

Indian Ocean Cruise Plan in China

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Outlines

Previous Investigations

- 1.1、 Moorings off Sumatra and Java by FIO/SOA
- 1.2、 Eastern Indian Ocean cruise during 2010 by SCSIO/CAS

Cruise Plan in Year 2011

- 2.1 、 Eastern Indian Ocean cruise by SCSIO/CAS
- 2.2、 MOMSEI cruise by FIO/SOA-AMFRD

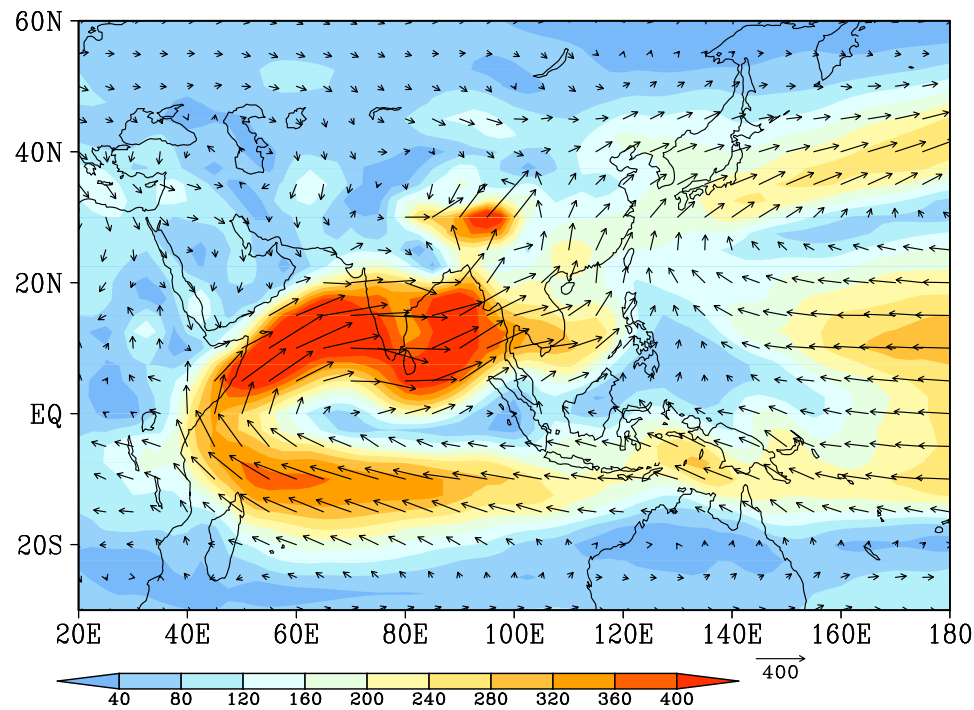


CINDY/DYNAMO Workshop in Yokohama, 2010 Nov. 8-10

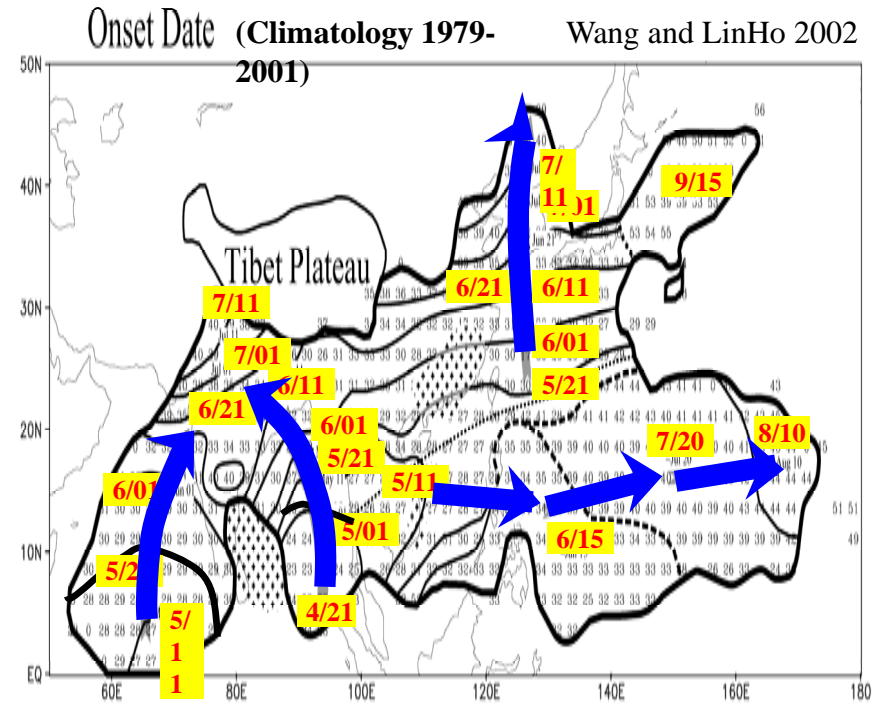


Motivation:

Summer Monsoon circulation and its impact on China



Water vapor transport



Monsoon onset

[illegible]

30°N

20°N

10°N

Eq.

10°S

20°S

30°S

30°E

50°E

70°E

90°E

110°E

22 occupied out of 46 proposed Sites
(47% completion; as of January 2009)

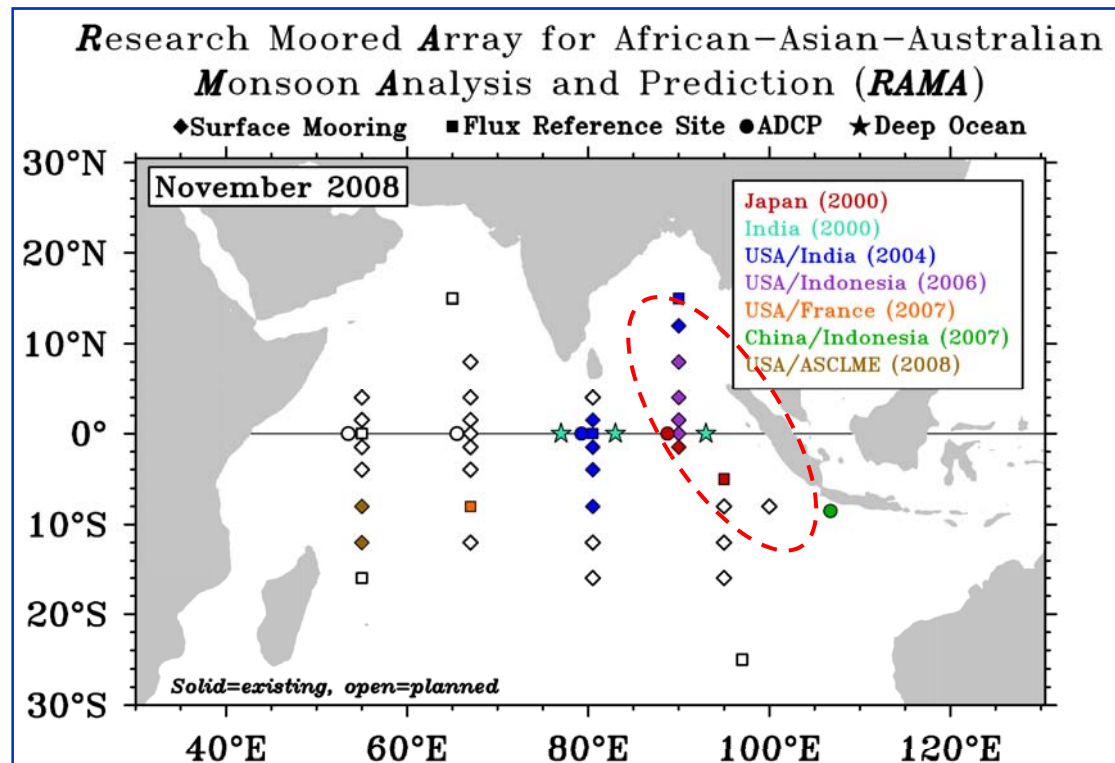
Surface mooring

Flux Reference Site

ADCP

Deep Ocean

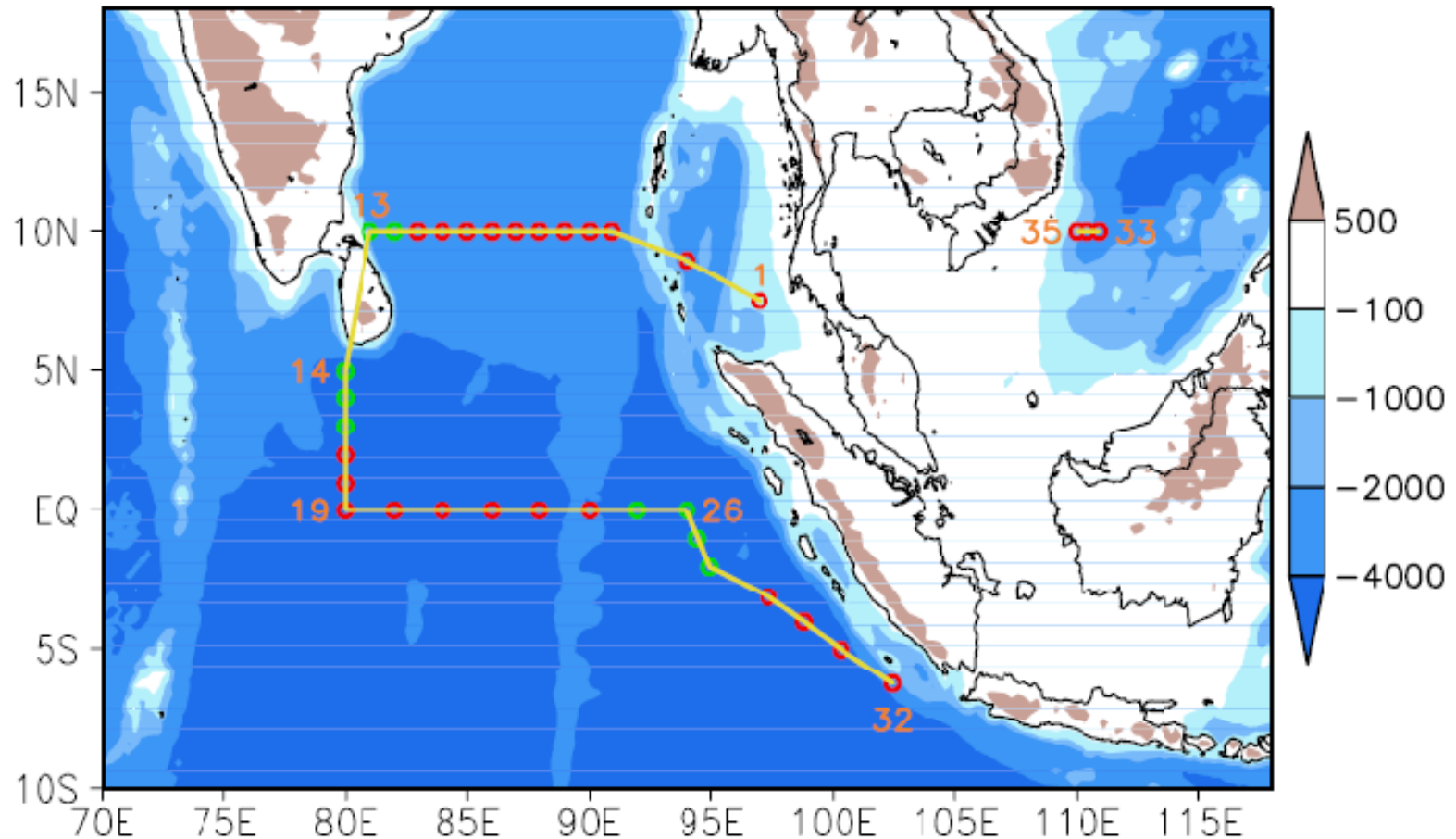
(Deep colors; Occupied locations)



UNESCO/IOC WESTPAC SEAGOOS Pilot Project

Monsoon Onset Monitoring and its Social and Ecosystem Impacts (*MOMSEI*)

1.2、 Eastern Indian Ocean cruise during 2010 by SCSIO/CAS



Cruise Map (Red: CTD, Green: XBT)

By “ShiYan 1” during 2010/4/12-5/29

Vessels in the SCSIO/CAS

ShiYan 1



ShiYan 3



ShiYan 2

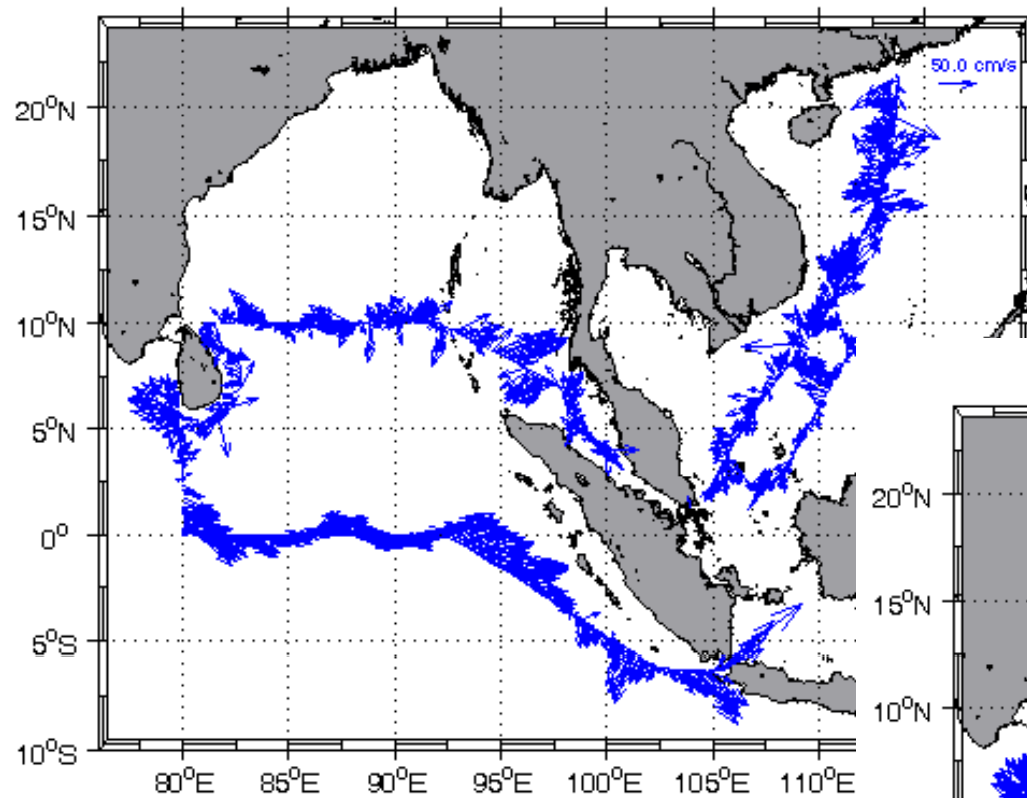


Observations

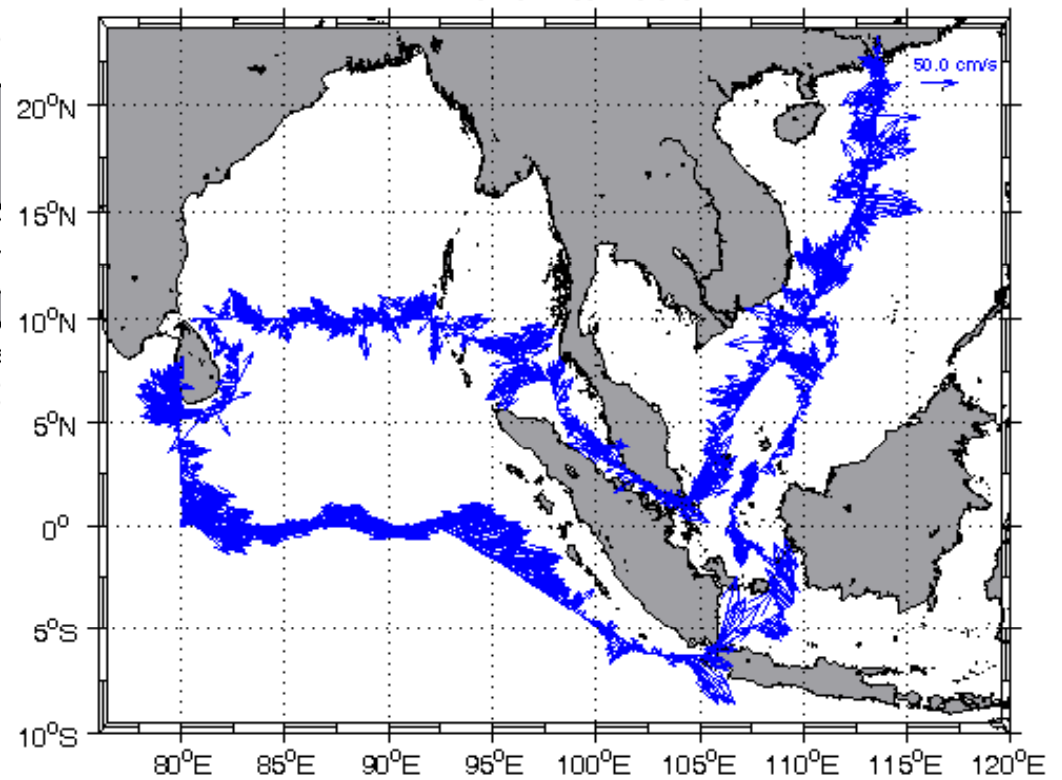
- Ship borne ADCP observation;
- 26 CTD stations;
- 150 XBT profiles;
- Surface CT (Salinity and Temperature);
- 12 Argos surface drifts and 15 Argo drifts;
- Auto Meteorology observation ;
- Ocean-atmosphere heat flux;
- 133 GPS sounding balloons;
- Ocean-atmosphere CO₂ flux;
- Biogeochemical sections;

ADCP currents

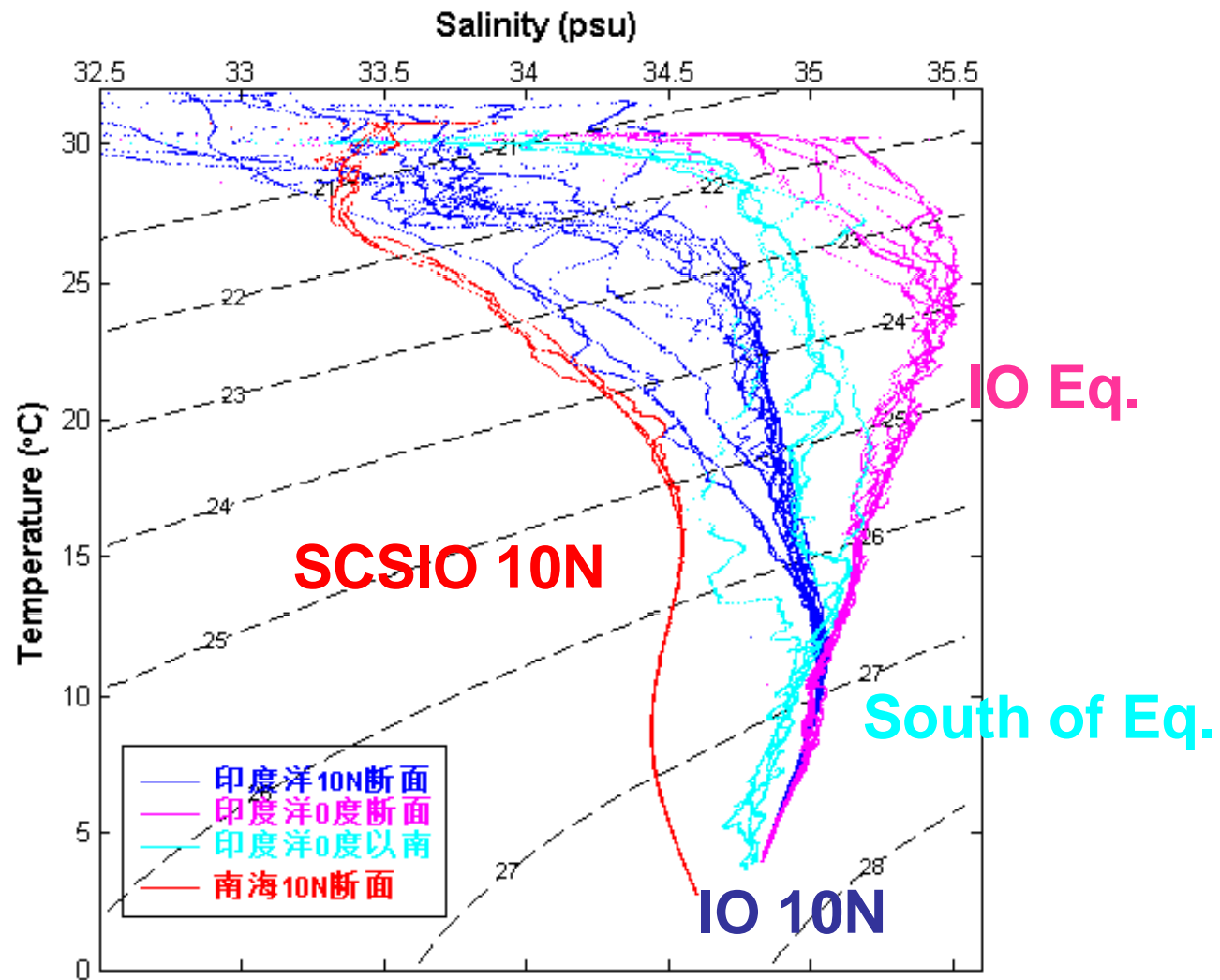
40m层流场分布图



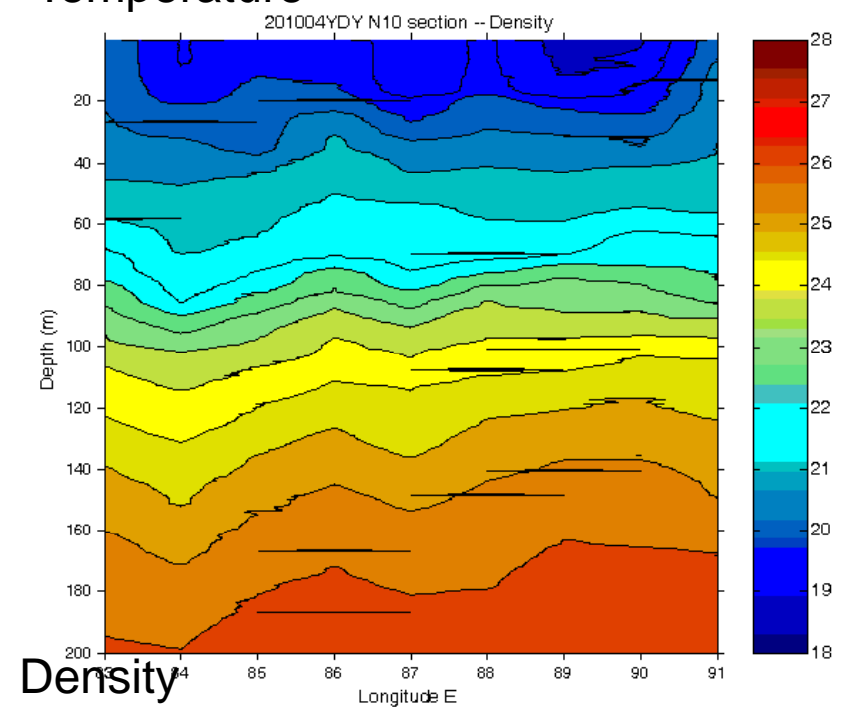
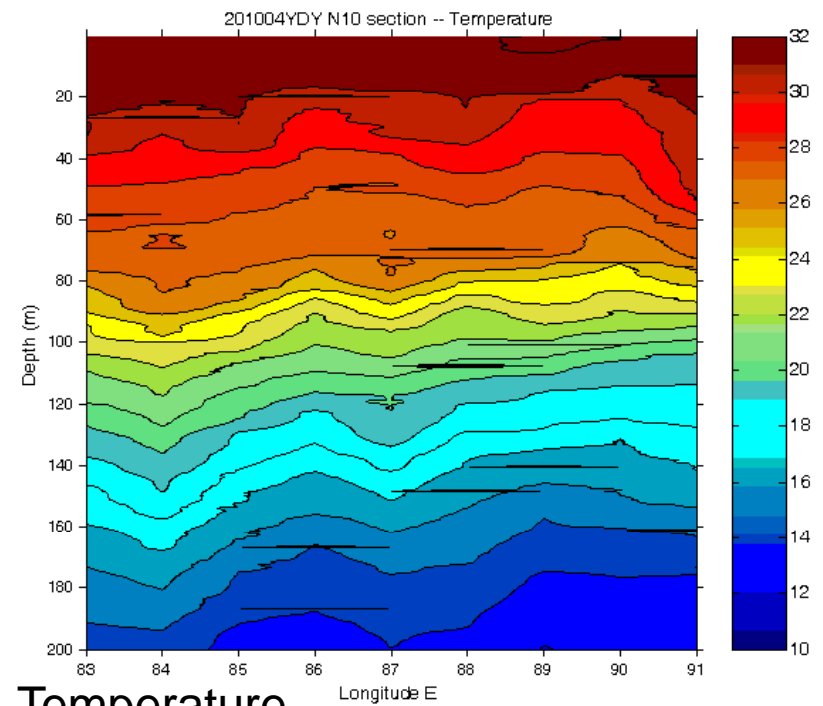
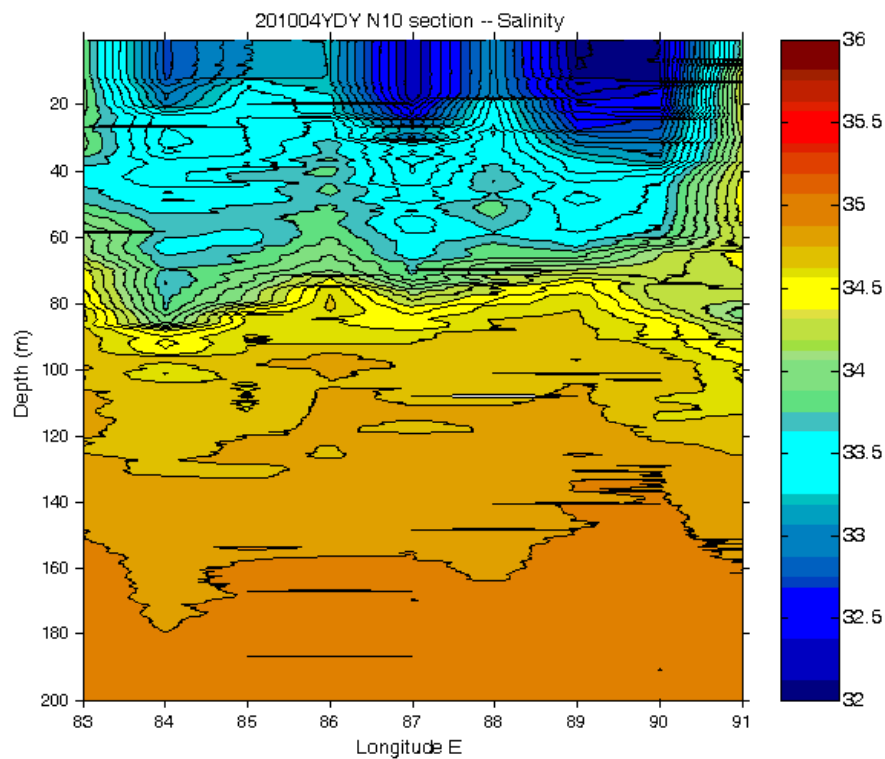
16m层流场分布图



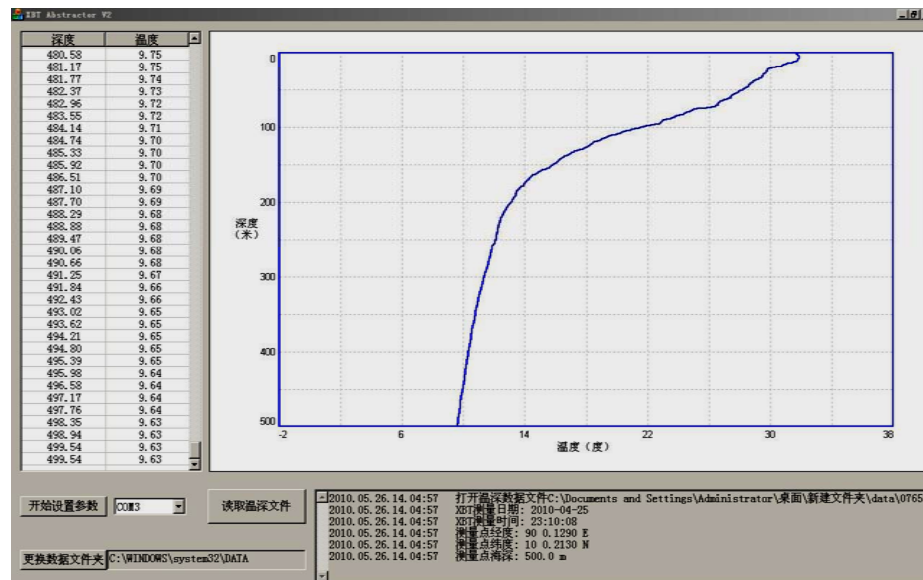
CTD T-S diagram



Temperature, salinity and density along 10N

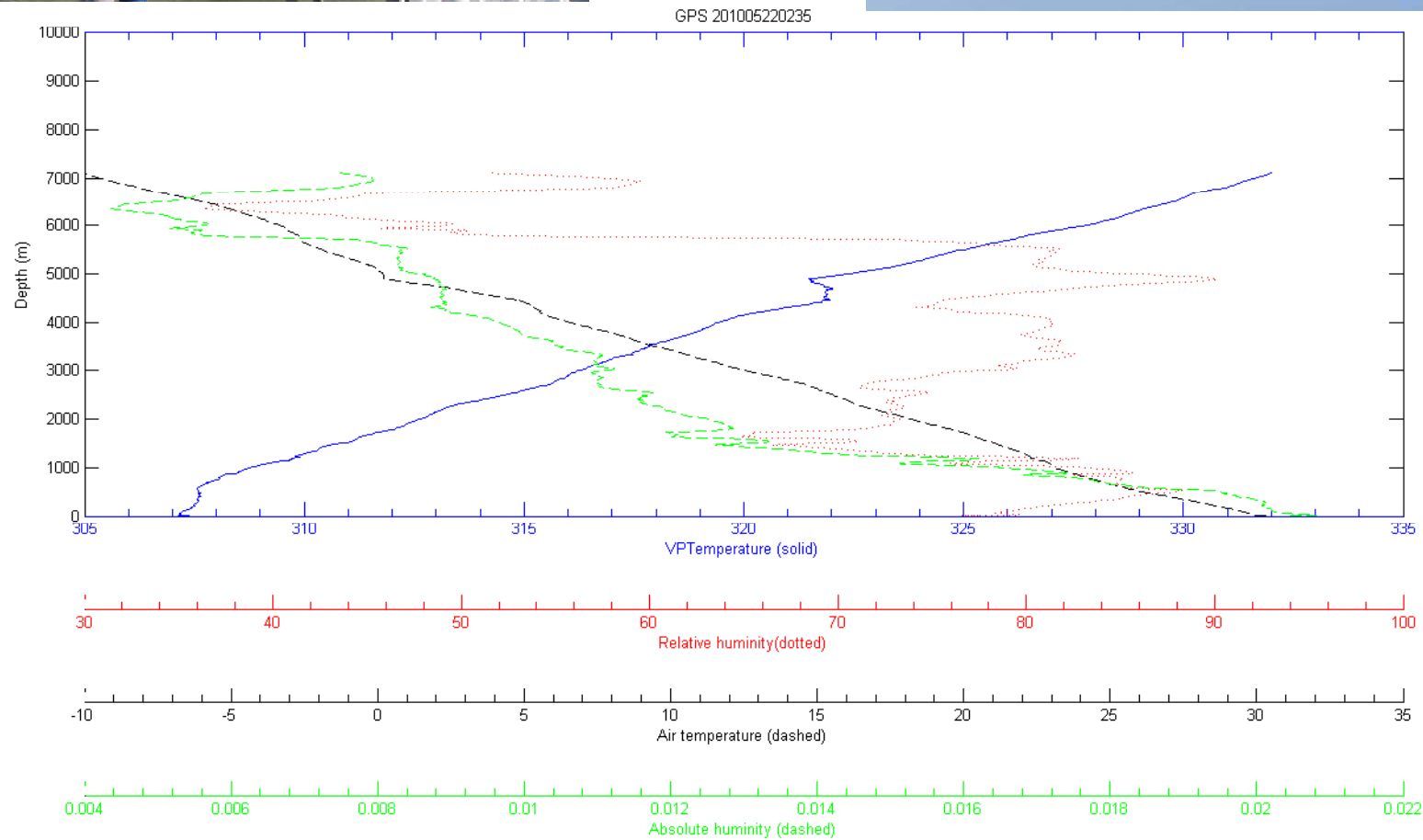


XBT profile





GPS sounding balloons



Argo, Argos

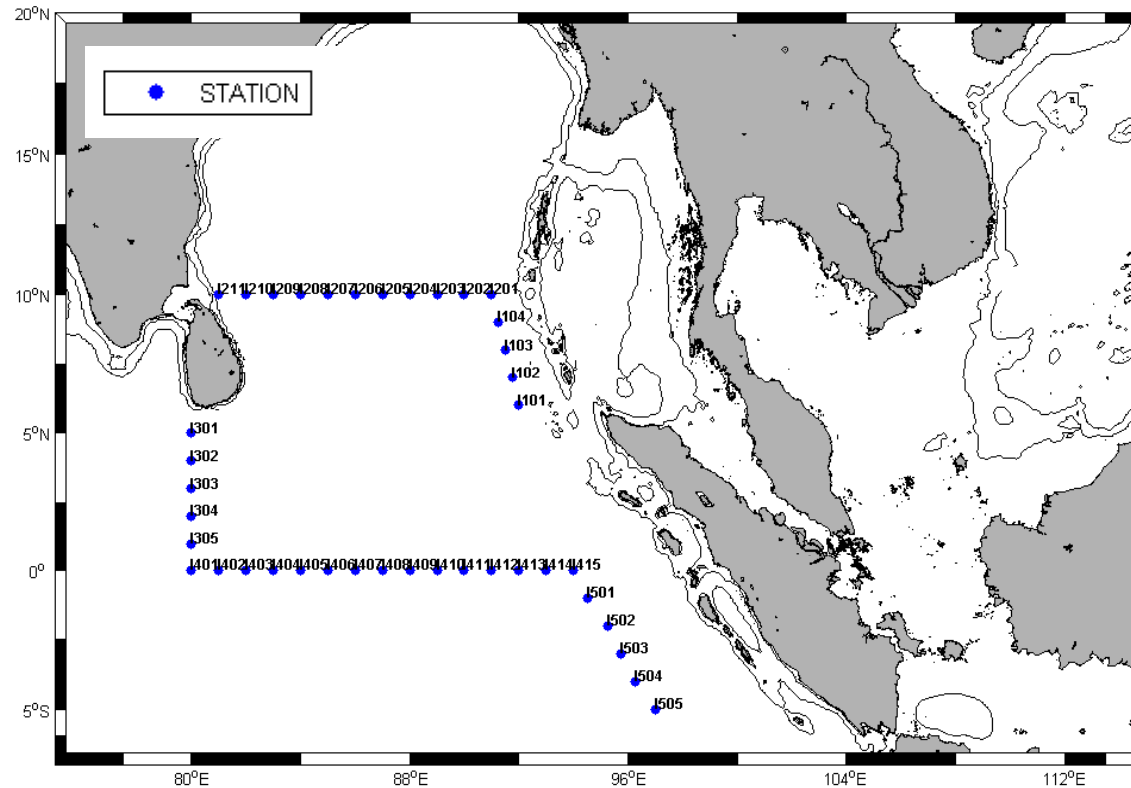


Cruise Plan in Year 2011

2.1 、 Eastern Indian Ocean cruise by
SCSIO/CAS

2.2、 MOMSEI cruise by FIO/SOA-AMFRD

2.1 、 Cruise plan for Eastern Indian Ocean in 2011 April-May by SCSIO/CAS



Repeat 2010 cruise track

Observation Parameters

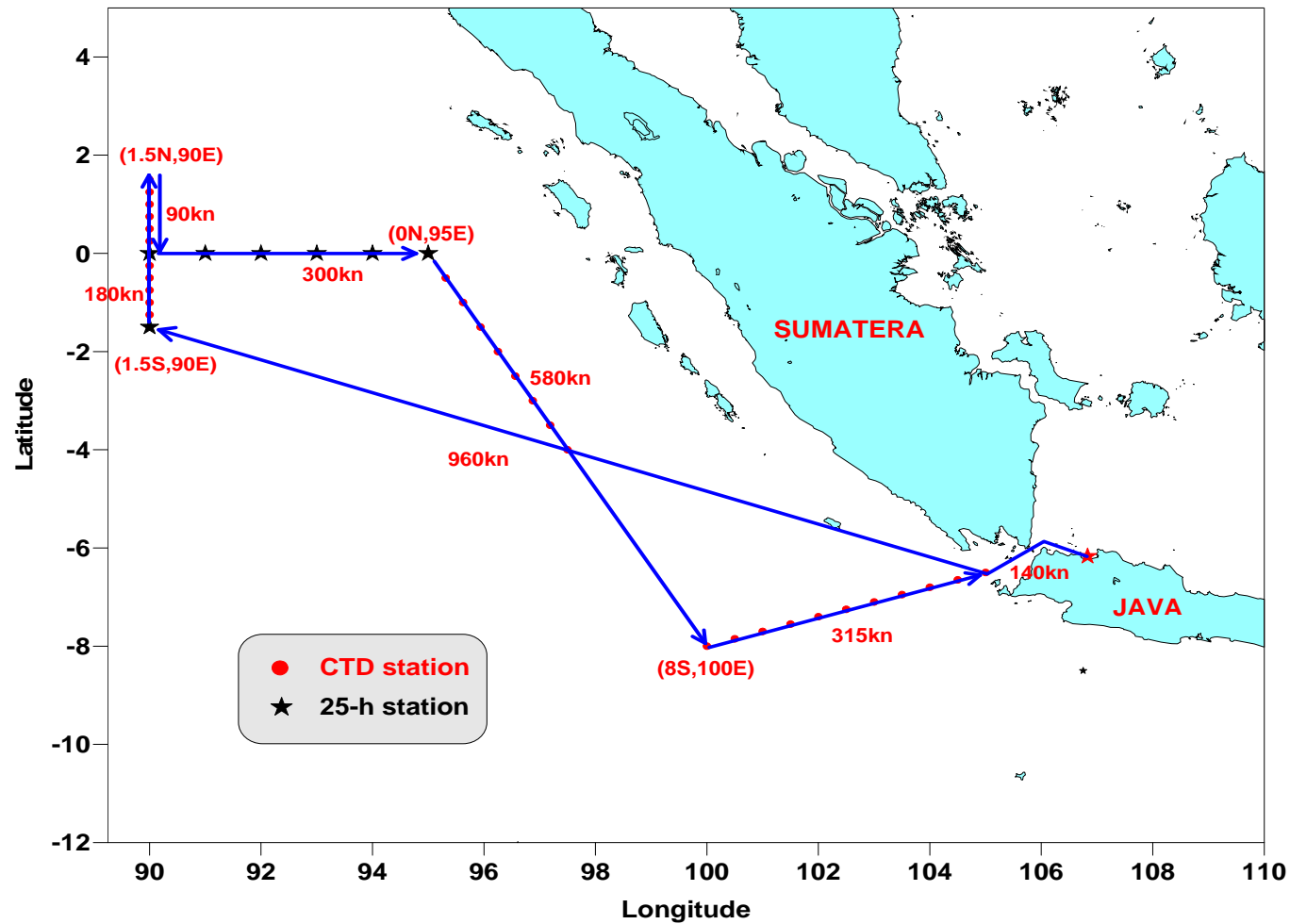
- Ship borne ADCP observation;
- 40 CTD stations;
- 100 XBT profiles;
- Surface CT (Salinity and Temperature);
- Auto Meteorology observation ;
- Ocean-atmosphere heat flux;
- 150 GPS sounding balloons;
- Ocean-atmosphere CO₂ flux;
- Biogeochemical sections;

Vessel arrangement:



By "ShiYan 1" from the SCSIO/CAS

2.2、 MOMSEI cruise by FIO/SOA-AMFRD in 2011 April



Map of MOMSEI cruise tracks

Observation Parameters

(1) CTD observations at 38 stations, with special focus on the tropical eastern Indian Ocean (including seven 25hr fixed stations) and cross-shelf of Java-Sumatra;

(2) Meteorology observation including the air temperature, relative humidity, pressure and wind along the cruise tracks, enhanced by the GPS sounding at 6hr interval;

(3) Ocean-atmosphere heat flux along the cruise tracks;

(4) Ocean-atmosphere CO₂ flux at the CTD stations;

(5) Service the JUV/RAMA buoy at (100E, 8S);

Vessel arrangement:

R/V BJ-3 be used in the MOMSEI cruise.
AMFRD/Center for Research and Development on
Marine and Coastal Resources, Indonesia will take
care of the vessel arrangement through its
administration procedure.