กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

Utilization of radar composite for severe weather watches, warnings, and advisories

Boonlert Archevarahuprok
Expert on Research & Development
for Meteorology

49th Session of the ESCAP/WMO Typhoon Committee, Yokohama, JAPAN

Topics

- Radar composite map
- Severe weather in January 2017
- Utilization for severe weather Watches
- Warnings, and Advisories
- Summary

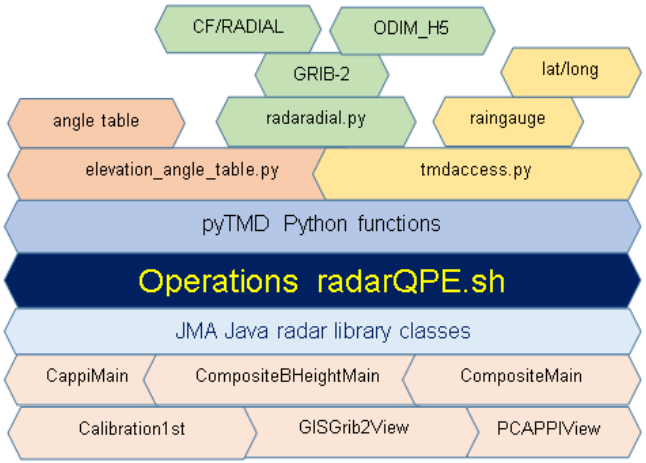
Presently, various advances of weather radar technology including dual polarization Doppler are implement in NHMSs operation.

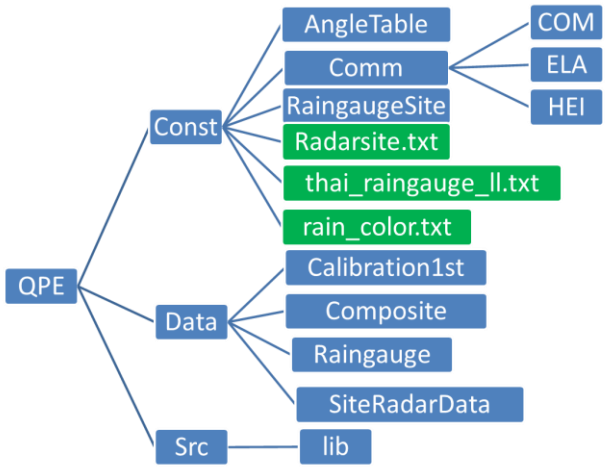
With the limitation of local observation range maximum hundred kilometers for S-band, C-band and X- band.

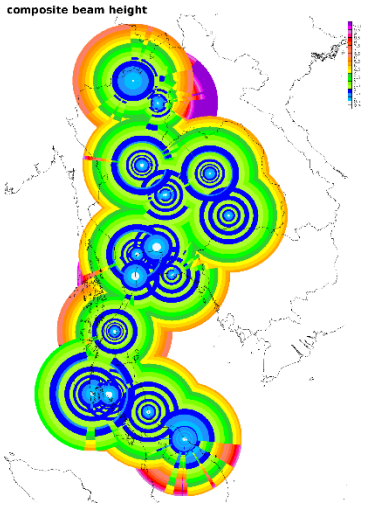
Some time, it is impossible to observe server phenomena that will occur and effect to resilient areas for alerting , early warning, and preparedness in advance.

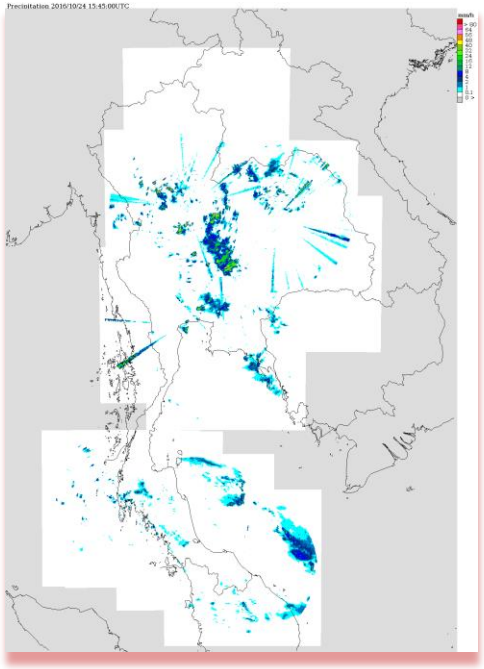
กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

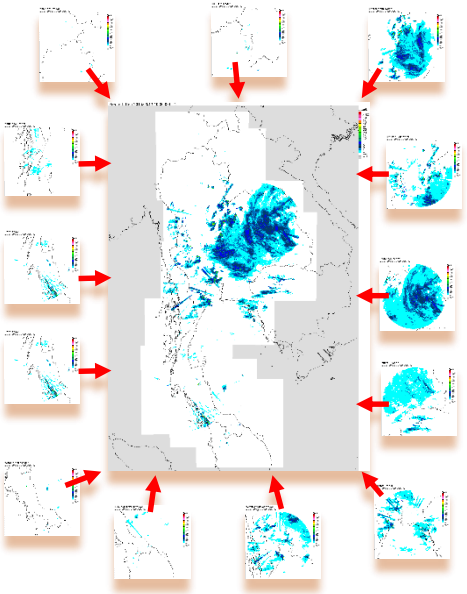
Radar composite and QPE

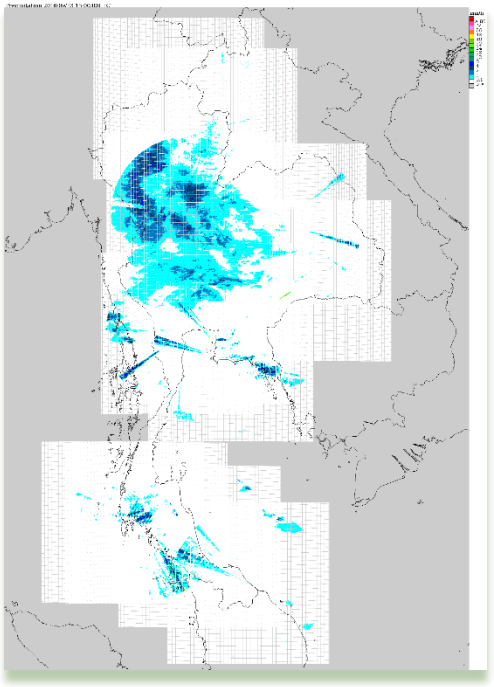








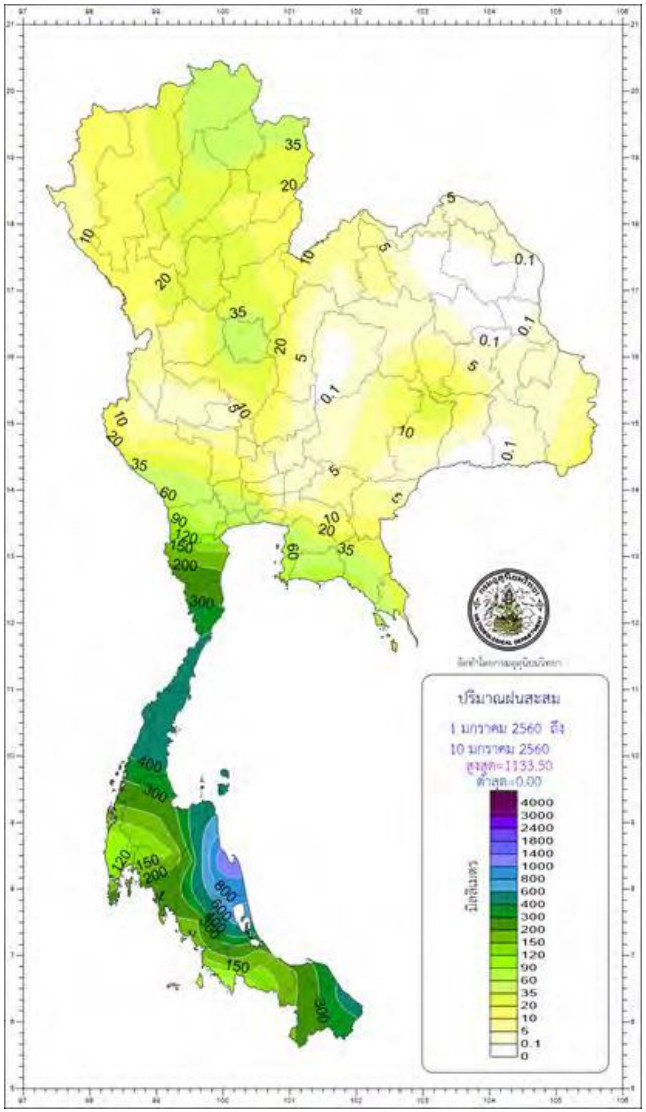


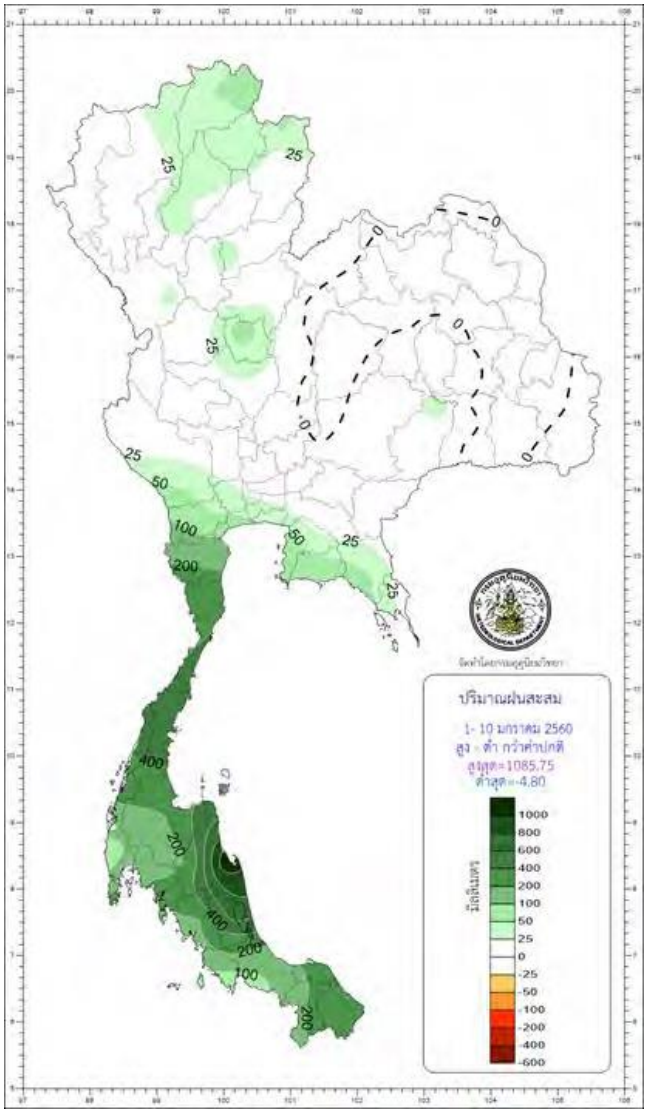


กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

Severe weather in Southern past of Thailand During 2-10 January 2017

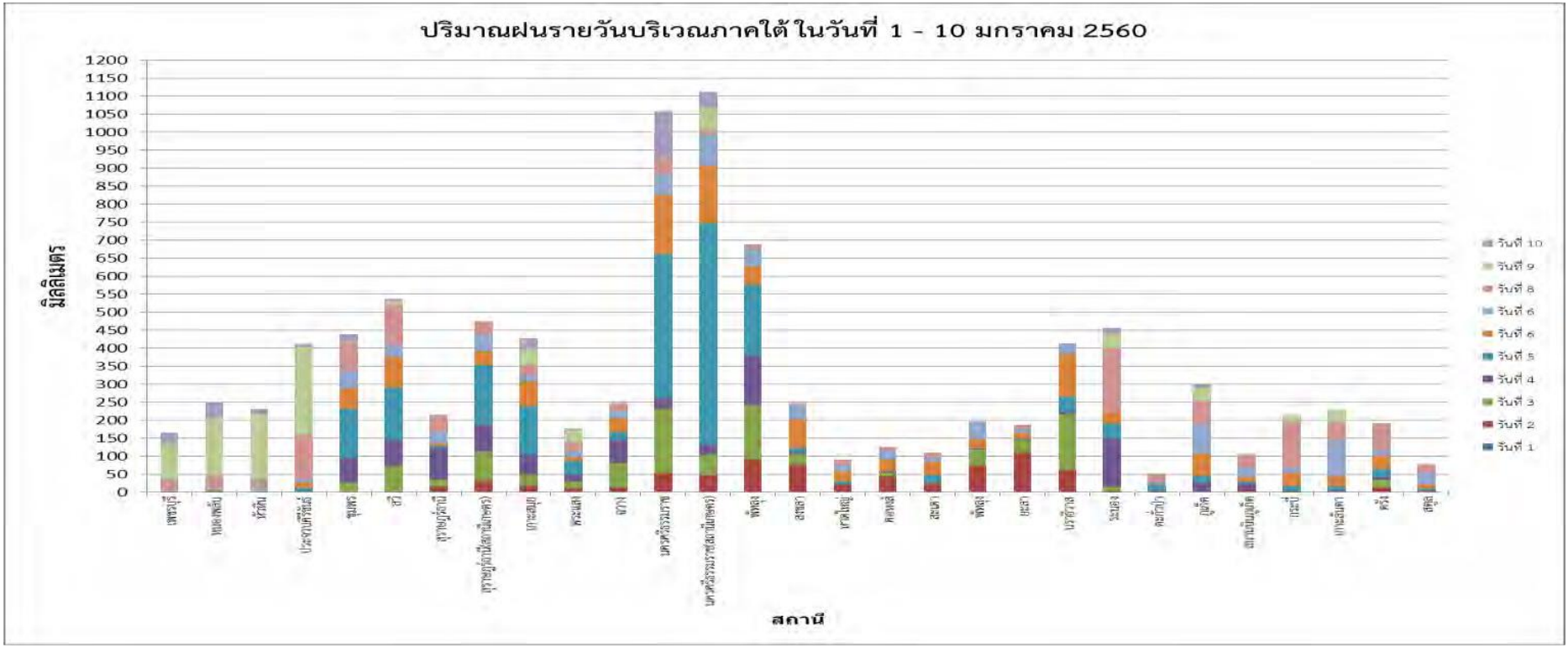
กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT





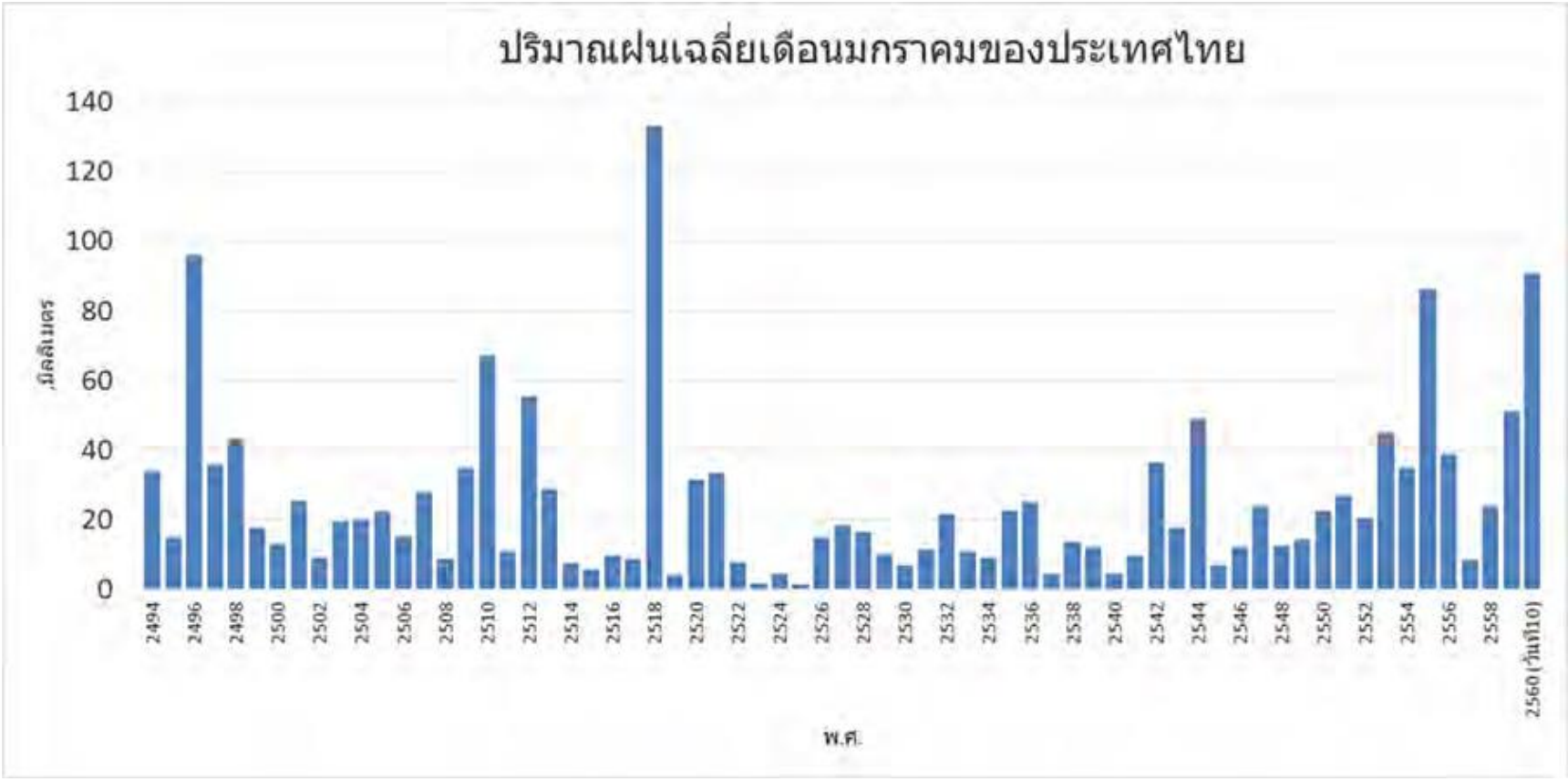
Pentad rainfall during period 1 to 10 January 2017 (left) and a normally (right)

กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT



Pentad rainfall during period 1 to 10 January 2017 of each observation stations in the Southern part of Thailand

กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT



Monthly average Rainfall on the period 1951 to 2017*

กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

New Record rainfall amount in January

Obs. Station	New Value		lasted Record	Period
Nakhon sri thammarat	615.6	5 Jan. 2017	206.4	1 Jan. 2012 5
Phatthalung	228.2	5 Jan. 2017	176.1	2 Jan. 2009 8
Ko lanta, Krabi	98.0	7 Jan. 2017	33.5	23 Jan. 1999 18
Phuket	83.2	7 Jan. 2017	77.9	27 Jan. 1953 64
Ranong	176.3	8 Jan. 2017	95.5	2 Jan. 2012 5
Phetchaburi	99.1	9 Jan. 2017	74.7	28 Jan. 1989 28
Huahin	181.5	9 Jan. 2017	110.3	16 Jan. 1970 47
Prachuap khiri khan	244.7	9 Jan. 2017	231.5	16 Jan. 1970 47
Nongplub, Prachuap khiri khan	160.3	9 Jan. 2017	80.0	12 Jan. 2004 13

กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

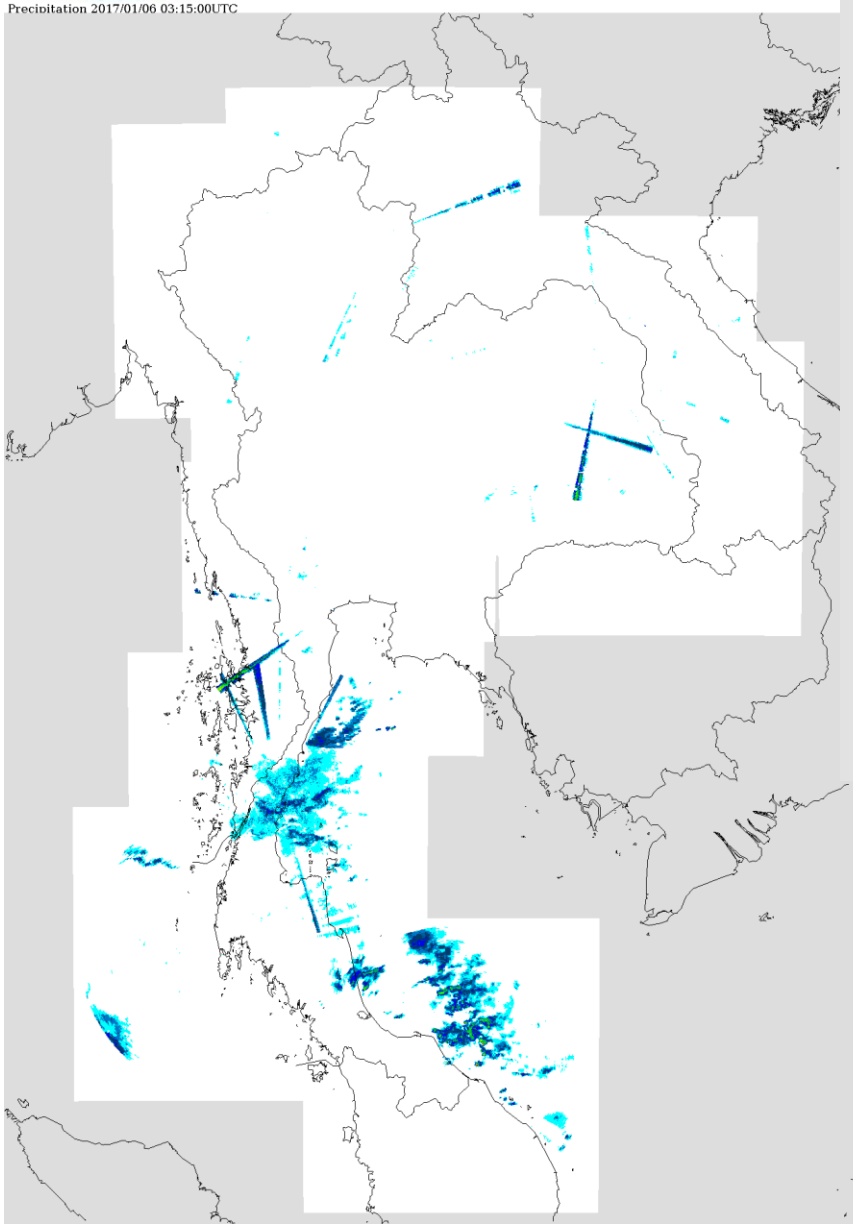
Weather Chart on 5 Jan. 2017

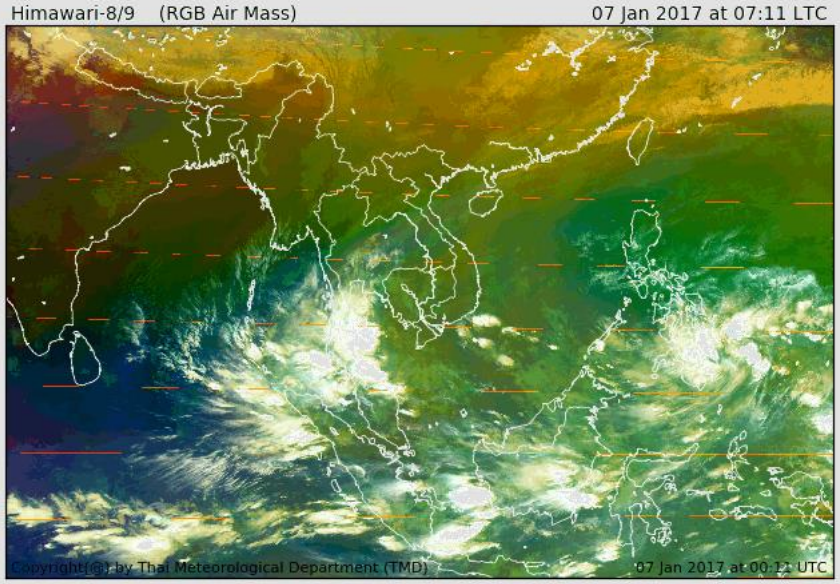
กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

http://www.manager.c

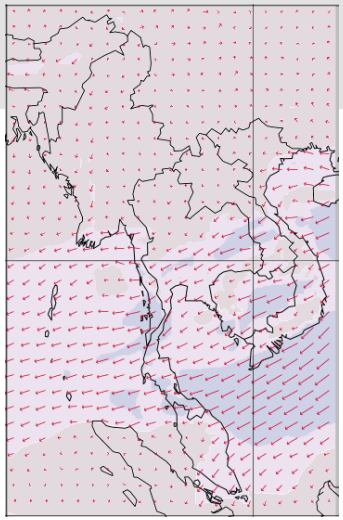
Utilization of radar composite for severe weather watches

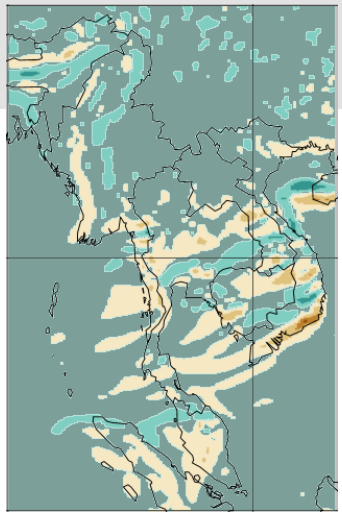
กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT





925 hPa Wind

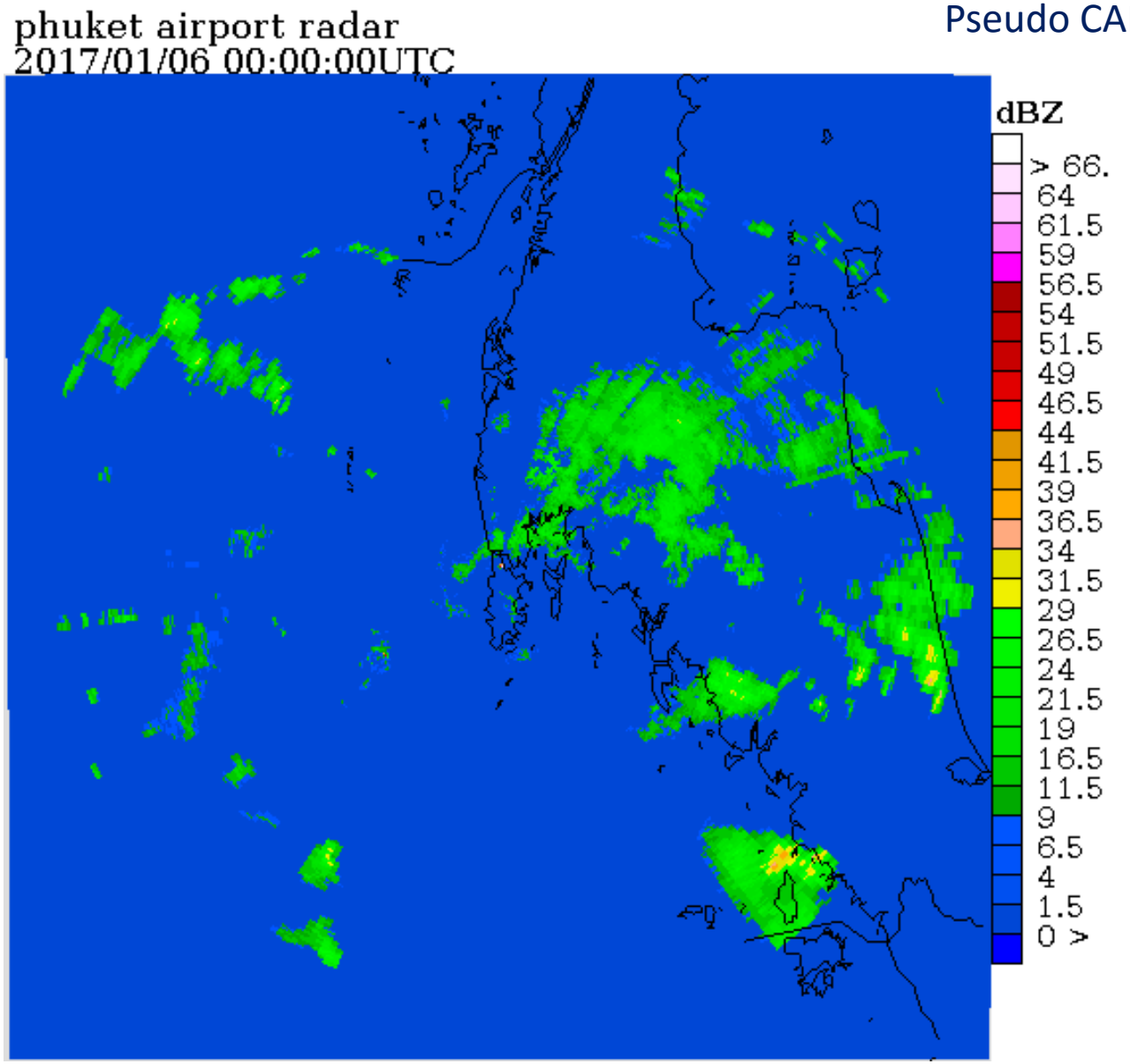




925 hPa Absolute Vorticity

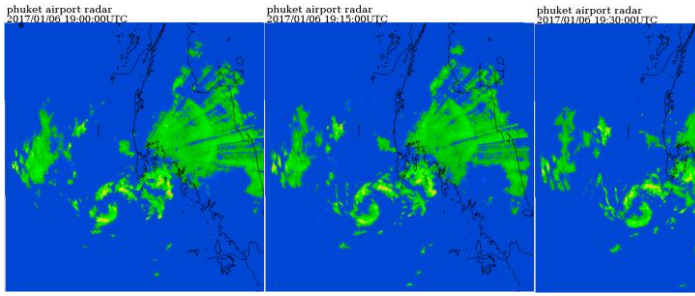
กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

Pseudo CAPPI at 2Km.

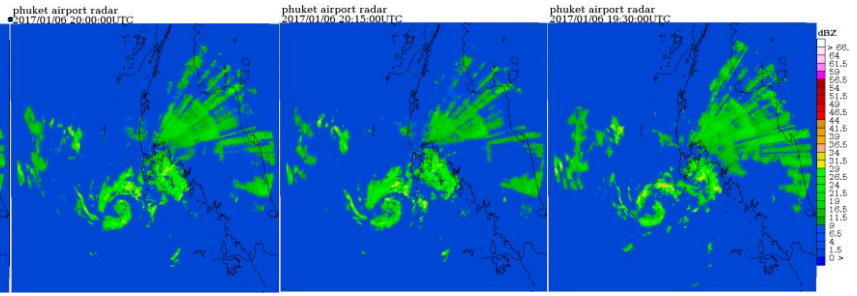


กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

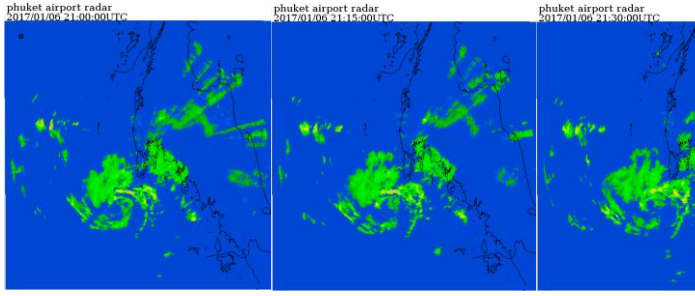
19:00



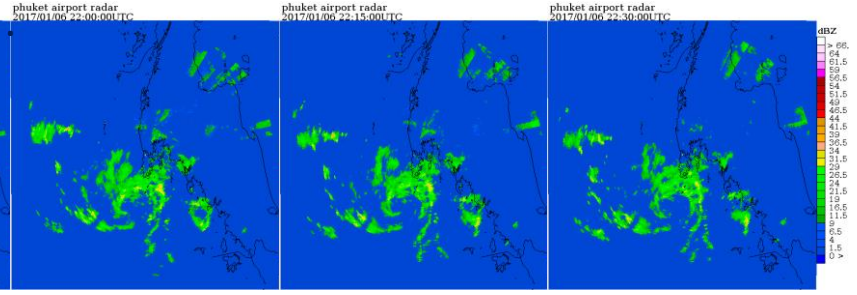
20:00



21:00



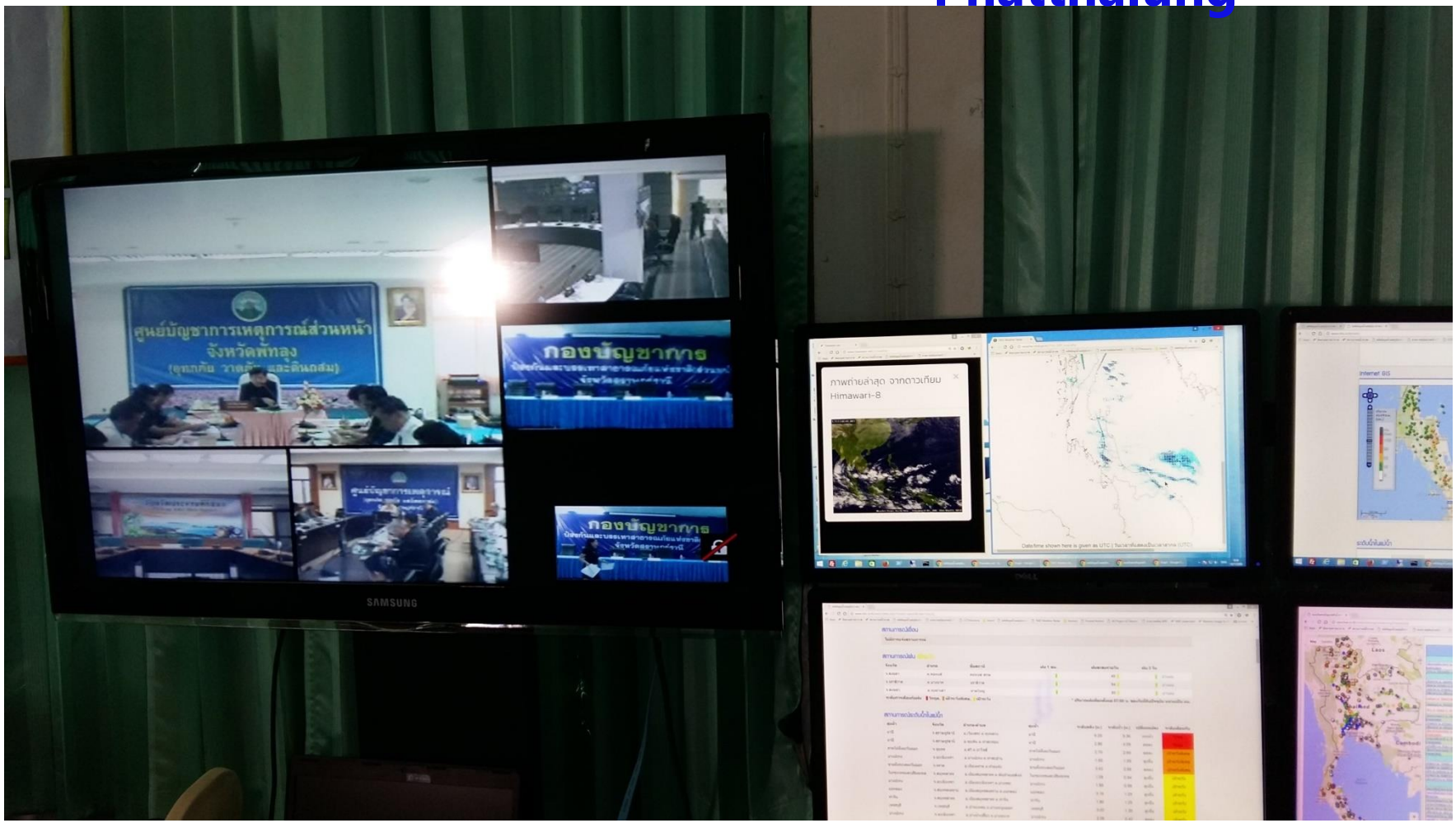
22:00



Warnings, and advisories

กรมอุตุนิยมวิทยา
THAI METEOROLOGICAL DEPARTMENT

Provincial government meeting at Phatthalung



Summary

The weather radar composite or mosaic is one of the application that gives more information in both of temporal and spatial resolution

The server weather occurred in the Southern past of Thailand is shown the development of active low and clarify especially position and movement.

These results will be more useful for advisories to the decision maker on disaster warning and preparedness in each situation

Acknowledgement

JMA, Technical Meeting on radar composite and QPE, Himawari-8/9 satellite images data

National Center for Atmospheric Research's Research Data Archive, NCEP GFS 0.25 Degree Global Forecast Grids Historical Archive (ds084.1)

WMO’s publications/Documents

Scientific open source applications/packages/operating system/etc.