



India Meteorological Department

FDP STORM Bulletin No. 43 (18-04-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

- ◆ The Western Disturbance as an upper air cyclonic circulation over Pakistan & adjoining Jammu & Kashmir now lies as a feeble cyclonic circulation at 3.1 km above mean sea level over north Pakistan & adjoining Jammu & Kashmir.
- ◆ A fresh Western Disturbance as an upper air cyclonic circulation extending upto 3.1 km. above mean sea level lies over Iran and neighbourhood with a trough aloft in mid & upper tropospheric westerlies with its axis at 5.8 km above mean sea level running roughly along longitude 55°E and north of latitude 28°N.
- ◆ The trough from northeast Uttar Pradesh to Manipur has become less marked. However, cyclonic circulation over Sub Himalayan West Bengal & neighbourhood extending upto 0.9 km above mean sea level persists
- ◆ A cyclonic circulation lies over Jharkhand & adjoining Bihar and extends up to at 0.9 km above mean sea level.
- ◆ A trough in mid tropospheric westerlies runs roughly along Long.90°E to the north of Lat. 22°N.
- ◆ The trough of low at mean sea level over Equatorial Indian Ocean & adjoining southwest Arabian Sea with the cyclonic circulation aloft extending upto 1.5 km above mean sea level has moved away westwards
- ◆ The other trough of low at mean sea level over Equatorial Indian Ocean & adjoining Southwest Bay of Bengal off south Sri Lanka coast now lies over Comorin Maldives area. The embedded cyclonic circulation now extends upto 1.5 km above mean sea level.
- ◆ The north south wind discontinuity from North Madhya Maharashtra to Rayalaseema now runs from Rayalaseema to south Tamilnadu at 0.9 km above mean sea level.
- ◆ A cyclonic circulation lies over south Konkan & Goa and neighbourhood and extends up to at 0.9 km above mean sea level.
- ◆ A north south trough runs from north Uttar Pradesh to north Telangana across East Madhya Pradesh and east Vidarbha at 0.9 km above mean sea level.

SATELLITE OBSERVATIONS during past 24 hrs and current observation:

Current Observation (based on 0300UTC imagery of INSAT 3D):

Western disturbance (WD):

Scattered multi-layered clouds seen over East Afghanistan, North Pakistan, Northwest Jammu & Kashmir, North Tibet, Central China and over the area between lat 37.0°N to 50.0°N, long 70.5°E to 100.0°E in association with another WD over the area.

Westerly Trough & Jet Stream:

Trough in westerlies runs roughly along long 65.0E & north of lat 28.0N.

Convective Activity:

Developed convective cells over extreme South Kerala, extreme South Tamilnadu, and Comorin (**Minimum CTT Minus 93 Deg C**) is moving in northeast direction.

Precipitation Nowcast Based on WMO Scope Product:

Based on 0300 UTC satellite data indicate that precipitation is likely to take place during next three (03 hrs) over extreme South Kerala, extreme Tamilnadu and over Lakshadweep.

Clouds descriptions within India:

Broken low/medium clouds with embedded intense to very intense to very intense convection seen over extreme South Kerala, extreme South Tamilnadu and Comorin (**Minimum CTT Minus 93 Deg C**). Scattered low/medium clouds with embedded moderate to intense convection seen over Northwest Jammu & Kashmir. Scattered low/medium clouds with embedded weak to moderate convection seen over Gangetic West Bengal, Sub-Himalayan west Bengal, Sikkim, Northeastern States, South Konkan and South Madhya Maharashtra. Scattered low/medium clouds with embedded isolated weak to moderate convection seen over North Interior Karnataka, and West Telangana. Scattered low/medium clouds seen over rest Jammu & Kashmir, North Himachal Pradesh, North Uttarakhand, rest Maharashtra and rest parts of East & South India.

Arabian Sea:-

Broken low/medium clouds with embedded intense to very intense convection seen over Comorin adjoining Gulf of Mannar (**Minimum CTT Minus 93 Deg C**), over Southeast Arabian Sea and Lakshadweep (**Minimum CTT Minus 93 Deg C**). Scattered low/medium clouds with embedded moderate to intense convection seen over South Arabian Sea and weak to moderate convection over Central Arabian Sea.

Bay of Bengal & Andaman Sea:

Broken low/medium clouds with embedded isolated weak to moderate convection seen over South Bay South of lat 9.5deg N and South Andaman Sea.

Past Weather:**Convection (during last 24 hrs):**

Moderate to Intense convection was observed over Gangetic West Bengal SHWB Sikkim Maharashtra Konkan & Goa adjoining Karnataka North Interior Karnataka extreme south Kerala adjoining south Tamilnadu and Weak to Moderate convection observed over J&K Himachal Pradesh Uttarakhand east Madhya Pradesh north Chhattisgarh north-east Bihar Jharkhand Odisha north Andhra Pradesh north-east states.

OLR:

Up-to 230wm^{-2} observed over Jammu & Kashmir North Himachal Pradesh North Uttarakhand Sikkim Arunachal Pradesh Meghalaya Assam Nagaland Manipur south Mizoram Gangetic West Bengal south Maharashtra adjoining Karnataka Konkan & Goa costal & south Karnataka Kerala and south Tamilnadu.

Dynamic Features:

Up to 30- 60 knots **wind shear** is observed over North & Central India and 5-15 knots over south peninsula India.

A **positive Vorticity** field at 850 hPa is observed over J&K Himachal Pradesh Uttarakhand Uttar Pradesh north-west Madhya Pradesh Meghalaya south-east Assam Gangetic West Bengal south Chhattisgarh & north Tamilnadu.

Precipitation:**IMR:**

Rainfall upto 90-150 mm observed over most parts of Madhya Maharashtra Konkan & east-central Gangetic West Bengal.
 Rainfall upto 50-70 mm observed over some parts of Madhya Maharashtra east-central Gangetic West Bengal extreme south Tamilnadu.
 Rainfall upto 10-30 mm observed over some parts of North-West Jammu & Kashmir Madhya Maharashtra north Andhra Pradesh northwest Karnataka Kerala & Tamilnadu.

Rainfall upto 01-10 mm observed over most parts of J&K Sikkim SHWB north-east states and some parts of north Himachal Pradesh north Uttarakhand north east Bihar Odisha south Chhattisgarh north Andhra Pradesh south Marathawada Goa extreme north Interior Karnataka south Karnataka North Coastal Andhra Pradesh Kerala & south Tamilnadu

RADAR and RAPID RGB Observation:

Isolated/multiple moderate echoes (dBZ >55 and height >10km) are seen in domain of DWR Kolkata, Machilipatnam, Vishakhapatnam and isolated/multiple light echoes in domain of Agartala, Gopalpur at around 1430IST.

RAPID RGB Satellite imagery at 1330IST indicates significant convection over Jammu & Kashmir, Himachal Pradesh and South Jharkhand.

Environmental Condition (dust etc) and its Forecast based on 00UTC of date:

Higher Dust concentration was observed over northern Africa, Arab countries and western part of India. Dust concentration is expected to increase over north-western part of India for next few days.

Particulate matter concentration is expected to remain in moderate category for next 2 days in Delhi.

Delhi – SAFAR analysis & Forecast	18.04.2018	19.04.2018
PM10 (micro-g/m ³)	181	164
PM2.5 (micro-g/m ³)	85	78

2. NWP MODEL GUIDANCE:**NCMRWF (NCUM forecast based on 00UTC the day):****1. Weather Systems:**

Low level CYCIRS, Troughs: 00 UTC of Day 2-5: A

00 UTC of Day 2-5: A deep trough and associated strong winds over Bangladesh and adjoining NE region

00UTC of Day 2-3: 850 hPa trough from U.P to S. Peninsular India across MP and Maharashtra

Confluence & wind Discontinuity regions: 12 UTC of Day 0-2: 925hPa N-S discontinuity over Southern Peninsular India and in Day 0-4 SW-NE discontinuity over MP Chhattisgarh & Odisha

Synoptic Systems:

12 UTC of Day 0-1: WD as a trough over north Pakistan and adjoining J &K.

12 UTC of Day 2: A fresh WD as a deep trough and associated CYCIR at 500 hPa over Pakistan and adjoining J &K.

00UTC of Day 1-5: 925 hPa anticyclone over Bay of Bengal. In Day 1-4 associated southeasterly winds are stronger along the east coast and over Bangladesh

2. Location of jet and jet core (>60kt) at 500hPa): 12UTC of Day 2 Over Gujarat & Rajasthan associated with approaching WD

3. Convergence at 850 hPa:

Day/Index: Subdivisions with Lower Level Convergence > 15×10^{-5} /s

Day0: NE NMMT, Odisha, SI Karnataka, Kerala,

Day1: NE NMMT, West UP, Jammu Kashmir, Odisha, East MP, Madhya Maharashtra, NI Karnataka,

Day2: Assam Meghalaya, NE NMMT, Gangetic WB, Jharkhand, West UP, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, Madhya Maharashtra, Chhattisgarh, Telangana,

Day3: Arunachal Pradesh, Assam Meghalaya, Madhya Maharashtra, Telangana, NI Karnataka, SI Karnataka,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Jharkhand, Odisha, East MP, Madhya Maharashtra, Marathwada, Tamilnadu, Puducherry, NI Karnataka, SI Karnataka, Kerala,

4. Low level Vorticity:-Positive Vorticity:

Day/Index: Subdivisions with Lower Level Vortex > 15×10^{-5} /s

Day0: Assam Meghalaya, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day1: Assam Meghalaya, Sub Himalayan WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh,

Day2: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, West UP, Haryana, Chandigarh, Delhi, Punjab, West RJ, Chhattisgarh, Tamilnadu, Puducherry,

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Himachal Pradesh, Odisha,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, NI Karnataka,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Odisha,

5. Showalter Index: -3 to -4[Very unstable]: Day/Index: Subdivisions with Showalter Index < -4

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, Rayalseema, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Coastal AP, Telangana, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Himachal Pradesh, Odisha, Chhattisgarh, Coastal AP, Tamilnadu, Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Himachal Pradesh, Jammu Kashmir, Odisha, Vidarbha, Chhattisgarh, Coastal AP, SI Karnataka, Kerala

6. Spatial distribution of TTI: TTI >50 [Scattered Thunderstorms few severe]:

Day/Index: Subdivision with Total Totals Index > 52

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day1: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ,
Day2: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab,
Himachal Pradesh, Jammu Kashmir, Odisha, Chhattisgarh, Coastal AP,
Day3: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh,
Jammu Kashmir, Odisha, Vidarbha, Chhattisgarh, Coastal Karnataka, SI Karnataka,
Day4: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Vidarbha,
Chhattisgarh

7. K-Index :-> 35[Very Unstable thunderstorm likely]:

Day/Index: Subdivisions with K Index > 40

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Odisha, Konkan Goa, Madhya Maharashtra,
Chhattisgarh, Coastal AP, Telangana, Rayalseema, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day1: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Odisha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, Tamilnadu, Puducherry,
Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Himachal Pradesh, Odisha, Vidarbha, Chhattisgarh, Coastal AP,
Telangana, Rayalseema, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day3: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Uttarakhand, Odisha, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema,
Tamilnadu, Puducherry, Coastal Karnataka, SI Karnataka, Kerala,
Day4: Arunachal Pradesh, Sub Himalayan WB, Odisha, Vidarbha, Chhattisgarh, Coastal AP, Tamilnadu, Puducherry, Coastal Karnataka, NI
Karnataka, SI Karnataka, Kerala

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jammu Kashmir,
Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Jammu Kashmir,
Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Uttarakhand, Himachal Pradesh, Jammu Kashmir,
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT,
Day5: Arunachal Pradesh, Assam Meghalaya,

IMD GFS (T1534) based on 00UTC the day:

1. Synoptic Systems:

The analysis based on 00 UTC indicates a cyclonic circulation in lower troposphere (925 hPa) over parts of Jharkhand and adjoining Bihar. The forecast shows it will persist till next 48 hours. The analysis shows another cyclonic circulation over south Konkan and Goa and adjoining areas. The forecast shows it will become less marked in next 24 hours. The analysis shows a cyclonic circulation in lower troposphere over east Uttar Pradesh and adjoining areas. The forecast shows it will move eastward till day 2. The forecast shows a cyclonic circulation over North Pakistan adjoining northwest Rajasthan and Punjab region on next 24 hours. The analysis shows a cyclonic circulation over SHWB and adjoining areas. A north- south trough is seen in the analysis extending from Rayalaseema to south Tamil Nadu. It will persist for next 24 hour forecast. The analysis shows a north- south oriented Trough from north Uttar Pradesh to north Telangana across East Madhya Pradesh and east Vidarbha. The forecast shows it will persist till day 3 with slight eastward shift.

2. Location of Jet and Jet Core (>60kt) at 500hPa:

Although the presence of strong westerlies is found over northern parts of India, east and northeast India but no jet core over the Indian region for the next 3 days.

3. Low Level Vorticity {850hPa Positive Vorticity (>12 x 10⁻¹/s):

Low level Positive Vorticity is seen mostly along the foothills of Himalaya, J&K, Himachal Pradesh and Uttarakhand; along the north-south trough for next 3 days. Low level Positive Vorticity is also seen over Northwest Rajasthan and adjoining Punjab region in next 24 hours. It is inferred that J&K, Punjab, Haryana, Delhi, adjoining Uttar Pradesh and Rajasthan has Positive Vorticity from day 2 onwards.

4. Spatial distribution of T-storm Initiation Index, Lifted Index, Total Total Index, CAPE, CIN and Sweat Index [High potential for thunderstorm]:

T-Storm Initiation Index (> 3): The threshold value of the index > 3 over coastal areas of Gangetic West Bengal and Kolkata, parts of Orissa, Bihar, Jharkhand, East Uttar Pradesh, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Karnataka, Tamil Nadu, parts of Gujarat, coastal Maharashtra including Mumbai, Konkan & Goa, Madhya Maharashtra, Marathwada, Vidarbha adjoining Chhattisgarh, coastal areas along the east coast and west coast, Assam, Meghalaya, Tripura and adjoining area, SHWB on all 3 days; over parts of South west Rajasthan on day 2; over parts of J&K on day 3; Maximum value of the index is seen over parts of GWB, Orissa, Jharkhand, Andhra Pradesh, coastal Maharashtra, Karnataka, Konkan and Goa, Chhattisgarh, coastal Tamil Nadu, Telangana during next 3 days; over parts of Bihar and East Vidarbha on day 2; over parts of east Uttar Pradesh, Bihar and East Vidarbha on day 3.

Lifted Index (< -2): The threshold value of the index is below -2 over parts of Gujarat, coastal Andhra Pradesh, Karnataka, Telangana, Rayalaseema, Konkan and Goa, Kerala, Tamil Nadu, southern part of west coast, coastal areas along the east coast, Chhattisgarh, East Uttar Pradesh, Bihar, Jharkhand, Vidarbha, Madhya Maharashtra, Marathwada, Orissa, GWB, SHWB, Sikkim and NE states on all 3 days; over parts of south west Rajasthan on day 2; over parts of J&K, Rajasthan, Punjab, Haryana and adjoining areas, Uttarakhand, Himachal Pradesh on day 3; maximum negative value of the index less than -10 is seen over parts coastal Orissa, GWB and Kolkata on day 1; over parts of Bihar, Jharkhand, GWB, SHWB and East Uttar Pradesh on day 3.

Total Total Index (> 50): The threshold value of the index is > 50 over parts of Himachal Pradesh, Uttarakhand, Rajasthan, Haryana, Delhi, Uttar Pradesh, Gujarat, Madhya Pradesh, Vidarbha, Madhya Maharashtra, Marathwada, Chhattisgarh, Bihar, Jharkhand, GWB, Telangana, Karnataka and Andhra Pradesh during next 3 days; maximum value of the index >60 is seen over parts of Rajasthan, Gujarat, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Vidarbha, Bihar, Jharkhand, Orissa, Telangana during next 3 days; over parts of Punjab, Haryana and adjoining areas, GWB, Madhya Maharashtra, Marathwada and north Karnataka on day 2; over parts of Punjab, GWB and Karnataka on day 3; over parts of Uttarakhand on day 1 and 2.

Sweat Index (> 300): Although the threshold value of the Index >300 is seen in most parts of the country except Haryana and adjoining areas, central parts of Madhya Pradesh and northern parts of Chhattisgarh during next 3 days, the maximum value of the index greater than 800 is seen over parts of GWB and Orissa on day 1; over parts of Bihar, Jharkhand, GWB, Orissa and East Uttar Pradesh on day 3.

CAPE (> 1000): Mostly in areas of southern peninsular India, along west coast and east coast, parts of Orissa, Andhra Pradesh, Telangana, Kerala, Tamil Nadu, Karnataka, coastal Maharashtra including Mumbai, Konkan and Goa, Gujarat, Bihar, Jharkhand, GWB, SHWB, Assam, Tripura and adjoining areas during next 3 days; over parts of East Uttar Pradesh and some parts of southwest Rajasthan on day 3; Maximum value of the index greater than 2500 is seen mostly over parts of GWB, coastal Orissa, Coastal Andhra Pradesh, Coastal Tamil Nadu, coastal Maharashtra, Karnataka, Konkan & Goa and coastal Kerala during next 3 days; over parts of Rayalaseema and adjoining areas on day 2; over parts of coastal Gujarat, Bihar, Jharkhand, SHWB and adjoining areas on day 3.

CIN (50-150): Although the threshold value of the Index lies in the range of (50–150) over most part of the country except J&K, Himachal Pradesh, Uttarakhand, Haryana, Delhi, west Uttar Pradesh, south east Rajasthan, Madhya Pradesh on day 1 and 2 and over most parts of the country except southeast Rajasthan, south west Uttar Pradesh, Madhya Pradesh, northern parts of Chhattisgarh, southern parts of Madhya Maharashtra and Marathwada on day 3, the maximum value of the index > 200 is seen over parts of Gujarat, northern parts of coastal Maharashtra, SHWB, Bihar, Jharkhand, East Uttar Pradesh, Orissa, Andhra Pradesh, Chhattisgarh, Telangana, Assam, Tripura and adjoining areas during next 3 days; over parts of north interior Karnataka and adjoining areas on day 2 and 3; over parts of J&K, Punjab, Haryana and adjoining areas, west Uttar Pradesh on day 3.

5. Rainfall Activity:

40-70 mm Rainfall: over parts of J&K and Himachal Pradesh on day 3.

10- 40 mm Rainfall: over parts Jammu and Kashmir, Karnataka, Kerala, Tamil Nadu, Sikkim and NE states during next 3 days; over parts of coastal Orissa and Andhra Pradesh on day1; over parts of Himachal Pradesh on day 2 and 3; over parts of Uttarakhand on day 3.

Up to 10 mm rainfall: Over parts of J&K, Foothills of Himalaya, Punjab, Himachal Pradesh, Uttarakhand, Sikkim, NE states, Orissa, Bihar, Jharkhand, GWB, SHWB, Chhattisgarh, Andhra Pradesh, Rajasthan, Kerala, Karnataka, Tamil Nadu, Telangana, Rayalaseema, coastal Maharashtra, Konkan and Goa on all 3 days; over southern parts of Marathwada, Madhya Maharashtra on day 1 and 2; over parts of Haryana, Delhi and west Uttar Pradesh on day 3.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

- Synoptic analysis indicates that a cyclonic circulation over Sub Himalayan West Bengal & neighbourhood and another cyclonic circulation lies over Jharkhand & adjoining Bihar will give rise to thunder squall with hail specifically over Sub-Himalayan West Bengal & Sikkim, Odisha on Day-1. With this systems, Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura may get some thunderstorm with gusty winds activity on Day-1. Meghalaya and Tripura may receive heavy rainfall on Day-1.
- Due to the north-south wind discontinuity from Rayalaseema to south Tamilnadu , thunderstorm with gusty winds activity may likely to be observed over Marathawada, Madhya Maharashtra
- Coastal Andhra Pradesh, Telangana, Karnataka, Kerala, Tamilnadu on Day-1.
- A fresh Western Disturbance as an upper air cyclonic circulation extending upto 3.1 km.above mean sea level lies over Iran and neighbourhood with a trough aloft in mid & upper tropospheric westerlies.

Day-1 & Day-2:

Significant Rainfall:
Meghalaya, Tripura

Thunderstorm with Squall/Gusty winds:
Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura
Gangetic West Bengal
Marathawada, Madhya Maharashtra
Coastal Andhra Pradesh, Telangana, Karnataka, Kerala, Tamilnadu,
Lakshadweep

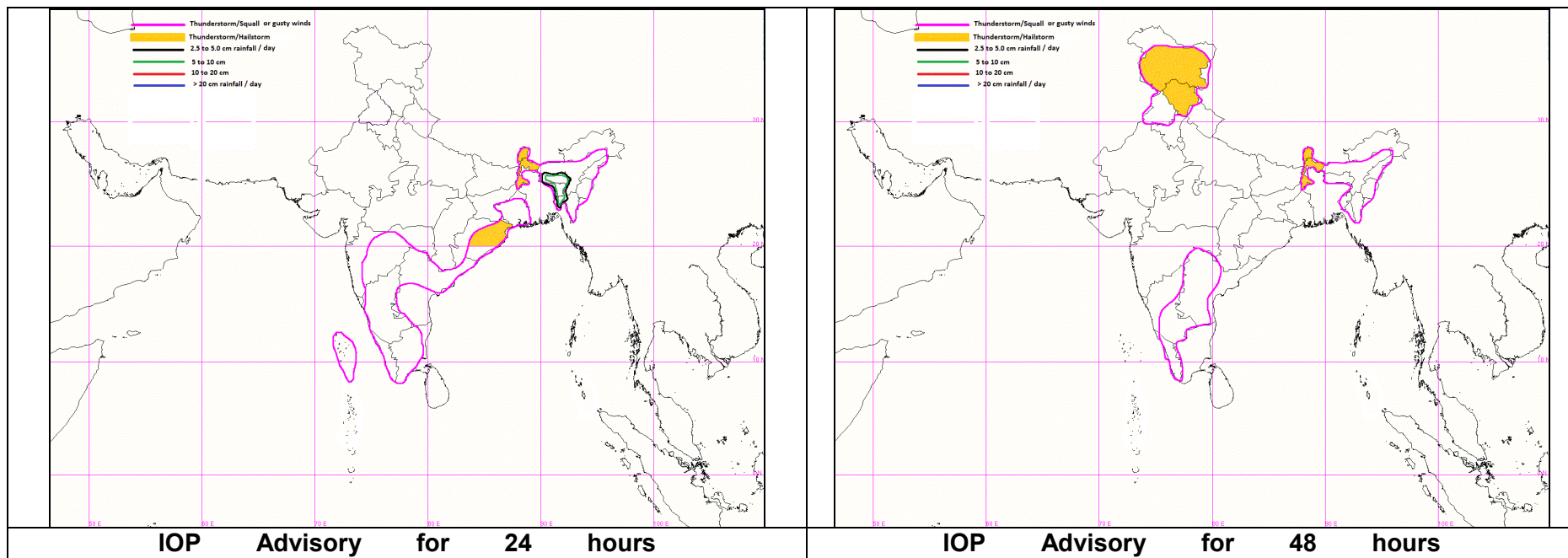
Thunderstorm with Squall &Hailstorm:
Sub-Himalayan West Bengal &Sikkim, Odisha

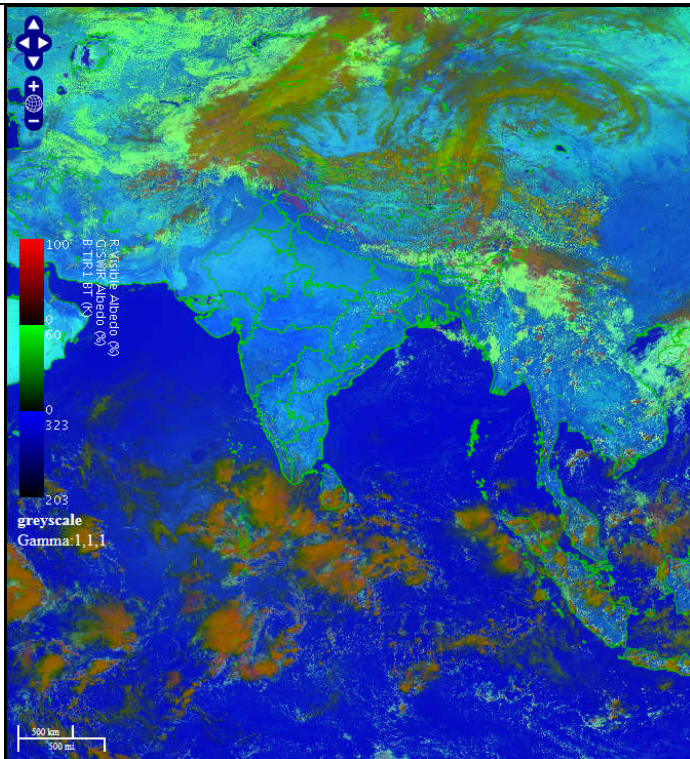
Significant Rainfall:
Nil

Thunderstorm with Squall/Gusty winds:
Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura
Kerala, South Interior Karnataka, Rayalaseema, Telangana
Punjab

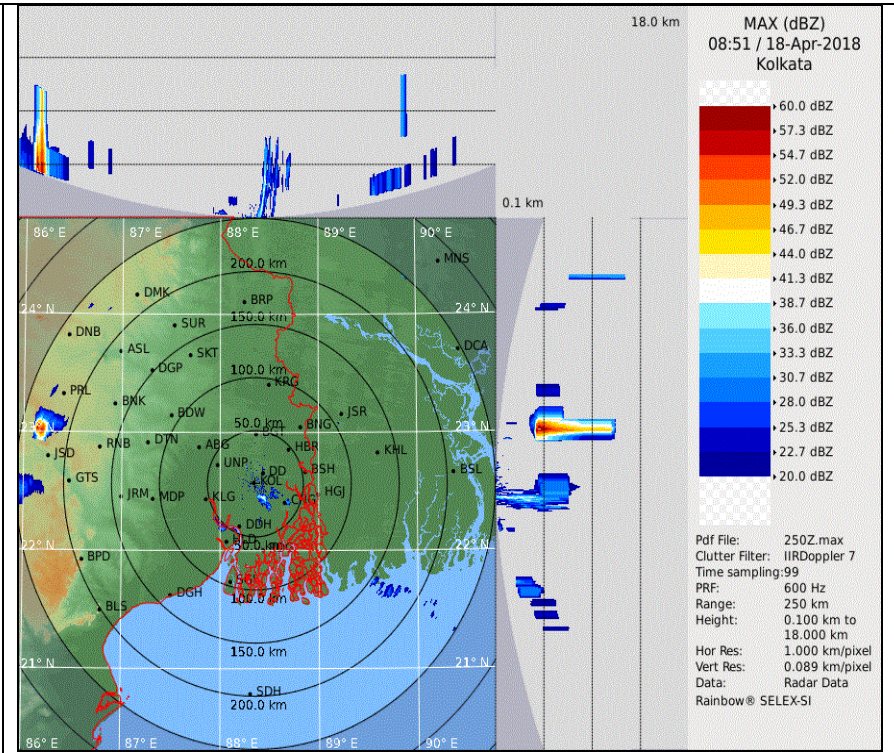
Thunderstorm with Squall &Hailstorm:
Jammu & Kashmir, Himachal Pradesh
Sub-Himalayan west Bengal & Sikkim

Graphical Presentation of Potential Areas for Severe Weather:

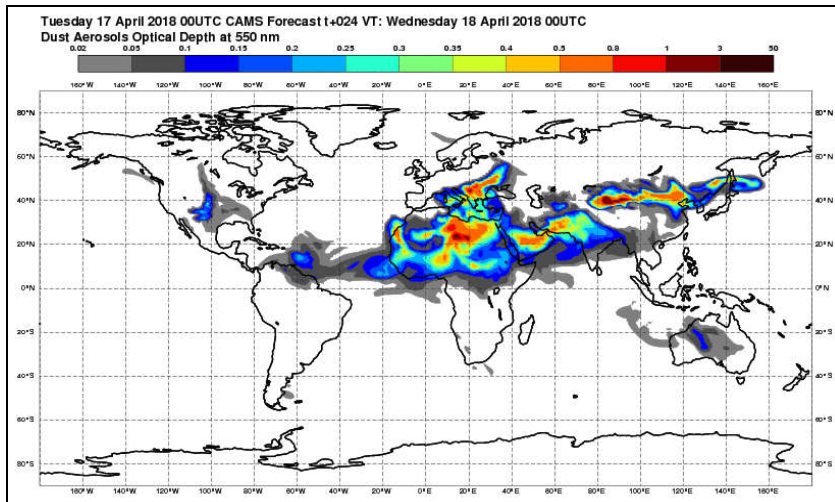




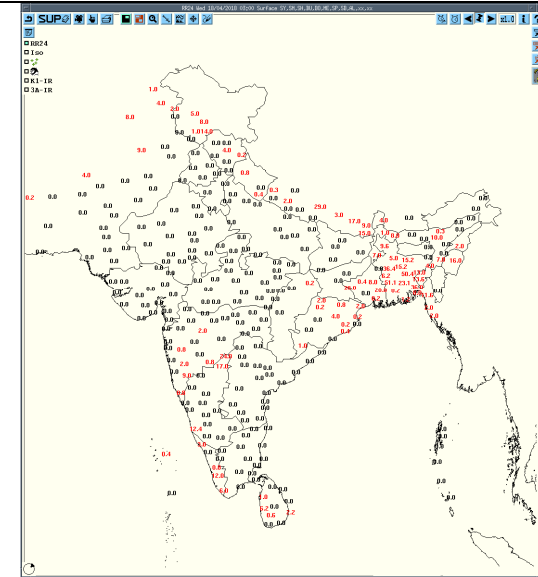
RAPID RGB Imagery at 1330 IST of the Day



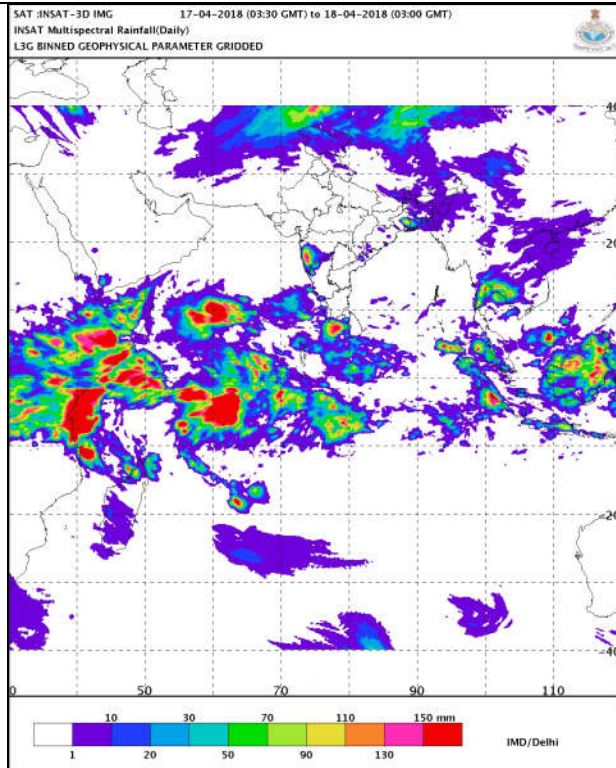
DWR Kolkata at 1421 IST of the Day



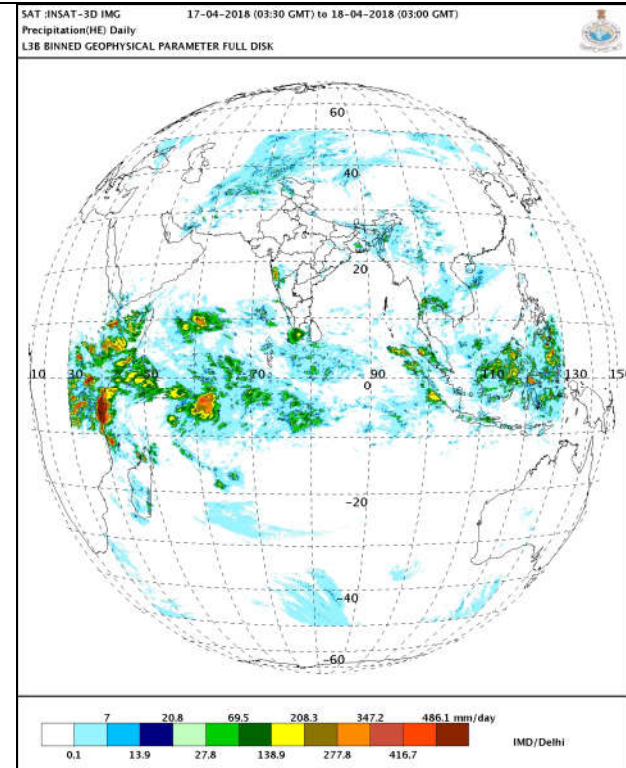
Dust Forecast



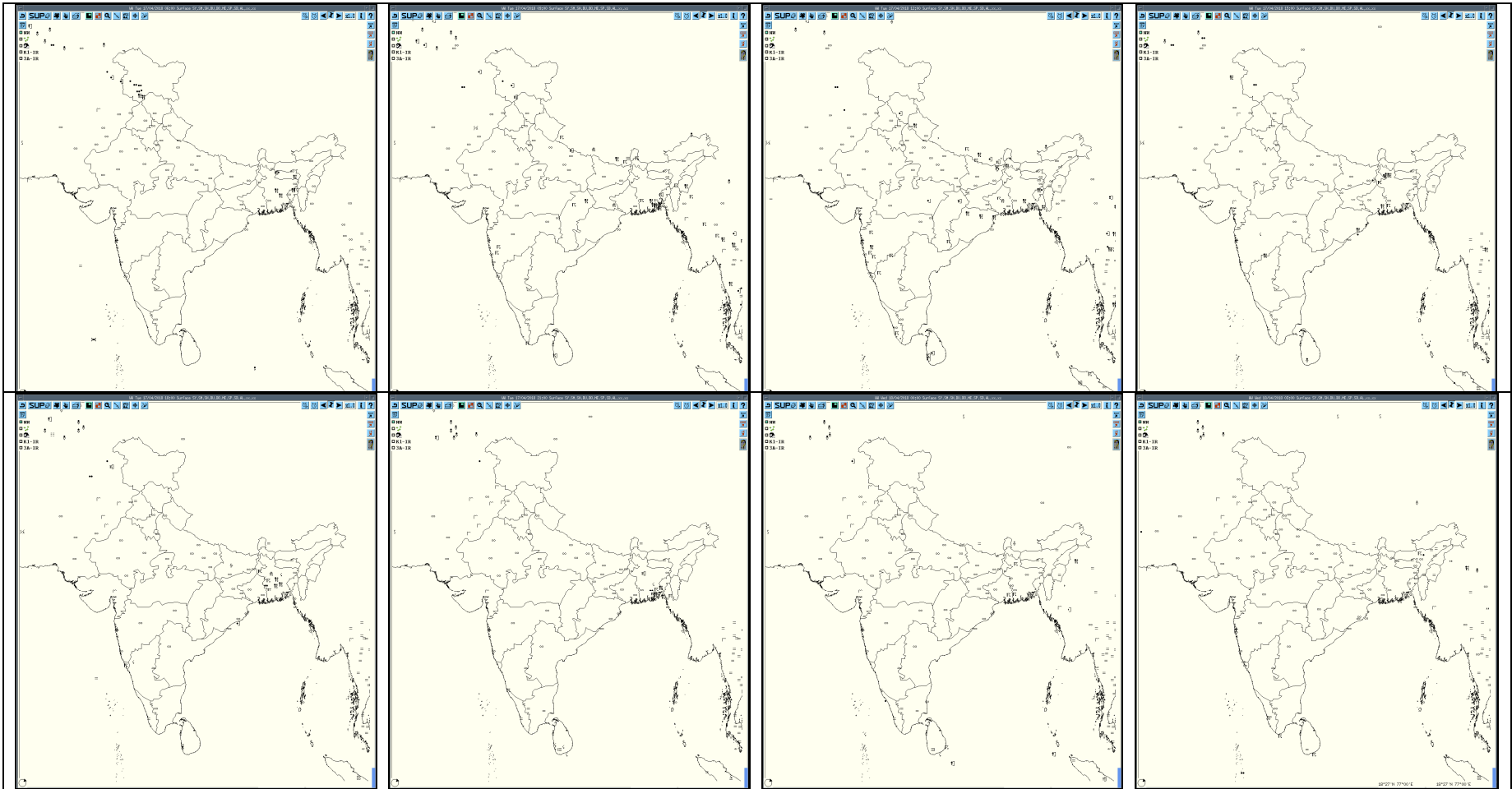
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



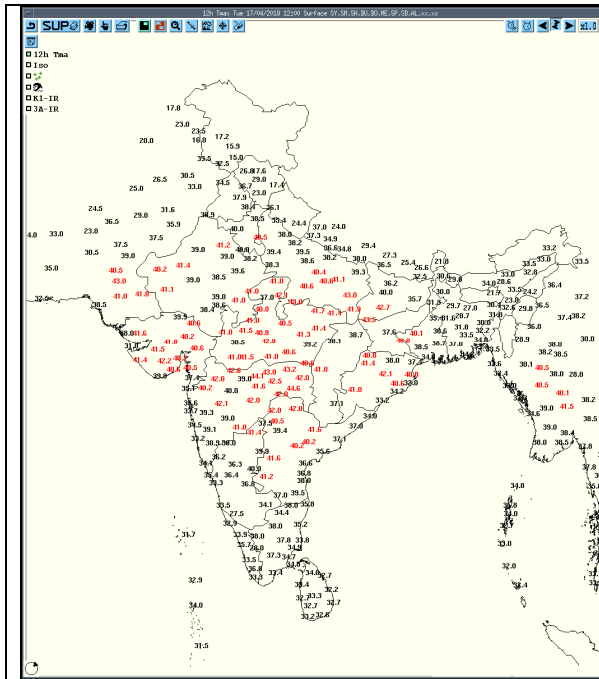
IMR



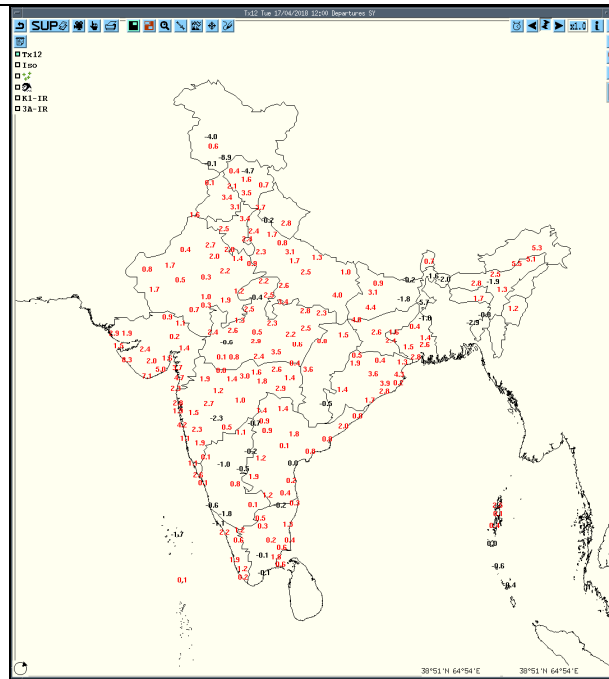
HEM



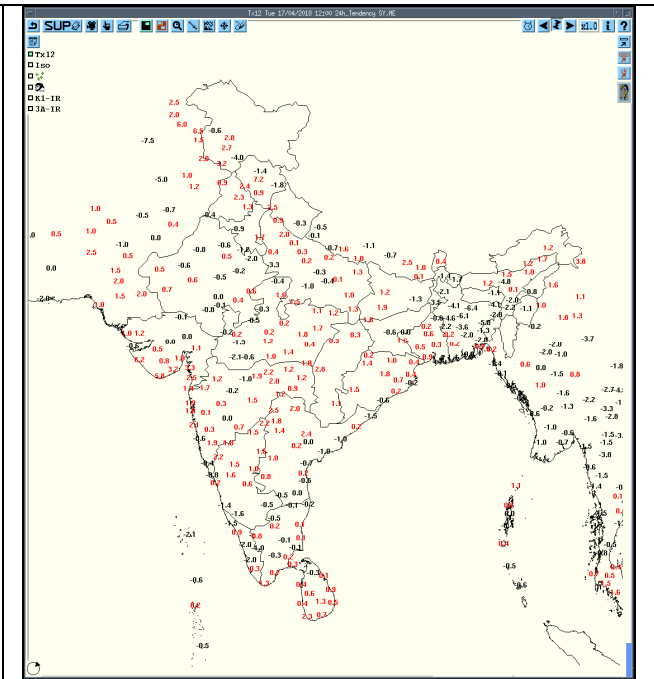
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



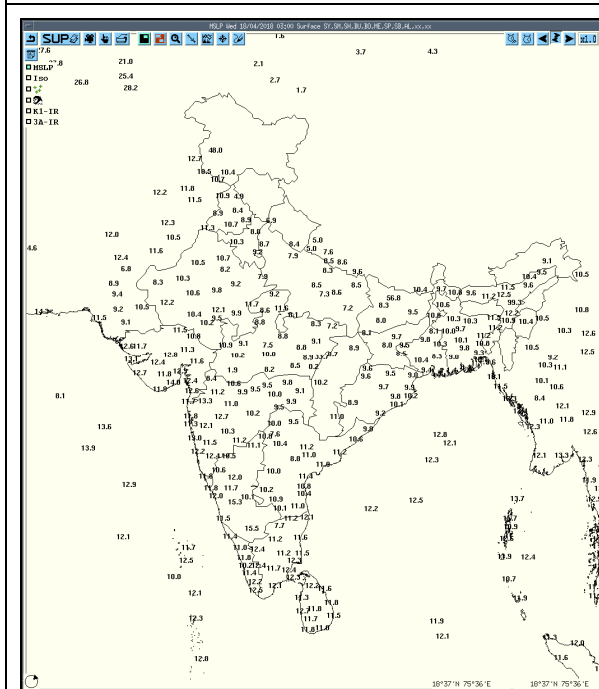
Tmax



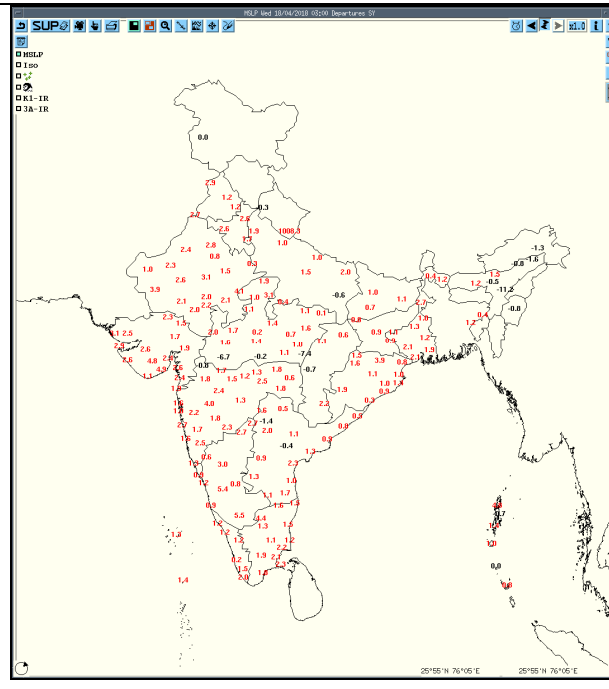
Departure Tmax



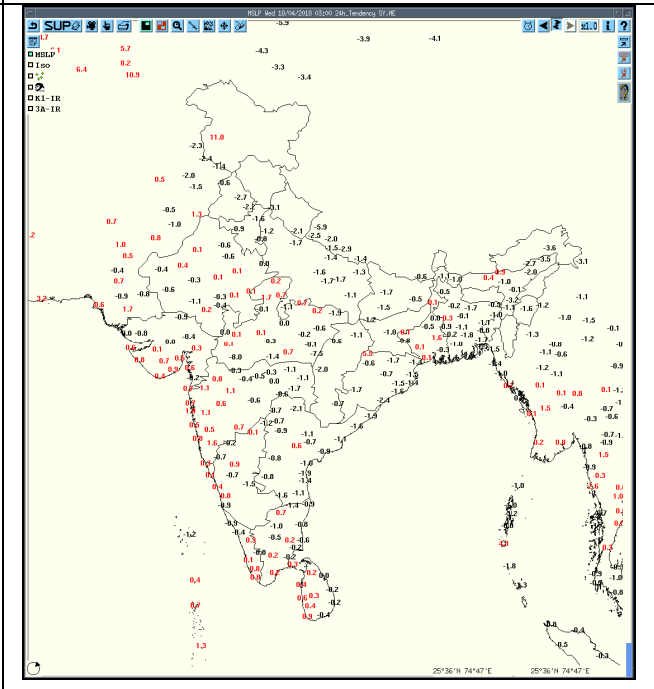
Tendency Tmax



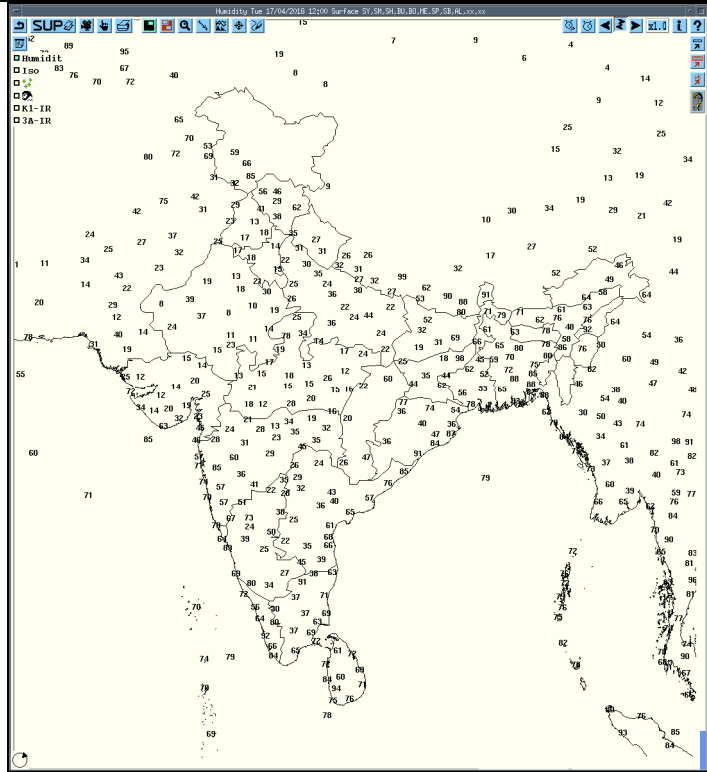
MSLP



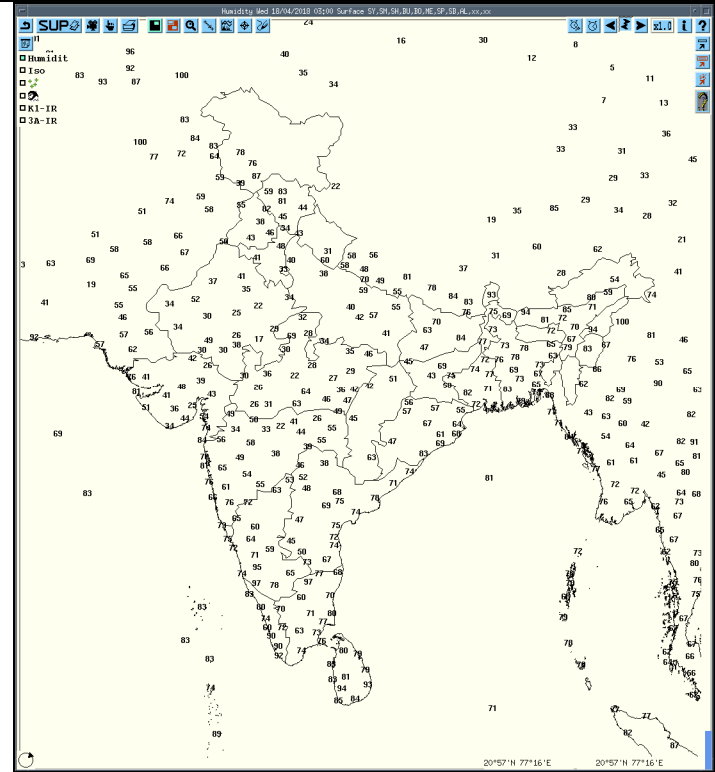
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Past 24 hours DWR Report:

Radar Station Name	Date	Time Interval Of Observation (UTC)	Organisation Of The Cells(Isolated Single Cells/ Multiple Cells/ Convective Regions/ Squall Lines) With Height Of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
Patna	18/04/18	170300-170412	NIL	N/A	N/A	N/A	N/A
		170412-170602	Single Cell Lat-27.38N, Long-84.52E Maximum Reflectivity: 49.5 dBZ Echo Top: 11 KM	Range: 208.1 KM from DWR Patna in NW direction Movement: North Westerly	N/A	Thunderstorm	West Champaran
		170602-171102	NIL	N/A	N/A	N/A	N/A
		171102-171432	Isolated Multiple Cells Lat-27.33N, Long-84.63E Maximum Reflectivity: 51 dBZ Echo Top: 14 KM Lat-26.78N, Long-85.37E Maximum Reflectivity: 52.5 dBZ Echo Top: 12 KM Lat-26.46N, Long-85.98E Maximum Reflectivity: 46.5 dBZ Echo Top: 8 KM Lat-26.15N, Long-87.26E Maximum Reflectivity: 52.5 dBZ Echo Top: 13 KM Lat-26.14N, Long-86.84E Maximum Reflectivity: 50.5 dBZ Echo Top: 12.5 KM	Range: 200.4 KM from DWR Patna in NW direction Movement: North Westerly Range: 136.8 KM from DWR Patna in NE direction Movement: North Westerly Range: 133.3 KM from DWR Patna in NE direction Movement: North Westerly Range: 227.3 KM from DWR Patna in NE direction Movement: North Westerly Range: 186.8 KM from DWR Patna in NE direction Movement: North Westerly	N/A	Thunderstorm	West Champaran, East Champaran, Sheohar, Sitamadhi, Madhepura, Purnea, Madhubani, Supaul, Araria, Katihar, Bhagalpur
		171432-180300	NIL	N/A	N/A	N/A	N/A
		171432-180300	NIL	N/A	N/A	N/A	N/A

Radar Station Name	Date	Time Interval of Observation (UTC)	Organisation of cells (Isolated single cells /multiple cells/ convective regions /squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station and Direction of movement	Remarks	Associated Severe Weather if any	Districts affected
Kolkata	17-04-18	0302 – 0821	NIL	NIL	NOSIG ECHO	NIL	NIL
		0821-1712	1. Isolated cell developed at a position 24.326 N/ 86.964 E/ 324.3 Degree/ 241.2 km away from radar transformed into big cell with maximum reflectivity of 61.5 dBz at 0901 UTC and maximum height of 7.12 Km at 0901 UTC	North (241.2 km) Moving in SE-ward direction.	1.Cell started forming at 0821 UTC at NW (241.2 Km) from radar. Matured and dissipated at 1122 UTC in N at a distance of 180.9 Km from Radar.	Thunderstorm / Rain	N/A
			2. Isolated cell developed at a position 22.721 N/ 86.091 E/ 274.7 Degree/ 232.7 km away from radar transformed into big cell with maximum reflectivity of 60.0 dBz at 0941 UTC and maximum height of 6.42 Km at 0941 UTC	W (232.7km) moving in SE-ward direction		2. Cell started forming at 0821 UTC at W (232.7 Km) from radar. Matured and dissipated at 1252 UTC in SSW at a distance of 169.1 Km from Radar.	Thunderstorm / Rain
	3. Isolated cell developed at a position 23.456 N/ 87.494 E/ 318.4 Degree/ 132.0 km away from radar transformed into big cell with maximum reflectivity of 62.0 dBz at 1011 UTC and maximum height of 17.73 Km at 1321 UTC	NW (132.0km) moving in SE-Ward direction	3.Cell started forming at 0921 UTC at NW (132.0 Km) from radar Matured and crossed Indo-B'Desh border at 1632 UTC in SSE-direction 83.8 km from Radar.	Thunderstorm / Rain	N/A		
4.Series of Multi cell developed from position 22.537 N/ 87.447 E/ 337.2 Degree/ 237.4 km to 23.575N/88.595E/012.1deg/114.4 Km away from radar at 1532 UTC, Max Height 8.5 km and Max reflectivity 52.5 dbZ at 1541 UTC.	4.NNW to NNE (237.4km to 114.4 km) moving ESE-Ward direction	4.Cells started forming at 1532 UTC at NNW (237.4 Km) to NNE(114.4km)from radar did not Mature and crossed Indo-B'Desh Border at 1712 UTC in NNE-direction ,156.9 km from Radar.		Thunderstorm / Rain			
		1713---2400	NIL	NIL	NOSIG ECHO	NIL	NIL
	18-04-18	0000—0300	NIL	NIL	NOSIG ECHO	NIL	NIL

Realised past 24hrs TS/SQ/HS Data:

Realised TS/HS/SQ during past 24 hours ending at 0300UTC of today(received from RMCs/MCs)						
Name of Station Reporting	Region	State/Sub Division	Weather Event (TS/Hail/Squall)	Date	Time of Commencement (IST)	Time of end (IST)
Gangtok	East India	Sikkim	Thunderstorm	17-04-18	1350	1630
Tadong	East India	Sikkim	Thunderstorm	17-04-18	1350	1610
Malda	East India	Sikkim	Thunderstorm	17-04-18	Occurred	
Alipore	East India	Sikkim	Thunderstorm	17-04-18	1921	2028
Alipore	East India	Gangetic West Bengal	Squall(Dir-NW, max. speed 84Kmph	17-04-18	1942	1943
Alipore	East India	Gangetic West Bengal	Squall(Dir-NW, max. speed 98Kmph	17-04-18	1955	1957
DumDum	East India	Gangetic West Bengal	Thunderstorm	17-04-18	1845	2045
DumDum	East India	Gangetic West Bengal	Squall(Dir-NW, max. speed 98Kmph	17-04-18	2014	2015
Diamond Harbour	East India	Gangetic West Bengal	Thunderstorm	17-04-18	1900	1940
Diamond Harbour	East India	Gangetic West Bengal	Thunderstorm	17-04-18	0600	0720
Haldia	East India	Gangetic West Bengal	Thunderstorm	17-04-18	0612	0655
Digha	East India	Gangetic West Bengal	Thunderstorm	17-04-18	1710	1810
Asansol	East India	Gangetic West Bengal	Thunderstorm	17-04-18	1450	1600
Purnia	East India	Bihar	Thunderstorm	17-04-18	1910	1930
Ranchi	East India	Jharkhand	Thunderstorm	17-04-18	1850	1940
Jamshedpur	East India	Jharkhand	Thunderstorm	17-04-18	1400	1530
Bhubaneswar	East India	Odisha	Thunderstorm	17-04-18	1935	2125
Balasore	East India	Odisha	Thunderstorm	17-04-18	1650	1800
Jharsuguda	East India	Odisha	Thunderstorm	17-04-18	1635 2040	1750 2100
Chandbali	East India	Odisha	Thunderstorm	17-04-18	1915	1945
Keonjhar	East India	Odisha	Thunderstorm		1625	1800
Ambikapur	Central India	Chhattisgarh	Thunderstorm	17-04-18	1345	1630
Jagdapur	Central India	Chhattisgarh	Thunderstorm	17-04-18	1705	1742
Silchar	Northeast India	Assam	Thunderstorm	17-04-18	17/1135	17/1500
Tezpur	Northeast India	Assam	Thunderstorm	18-04-18	18/0700	18/0800
Dhubri	Northeast India	Assam	Thunderstorm	17-04-18	17/0840, 17/1120	17/0922, 17/1130
Barapani	Northeast India	Meghalaya	Thunderstorm	17-04-18	17/1250	17/1445
Shillong	Northeast India	Meghalaya	Thunderstorm	17-04-18	Reported at 12Z Synop	
Imphal	Northeast India	Manipur	Thunderstorm	17-04-18	Reported at 12Z Synop	
Kailasahar	Northeast India	Tripura	Thunderstorm	17-04-18	17/1002	17/1340
Agartala	Northeast India	Tripura	Thunderstorm	17/18-04-18	17/1250, 17/1335	17/1350, 18/0210
Thiruvananthapuram City	South India	Kerala	Thunderstorm	17-04-18	1405	1605
Panambur	South India	Coastal Karnataka			0321 0446	0411 0505
Bajpe	South India	Coastal Karnataka			0228	0440
Belgaum AP	South India	North interior Karnataka			1515 1725	1615 1840
Kalaburgi	South India	North interior Karnataka			1935	2210
Panambur	South India	Coastal Karnataka			0321 0446	0411 0505

IMPORTANT LINKS:

For NCMRWF NWP products:(<http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php>)

For IMD NWP products:(http://nwp.imd.gov.in/diagpro_new.php)

For Synoptic plotted data and charts

<http://amssdelhi.gov.in/>

<http://www.amsskolkata.gov.in/>

For RANDHRA PRADESHID tool:

http://rAndhra_Pradeshid.imd.gov.in/

Low Level Winds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR_2017/?C=M;O=D

Upper level winds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/HLW/MAR_2017/?C=M;O=D

Past24hourHEMandIMRrainfall(upto03UTCoftoday)

IMR: http://satellite.imd.gov.in/img/3Ddaily_imr.jpg

HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

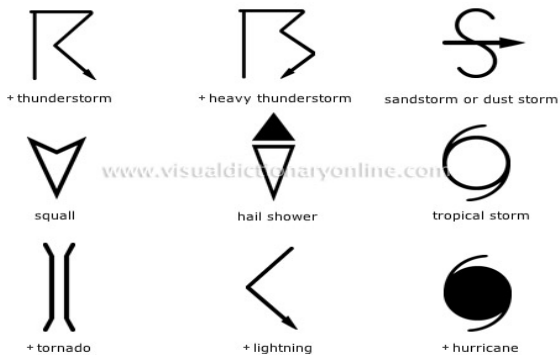
ForRadarimagesofthepast24hoursincludingmosaicofimages:

http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T- Phigram

http://satellite.imd.gov.in/mAndhra_Pradesh_skm2.html

WEATHER SYMBOLS:



∞	haze
⌋	smoke
⌋	dust or sand storm
≡	fog
•	drizzle
•	rain
*	snow
▽	showers
△	hail
⌋	thunderstorm
Weather Symbols	