

Activity of Oceanographic Command JMSDF

Commander, OGC
CAPT Sato



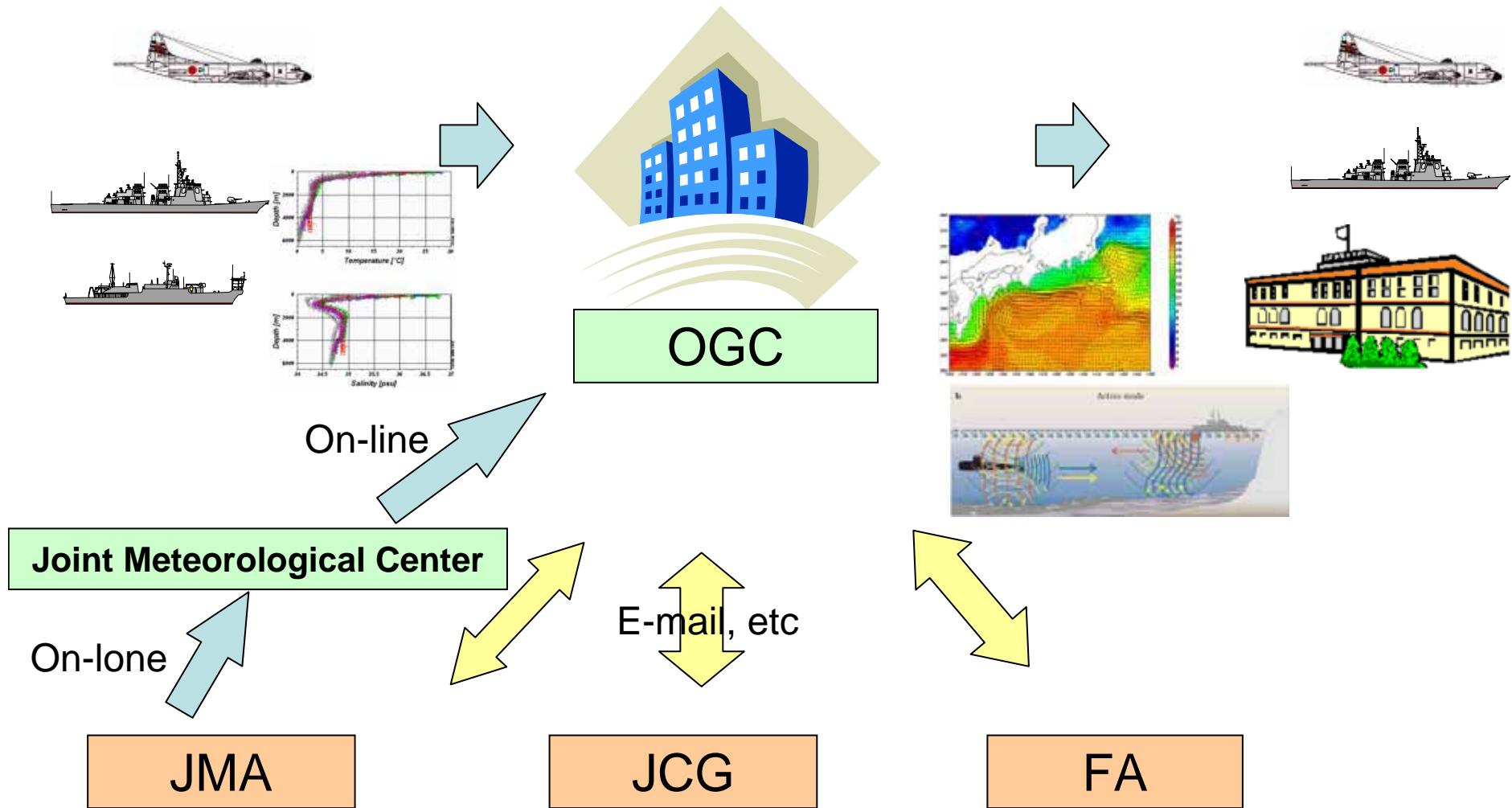
Oceanographic Command

- Headquarters (Yokosuka)
- AGS
 - SUMA, WAKASA, NICHINAN, SHONAN
(Yokosuka)
- AOS
 - HIBIKI, HARIMA (Kure)
- ARC
 - MUROTO (Kure)
- ASWC (Yokosuka)
- WSU (Yokosuka)
- OOS (Shimokita, Katsuren)

Personnel: App.1,000



Data Flow



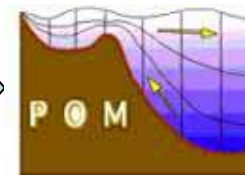
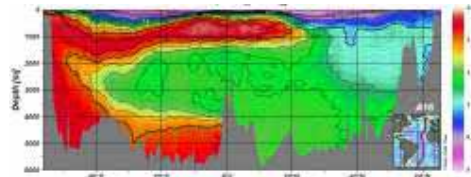
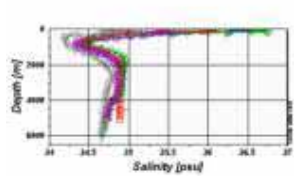
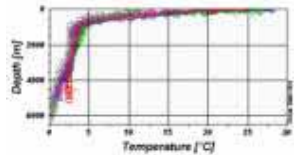


AGSs



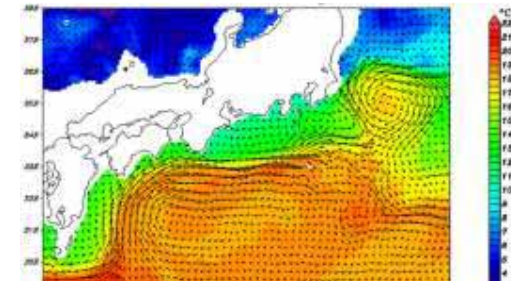


Oceanographic Data Acoustic Environment

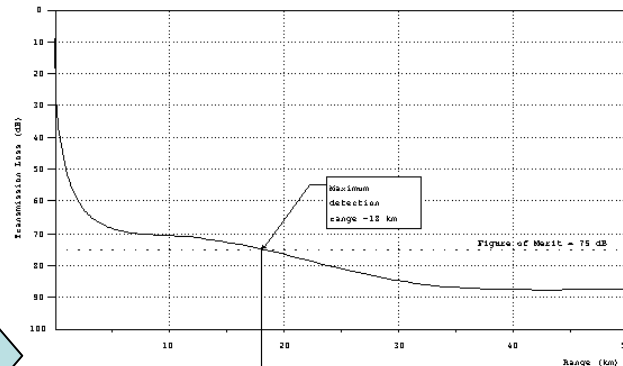
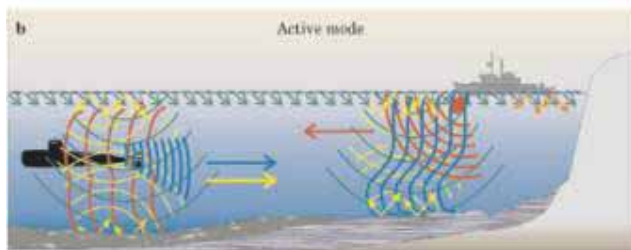
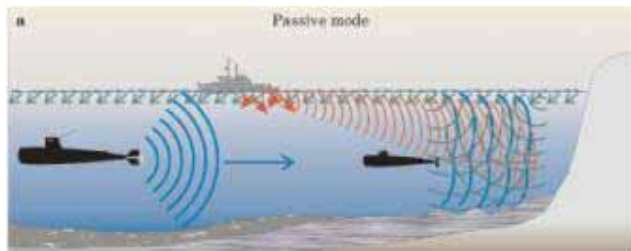
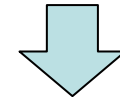


$$\frac{\partial DU}{\partial x} + \frac{\partial DV}{\partial y} + \frac{\partial \omega}{\partial \sigma} + \frac{\partial \eta}{\partial t} = 0$$

$$\frac{\partial TD}{\partial t} + \frac{\partial TUD}{\partial x} + \frac{\partial TVD}{\partial y} + \frac{\partial T\omega}{\partial \sigma} = \frac{\partial}{\partial \sigma} \left[\frac{K_H \partial T}{D \partial \sigma} \right] + F_T - \frac{\partial R}{\partial z}$$



Utilize for SAR, DR



Passive Sonar Equation

$$SE = SL - PL - LE - RD$$

where:

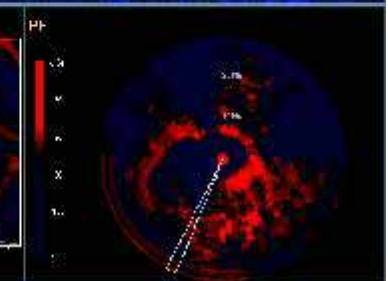
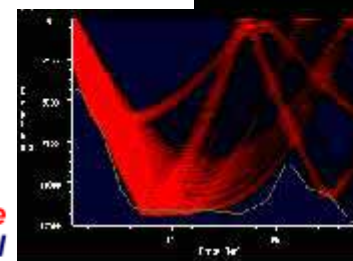
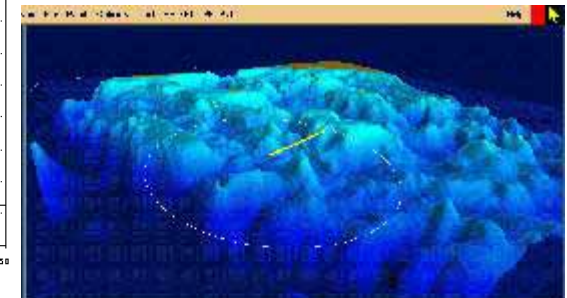
SE = Signal Excess

SL = Source Level

PL = Propagation Loss

LE = Total Background Noise

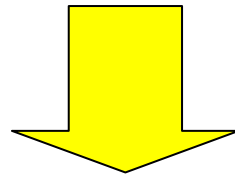
RD = Recognition Differential





Background (1 of 3)

After Tsunami hit the NPP, some radioactive water had leaked to the ocean.

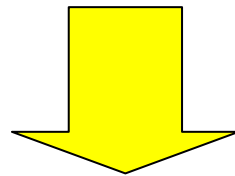


Had to find whether that leak affected to conduct any operation at sea.



Background (2 of 3)

Earthquake and Tsunami damaged many observation sites and instruments

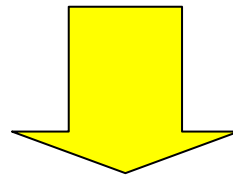


Need to get some data for assimilation
Improve the precision of the simulation model



Background (3 of 3)

To find the actual situation of off the NPP
To get data for assimilation
To assess the precision of the simulation model



Conducted data acquisition and recording
operation off the NPP by AGS WAKASA

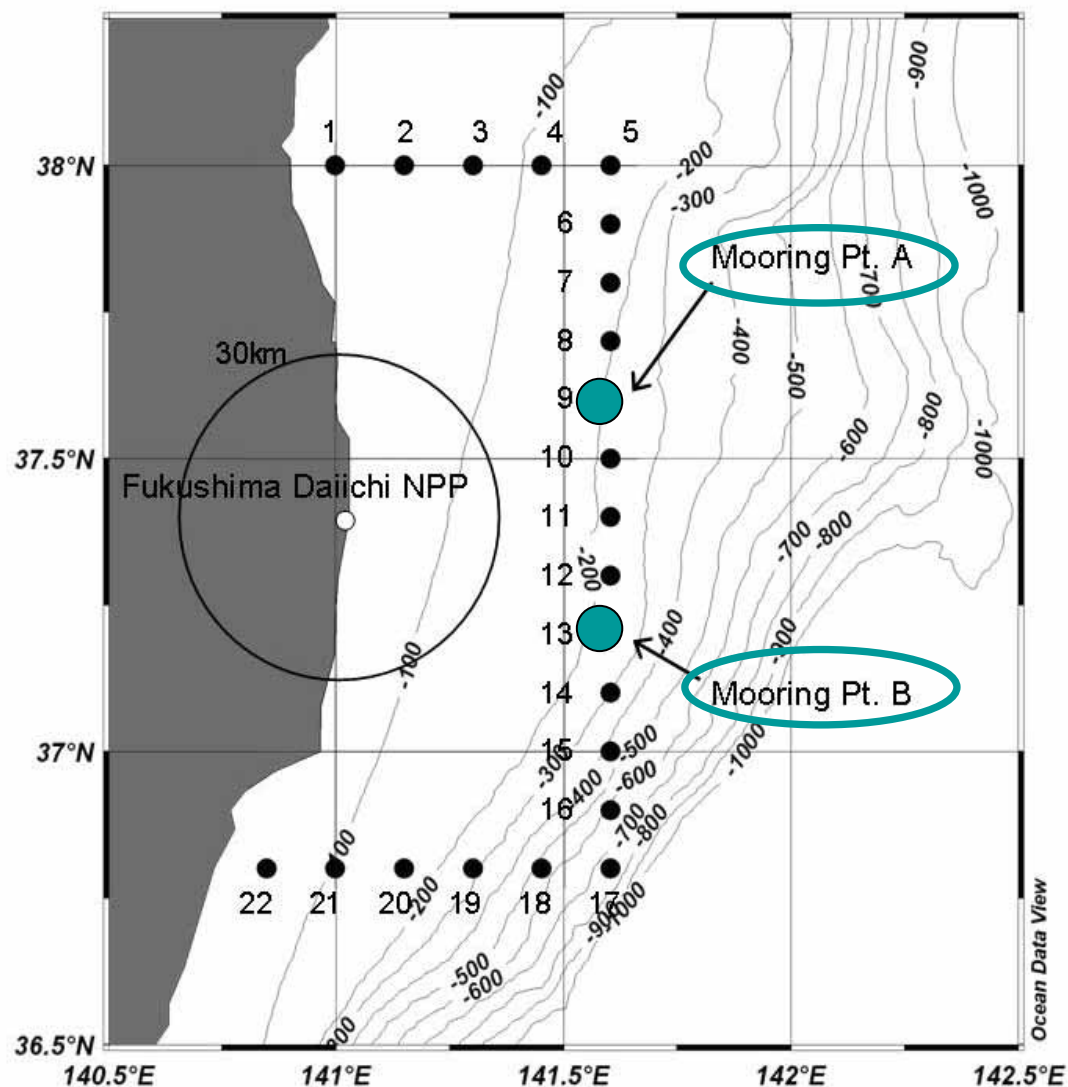


AGS WAKASA





Temperature / Salinity



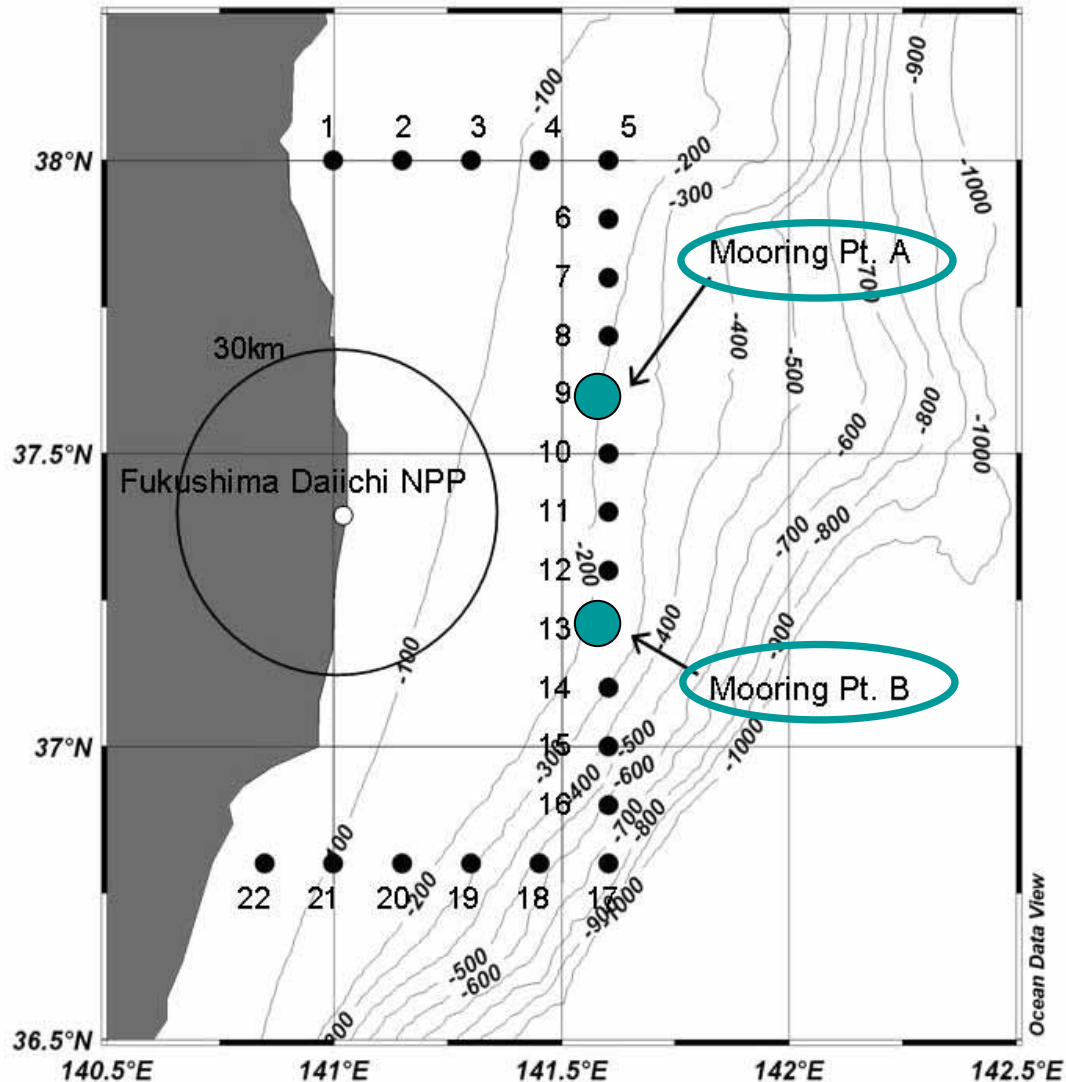
Points :
Off the Fukushima
Daiichi NPP
App.30NM
Pt1-Pt22 (every6NM)

Period :
May 1 – May 6

Instrument:
XBT,CTD,XCTD



Current (Speed & Direction)



Mooring Points :

Pt.A(9), PtB(13)

Period :

Apr 30 – May 7

Depth : 20m

Sampling Rate

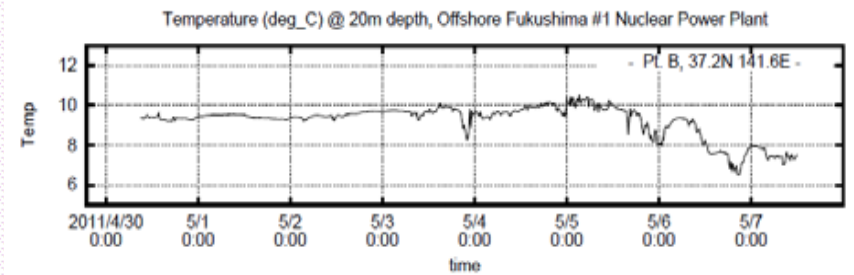
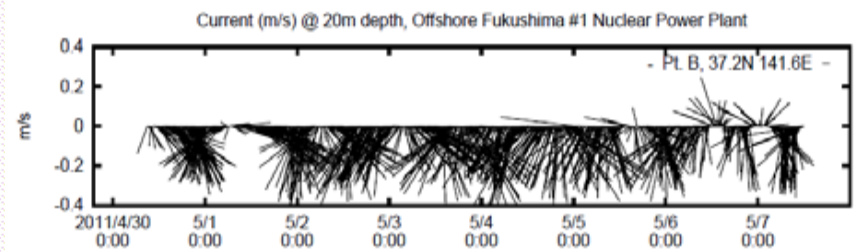
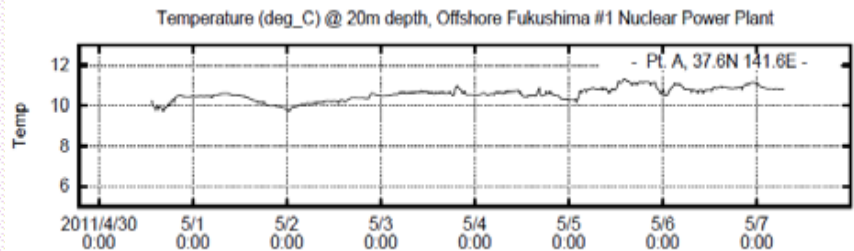
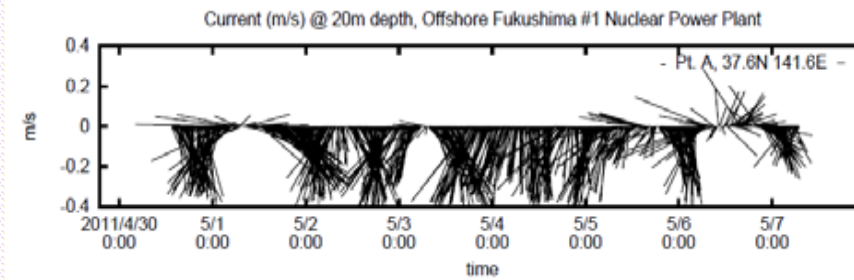
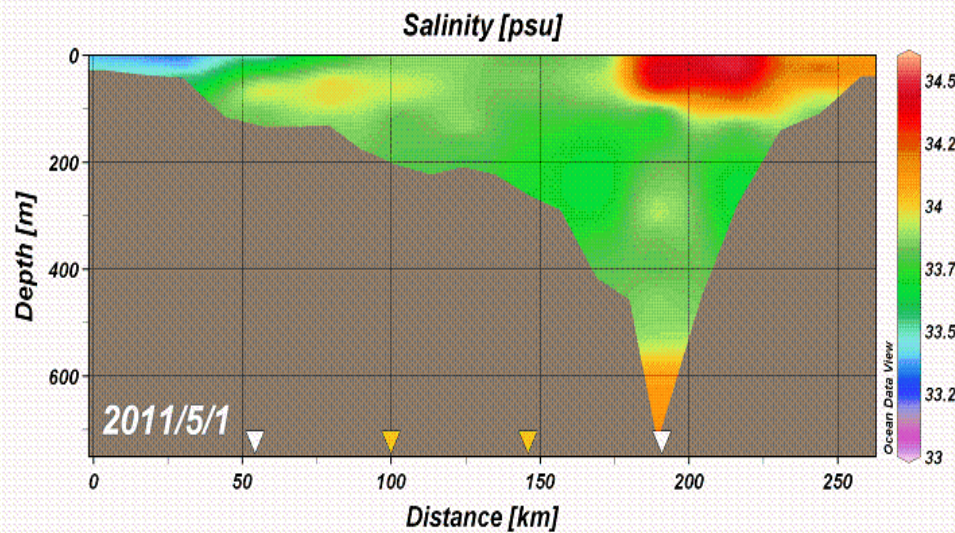
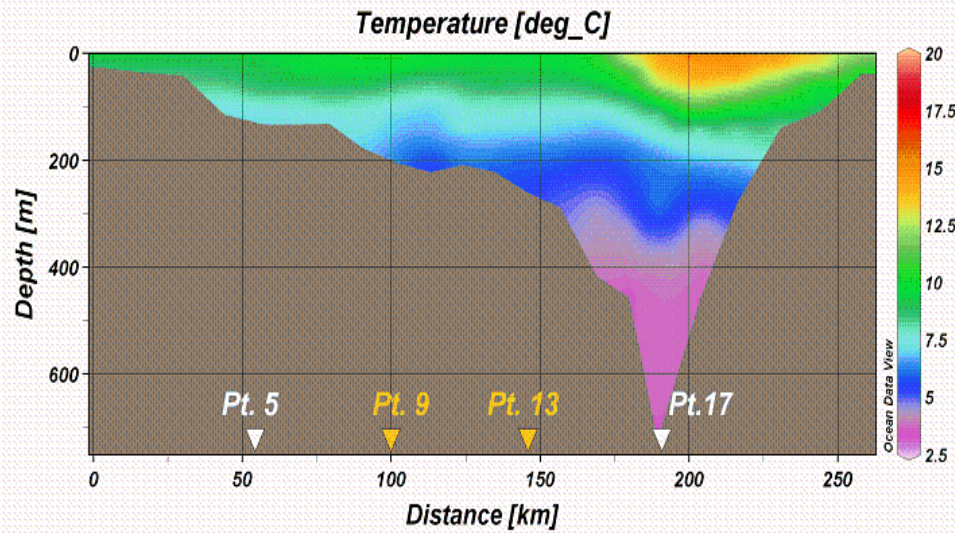
: 15min

Instrument :

Current meter



Results (1 of 2)





Results (2of2)

