

# **East-Asian Monsoon Experiment (EAMEX): Summer and Winter**

## **Concept and Structure of the Intense Observation**

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**First International MAHASRI Science Steering Committee Meeting  
Bangkok, Thailand, October 19-20, 2006**

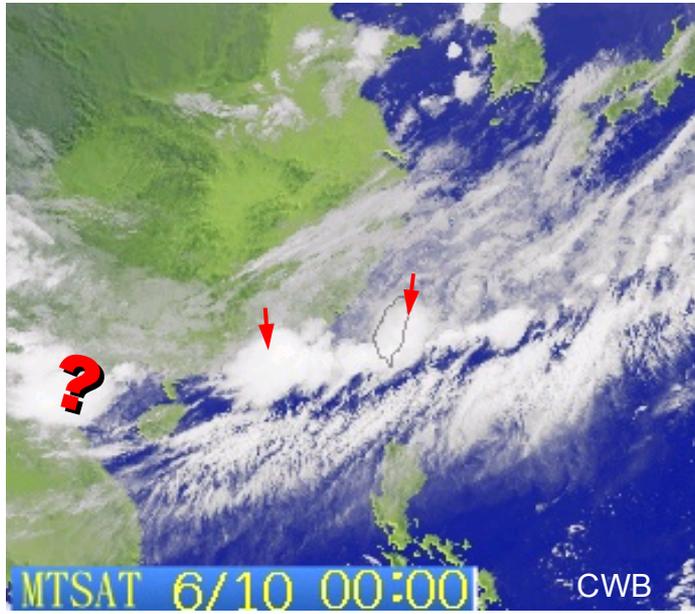
**I. Plan of Field Experiment**

**II. Time Table**

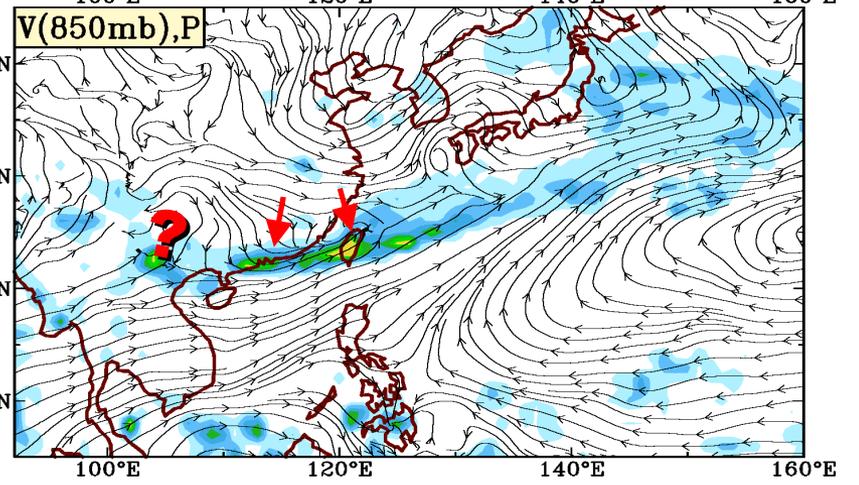
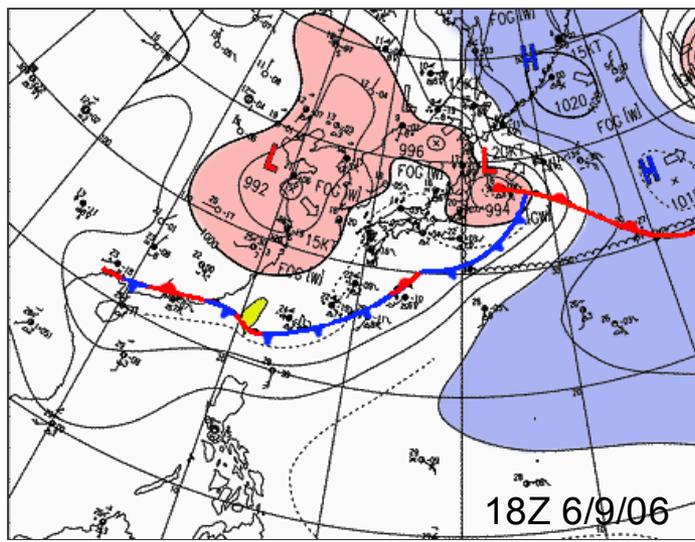
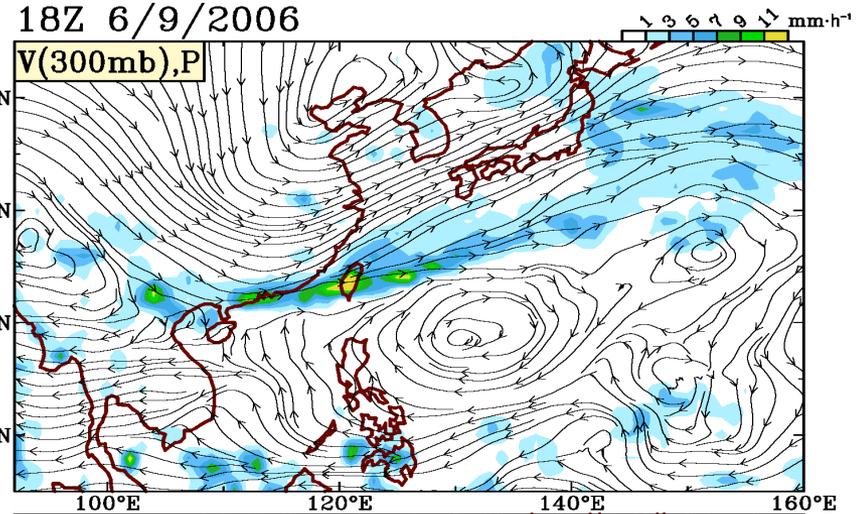
**III. Facilities**

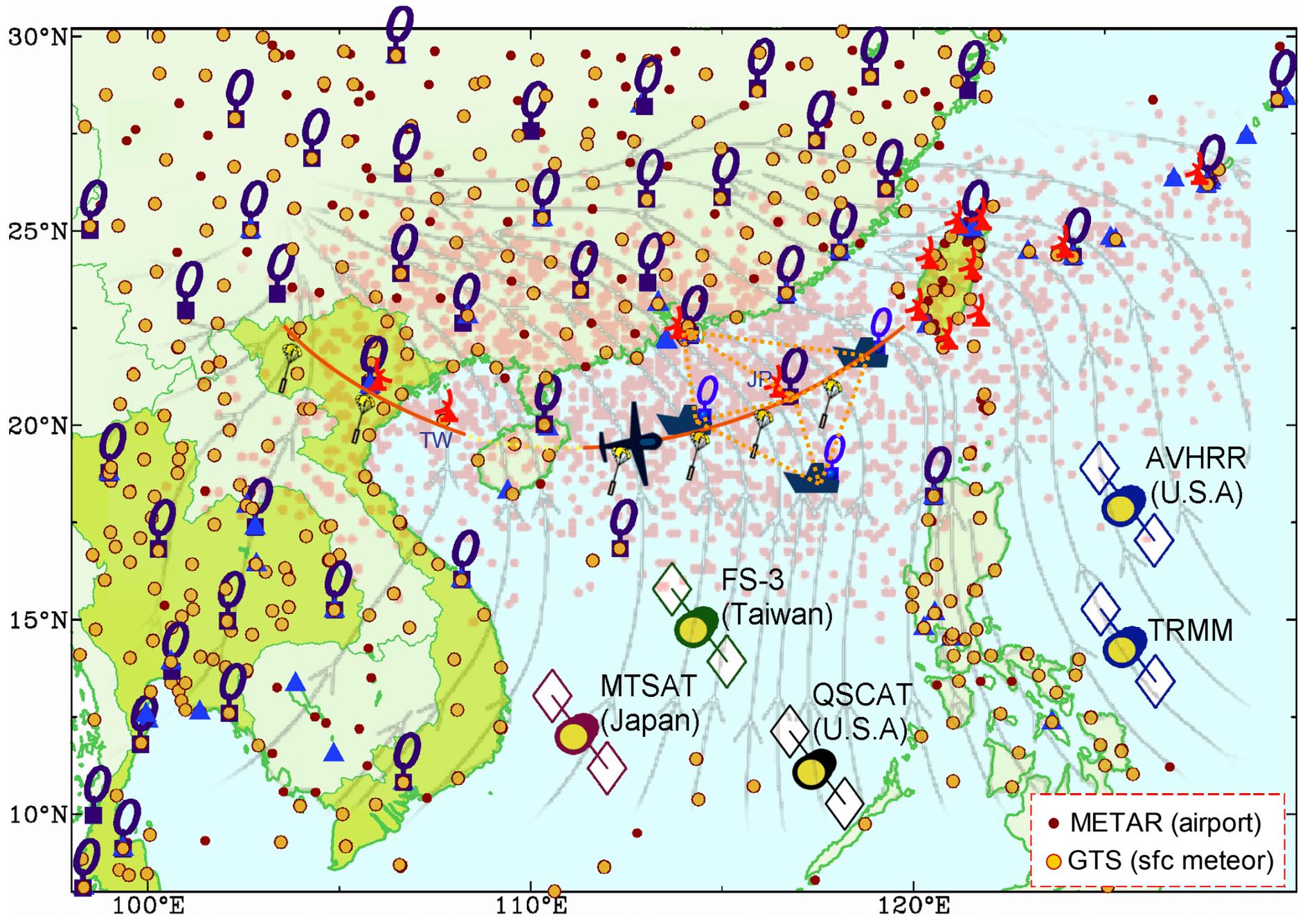
# I. Plan of Field Experiment

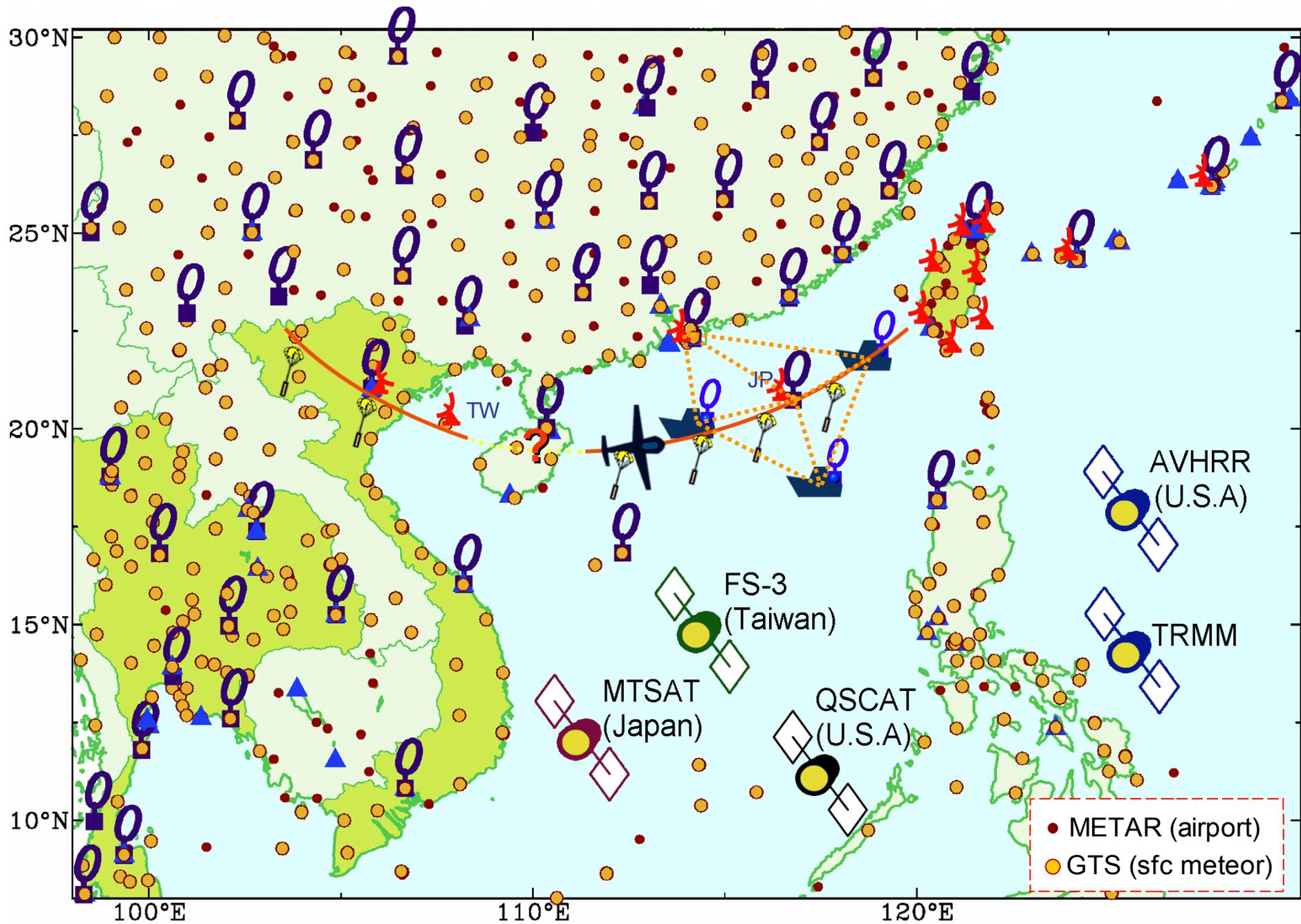
## 1. Summer Monsoon Rainstorm Experiment



### 2006 rainstorm cases

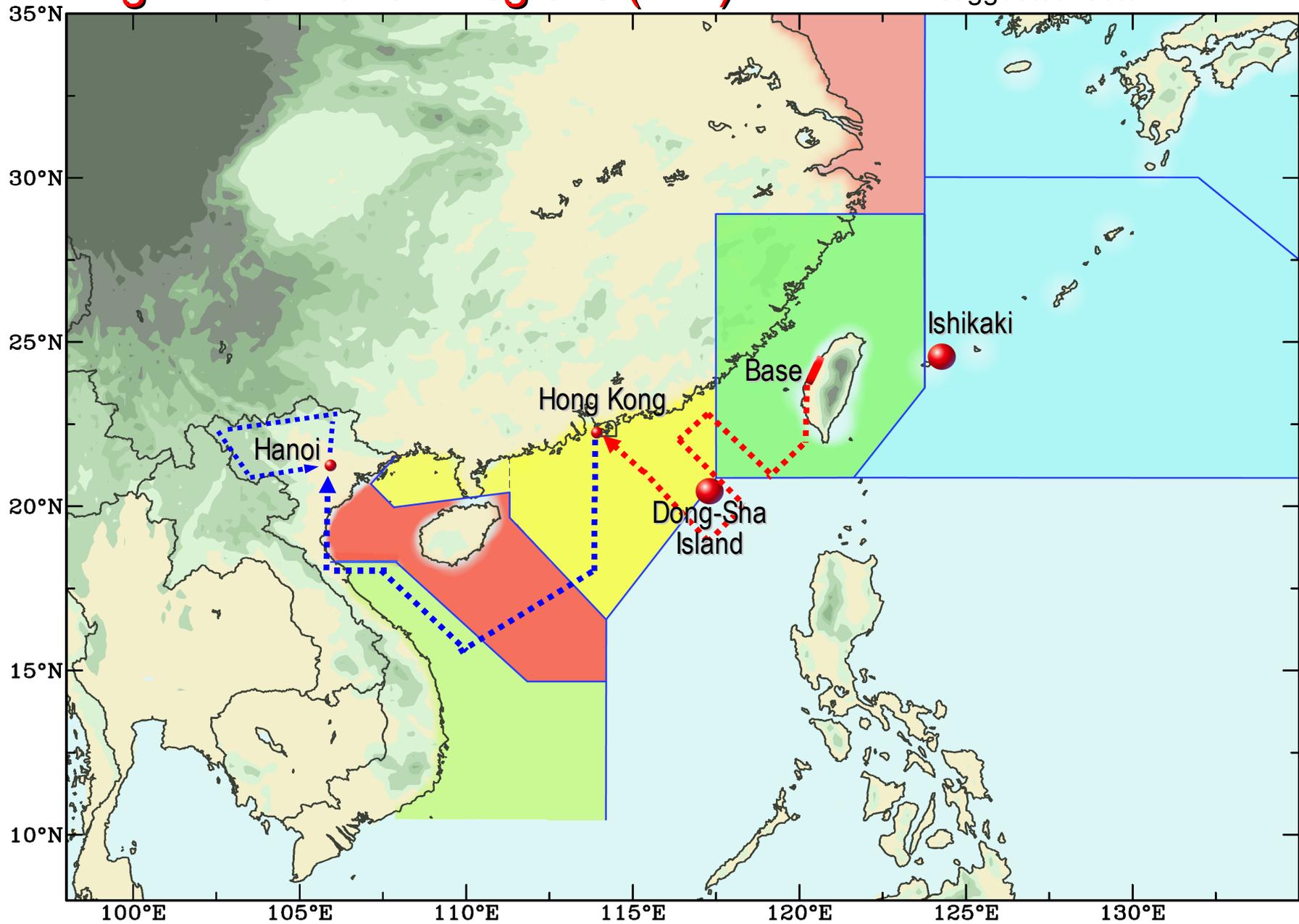






# Flight Information Regions (FIR)

- ..... suggested route-1
- ..... suggested route-2



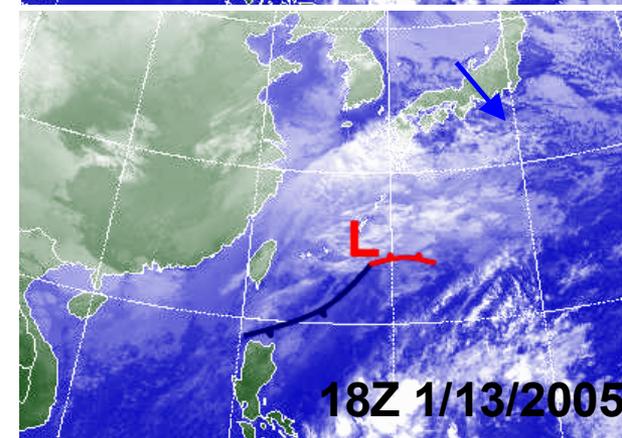
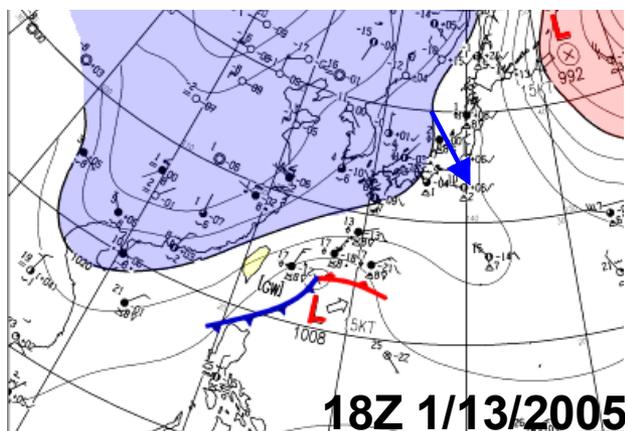
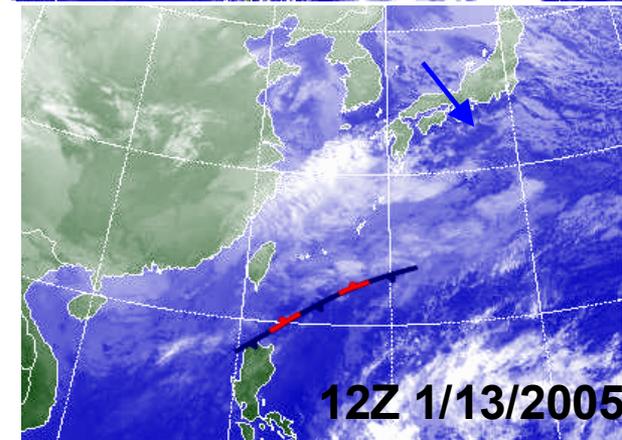
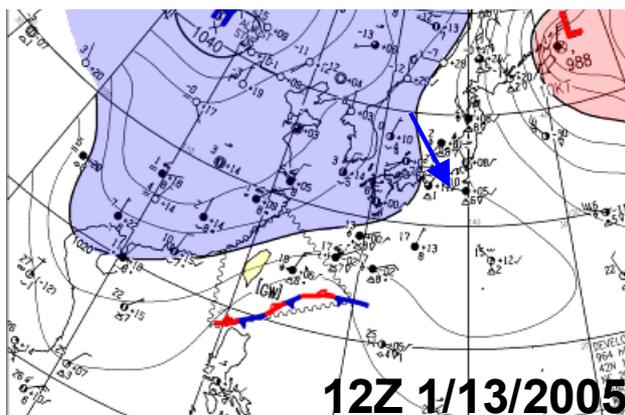
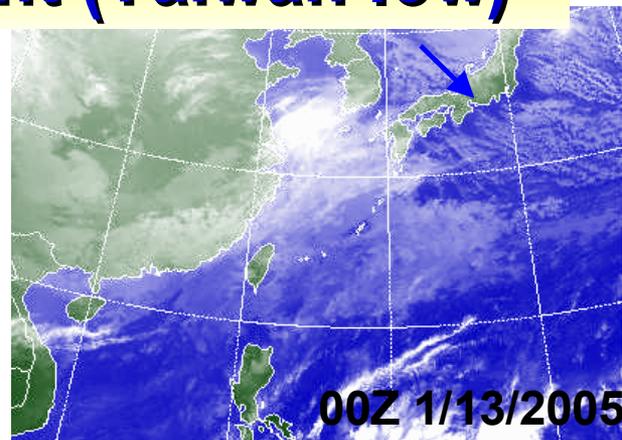
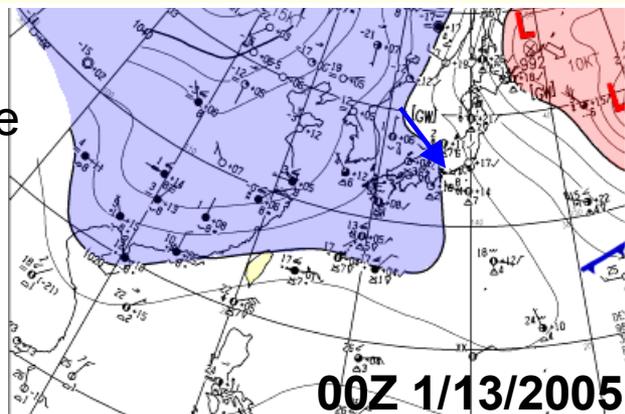


Perry-Castañeda Library  
Map Collection

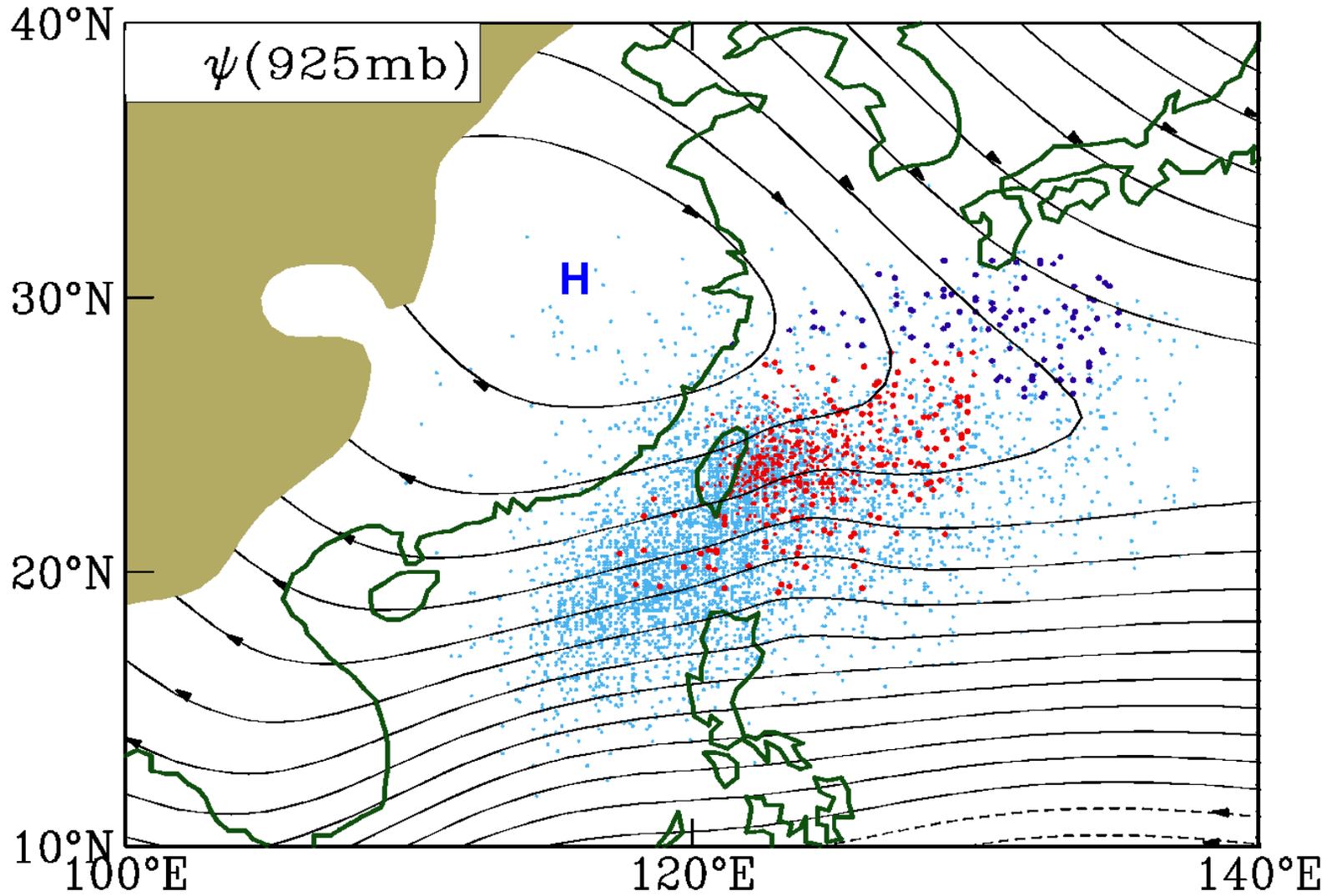


# 2. Winter rainfall Experiment (Taiwan low)

Example case  
1/13/05

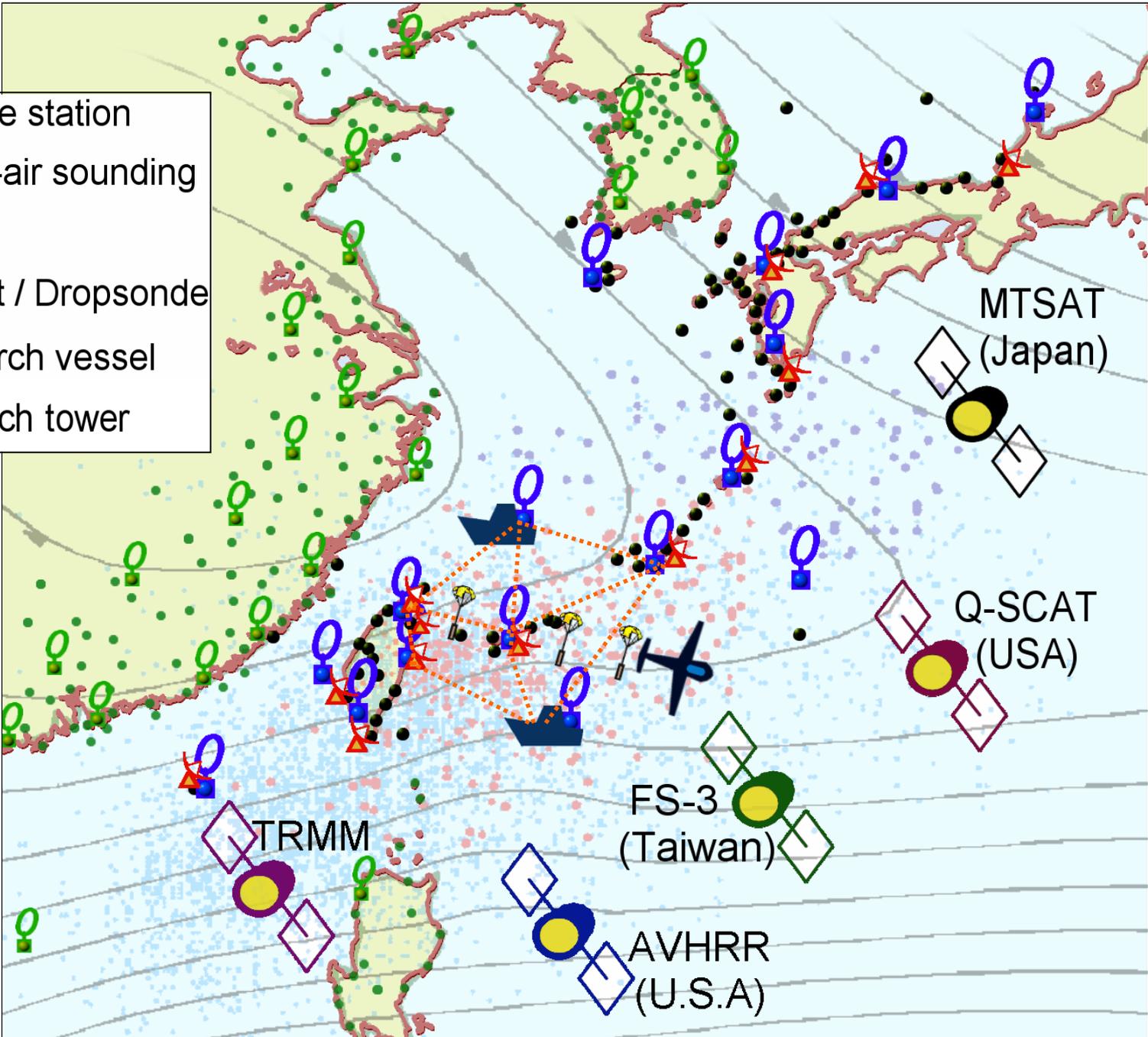


# Taiwan low geneeses

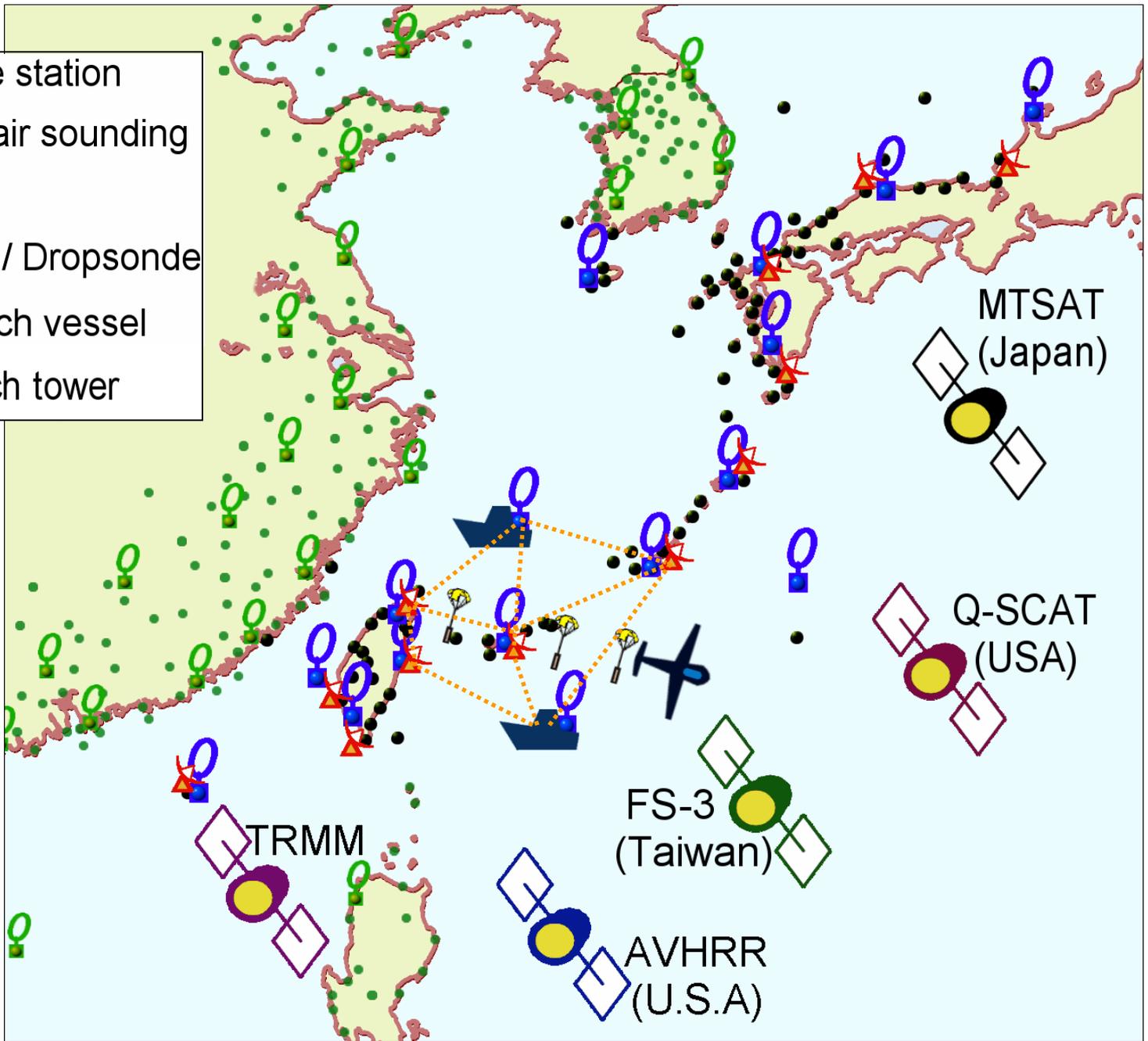


- perturbations
- taiwan low
- mid-latitude cyclone

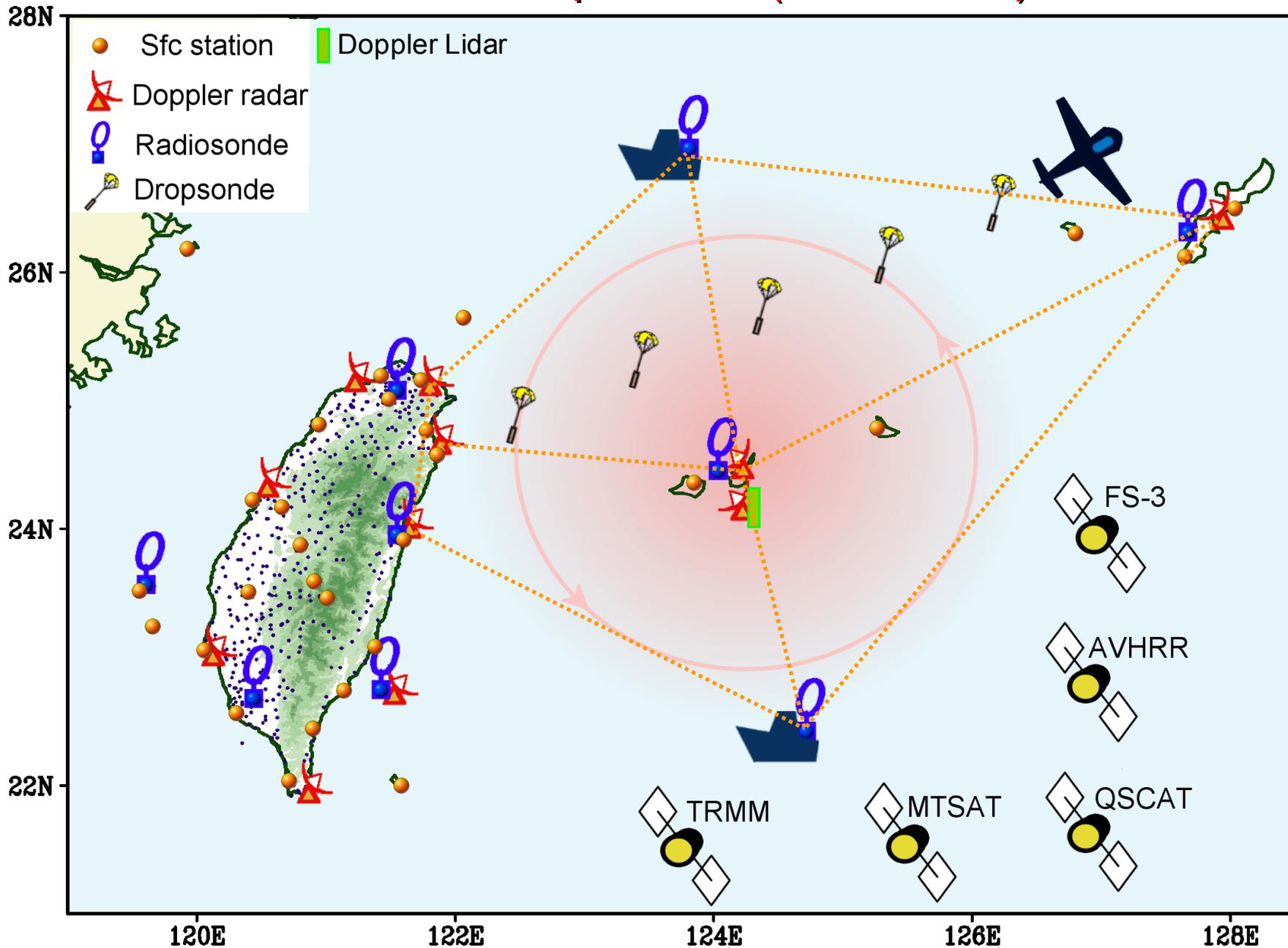
- Surface station
- Upper-air sounding
- ▲ Radar
- ✈ Aircraft / Dropsonde
- ⚓ Research vessel
- ⚓ Research tower



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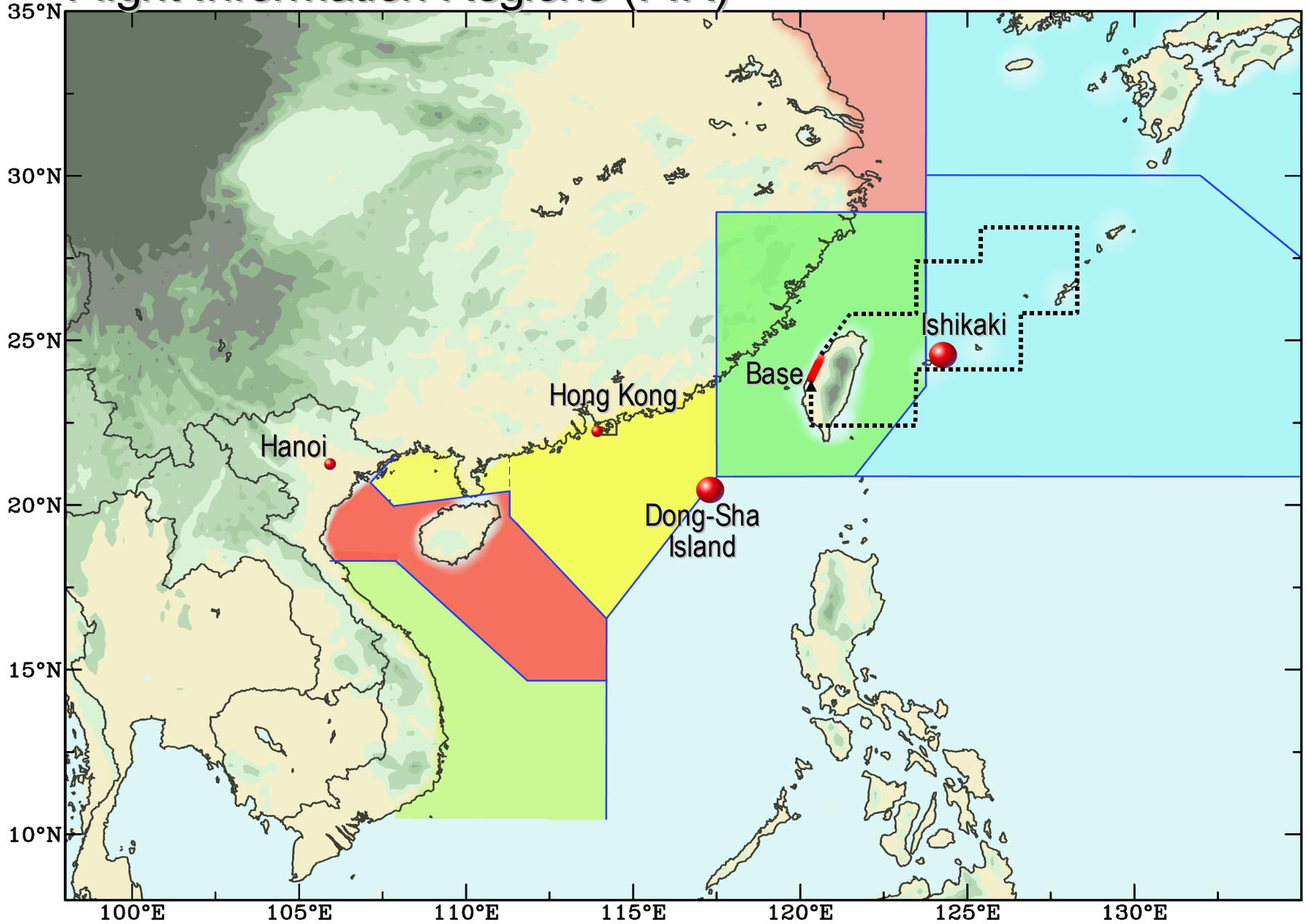


# Winter Rainfall Experiment (Taiwan low)



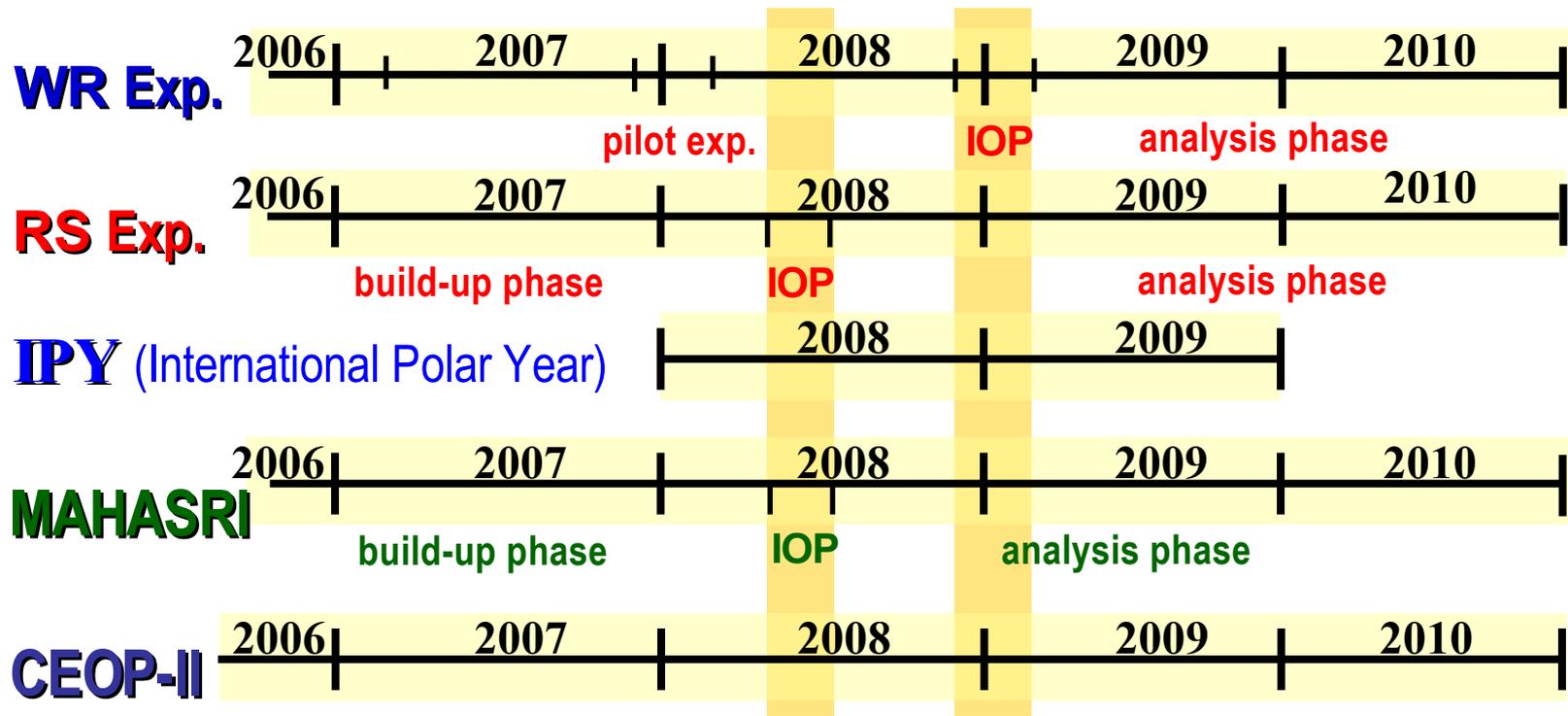
# Flight Information Regions (FIR)

..... suggested route

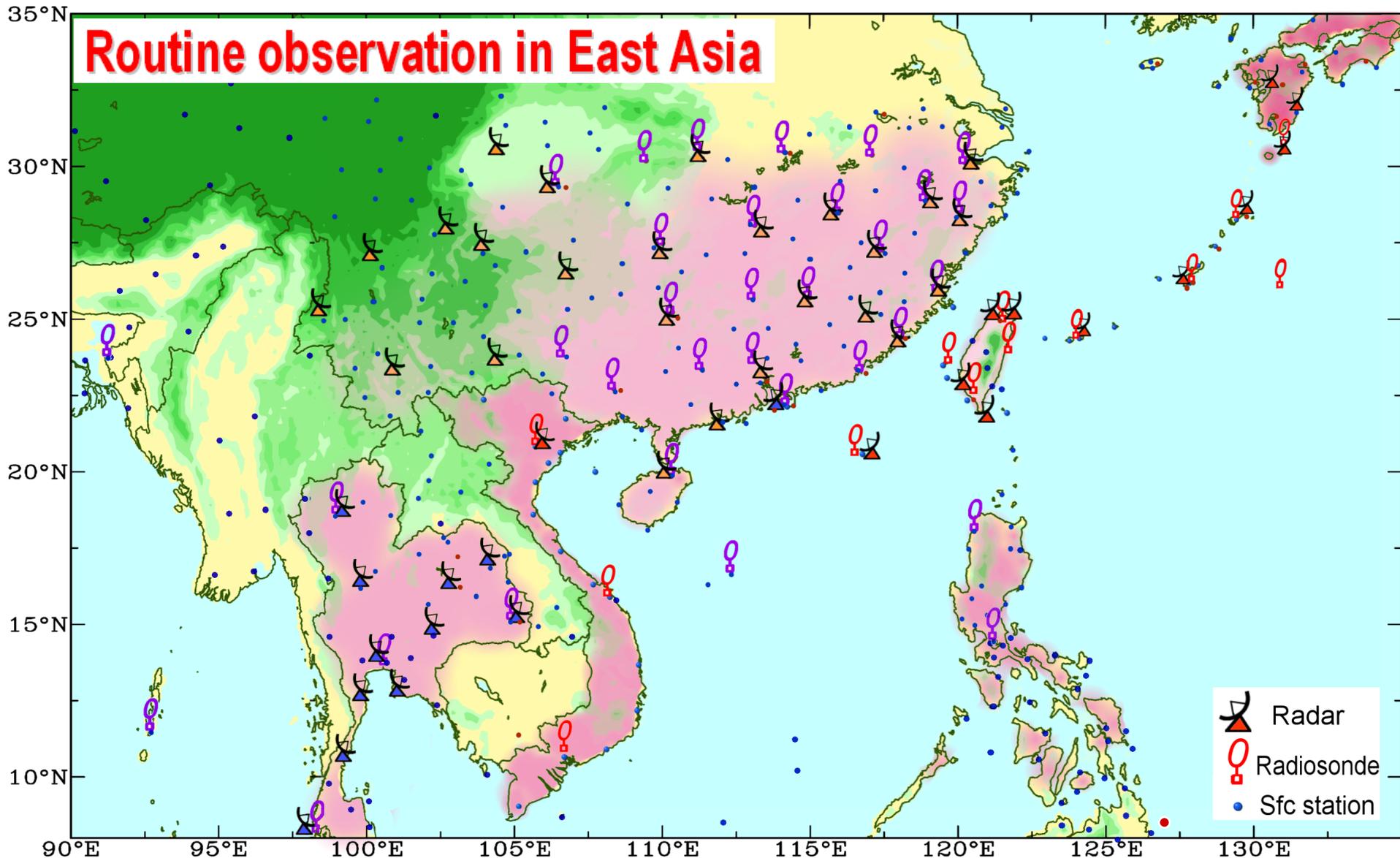


# II. Time Table

(with international projects)



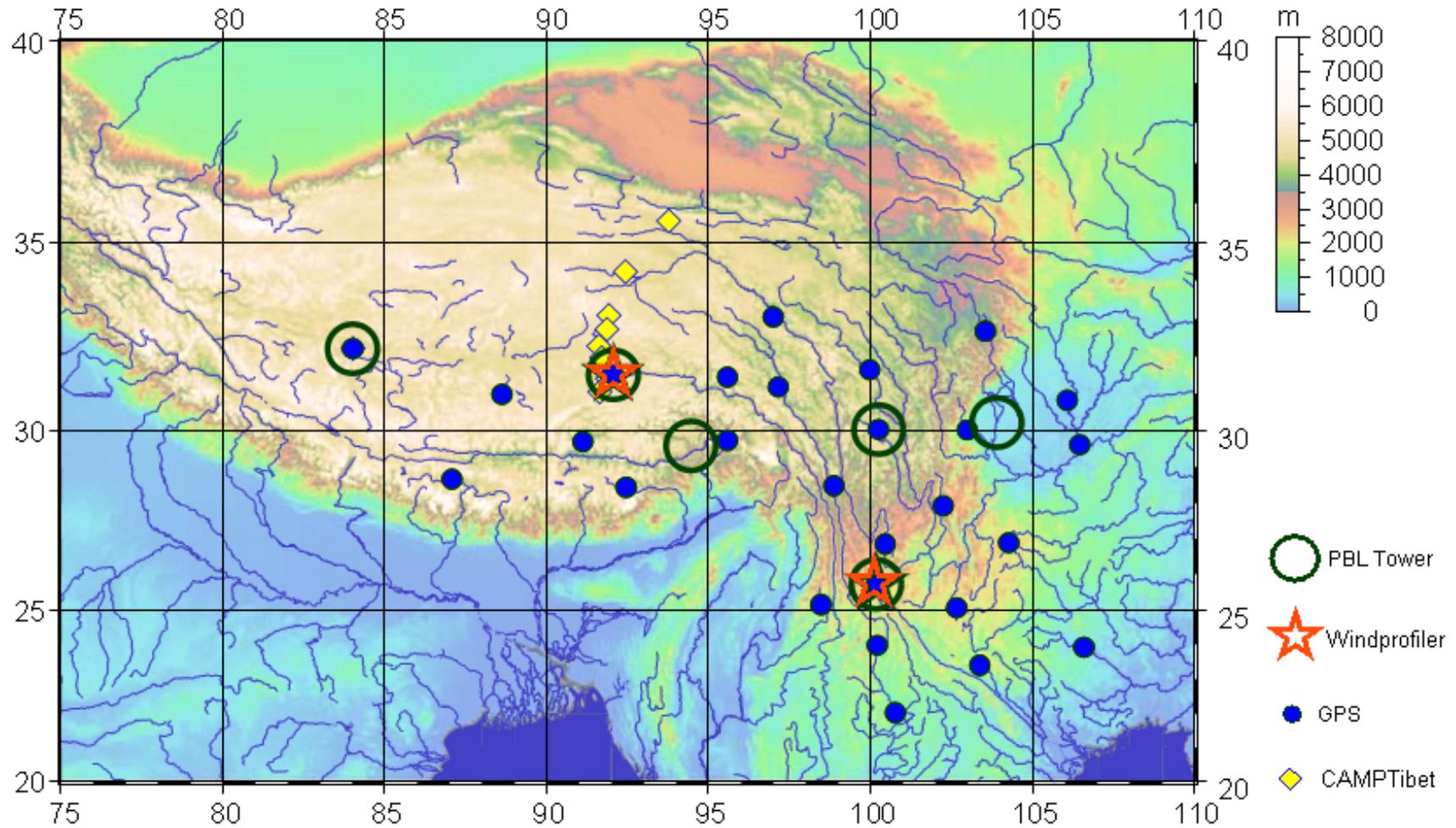
# III. Facilities



# Tibetan Plateau

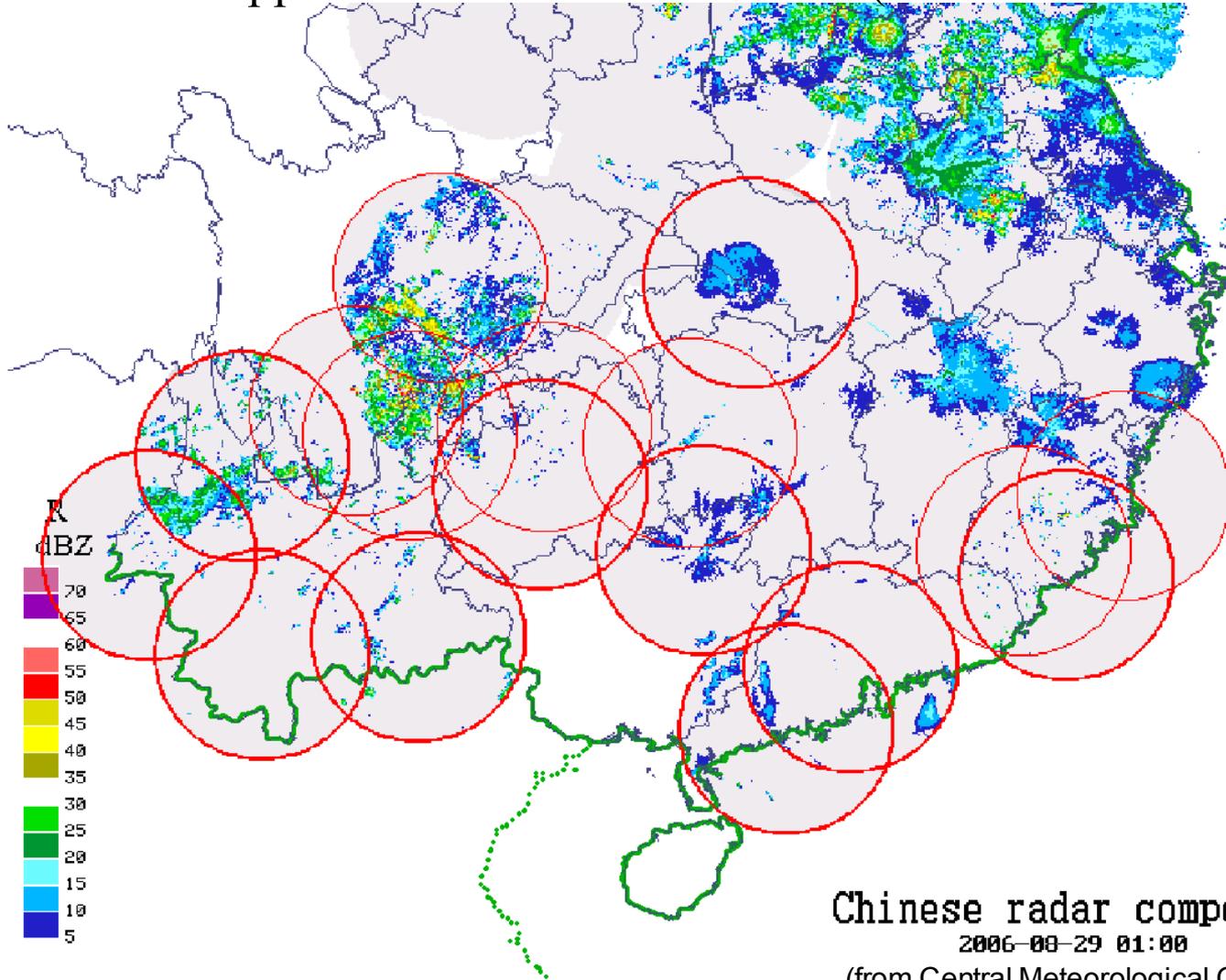
*provided by T. Koike*

## China-Japan Cooperative Project On Weather Disaster Reduction



# Radar Network in China

NexRad Doppler Radar Network in China (more than 90 sites)



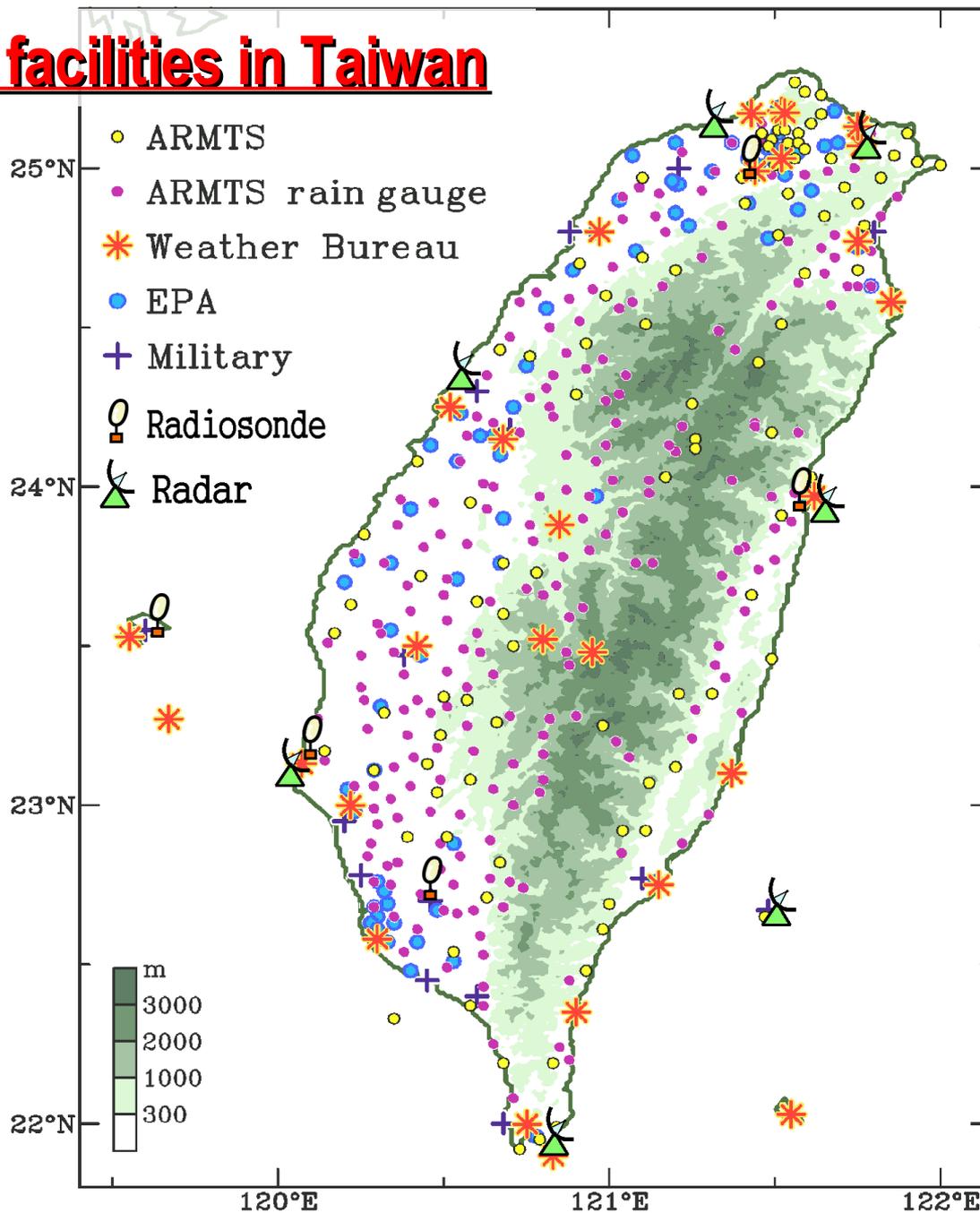
Chinese radar composite

2006-08-29 01:00

(from Central Meteorological Office)

[http://www.cma.gov.cn/cma\\_new/nmic/radar/](http://www.cma.gov.cn/cma_new/nmic/radar/)

# Observing facilities in Taiwan



# Available satellite observations:

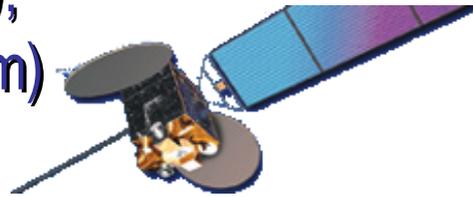
## 1. FORMOSAT-3

Multi-level T, q, Z  
( $\sim 2.5^\circ \times 2.5^\circ$ )



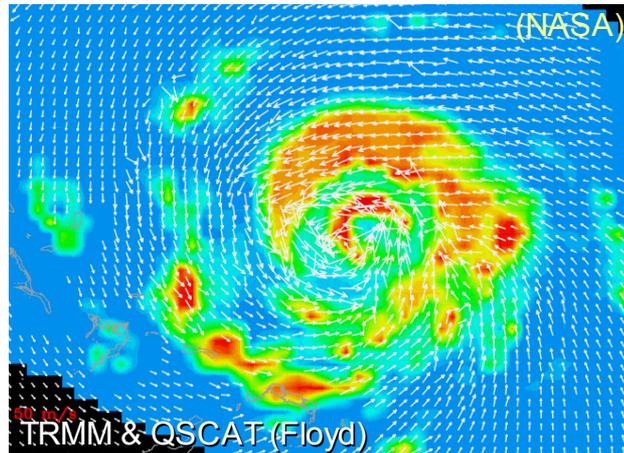
## 2. MTSAT / GOES9

VIS (1x1 km), IR(4x4 km),  
Water vapor channel (4km)

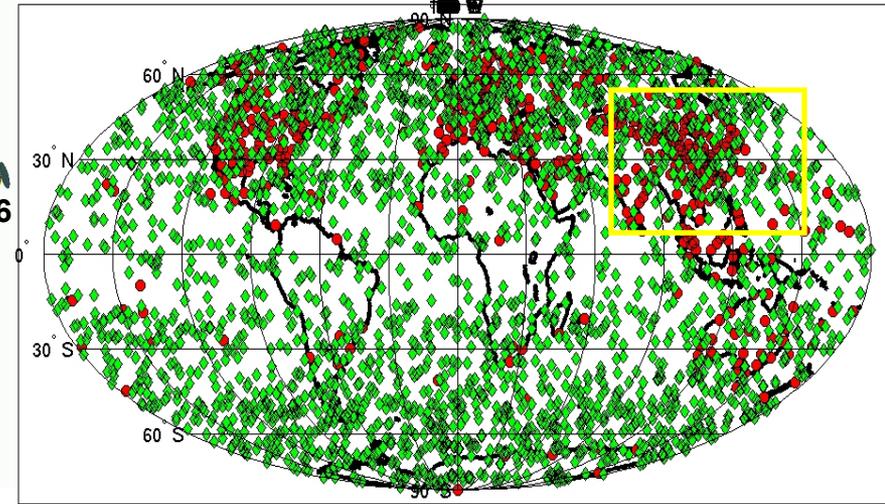


## 3. QuikSCAT

Sea surface winds  
( $0.25^\circ \times 0.25^\circ$ )



Occultation Locations for COSMIC, 6 S/C, 6 Planes, 24 Hrs



## 4. AVHRR (NOAA)

(1x1 km)

VIS, IR, WV



## 5. TRMM

P( $0.25^\circ \times 0.25^\circ$ )



# Applicable aero-platforms in Taiwan



Gulfstream-100



Ultralight A22



UAV

Platform	Range / Ceiling	Duration	Runway
Gulfstream-100	4800 km / 14 km	6 hours	2000m
Ultralight A22	200 km / 3 km	3 hours	400m
UAV Jack	40 km / 2 km	2 hours	100m

## Observing instruments

	Manufacturer	Measurement variables	Resolution-val
Dropsonde	Vaisala	P,T,RH,U,V	0.5 second
RSS901	Vaisala	P,T,RH	0.5 second
ASP	NTU/COOK	P,T,RH,SW	1 second
radisonde	Vaisala RS-80 Vaisala RS-92	P,T,RH,U,V	2 seconds
Digital Camera		Visible image	5 seconds

# Applicable research vessels in Taiwan

NAVY research vessel



Ocean research vessel 1



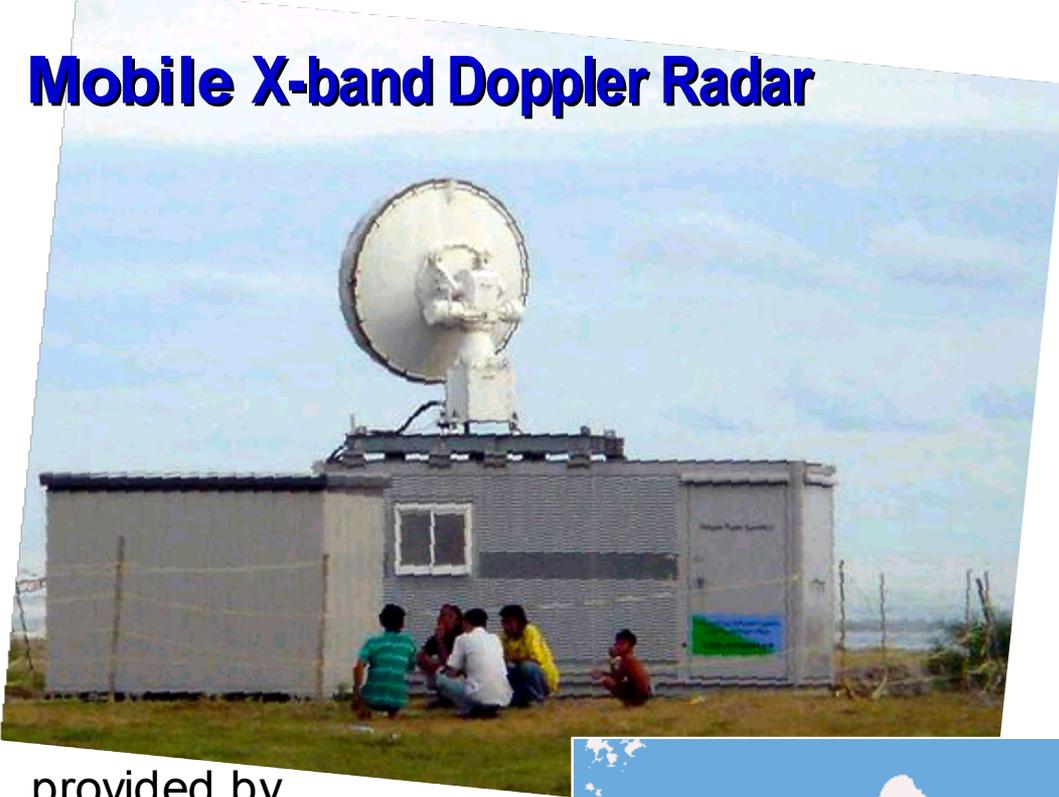
Ocean research vessel 2



Fishery research vessel

## Other research facilities (Japan)

### Mobile X-band Doppler Radar



provided by  
Prof. Y. Fujiyoshi

### 3D-scanning Coherent Doppler Lidar



## Real-time observation provider:

HKUST: GTS surface/upper-air soundings

- <http://envf.ust.hk/>

CWB: Satellite/Radar imagery, Surface analysis, Weather maps

- <http://www.cwb.gov.tw/>

JMA: Satellite imagery, Surface analysis, Weather maps

- <http://http://www.jma.go.jp/en/warn/index.html/>

## Observation data provided by Japan

JMA rawinsonde stations: Ishigaki-jima, Naha and Munamidaitou-jima

- <http://www.okinawa-jma.go.jp/syokai/kansoku/kousou/koso/station.htm>

JMA radar stations: Ishigaki-jima, Okinawa(Itokazu)

- <http://www.data.kishou.go.jp/inform/radar.html>

JMA wind profiler: Yonaguni-jima

- <http://www.data.kishou.go.jp/inform/windpro.html>

Aviation meteorology station (basically surface obs.)

- <http://www.jma.go.jp/jp/kuko/>

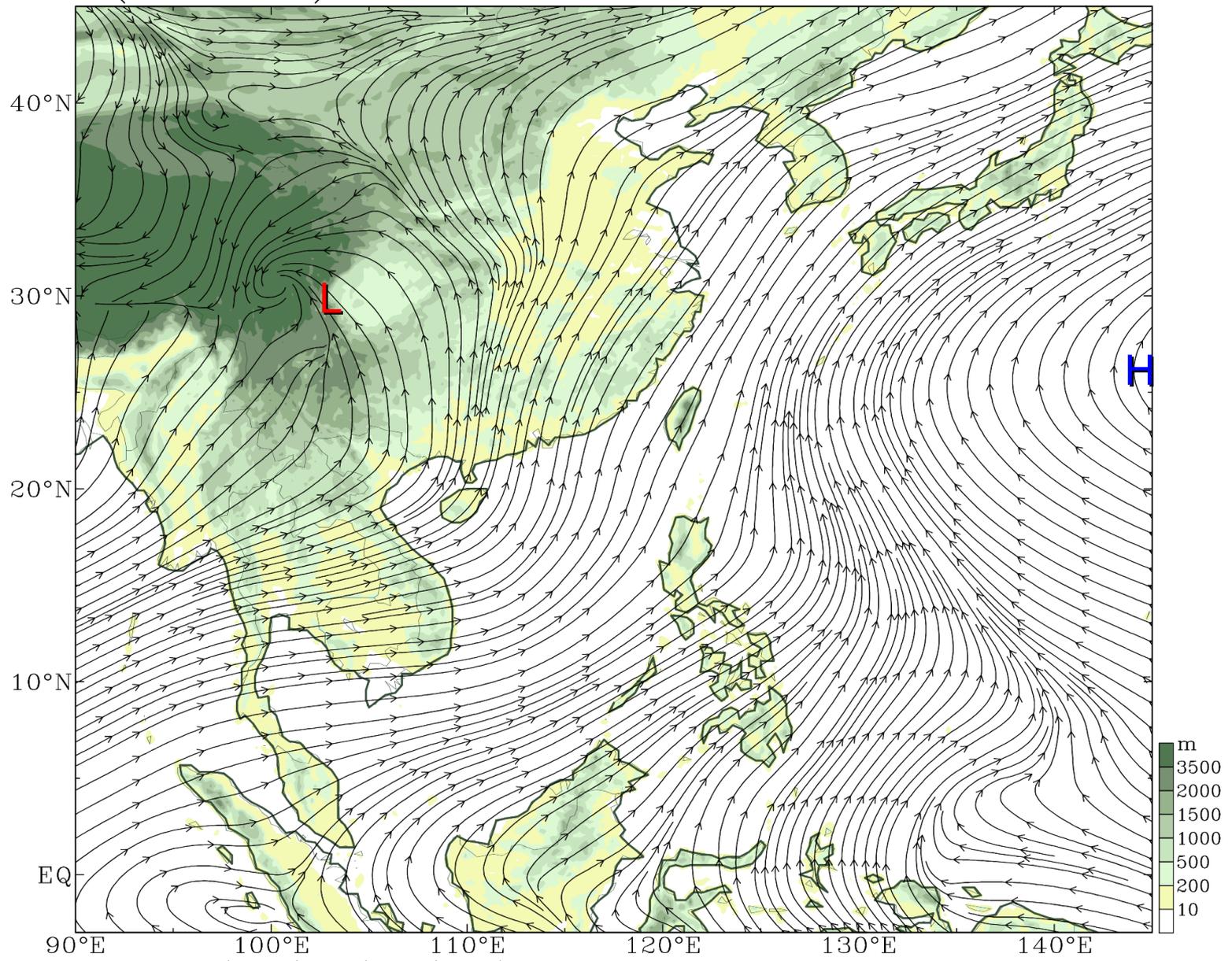
NICT

- <http://www2.nict.go.jp/y/y222/okinawa/index.html>

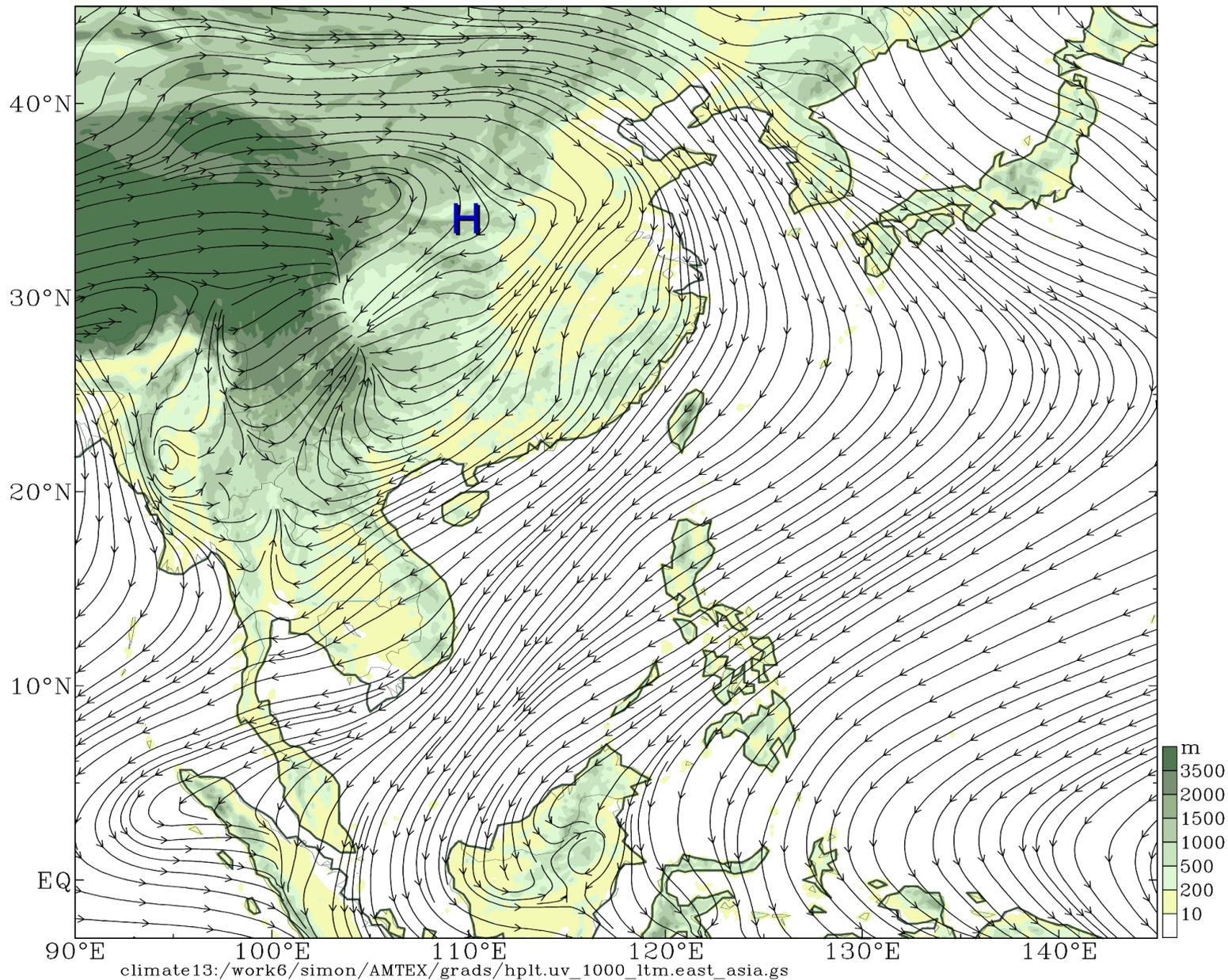
NICT Radar: Okinawa (Three sites), Ishigaki-jima, Yonaguni-jima

- <http://www2.nict.go.jp/y/y222/okinawa/DNS/index.html>

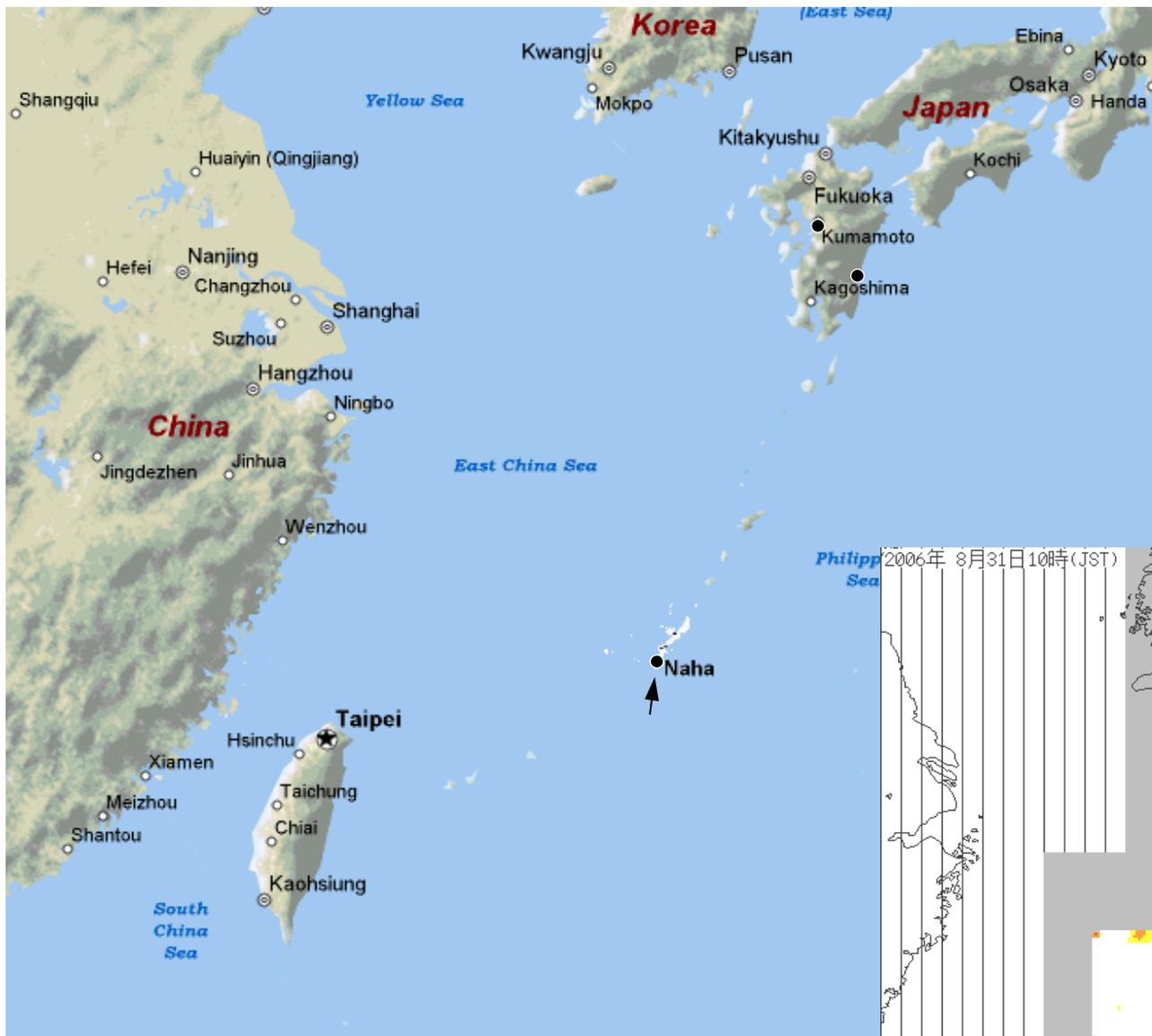
# V(850mb) (JJA)



$V_s$  (DJF)







2006年 8月31日 10時 (JST)

レーダーアメタス合成値

