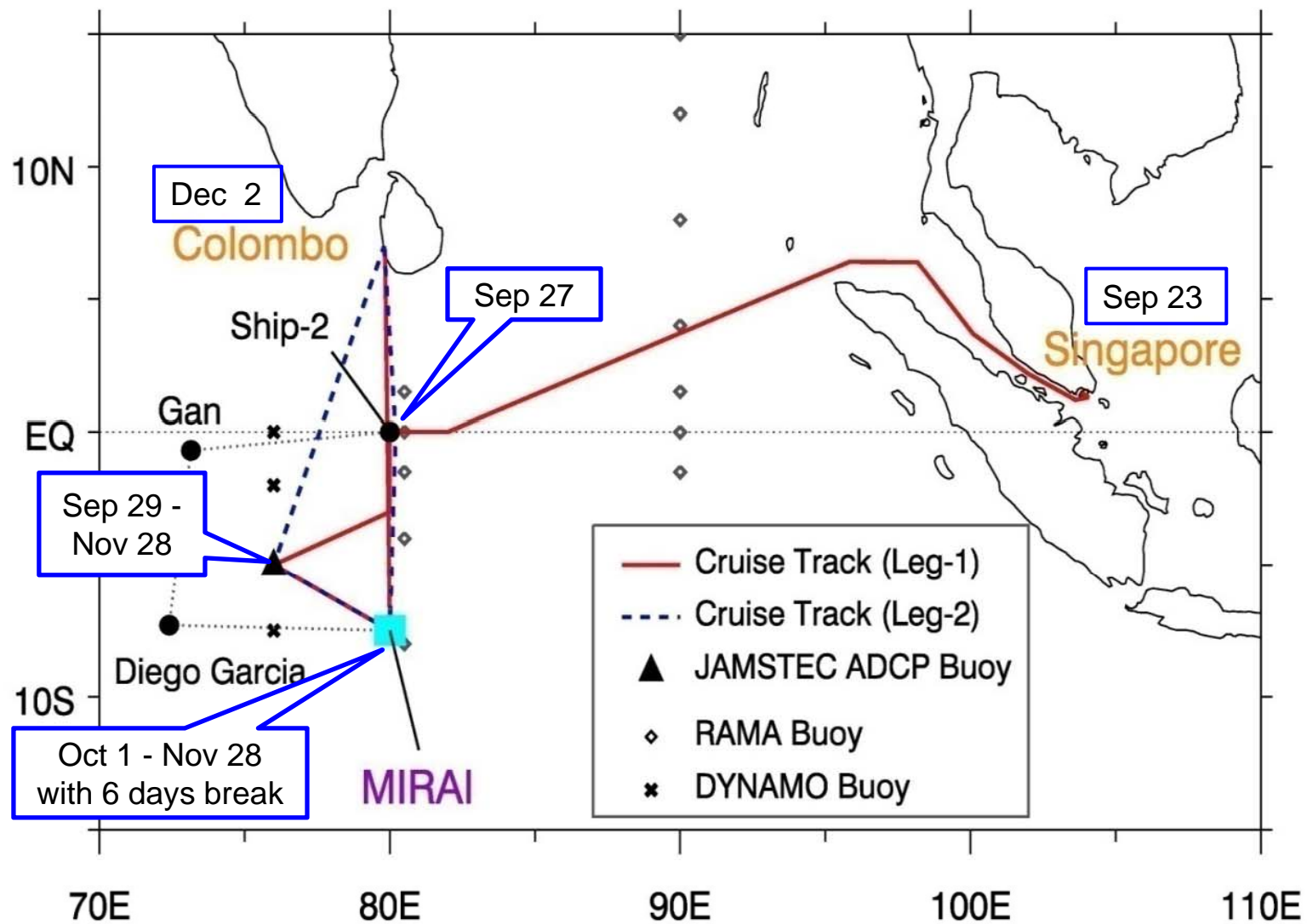


## *Oceanic Observations on-board the Mirai*

- \* CTD with water sampler for biogeochemical analysis (Nutrients, Chl-a, pH) with LADCP (by IPRC)
- \* Micro-structure Profiler
- \* Shipboard ADCP
- \* Sea Surface Monitor (T, S, DO, Chl-a)
- \* Argo (Ascent once per day from 500 m parking depth) x 1  
+ standard Argo (10-day cycle, 2000 m parking) x about 5
- \* Sub-surface ADCP mooring with PAL(passive aquatic listener)
- \* Sea-gliders (EQ, 1.5S, 3S along 80E by UK/UEA group) x 3

# Mirai Cruise Course



# CTD Casting

- \* CTD with water sampler for biogeochemical analysis (Nutrients, Chl-a, pH) with LADCP (by IPRC)
- \* Micro-structure Profiler

Basic plan:

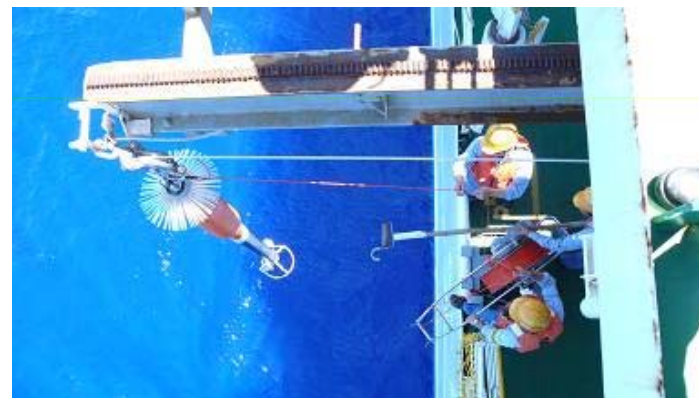
CTD + LADCP / MSP every 6 hours

According to the request of frequent MSP, every 3 hr cast or higher sampling will be done.

Input from IPRC ?

## Tiny Remarks

Coordination is needed for evening cast with another theme, which was selected through public selection (sampling of "sea-skater").



# Argo

Argo floats will be deployed in two settings.

- 1) To study intraseasonal variability, one Argo float (\*) will be set to ascend every day from 500 m parking depth. Location to be deployed is flexible, according to other mooring / float sites.
- 2) Other argo floats less than 10 will be deployed as a part of International Argo Project, and its parking depth is set 2000 m and every 10 day ascent. Their locations will be determined according to the latest situation to cover the Indian Ocean as wide as possible.

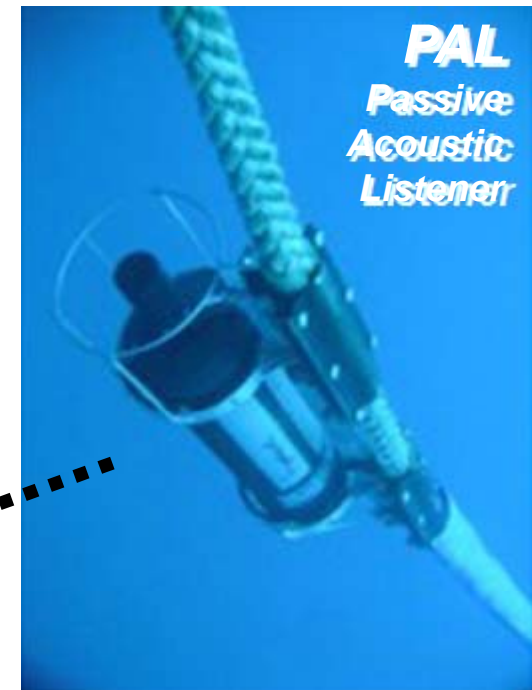
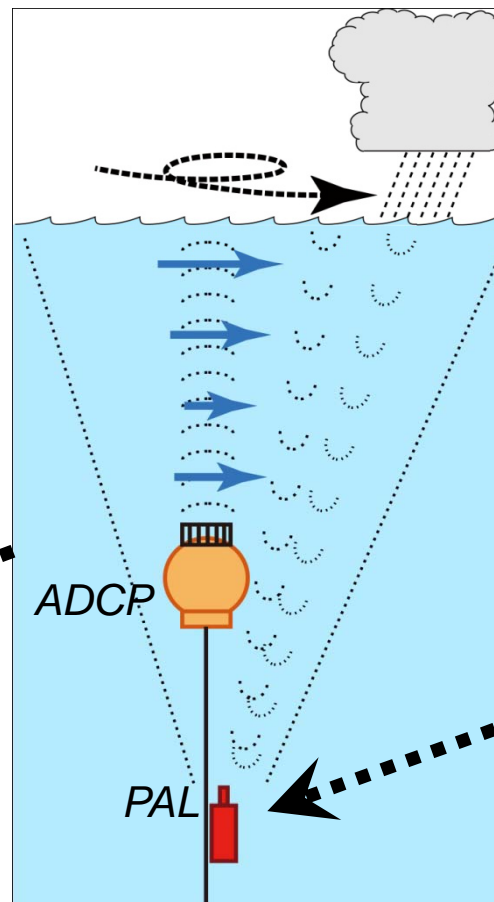
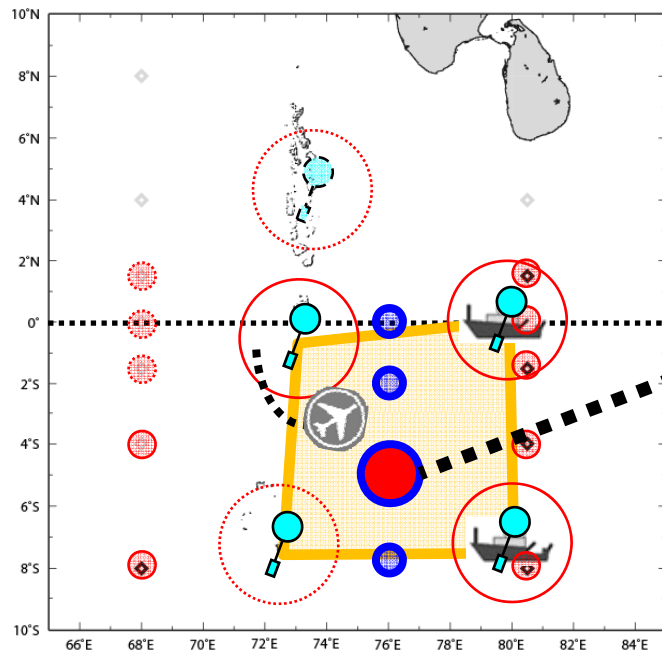
\* ... NEMO (Navigating European Marine Observer; Optimare, Germany)-type

# JAMSTEC Sub-surface mooring at (5S, 76E)

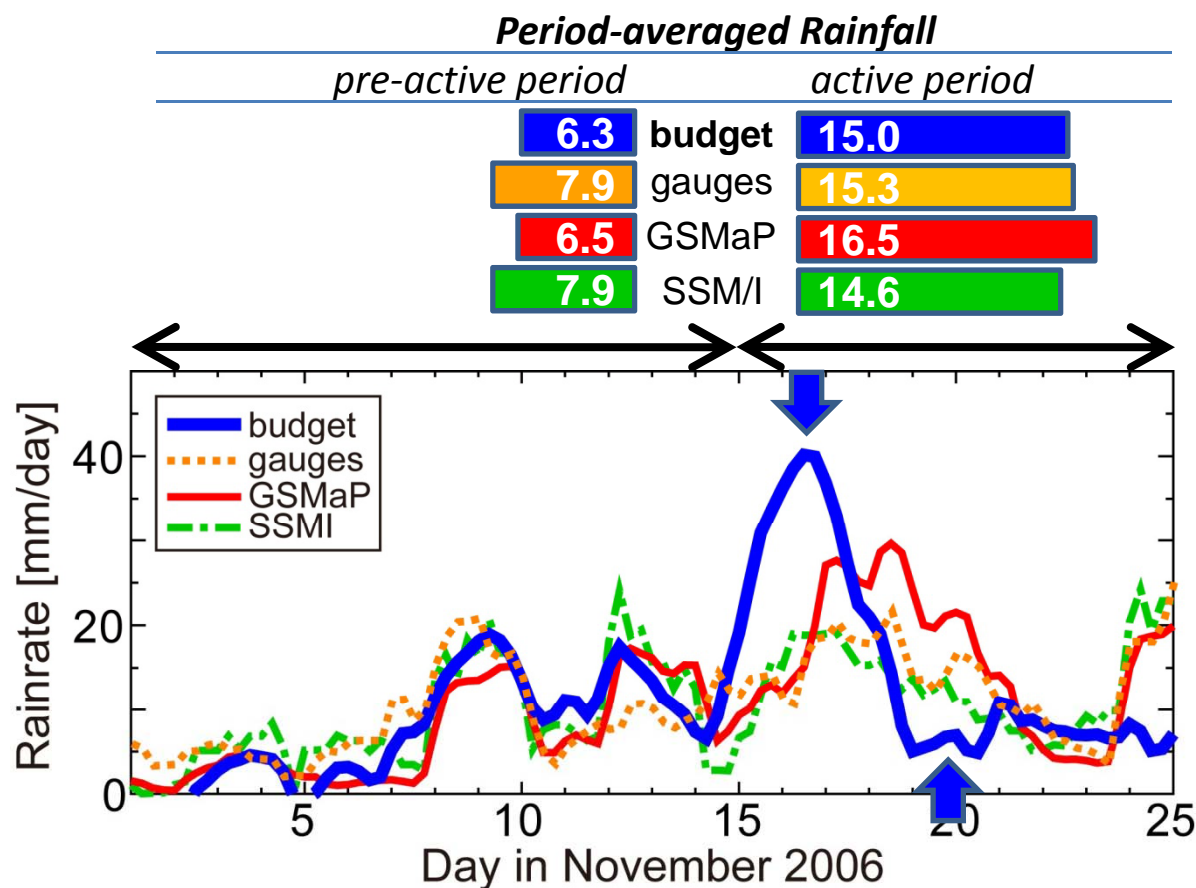
< Purpose >

**to reinforce the measurements on:**

- **Rain (PAL)** ... Surface rain flux (to close the water-vapor budget with sounding array)
- **Surface Wind (PAL)** ... Surface heat flux and surface wind stress
- **Current Profile (ADCP)** ... Dynamic structure at northern edge of SCTR



# Rainfall data for vapor budget analysis: In case of MISMO



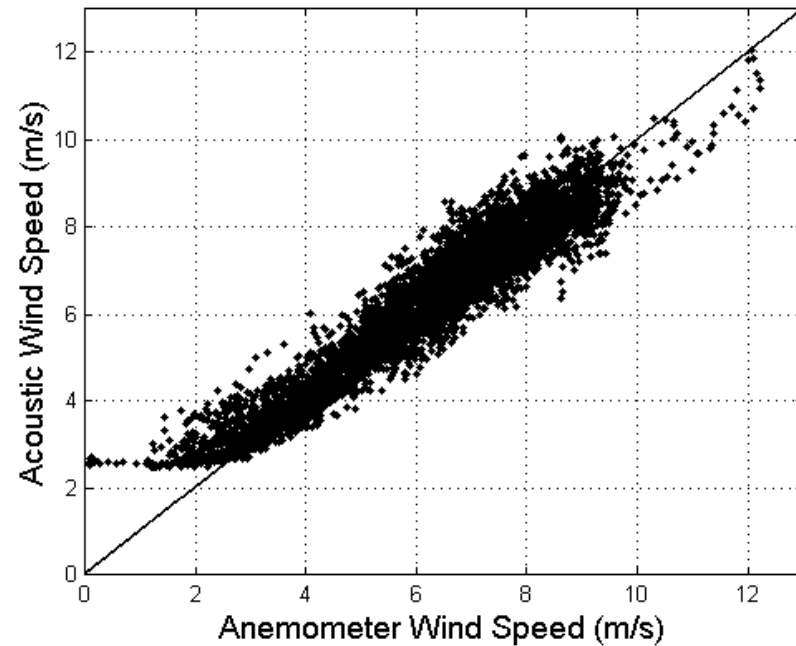
*Good agreements  
in period-averaged rainfall  
amounts*

*Discrepancy in temporal  
change (a few to several days)  
in active period*

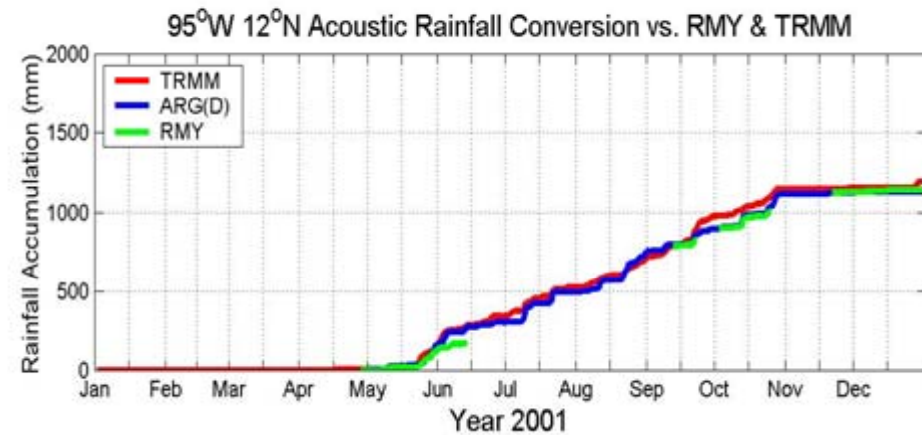
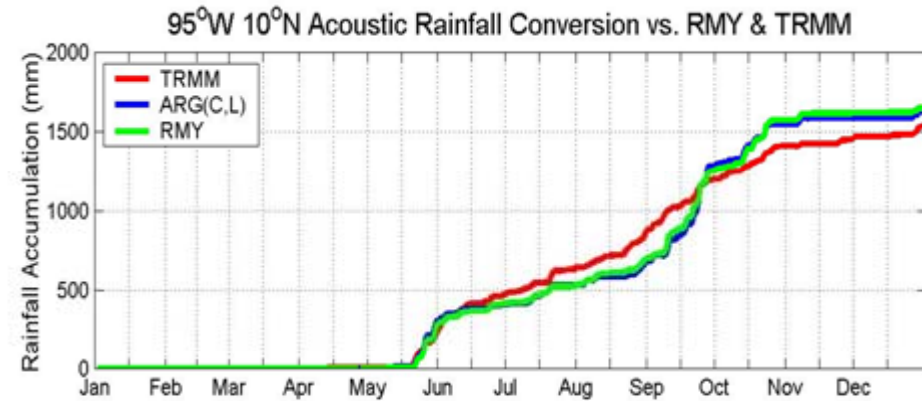
*Katsumata et al. (2010, JAMC)*

# Past PAL measurements in the Tropics (by UW/APL)

## Wind Speed

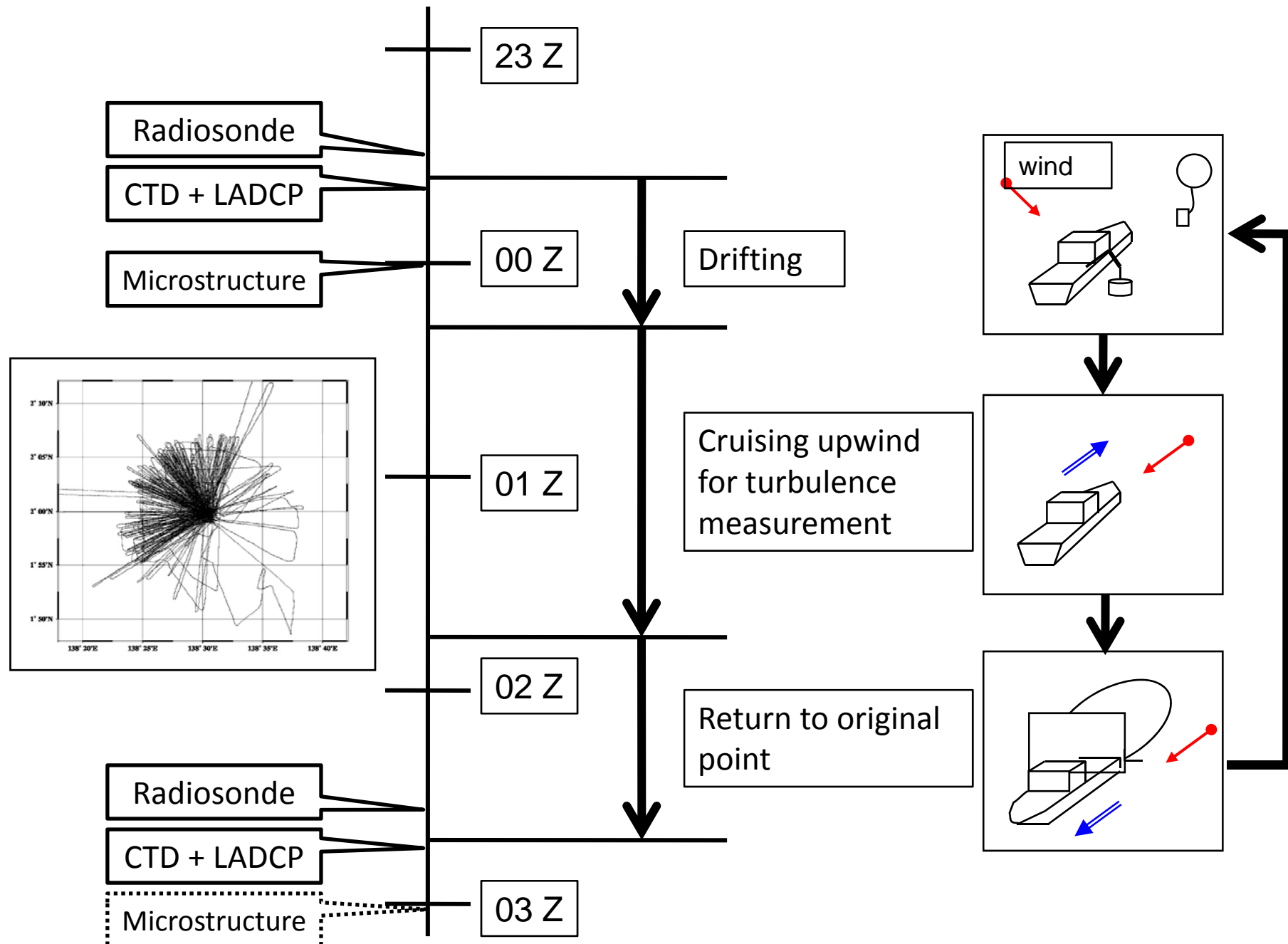


## Rainfall Amount





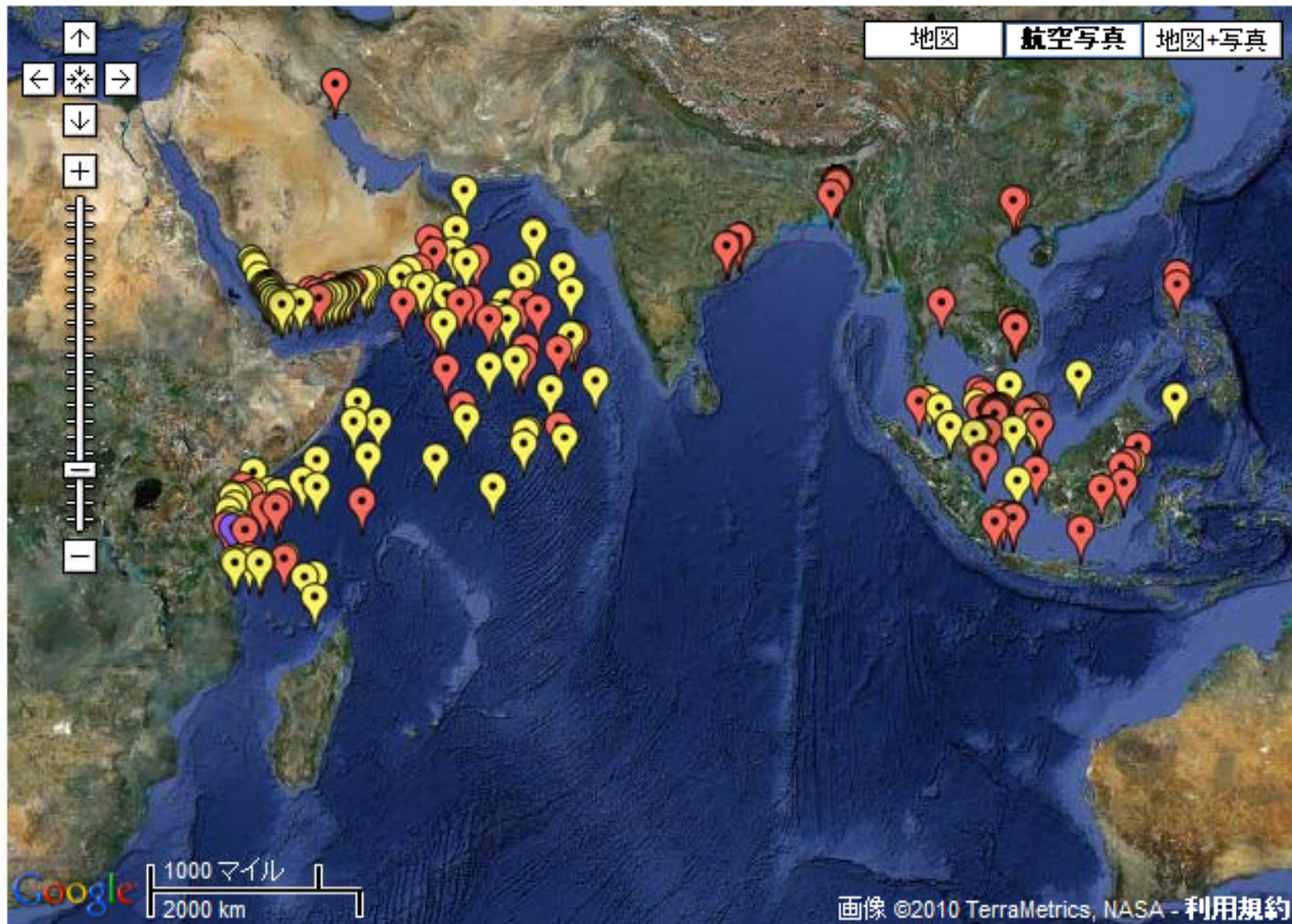
# Basic Operation during Stationary Observation





# Piracy Report Map as of Nov 6, 2010

📍 = Actual Attack    📍 = Attempted Attack    📍 = Suspicious vessel



Taken from ICC Commercial Crime Services. <http://www.icc-ccs.org/>