The 3rd YMC Science and Planning Workshop, Bangi, Malaysia March 14-16, 2017

Korean observation plan In the southern Philippine sea

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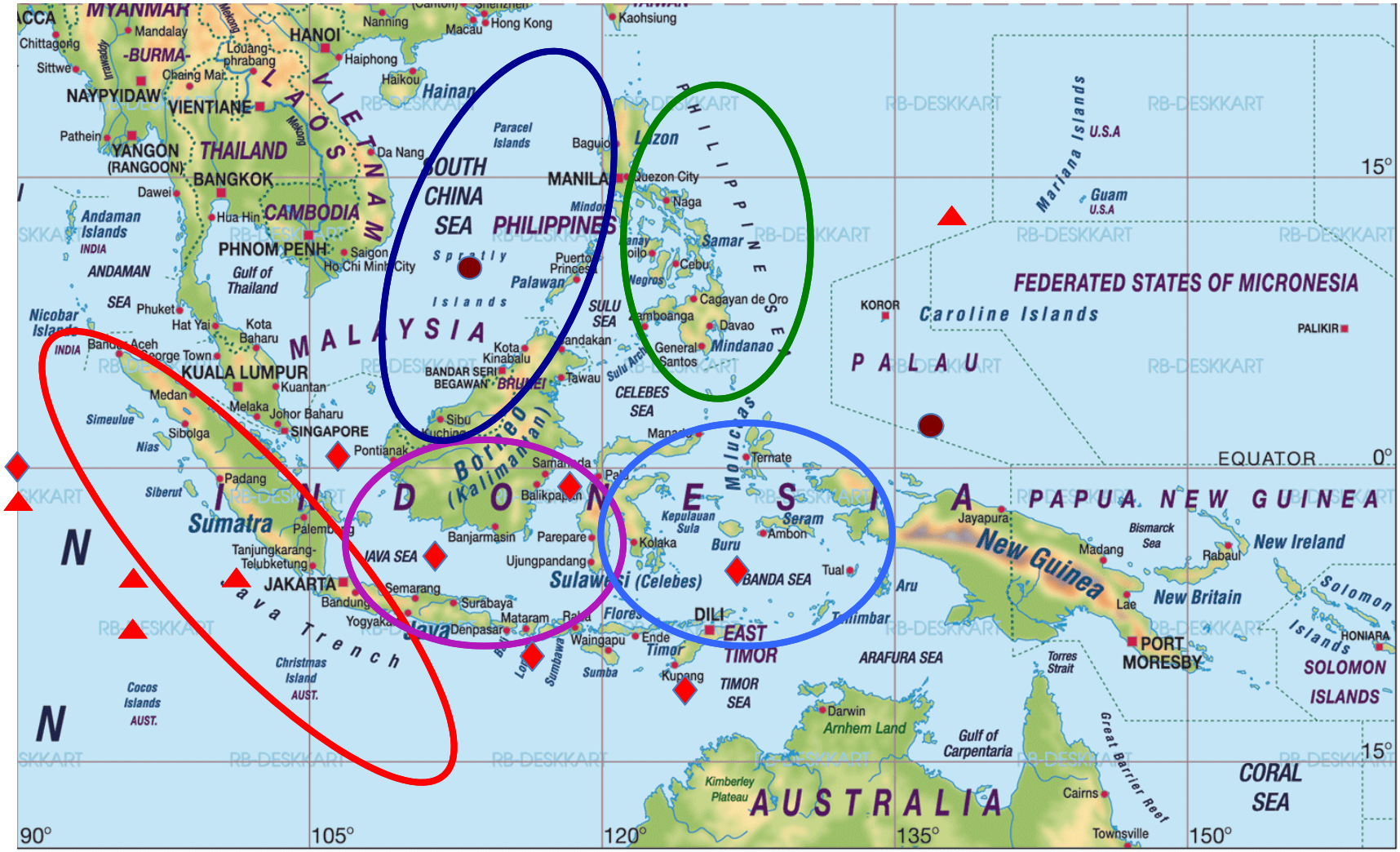
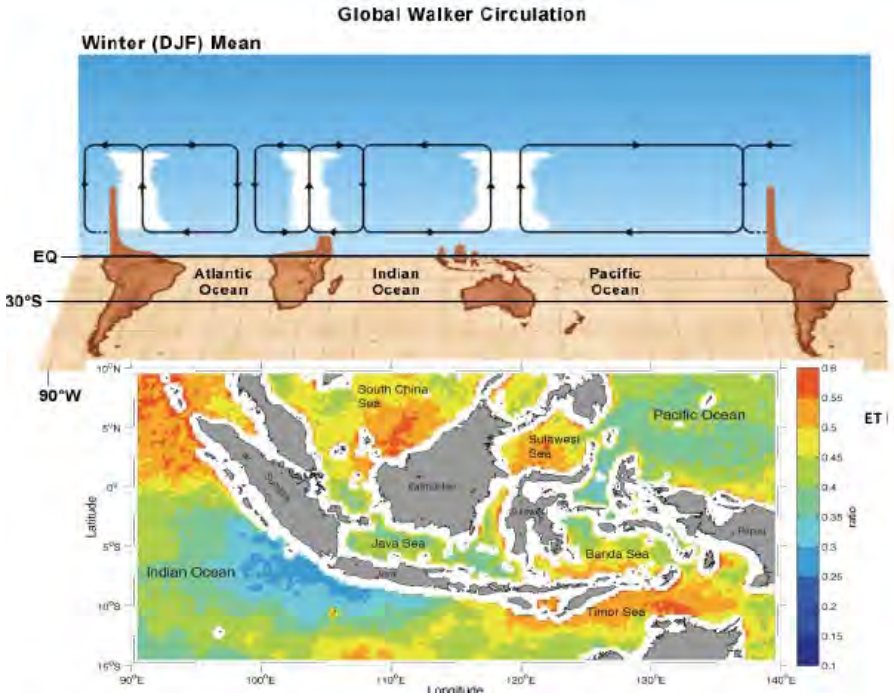
Korea Institute of Ocean Science and Technology

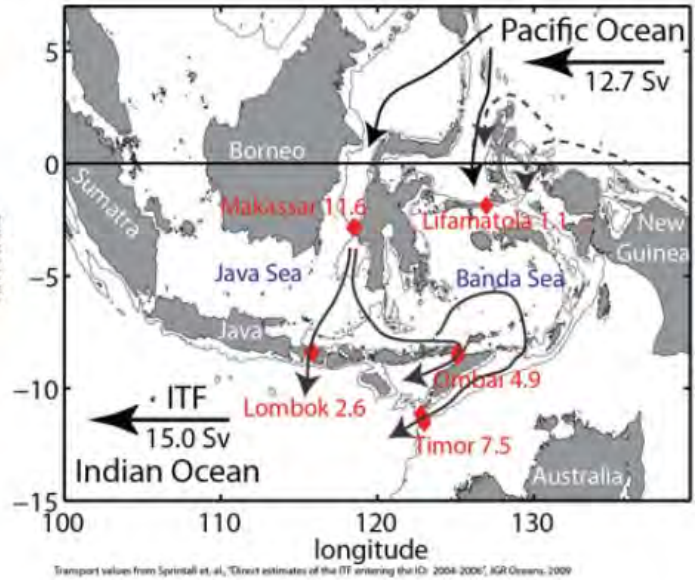


- Upper-ocean, air-sea
- Surface met
- Ocean

Importance of the MC in Global Weather-Climate Continuum

- **Mean Convective Center: Walker Circulation, ENSO**
- **Center of the Indo-Pacific Warm Pool**
- **MJO Barrier**
- **Biomass Burning Aerosol**
- **Indonesian ThroughFlow (ITF) and mixing in Indonesian Seas: impact on regional SST, heat balance and rainfall patterns on MJO, Monsoon, to ENSO time scales**

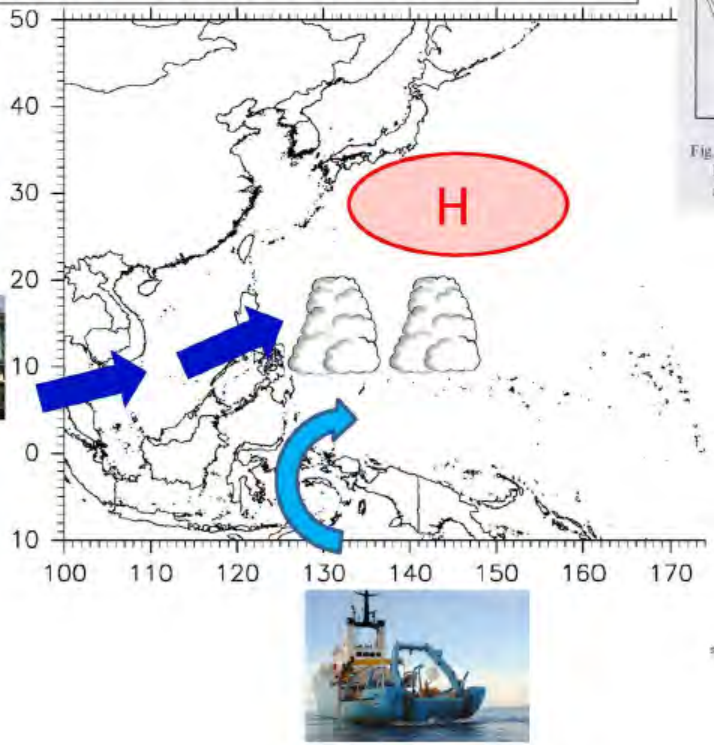




Western North Pacific Summer **Monsoon Study**

Hisayuki Kubota (JAMSTEC)

- To understand the seasonal march of Western North Pacific Summer Monsoon and its predictability
- Mechanisms: the role of westerly wind flow, cross equatorial flow and those air-sea interaction through observational study
- Influences: teleconnection to East Asia, Southeast Asia, and US



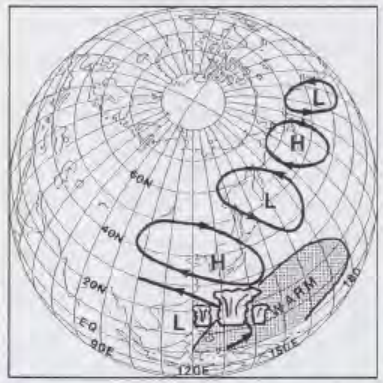
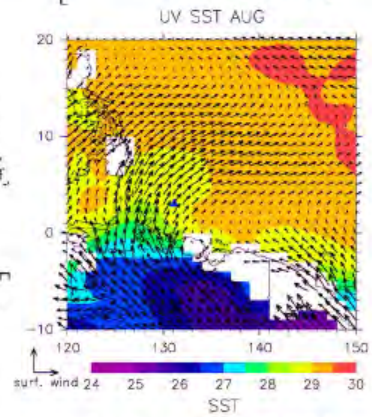


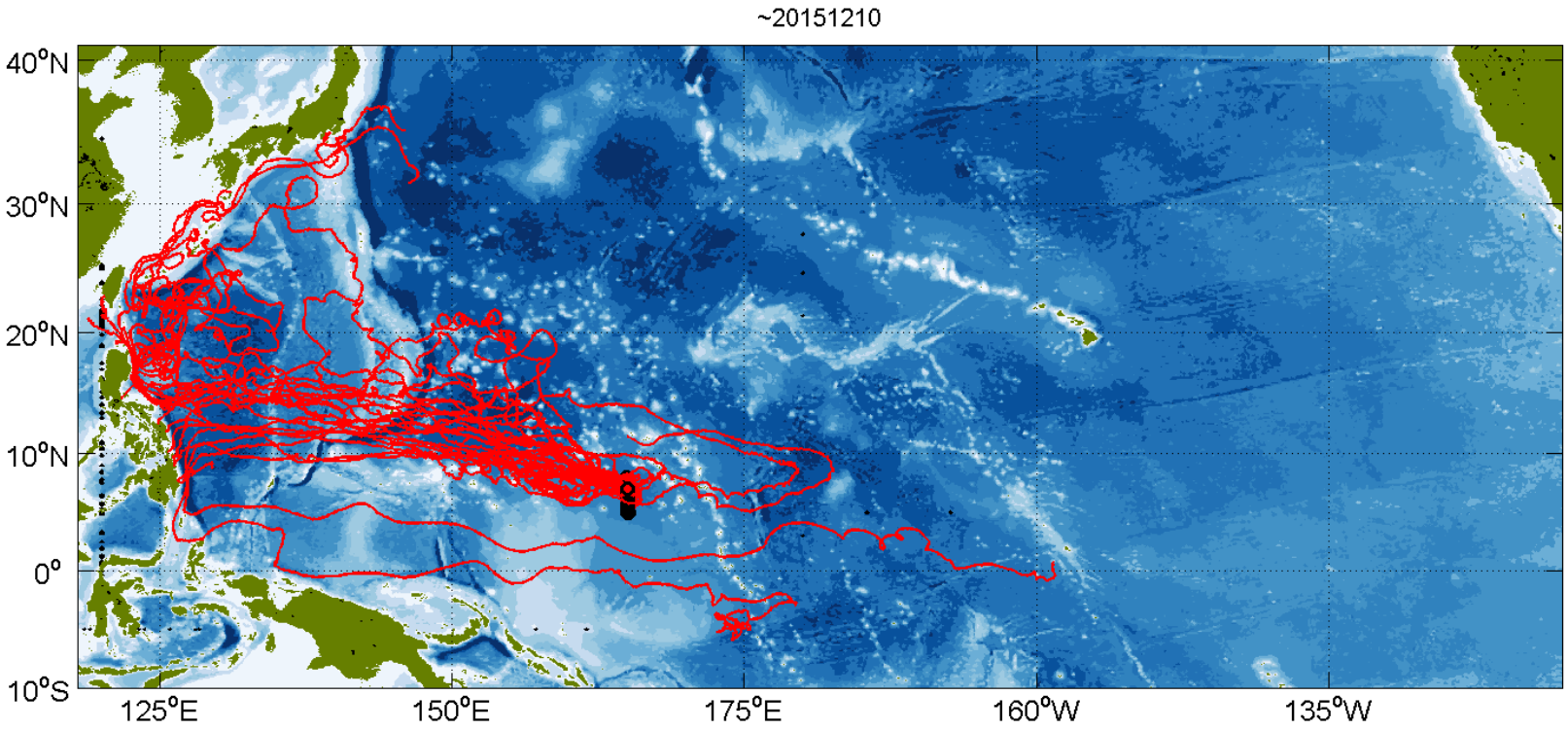
Fig. 18. Schematic pictures showing the relationships between SST anomalies, convective activities and atmospheric Rossby-wave trains.

Nitta (1987)

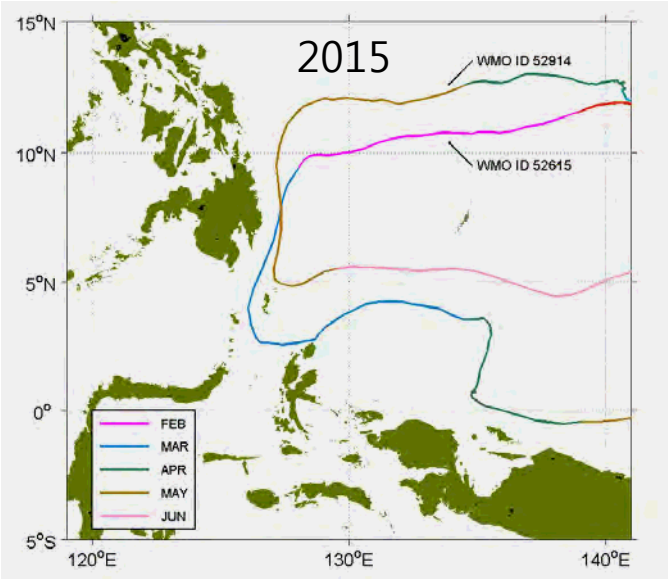


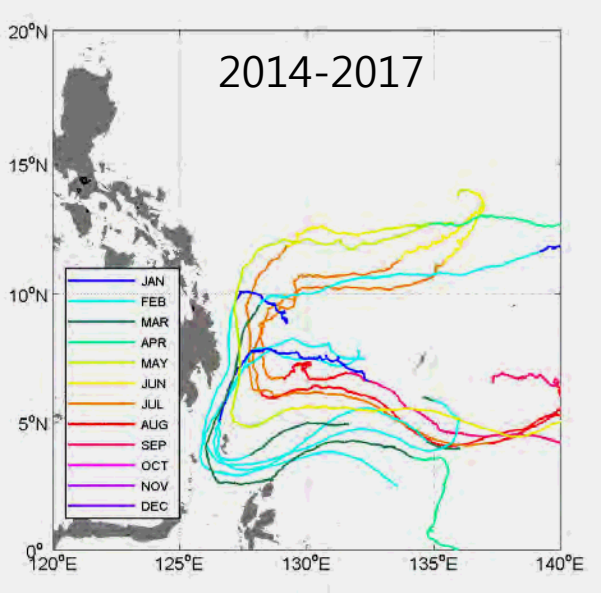
Kubota et al. (2011)

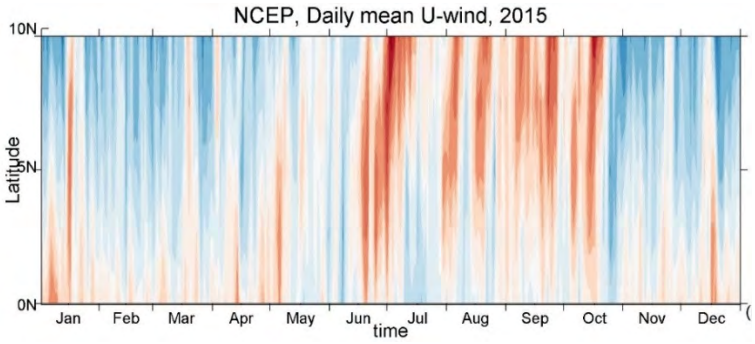
Trajectories of 26 drifters deployed in June 2014

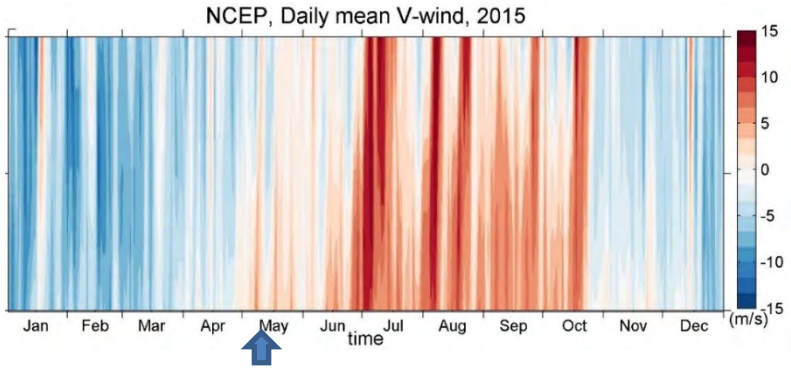


Retroflection of the Mindanao Current

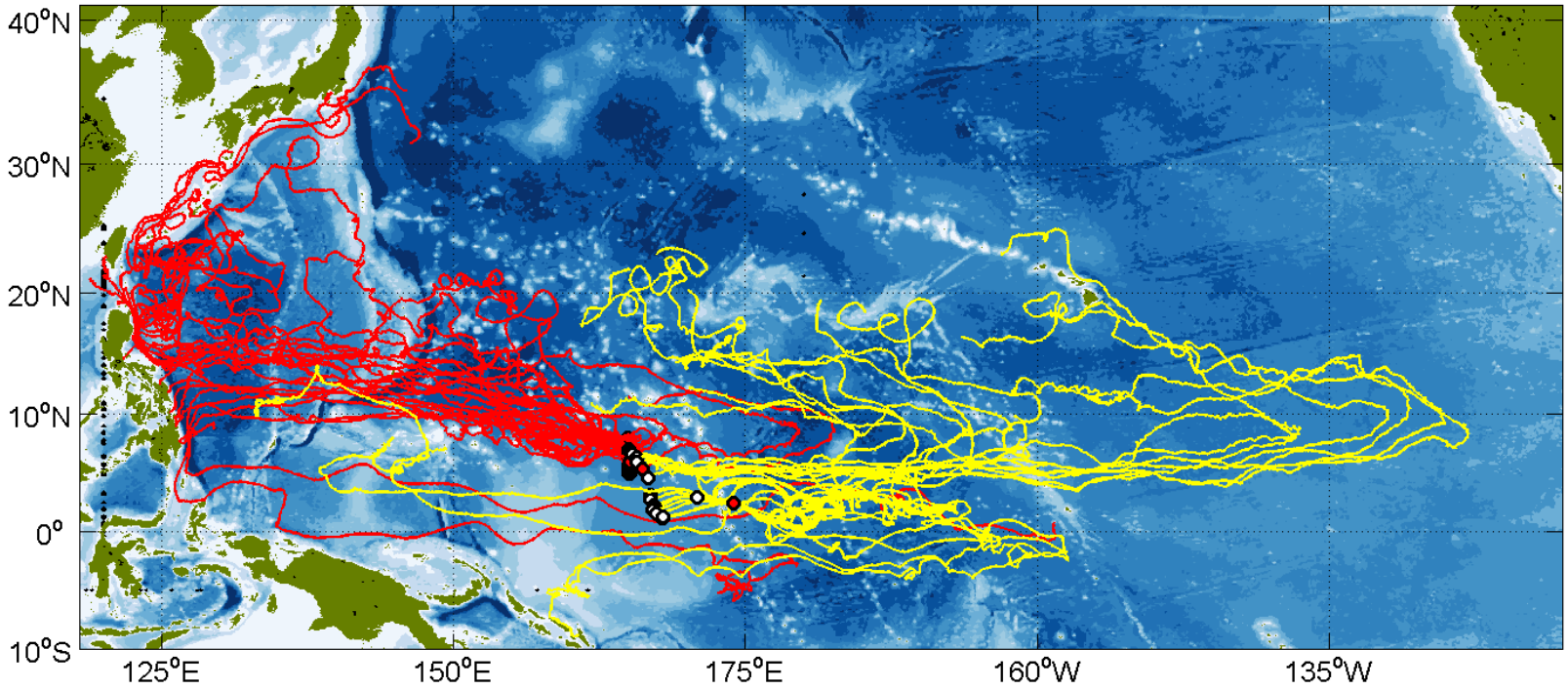




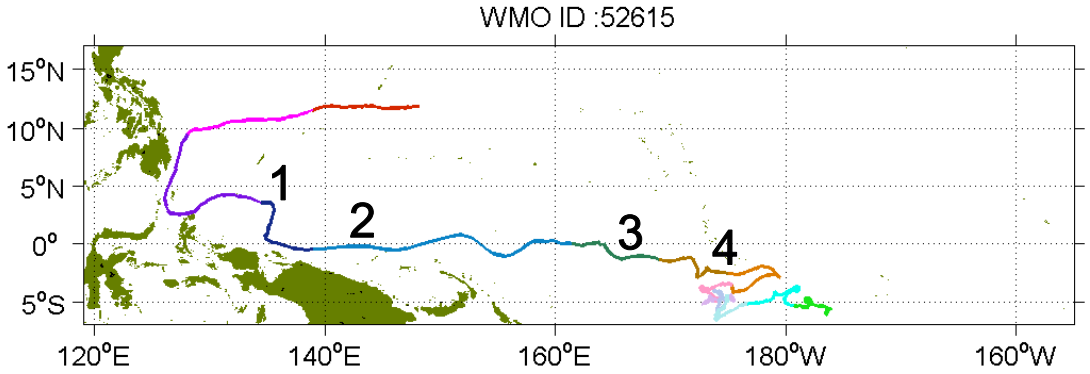


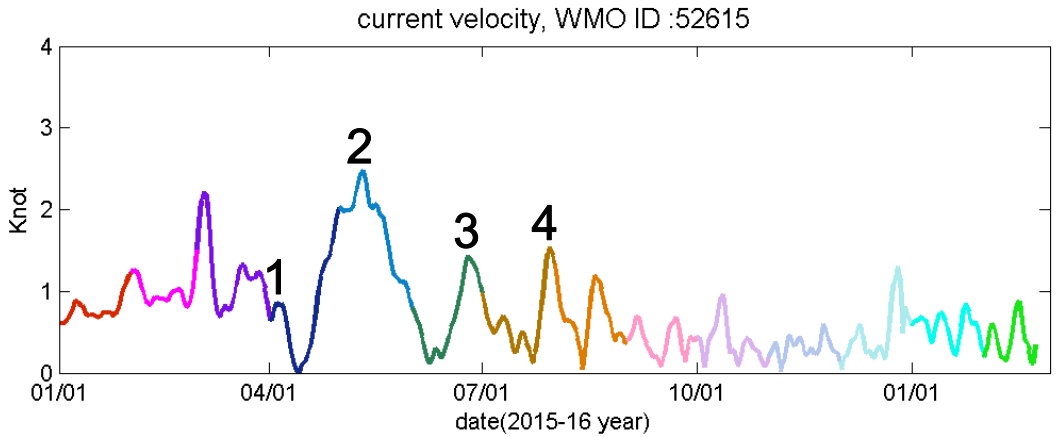


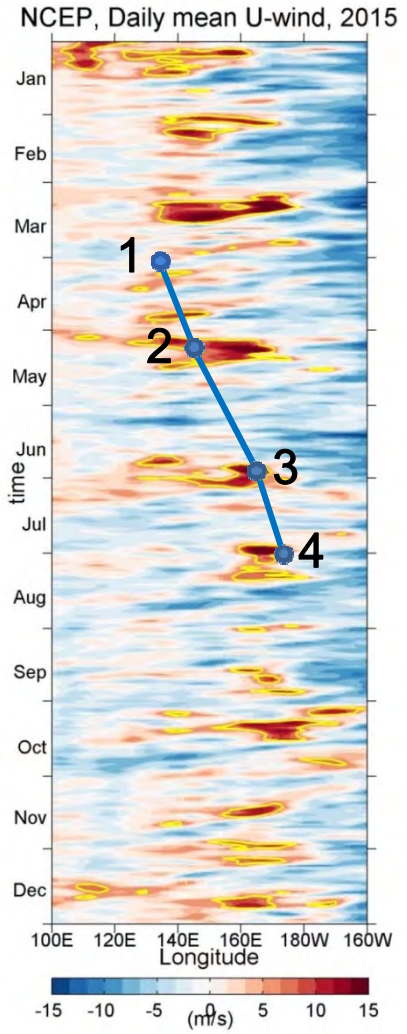
Trajectories of 23 drifters deployed in August 2015

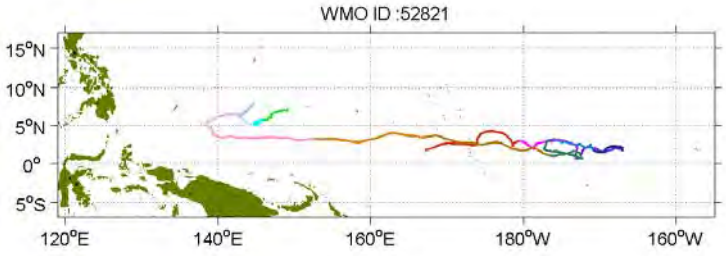


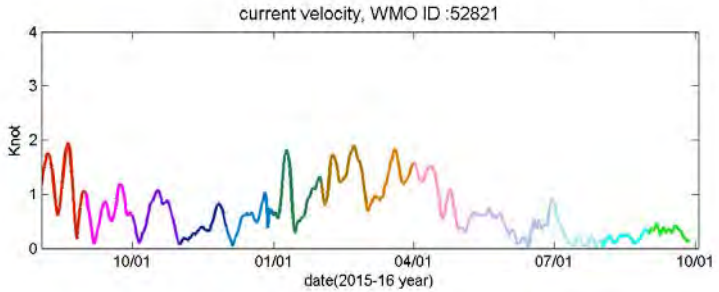
The enhanced North Equatorial Countercurrent and westerly wind bursts

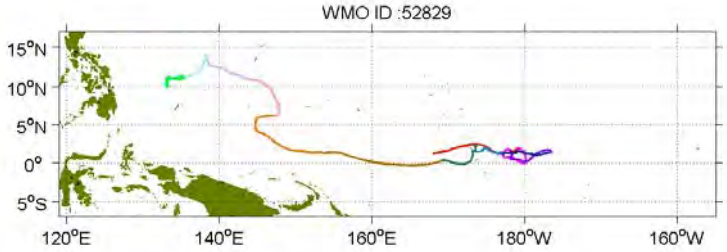


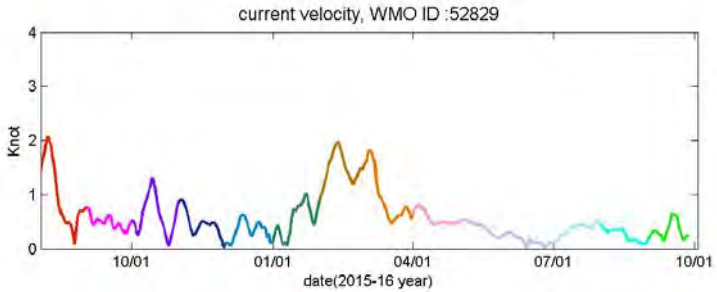


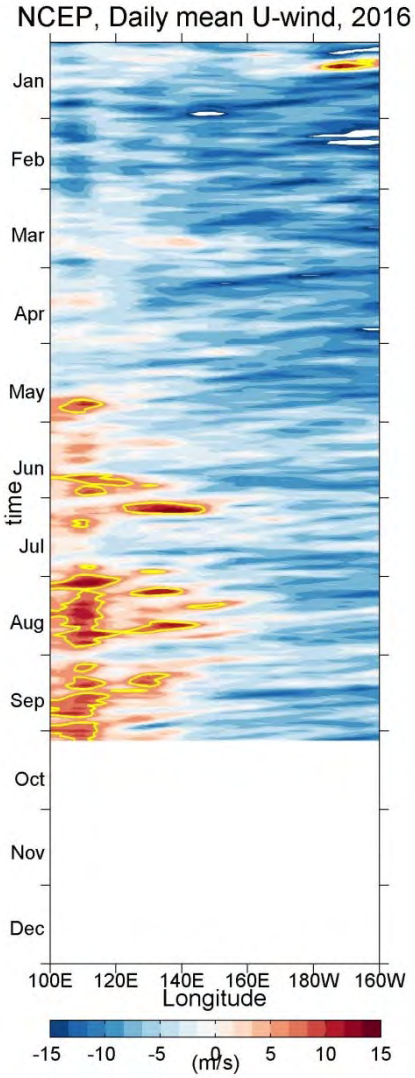



WMO ID :52821
15°N
10°N
5°N
0°
5°S
120°E
140°E
160°E
180°W
160°W

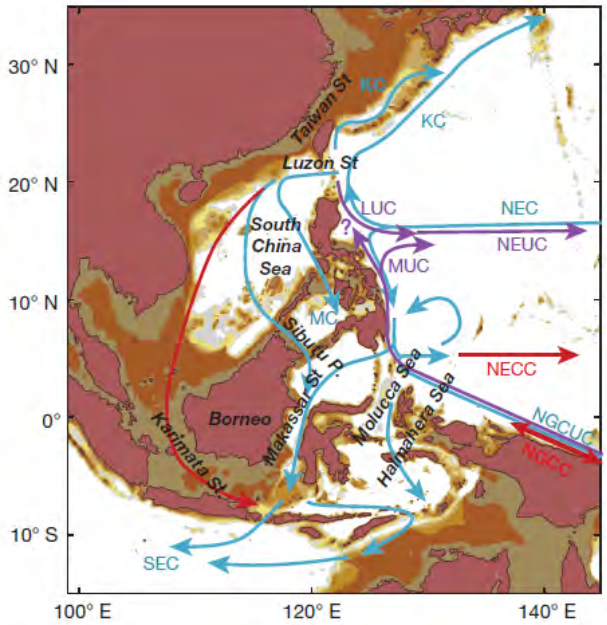

current velocity, WMO ID :52821
Knot
0
1
2
3
4
10/01
01/01
04/01
07/01
10/01
date(2015-16 year)


WMO ID :52829
15°N
10°N
5°N
0°
5°S
120°E
140°E
160°E
180°W
160°W

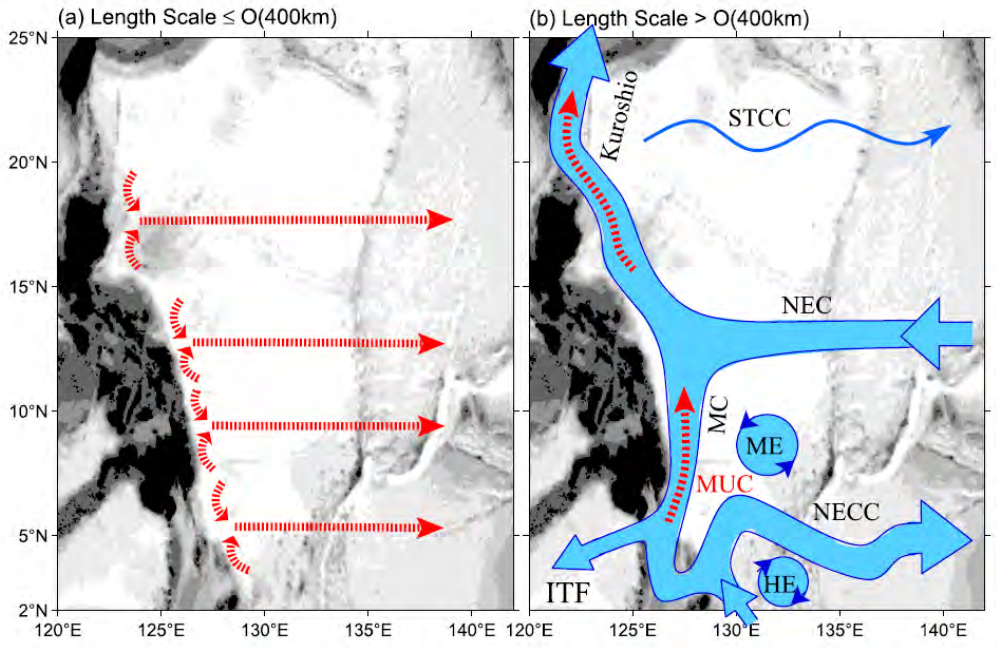

current velocity, WMO ID :52829
Knot
0
1
2
3
4
10/01
01/01
04/01
07/01
10/01
date(2015-16 year)


NCEP, Daily mean U-wind, 2016
time
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
100E
120E
140E
160E
180W
160W
Longitude
-15
-10
-5
0
5
10
15
(m/s)

New observation: planning

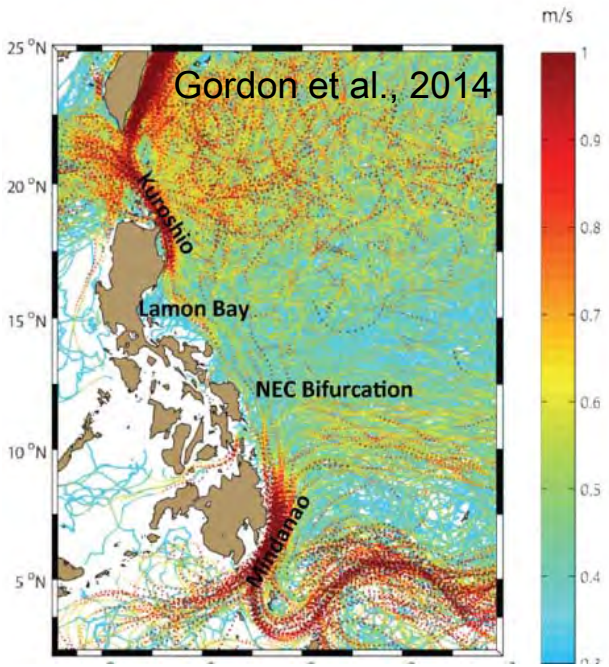


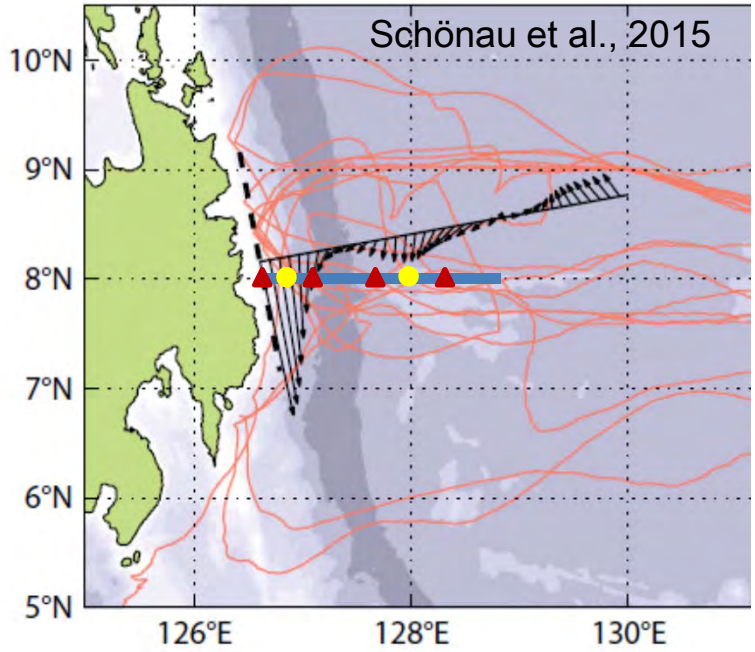
Hu et al. (2015, Nature)



Qiu et al. (2015, JPO)

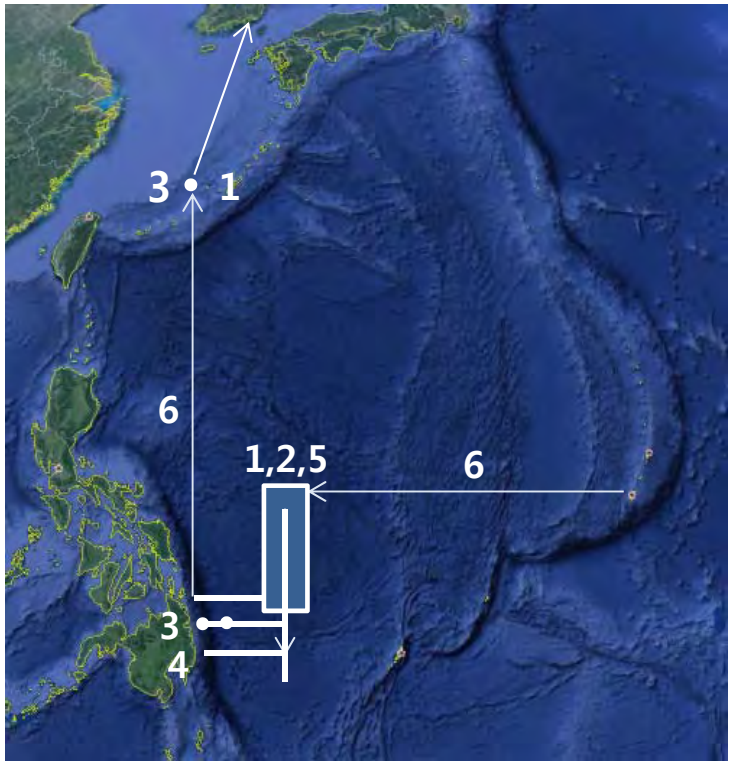
New observation: planning





- Current meter & CPIES moorings: along 8N (or 7.5N)
- Oct~Nov 2017, R/V Isabu

New observation: planning



1: Vertical atmosphere-ocean profile
(repeated Radiosonde & XBT/2017~2021)

2: Air-sea interaction (heat flux) observation
(ship, surface buoy/2019-2020)

3: LLWBC observation
(ADCP, current meter & CPIES/2017-2020)

4: LLWBC observation (ship/2017~2021)

5: Deployment of surface drifters (with NOAA)

6: Air-sea CO2 flux (ship/2017~2021)