



India Meteorological Department

FDP STORM Bulletin No. 59 (04-05-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

- ◆ The Western Disturbance as a cyclonic circulation over Jammu & Kashmir and neighbourhood now lies over Jammu & Kashmir and adjoining Himachal Pradesh between 3.1 km & 5.8 km above mean sea level. The trough aloft with its axis at 7.6 km above mean sea level now runs roughly along long 77° E to the north of Lat 34°N.
- ◆ A fresh Western Disturbance as an upper air cyclonic circulation between 3.1 km & 5.8 km above mean sea level lies over western parts of Iran & neighbourhood.
- ◆ The cyclonic circulation over Haryana & neighbourhood persists and now extends upto 1.5 km above mean sea level.
- ◆ The cyclonic circulation over central parts of south Uttar Pradesh and neighbourhood now lies over East Uttar Pradesh and adjoining Bihar and extends upto 1.5 km above mean sea level.
- ◆ The trough at mean sea level from northwest Rajasthan to West Madhya Pradesh now runs from West Rajasthan to northeast Madhya Pradesh across East Rajasthan and extends upto 1.5 km above mean sea level.
- ◆ The cyclonic circulation over Gangetic West Bengal and adjoining Bangladesh now lies over Sub-Himalayan West Bengal & Sikkim and neighbourhood between 2.1 km & 3.1 km above mean sea level with a trough aloft running roughly along Long 88° E to the north of Lat 20°E.
- ◆ A cyclonic circulation extending upto 1.5 km above mean sea level lies over Comorin area & neighbourhood.
- ◆ A trough runs from the above cyclonic circulation to south Interior Karnataka across Interior Tamilnadu and extends upto 1.5 km above mean sea level.
- ◆ A north-south wind discontinuity runs from north Madhya Maharashtra to south Konkan at 1.5 km above mean sea level

SATELLITE OBSERVATIONS during past 24 hrs and current observation:

Current Observation (based on 0600UTC imagery of INSAT 3D):

Intense Precipitation Advisory for next 3 hrs:

Heavy rainfall spell (>15mm/hour): Nil. Moderate to Heavy rainfall spell (>5mm/hour) is likely over Gangetic West Bengal, Mizoram, South Assam, Kerala and Lakshadweep. Light to moderate rainfall spell (<5mm/hour) is likely over Tamilnadu, Meghalaya and Tripura (For details kindly refer to <http://sigma.cptec.inpe.br/scope/>).

Thunderstorm Advisory for Next 3 Hrs:

Thunderstorm/Convective cells are likely over Gangetic West Bengal (For details kindly refer to <http://www.rapid.imd.gov.in/>).

Western Disturbance (WD):

Scattered multi-layered clouds seen over Tibet, and over the area between Lat 37.0deg N to 45.0deg N, Long 72.0deg E to 110.0deg E in association with Western Disturbance over the area.

Scattered multi-layered clouds seen over South Caspian Sea, West Iran & neighbourhood in association with another Western Disturbance over the area.

Clouds descriptions within India:

Broken low/medium clouds with embedded moderate to intense convection seen over South Kerala, South Tamilnadu, and adjoining Arabian Sea. Scattered low/medium clouds with embedded moderate to intense convection seen over West Assam, Meghalaya, Tripura and Northwest Bangladesh. Scattered low/medium clouds with embedded weak to moderate convection seen over Northeast Jammu & Kashmir, Konkan & Goa, rest Tamilnadu, Lakshadweep, Bay Islands, and Telangana. Scattered low/medium clouds with embedded weak convection seen over North Himachal Pradesh. Scattered low/medium clouds with embedded isolated weak convection seen over East Bihar, rest Northeastern states, Sub-Himalayan West Bengal, Gangetic West Bengal and Bhutan. Scattered low/medium clouds seen over Uttarakhand, South Chhattisgarh, South Odisha, Madhya Maharashtra, and Rayalaseema.

Arabian Sea:-

Broken low/medium clouds with embedded intense to very intense convection seen over Southeast Arabian Sea off Kerala coast & Comorin.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convective seen over Southeast Bay.

Past Weather:

Convection (during last 24 hrs):

Moderate to Intense convection was observed over J&K Himachal Pradesh Uttarakhand Uttar Pradesh Punjab North-East Rajasthan North-West Madhya Pradesh South Jharkhand south Orissa south Chhattisgarh Telangana Andhra Pradesh Sub Himalayan West Bengal Meghalaya west Assam South Interior Karnataka Kerala Andaman & Nicobar islands Lakshadweep and weak to moderate convection over North-East states East Madhya Pradesh extreme Chhattisgarh (.)

OLR: - .

Up-to 230 wm^{-2} observed over J&K Himachal Pradesh Uttarakhand North Uttar Pradesh Bihar Sikkim North-East States South Chhattisgarh south Odisha North East Jharkhand Coastal Andhra Pradesh South Interior Karnataka Kerala West Tamilnadu Andaman & Nicobar islands Sikkim Sub Himalayan West Bengal.

Synoptic Features:

Westerly Trough & jet Stream:

Westerly Trough roughly along Longitude 74.0°E & North Of Latitude 33.0°N.

Dynamic Features:

Up to 30- 60 kts **Wind Shear** is observed over North India, Central India & North-East India and 05-20 kts over south peninsula India.

Negative shear tendency -20 kts observed over central india, **positive shear tendency** Up to 40 kts observed over North India and up to 20 kts shear tendency observed over North east states

Negative low level convergence observed over south Gujarat south Orissa sub Himalayan west Bengal North-Estates **Positive Low Level Convergence** is observed over rest Indian region.

Positive **Vorticity (850 hPa)** is observed over Punjab Haryana Delhi North west Uttar Pradesh Madhya Pradesh North Bihar sub Himalayan west Bengal North-Estates south interior Karnataka.

Precipitation:

IMR:-

Rainfall Up to 150 mm observed over Andhra Pradesh Telangana.

Rainfall up to 20- 90mm observed over Kerala Tamilnadu south interior Karnataka south Chhattisgarh south Orissa rest Andhra Pradesh Telangana.

Rainfall up to 01-10mm observed over Jammu and Kashmir north Himachal Pradesh north Uttarakhand north west Uttar Pradesh Rajasthan sub Himalayan west Bengal west Meghalaya west Assam Sikkim north east states south interior Karnataka rest south Chhattisgarh south Orissa.

HEM:-

Rainfall up to 347-416mm observed over south Andhra Pradesh

Rainfall up to 27 -277 mm observed over Telangana Andhra Pradesh south interior Karnataka Kerala west Tamilnadu and central Jammu & Kashmir.

West Jammu and Kashmir South Himachal Pradesh Uttarakhand West Arunachal Pradesh East Meghalaya West Tamilnadu Adjoining Kerala South Interior Karnataka(.)

Rainfall up-to 0.1-14 mm observed over Jammu and Kashmir Uttar Pradesh Jharkhand Bihar North East States Kerala North Chhattisgarh Orissa South Gangetic West Bengal North Coastal Andhra Pradesh..

RADAR and RAPID RGB Observation:

Moderate to strong convection (max. dBZ >55 and height >12) is seen on DWR Kolkata domain at around 1615 IST. Light to moderate echoes are also seen on DWR Agartala, Srinagar and Patiala domains at around 1615 IST.

RAPID RGB Satellite imagery at 1500IST indicates significant convection over Jammu & Kashmir, Himachal Pradesh, North Uttarakhand, South Rajasthan, East & South Assam, East Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, North Chhattisgarh adjoining East Madhya Pradesh, south Jharkhand adjoining West Gangetic West Bengal, South Kerala adjoining Tamilnadu and Andaman & Nicobar Islands.

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 slightly over IGP and north India.

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

Delhi – SAFAR analysis & Forecast	04.05.2018	05.05.2018
PM10 (micro-g/m ³)	139	152
PM2.5 (micro-g/m ³)	61	67

2. NWP MODEL GUIDANCE:

NCMRWF (NCUM forecast based on 00UTC the day):

1. Weather Systems:

Low level Cycirs, Troughs:

00UTC of Day 1-4: 925 hPa weak CYCIR over NW India.

00UTC of Day 1: 925 hPa CYCIR over Uttar Pradesh. Day 2-4 a trough form Uttar Pradesh to Peninsular India.

00 UTC of Day 2-4: Trough at 850 hPa over Bihar and adjoining WB moving eastward towards Bangladesh in Day 3-4

12 UTC of Day 0-4: Trough in MSLP from Rajasthan to Odisha

Confluence & Wind Discontinuity Regions:

12 UTC of Day 0-3: 925 hPa N-S discontinuity over Southern Peninsular India and SW-NE discontinuity over Maharashtra-Chhattisgarh region

Synoptic Systems:

00 UTC of Day 1: WD as a weak trough over J &K. Fresh WD approaching J&K on day-2.

2. Location of jet and jet core (>60kt) at 500hPa: Nil

3. Convergence at 850 hPa:

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

Day0: Jammu_Kashmir, Odisha, East_MP, Madhya_Maharashtra, NI_Karnataka,

Day1: Odisha, West_MP, Madhya_Maharashtra, Chhattisgarh, NI_Karnataka, SI_Karnataka,

Day2: Assam_Meghalaya, NE_NMMT, West_MP, Madhya_Maharashtra, Marathwada, Chhattisgarh, TN_Puducherry, NI_Karnataka, SI_Karnataka,

Day3: Assam_Meghalaya, NE_NMMT, Jharkhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, Madhya_Maharashtra, TN_Puducherry, SI_Karnataka,

Day4: Arunachal_Pradesh, Assam_Meghalaya, Gangetic_WB, Jharkhand, East_UP, West_UP, West_RJ, East_RJ, Odisha, Madhya_Maharashtra, Chhattisgarh

4. Low level Vorticity:-Positive Vorticity:

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

Day0: Jharkhand, Bihar,

Day1: Assam_Meghalaya, Gangetic_WB, Uttarakhand, Himachal_Pradesh, Coastal_AP,

Day2: Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Bihar, Uttarakhand, Punjab, Odisha,

Day3: Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Bihar, Punjab, Himachal_Pradesh, Jammu_Kashmir, TN_Puducherry,

Day4: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, West_UP, Uttarakhand, Punjab, Himachal_Pradesh, Odisha, TN_Puducherry,

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, Jharkhand, East_UP, West_UP, Uttarakhand, Hry_Chd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Konkan_Goa, Coastal_AP, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day1: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, East_UP, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Chhattisgarh, Coastal_AP, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day2: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Konkan_Goa, Madhya_Maharashtra, Coastal_AP, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day3: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Konkan_Goa, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day4: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, Uttarakhand, Hry_Chhd_Delhi, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Odisha, Konkan_Goa, Madhya_Maharashtra, Coastal_AP, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, 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, Sub_Himalayan_WB, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, West_MP, East_MP,

Day1: Arunachal_Pradesh, Sub_Himalayan_WB, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir,

Day2: Arunachal_Pradesh, Sub_Himalayan_WB, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir,

Day3: Arunachal_Pradesh, Sub_Himalayan_WB, Jharkhand, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ,

Day4: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha

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

Day/Index: Subdivisions with K Index > 40

Day0: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, West_UP, Uttarakhand, Punjab, Himachal_Pradesh, West_RJ, Odisha, Konkan_Goa, Madhya_Maharashtra, Chhattisgarh, Coastal_AP, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day1: Arunachal_Pradesh, Sub_Himalayan_WB, Uttarakhand, Jammu_Kashmir, Odisha, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Konkan_Goa, Madhya_Maharashtra, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Madhya_Maharashtra, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Uttarakhand, Jammu_Kashmir, West_RJ, Odisha, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, TN_Puducherry, Kerala,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Jammu_Kashmir, Kerala,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Himachal_Pradesh, Jammu_Kashmir,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Himachal_Pradesh, Jammu_Kashmir, TN_Puducherry, Kerala,

Day5: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Himachal_Pradesh, Jammu_Kashmir, Andaman_Nicobar, TN_Puducherry

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

1. Synoptic Systems:

The analysis based on 00 UTC indicates a cyclonic circulation over Haryana and adjoining areas in lower troposphere. The forecast shows this circulation will move eastward till day 2 and become less marked thereafter. Another cyclonic circulation is seen in the analysis over East Uttar Pradesh and adjoining Bihar. The forecast show it will persist till day2 with slight eastward shift. The analysis indicates a Trough from West Rajasthan to North East Madhya Pradesh region in lower troposphere. The forecast shows North - North Eastward movement of the Trough till day2. Another cyclonic circulation is seen in the analysis over Comorin area in lower troposphere (925hPa). The analysis indicates a Trough extends from this cyclonic circulation to South Interior Karnataka across Interior Tamil Nadu. The forecast shows it will become less marked in next 48 hours. A cyclonic circulation is seen in the analysis over Punjab and adjoining North West Rajasthan and adjoining areas in lower troposphere (925hPa). The forecast shows it will become less marked in next 24 hour.

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

Although the presence of strong westerlies is found over Eastern and North Eastern parts of 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 Trough, along the cyclonic circulations, along the Foothills of Himalaya and NE states during next 3 days; Low level Positive Vorticity is also seen over parts of Punjab, adjoining North West Rajasthan, Haryana and adjoining Madhya Pradesh on day 1; It is inferred that parts of Rajasthan, Madhya Pradesh, Punjab, Vidarbha, Himachal Pradesh, Uttarakhand, Haryana and adjoining areas have Positive Vorticity on day 2 and 3.

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 is seen over parts of Gujarat, coastal areas of Gangetic West Bengal and Kolkata, SHWB, parts of Orissa, Bihar, Jharkhand, Uttarakhand, Uttar Pradesh, Rajasthan, Andhra Pradesh, Telangana, Rayalaseema, Kerala,

Karnataka Konkan and Goa, Tamil Nadu, coastal Maharashtra including Mumbai, Konkan & Goa, Vidarbha, Madhya Maharashtra, East Madhya Pradesh, Chhattisgarh, coastal areas along the east coast and west coast, Sikkim, Assam, Meghalaya, Tripura and adjoining area during next 3 days; over parts of Punjab, Himachal Pradesh, Uttarakhand, Haryana, West Uttar Pradesh and adjoining areas on day 1; Maximum value of the index is seen over parts of GWB, Orissa, Bihar, Jharkhand, Chhattisgarh, Telangana, Gujarat, Rajasthan, coastal Maharashtra, coastal Karnataka, Konkan and Goa, Vidarbha and Andhra Pradesh during next 3 days; over parts of East Uttar Pradesh and adjoining areas on day 2 and 3.

Lifted Index (< -2): The threshold value of the index is below -2 over parts of Gujarat, Rajasthan, Uttar Pradesh, Madhya Pradesh, Bihar, Jharkhand, Andhra Pradesh, Karnataka, Telangana, Rayalaseema, Konkan and Goa, Kerala, Tamil Nadu, southern part of west coast, coastal areas along the east coast, Chhattisgarh, Vidarbha, Orissa, GWB, SHWB, Sikkim and NE states on all 3 days; over parts of Punjab, Haryana, J&K, Himachal Pradesh, Uttarakhand on day 1; over parts of Punjab, Haryana and adjoining areas on day 2; over parts of J&K, Punjab and adjoining areas on day 3; maximum negative value of the index less than -8 is seen over parts of GWB, SHWB, Bihar and Jharkhand on day 3.

Total Total Index (> 50): The threshold value of the index is > 50 is seen over parts of J&K, Himachal Pradesh, Uttarakhand, Rajasthan, Punjab, Haryana, Delhi, Uttar Pradesh, East Madhya Pradesh, Bihar, Jharkhand, Chhattisgarh, Vidarbha, Orissa, GWB on day 1; Over parts of J&K, Himachal Pradesh, Uttarakhand, Rajasthan, Punjab, Haryana, Uttar Pradesh, East Madhya Pradesh, Bihar, Jharkhand, Chhattisgarh and Orissa on day 2 and 3; over parts of Andhra Pradesh, Telangana, South Karnataka on day 3; over parts of SHWB, Sikkim and NE during next 3 days; the maximum value of the index >55 is seen over parts of J&K, Himachal Pradesh, Uttarakhand and Punjab during next 3 days.

Sweat Index (> 300): Although the threshold value of the Index >300 is seen in most parts of the country on day 1 and threshold value of the Index >300 is seen in most parts of the country except central parts of Madhya Maharashtra, Madhya Pradesh, West Uttar Pradesh, Madhya Maharashtra, Marathawada and west Vidarbha on day 2 and 3; maximum value of the index greater than 800 is seen over parts of SHWB, Jharkhand and adjoining areas on day 3.

CAPE (> 1000): Mostly seen over southern peninsular India, along west coast and east coast, parts of East Madhya Pradesh, Orissa, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Tamil Nadu, Karnataka, coastal Maharashtra including Mumbai, Gujarat, Konkan and Goa, Bihar, Jharkhand, Chhattisgarh, East Vidarbha, GWB, SHWB, Sikkim, Assam, Meghalaya, Tripura and adjoining areas during next 3 days; over parts of Vidarbha, West Madhya Pradesh, south west Rajasthan on day 1; over parts of East Uttar Pradesh, Assam, Sikkim, Tripura, Arunachal Pradesh and adjoining areas on day 2 and 3; over parts of south west Rajasthan on day 3; Maximum value of the index greater than 2500 is seen mostly over parts of Gujarat, Orissa, Andhra Pradesh, Coastal Tamil Nadu, coastal Kerala, Orissa, GWB and coastal Karnataka on day 1; over parts of GWB, SHWB, Bihar, Jharkhand, Orissa, Andhra Pradesh on day 2 and 3; over parts of East Uttar Pradesh, Tamil Nadu, Tripura 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 central parts of Madhya Pradesh, northern parts of Madhya Maharashtra, Marathawada, and West Vidarbha region on day 1; threshold value of the Index lies in the range of (50–150) over most part of the country except central parts of Madhya Maharashtra, Madhya Pradesh, West Uttar Pradesh, Madhya Maharashtra, Marathawada and west Vidarbha on day 2 and 3; maximum value of the index greater than 400 is seen over parts of Uttar Pradesh on day 1; over parts of Chhattisgarh adjoining Telangana and Andhra Pradesh on day 2; over parts of West Rajasthan, Andhra Pradesh, Chhattisgarh, GWB and Orissa on day 3.

5. Rainfall Activity:

40-70 mm Rainfall: over parts of Arunachal Pradesh, Assam, Mizoram and adjoining areas on day 1; over parts of Assam, Meghalaya, Tripura and adjoining areas on day 2 and 3.

10-40 mm Rainfall: over parts of J&K, Himachal Pradesh, Uttarakhand, Sikkim, NE states, Foothills of Himalaya, Kerala, South Interior Karnataka and Tamil Nadu during next 3 days; over parts of GWB and Orissa on day 1; over parts of Andhra Pradesh and adjoining areas on day 2.

Up to 10 mm rainfall: Over parts of J&K, Foothills of Himalaya, Himachal Pradesh, Uttarakhand, Punjab, Haryana and adjoining areas, Uttar Pradesh, Sikkim, NE states, GWB, SHWB, Orissa, East Madhya Pradesh, Andhra Pradesh, Kerala, Karnataka, Tamil Nadu, Bihar, Jharkhand, Chhattisgarh, Telangana, Rayalaseema, Vidarbha, Marathawada during next 3 days.

IMD WRF (9km based on 00UTC of the day):

1. Model Reflectivity (Max. dBZ):

> 25 dBZ Model Reflectivity: Over parts of J&K, GWB, SHWB, Sikkim, Orissa, Bihar, Jharkhand and NE states on day 1; over parts of J&K, Punjab, Himachal Pradesh, Rajasthan, Haryana and adjoining areas, Sikkim, SHWB and NE states on day 2; over parts of J&K, Himachal Pradesh, Uttarakhand and NE states on day 3; maximum value of the Model reflectivity is seen over parts of GWB and Orissa on day 1; over parts of Assam, Meghalaya, Tripura, Mizoram and adjoining areas during next 3 days; over parts of J&K on day 3.

2. Spatial distribution of Total Total Index, K-Index, CAPE and CIN [High potential for thunderstorm]:

Total Index (> 50): Above threshold value is observed over most parts of the country except extreme south peninsular India, extreme southern parts of west coast and the east coast, southern parts of Karnataka, coastal Maharashtra, Madhya Maharashtra, Marathawada, Konkan and Goa, Kerala, Andhra Pradesh, Tamil Nadu, Bihar, Jharkhand, Orissa, GWB, SHWB, NE states, East Uttar Pradesh, Chhattisgarh, Telangana and Vidarbha and Gujarat during next 3 days; the maximum value of the index is seen over parts of Haryana, Rajasthan, Madhya Pradesh, Uttar Pradesh, Orissa, Vidarbha, Chhattisgarh on day 1; over parts of J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Rajasthan, Uttar Pradesh, Madhya Pradesh, Vidarbha, Madhya Maharashtra, Marathawada, Telangana, Karnataka, Chhattisgarh, Orissa and Jharkhand on day 2 and 3.

K-Index (> 35): Less than threshold value is observed over most of the part of the country during the next 3 days.

CAPE (> 1500): Greater than threshold value over parts of Gujarat, coastal areas of west coast, coastal Maharashtra, Konkan & Goa, coastal areas along the east coast, Bihar, Jharkhand, Uttar Pradesh, East and North west Madhya Pradesh, Chhattisgarh, Vidarbha, Orissa, GWB and Kolkata, SHWB, Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Telangana, Rayalaseema, Extreme south peninsular India, Assam, Meghalaya, Tripura and adjoining areas during next 3 days; Maximum value of the index greater than 3500 is seen over the parts of Orissa, Andhra Pradesh, Tamil Nadu, Kerala, East Madhya Pradesh, Vidarbha, Karnataka, Konkan and Goa, coastal Maharashtra and Gujarat on day 1; over parts of GWB, Jharkhand, Orissa, Andhra Pradesh, Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, Konkan and Goa and coastal Maharashtra on day 2; over parts of GWB, Bihar, Jharkhand, Orissa, Andhra Pradesh, Karnataka and Kerala 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 southern parts of west Vidarbha, Madhya Maharashtra and Marathawada, central parts of west Madhya Pradesh on day 1; over most of the parts of the country except south Rajasthan, Madhya Pradesh, West Uttar Pradesh, Vidarbha, south Chhattisgarh, Madhya Maharashtra and Marathawada on day 2 and 3; the maximum value of the index > 400 is seen over parts of Punjab, Haryana, Gujarat, Rajasthan, Madhya Pradesh, Uttar Pradesh, Chhattisgarh and Orissa on day 1 and 2; over parts of Bihar, Jharkhand, Telangana and Andhra Pradesh on day 2 and 3; over parts of Vidarbha, SHWB, Telangana and Andhra Pradesh, Rajasthan, East Uttar Pradesh and Gujarat on day 3.

3. Rainfall and Thunderstorm Activity:

Above 130 mm Rainfall: over parts of Tripura and adjoining areas on day 3.

70- 130 mm Rainfall: over parts of Orissa on day 1; over parts of Tripura, Mizoram and adjoining areas on day 2; over parts of J&K, Assam, Meghalaya, Tripura, Mizoram and adjoining areas on day 3.

40- 70 mm Rainfall: over parts of Assam, Meghalaya, Tripura, Mizoram and adjoining areas during next 3 days; over parts of GWB and Orissa on day 2; over parts of J&K on day 3.

10- 40 mm Rainfall: over parts of J&K, Sikkim, Foothills of Himalaya, GWB, SHWB, Bihar, Jharkhand, Kerala, Tamil Nadu, Karnataka and NE states during next 3 days; over parts of Himachal Pradesh and Uttarakhand on day 2 and 3; over parts of Orissa on day 1 and 2.

Up to 10 mm Rainfall: Over parts of J&K, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Kerala, Tamil Nadu, Karnataka, Orissa, Andhra Pradesh, Telangana, Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh, foothills of Himalaya, GWB, SHWB, Sikkim and NE states during next 3 days; over parts of Punjab and North West Rajasthan on day 2; over parts of Vidarbha on day 1..

3. IOP ADVISORY FOR 24 and 48Hrs:

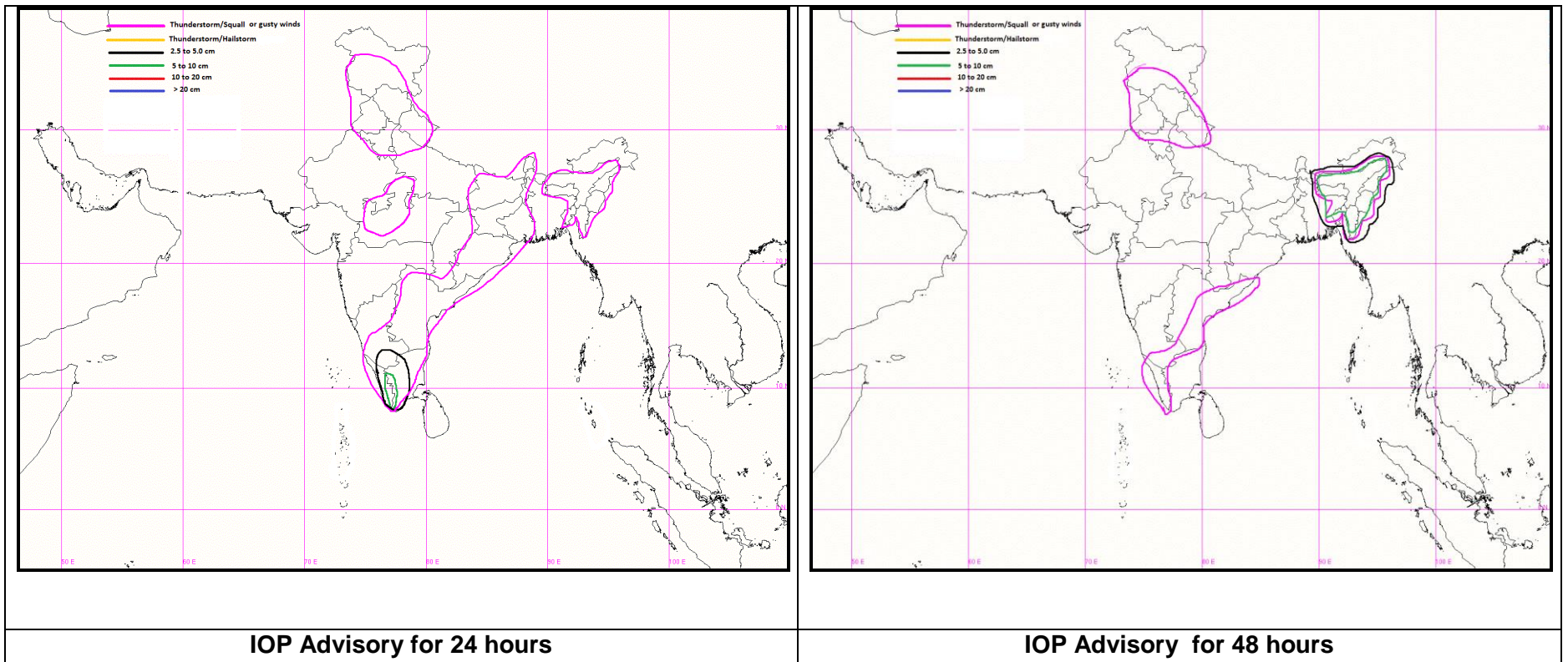
Summary and Conclusions:

- With the present synoptic conditions, the cyclonic circulation over Gangetic West Bengal and adjoining Bangladesh now lies over Sub-Himalayan West Bengal & Sikkim and neighbourhood, will give thunderstorm with gusty winds over SHWB,GWB, Orissa on Day-1.
- Due to the cyclonic circulation over Haryana & neighbourhood, J&K, Himachal Pradesh, Uttarakhand and Punjab may likely to experience the thunderstorm with gusty winds on Day-1.
- A trough runs from the above cyclonic circulation to south Interior Karnataka across Interior Tamilnadu. This will give rise to the thunderstorm with gusty winds activity mainly Tamilnadu, Kerala, Telangana on Day-1.
- A fresh Western Disturbance as an upper air cyclonic circulation between 3.1 km & 5.8 km above mean sea level lies over western parts of Iran & neighbourhood.

Day-1 & Day-2:

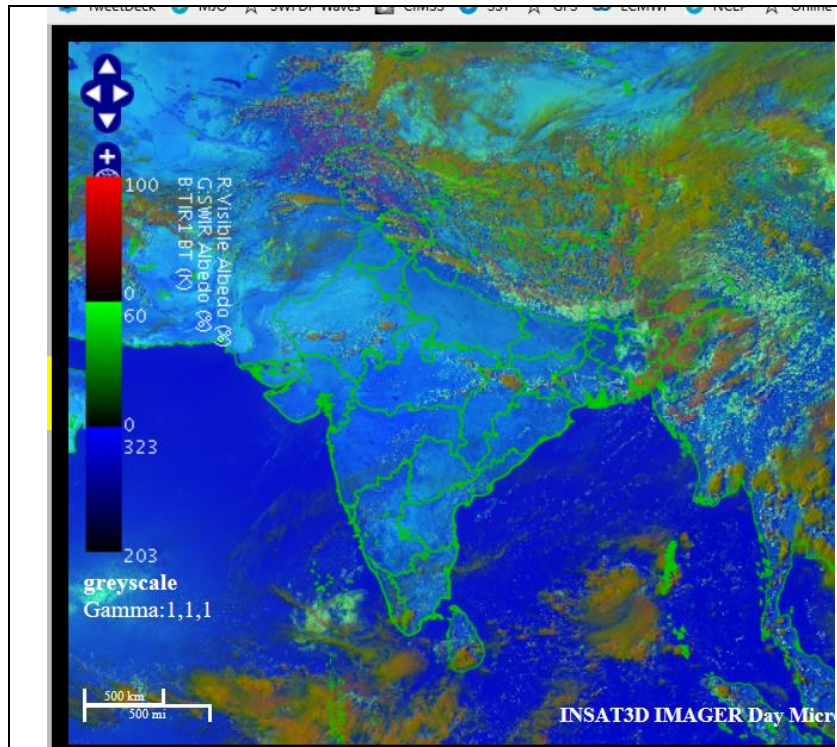
24hour Advisory for IOP:	48hour Advisory for IOP:
<p>Significant Rainfall: Kerala, Interior Tamilnadu, South Interior Karnataka</p> <p>Thunderstorm with squall or gusty winds: Jammu & Kashmir, Himachal Punjab, Uttarakhand, Punjab, Haryana, Delhi, Chandigarh West Madhya Pradesh West Bengal, Sikkim, Bihar, Jharkhand, Odisha Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura Coastal Andhra Pradesh, Rayalaseema, Telangana, Kerala, Tamilnadu, South Interior Karnataka</p> <p>Thunderstorm with squall and hail Nil</p> <p>Thunderstorm and/or Duststorm Rajasthan</p>	<p>Significant Rainfall: Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura</p> <p>Thunderstorm with squall or gusty winds: Jammu & Kashmir, Himachal Punjab, Uttarakhand, Punjab, Chandigarh West Bengal & Sikkim Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura Coastal Andhra Pradesh, Kerala,</p> <p>Thunderstorm with squall and hail Nil</p>

Graphical Presentation of Potential Areas for Severe Weather:

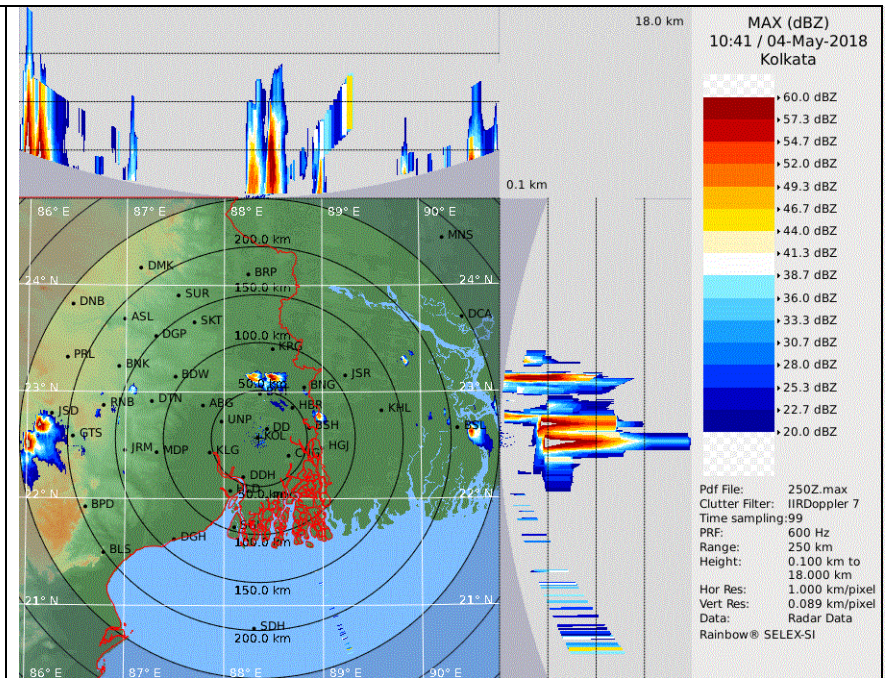


IOP Advisory for 24 hours

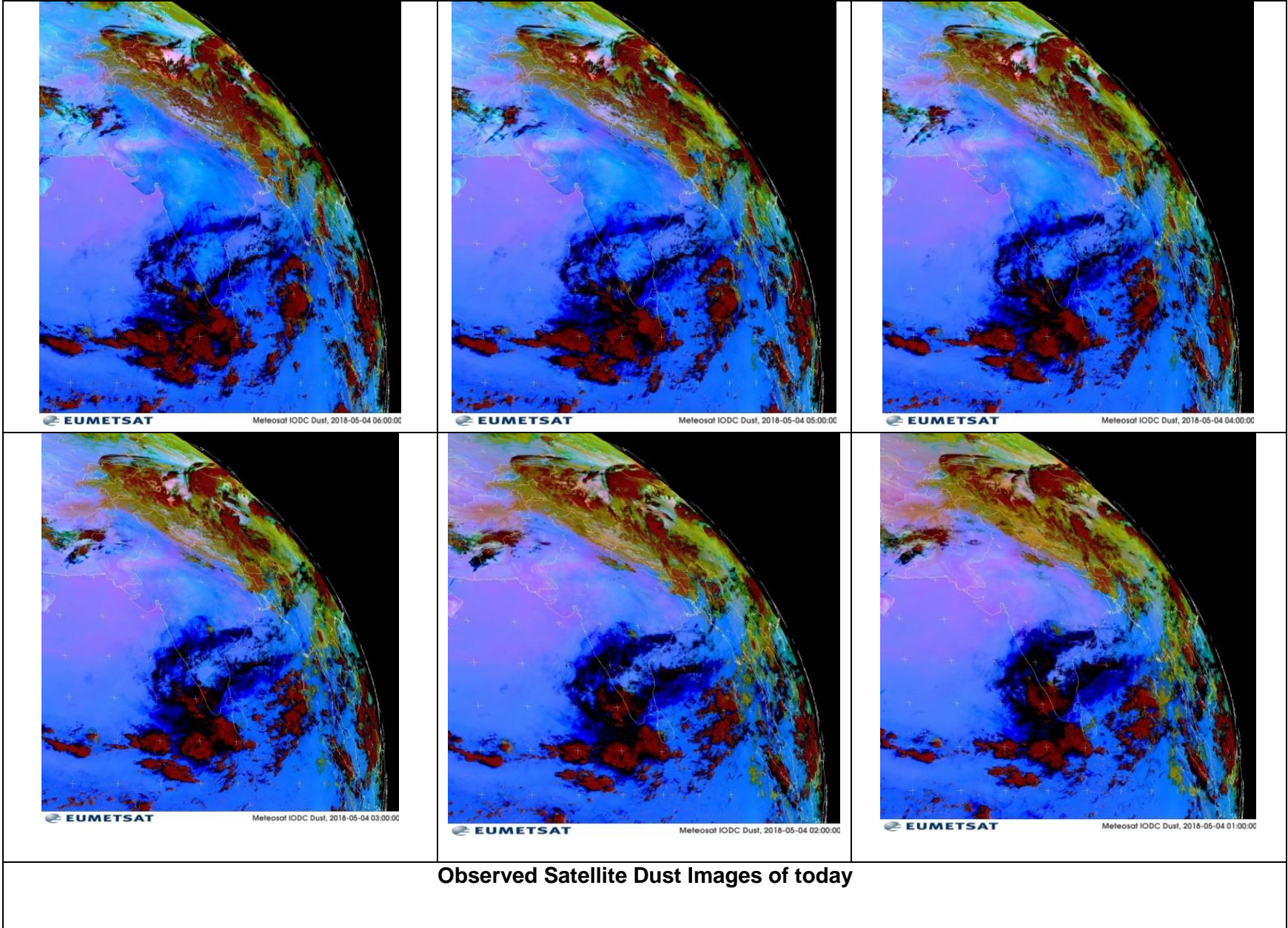
IOP Advisory for 48 hours



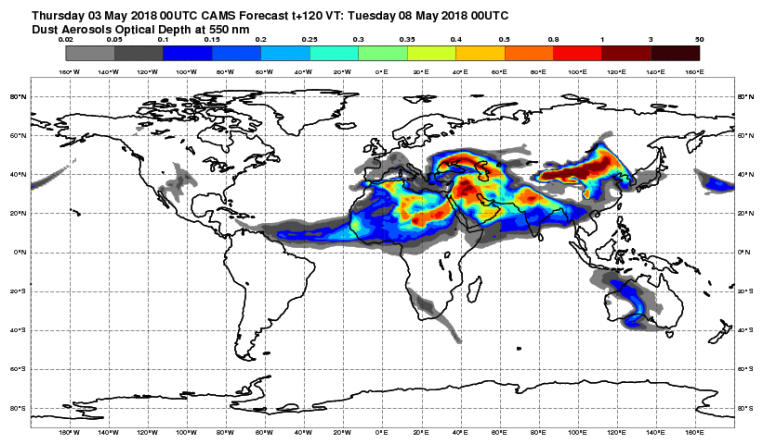
RAPID RGB Imagery at 1500 IST of the Day



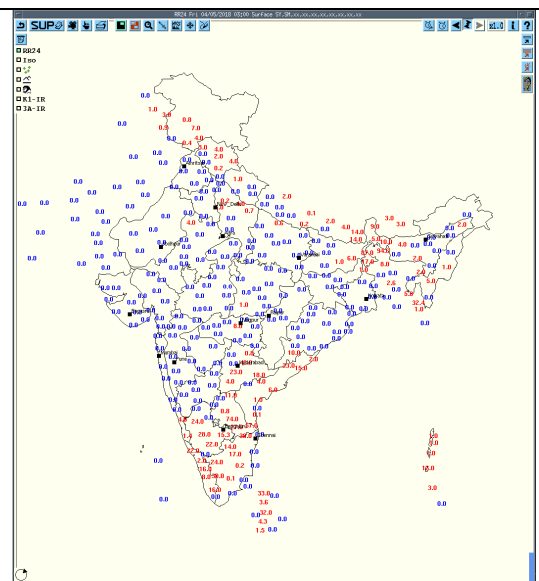
DWR Kolkata at 1611 IST of the Day



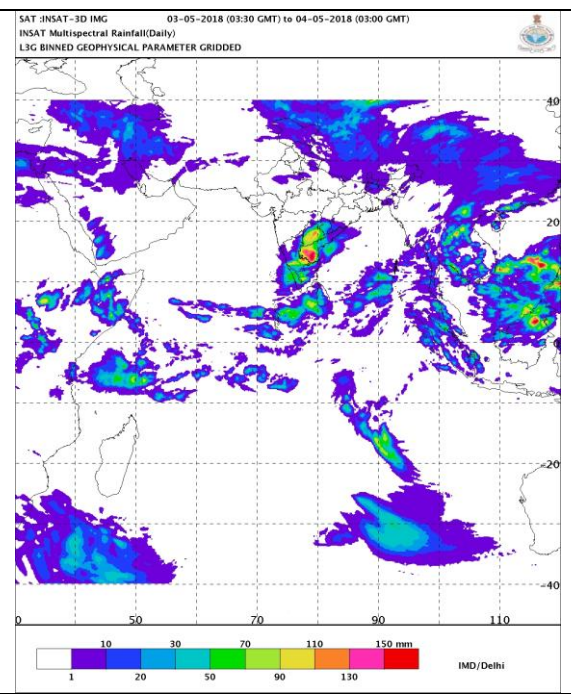
Observed Satellite Dust Images of today



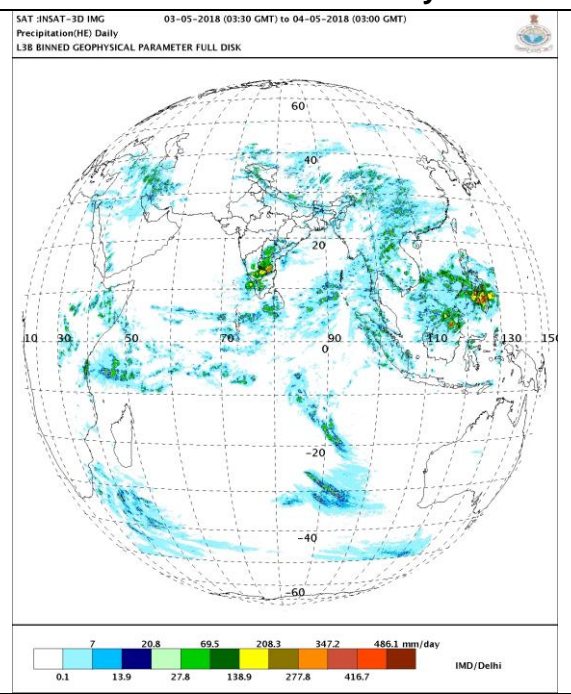
Dust Forecast



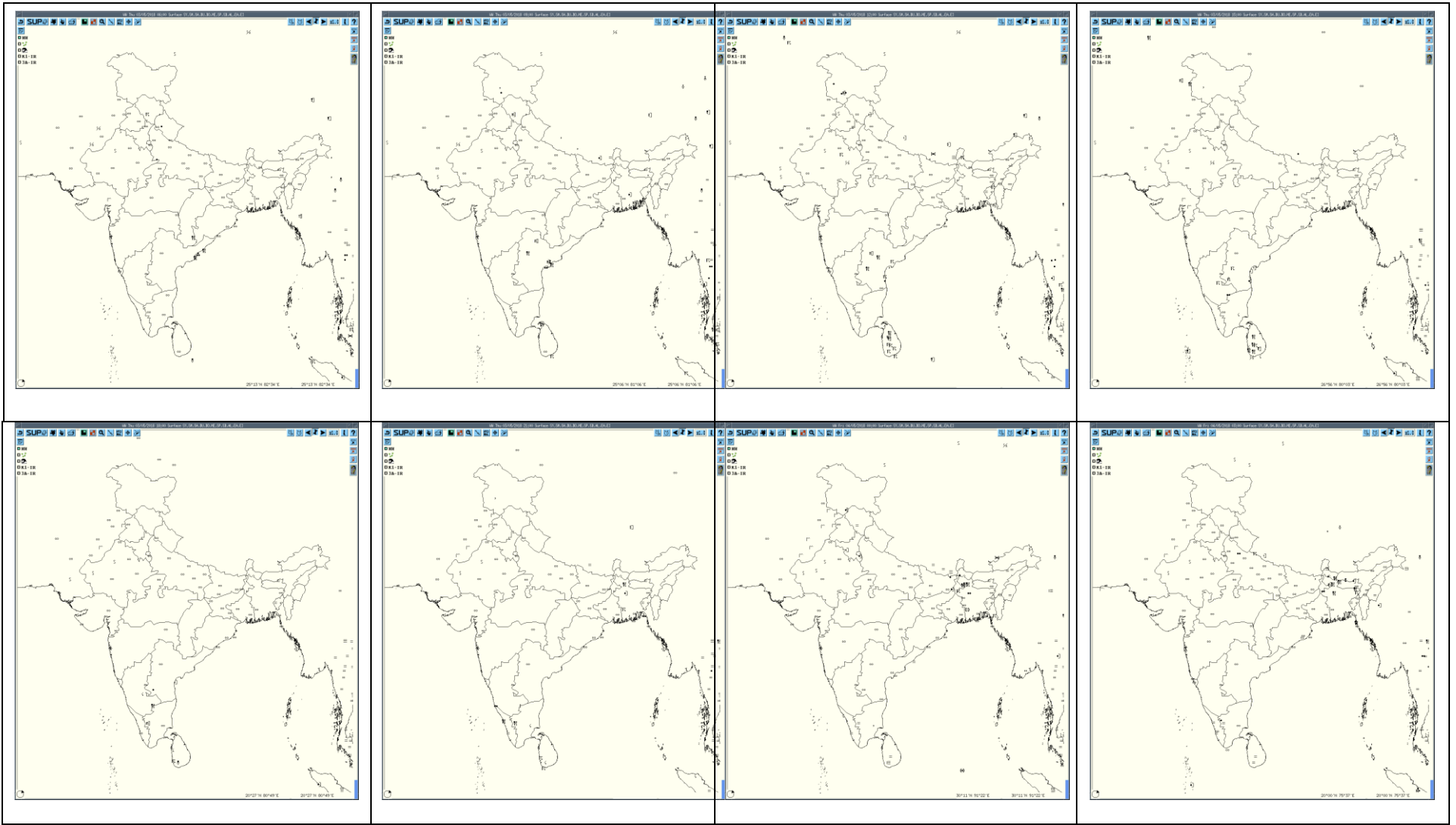
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



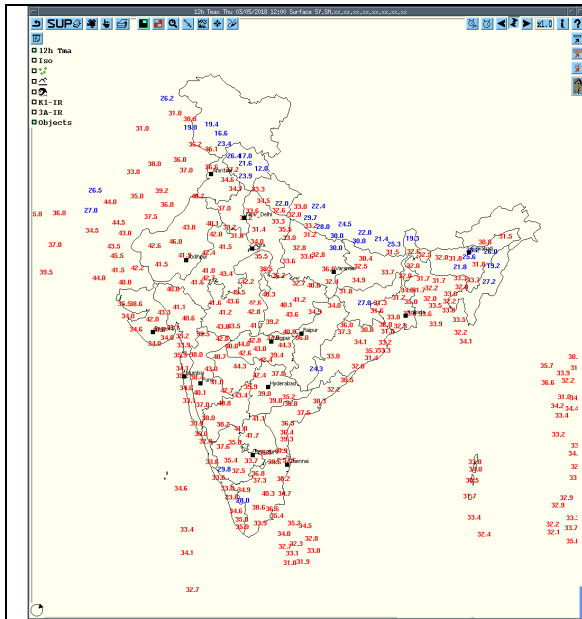
IMR



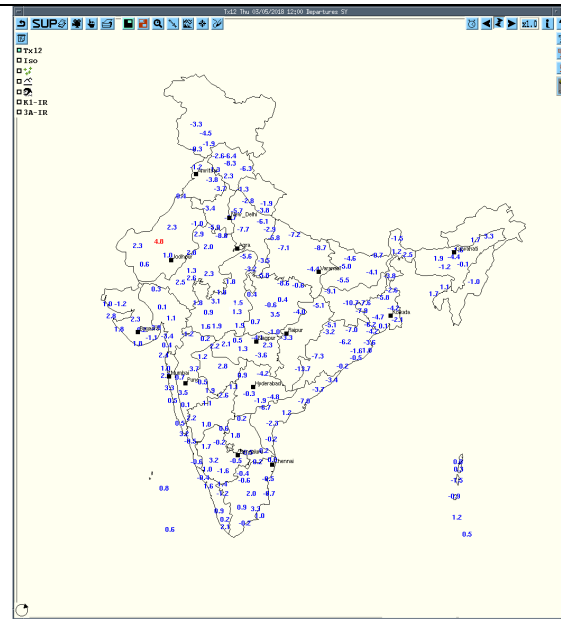
HEM



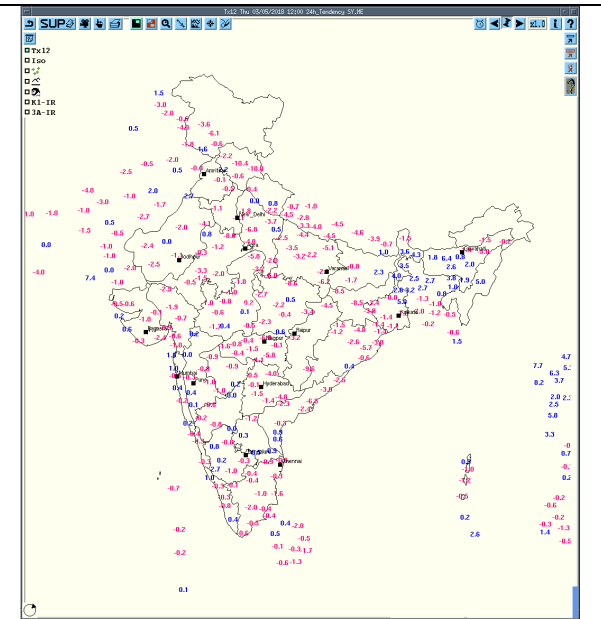
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



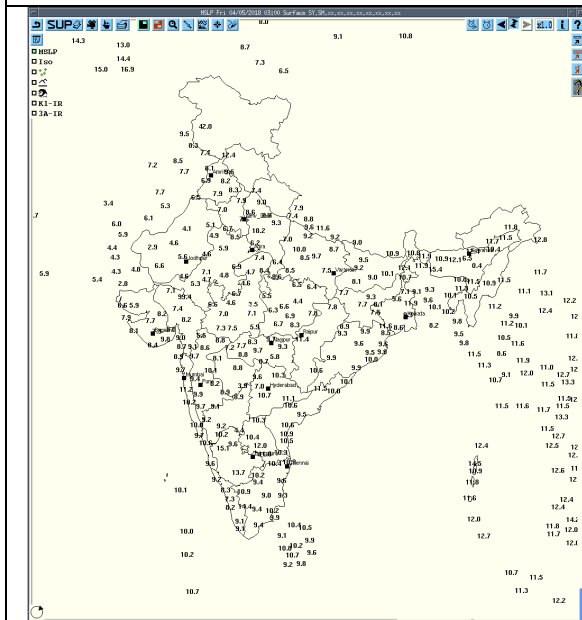
Tmax



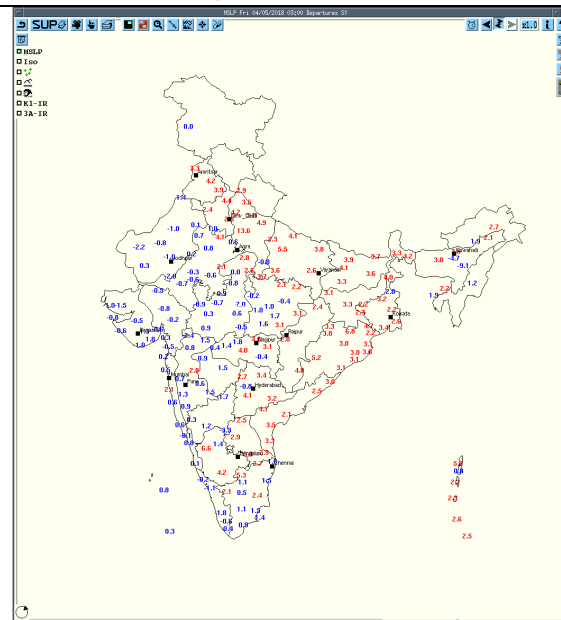
Departure Tmax



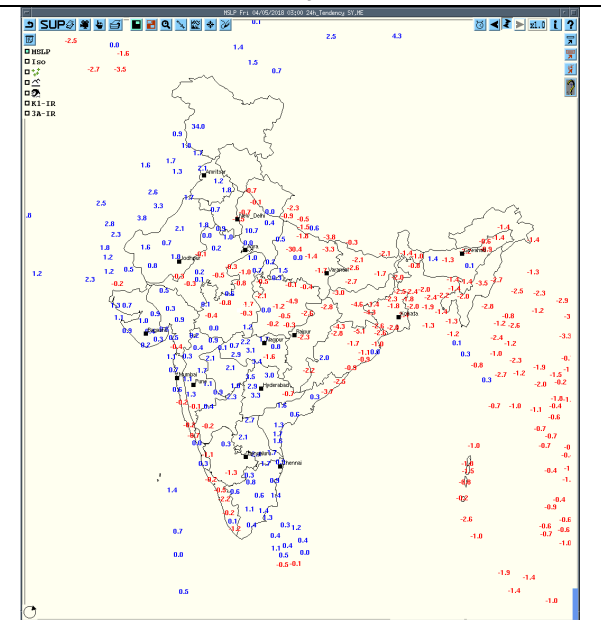
Tendency Tmax



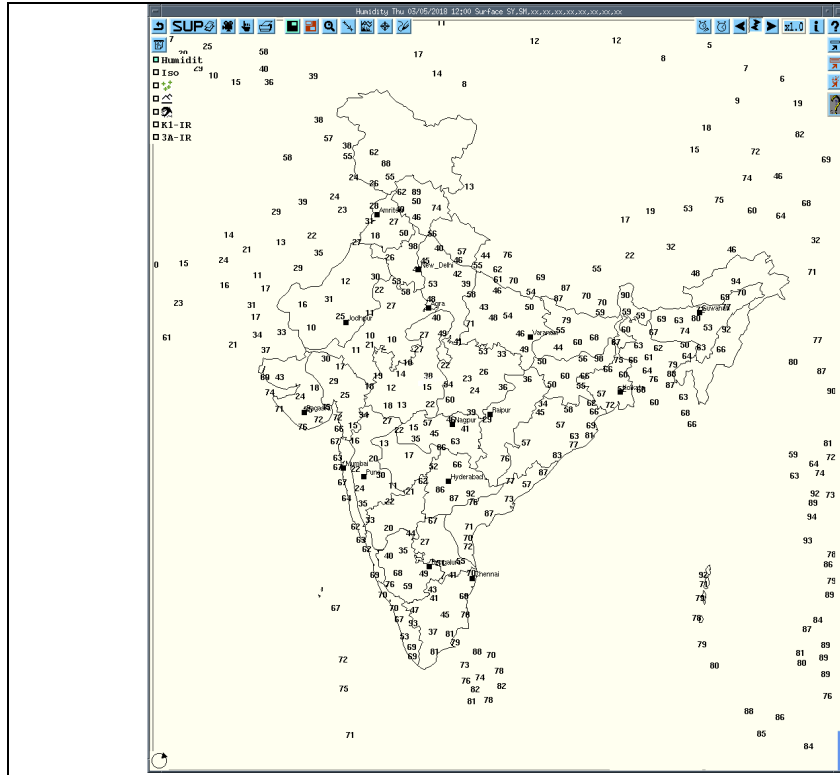
MSLP



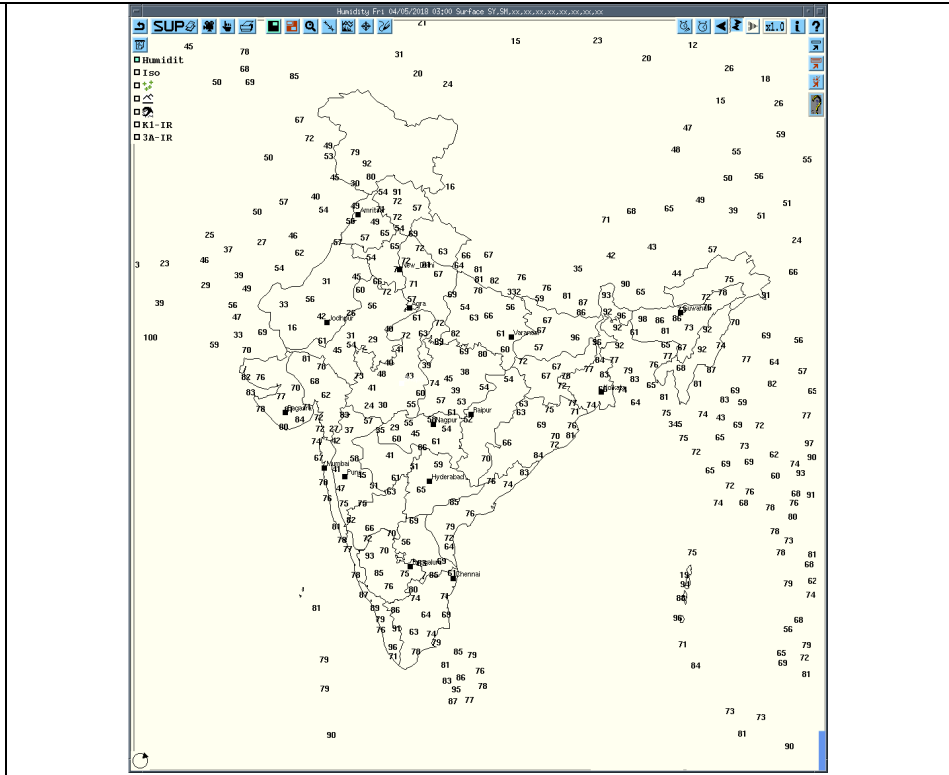
Departure MSLP



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 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
Patiala	04-05-18	030300 - 030600	MULTIPLE CELLS DBZ 43.5 HT. 10 KM	N SECTOR. .MOVMENT E- WARDS.		--	DALHOUSIE,PALAMPUR,MANDI,SUNDERNAGAR,UNA,BHAKRADAM
		030600 - 030900	MULTIPLE CELLS DBZ 47.0 HT. 08 TO 09 KM	NE SECTOR . .MOVMENT SE- WARDS.		--	ROHRU GANGOTRI
		030900- 031200	MULTIPLE CELLS DBZ 45.5 HT. 8-9 KM	N SECTOR . .MOVMENT SE- WARDS.		--	KALPA ,KEYLONG
		031200 - 031500	MULTIPLE CELLS DBZ 41.5 HT. 08 TO 09 KM	NE,SE SECTORS. .MOVMENT SE- WARDS.		---	MUSSORIE ,MANDI
		031500 - 031800	ISOLATED CELLS DBZ 42.0 HT. 07 TO 09 KM	NORTH EAST SECTORS. .MOVMENT E- WARDS		----	DALHOUSIE,PALAMPUR
		031800 - 032100	MULTIPLE CELLS DBZ 45.0 HT. 09 TO 10 KM	NW, SECTORS. .MOVMENT EWARDS.		---	SUNDER NAGAR,SHAMLI,MUZAFTERNAGAR
		032100- 040000	MULTIPLE CELLS DBZ 40.0 HT. 09 TO 10 KM	NW,SE SECTOR MOV. E WARDS			PALAMPUR,BHUNTHER,BAGHPAT,MEERUT
		040000 - 040252	MULTIPLE CELLS DBZ 37.5 HT. 09 TO 10 KM	MULTIPLE CELLS DBZ 37.5 HT. 09 TO 10 KM			----

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	04-05-18	030300 - 031530	NIL.	N/A	NIL.	NIL.	N/A
		031530 - 040000	Multicell Maximum ref.- 57 DBZ E-Top-15 KM	Position: NE to E Dir mov-SE	Warning issued	Thunderstorm, Hailstorm, Lightning. Light to Moderate Rain.	<u>BEGUSARAI, SAMASTIPUR, DARBHANGA, MADHUBANI, KHAGARIA ,MUNGER, SUPAUL,SAHARSA,MADHEPURA,LAKHISARAI, JAMUI,BHAGALPUR,BANKA,KATI HAR,PURNEA, ARARIA, KISHANGANJ.</u>
		040130 - 040200	Multicell Maximum ref.- 49.5 DBZ E-Top-12 KM	Position: ESE Dir mov-E	Warning issued	Thunderstorm, Lightning. Light to Moderate Rain.	<u>BANKA</u>
		040200 - 040300	NIL.	N/A	NIL.	NIL.	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	04-05-18	030301-032400	NIL	NIL	NOSIG ECHO	NIL	NIL
		040221-040301	Isolated small multi cells with maximum reflectivity of 51.0 dBz at 0301 UTC and maximum height of 12.00 Km at 0221 UTC	Coming from NNW (245.4 km) Moving in SE-ward direction	Isolated small multi cells coming from NNW from 0221, contd.	Thunderstorm /Rain	N/A

DWR Station	Date	Time interval of observation	Organization of the cells (isolated single cell/multiple cells convective regions/squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station & direction of movement	Remarks	Associated severe weather if any	Districts affected
Lucknow	04-05-18	030300 - 030522	A Single cell formed at 0302UTC with height 29dbz echo top and maximum reflectivity 42dbz from station about 250Km.	A Single cell system moved along SE'ly towards station with average speed 45Km/h.	A Single cell weakened and dissipated around at 0522UTC over 150 Km north of northwest from station.	TS/SQ/RA	Etah,Agra, Hatras, Mainpuri.
		030522 - 040220	Another Single cell formed at 2220 UTC with height 30dbz echo top and maximum reflectivity 42dbz converted into multiple cell with maximum reflectivity 44dbz at 2322UTC from station .	Multiple cell system moving towards station in direction of ESE"ly with average speed 50Km/h.	Multiple cell system weakened and dissipated at 4/0220UTC.	TS/SQ/RA	Amroha,Rampur, Bareilly,Badaun, Shajhanpur, Pilibhit,Lakhimpur Hardoi, Sitapur,Bahraich ,Gonda
		040220 - 040300	NIL	NIL	NIL	NIL	NIL
Jaipur	04-05-18	030300 - 040300	* Radar Shutdown due to Radar Antenna & Radar Computer Technical Problem. (Hang Problem)				

Radar Station name	Date	Time interval of observation (UTC)	Organization 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
Visakhapatnam	04-05-18	030600	Multiple cb cells with maximum reflectivity of 63 dBz and height of 18 kms	CB cells surrounded by Radar up to 100 KMS in all direction except NW and NW(80 to 175kms, moving SE ly	Since last observation Cb cells are developing and matured to 63dBz and 18 kms at 0311 UTC and dissipating from 0501UTC	Thunderstorm with rain	Visakhapatnam vizianagarma srikakulam East Godavari dist. (AP) koraput dist. (Orissa)
		030900	Multiple cb cells with maximum reflectivity of 53 dBz and height of 15 kms	CB cells surrounded by Radar up to 100 KMS in all direction except NE(80 to 175kms) and moving SE ly	Since last observation Cb cells are developed and dissipating started from 0701UTC	Thunderstorm with rain	Visakhapatnam, East Godavari, West Godavari dist. (AP), koraput dist. (Orissa) and Bay of Bengal
		031200	Convective cells with maximum reflectivity of 35 dBz and height of 9 kms	Convective cell at South and west and moving SEly	Dissipated	-	-
		031500	Convective region with reflectivity 44dbz .	Moving SE ly.	240kms(WSW)	-	-

Radar Station name	Date	Time interval of observation (UTC)	Organization 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
Agartala	04-05-18	030300-040300 (DWR operation from 0030 UTC to 1430 UTC)	MLTPL CELLS FORMATION OVER N-BAY/S-B'DESH@030730Z;13KMS, 55dBZ	200Kms(approx) South;30kmph;N/NE'LY	Cell weakened over adj B'desh but persisted moving towards SLC(ASSAM)@031400z	Moderate to heavy thunderstorm over all dists of TRP	All dists of TRP.
			SQUALL LINE FORMATION OVER ADJOINING B'DESH;12KMS;50dBZ	200 Kms NW;30Kmph;E'ly	Cell persisted till 040300z	Not Known	

Realised past 24hrs TS/SQ/HS Data:

Realised TS/HS/SQ during past 24hours 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 Comment (IST)	Time of end (IST)
Qazigund	Northwest India	Jammu & Kashmir	Thunderstorm	03-05-18	1650	1710
Kupwara	Northwest India	Jammu & Kashmir	Thunderstorm	03-05-18	1630	1800
Kukernag	Northwest India	Jammu & Kashmir	Thunderstorm	03-05-18	1520	1650
Banihal	Northwest India	Jammu & Kashmir	Thunderstorm	03-05-18	2210	2250
Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm	03-05-18	0400	0430
Gulmarg	Northwest India	Jammu & Kashmir	Thunderstorm	03-05-18	1910	1920
Sundernagar	Northwest India	Himachal Pradesh	Thunderstorm	03-05-18	1005 1136 1238 1335	1122 1205 1250 1337
Sikar	Northwest India	East Rajasthan	Thunderstorm	03-05-18	1710	1820
Gangtok	East India	Sikkim	Thunderstorm	03-05-18	1700	1730
Tadong	East India	Sikkim	Thunderstorm	03-05-18	1710	1745
Coochbehar	East India	Sub-Himalayan west Bengal	Thunderstorm	04-05-18	0530	0830
Jalpaiguri	East India	Sub-Himalayan west Bengal	Thunderstorm	04-05-18	0735	0815
Malda	East India	Sub-Himalayan west Bengal	Thunderstorm	04-05-18	0440	0740
Dhubri	Northeast India	Assam	Thunderstorm	04/0520	0520	0828
Dibrugarh	Northeast India	Assam	Thunderstorm	04/0010	0010	0020
Silchar	Northeast India	Assam	Thunderstorm	03-05-18	1910	1920
Cherrapunjee	Northeast India	Meghalaya	Thunderstorm	03/04-05-18	031020 040650	031240 040805
Lengpui	Northeast India	Mizoram	Thunderstorm	03-05-18	1715	1730
Kailasahar	Northeast India	Tripura	Thunderstorm	03-05-18	1700	1840
Wardha	Central India	Vidarbha	Thunderstorm	030-05-18	1536	1738
			Hailstorm with hail diameter 0.2cm	03-05-18	1720	1730
Jagdalpur	Central India	Chhattisgarh	Thunderstorm	03-05-18	0830	1200
Machilipatnam	South India	Coastal Andhra Pradesh	Thunderstorm	03-05-18	1150	1430

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

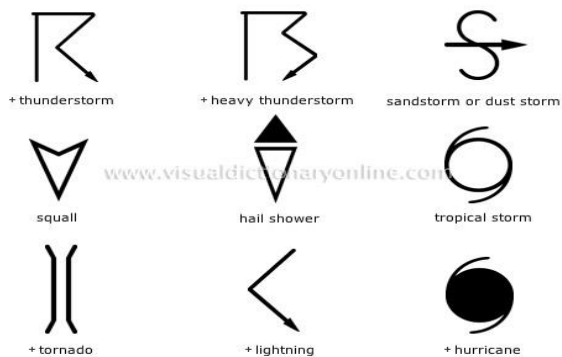
ForRadarimagesofthepast24hoursincludingmosaicofimages:

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	