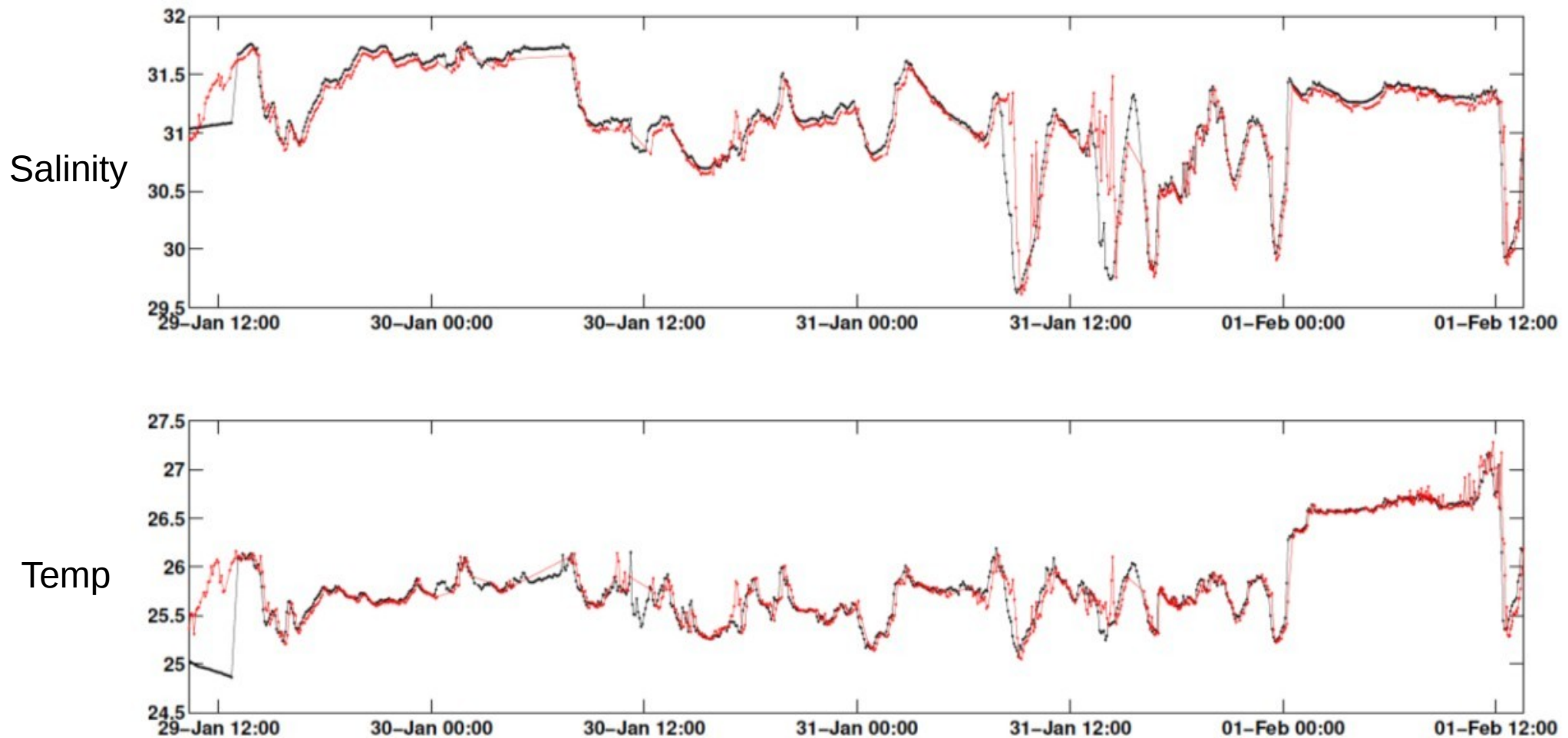
Goose Bernacles (*Lepas anatifera*)





Fronts

- Regions of sharp density contrasts



21 22 23 24 25 26 27 28 29

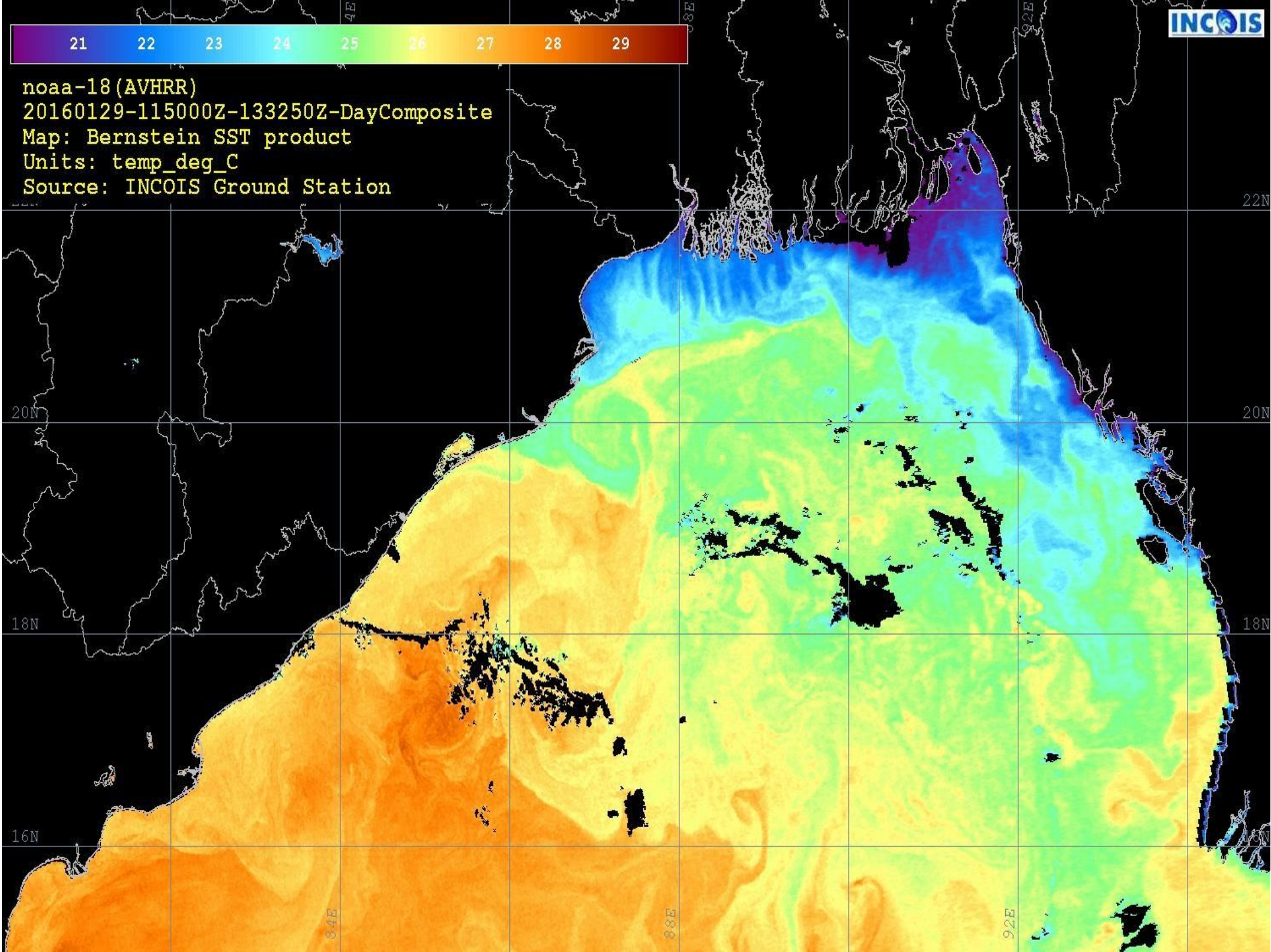
noaa-18 (AVHRR)

20160129-115000Z-133250Z-DayComposite

Map: Bernstein SST product

Units: temp_deg_C

Source: INCOIS Ground Station



- Ocean flows are largely geostrophic (2D)
- Small scale dynamics – rotation of earth not important
- Fronts: Submesoscale : (1-10km) : Earth's rotation can be felt but not restricted to 2 D

Importance of fronts

- They are hotspots for air-sea heat and gas exchange
- Extremely important for ocean biology.
(phytoplankton can be strongly influenced by small-scale physical processes near fronts (e.g. Lévy et al. 2012))

Few objectives to carry on

- Identify and describe the dominant submesoscale (1-10km) instabilities at ocean fronts
- Parameterizing frontal processes in large-scale ocean models