



India Meteorological Department

FDP STORM Bulletin No. 57 (02-05-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

- ◆ The Western Disturbance as a trough in mid and upper tropospheric levels with its axis at 7.6 km above mean sea level now runs roughly along Long 64° E to the north of Lat 30°N.
- ◆ A fresh Western Disturbance is likely to affect Western Himalayan region from 5th May.
- ◆ The cyclonic circulation over south Haryana and neighbourhood persists and now extends upto 1.5 km above mean sea level.
- ◆ The cyclonic circulation over Sub-Himalayan West Bengal and adjoining Bangladesh now lies over Gangetic West Bengal and neighbourhood and extends upto 1.5 km above mean level.
- ◆ An east-west trough extending upto 1.5 km above mean sea level runs from northwest Rajasthan to Manipur across the cyclonic circulation over Haryana, Uttar Pradesh, the cyclonic circulation over Gangetic West Bengal and Assam & Meghalaya.
- ◆ Yesterday's trough from the above cyclonic circulation to Manipur extending upto 1.5 km above mean sea level has merged with the above east-west trough.
- ◆ The trough at 3.1 Km above mean sea level now seen between 3.1 & 7.6 km above mean sea level roughly along Long 89°E to the north of Lat 22°N.
- ◆ The north-south trough from north West Rajasthan to north Konkan now runs from north Madhya Maharashtra to south Tamilnadu across interior Karnataka extending upto 0.9 km above mean sea level.
- ◆ The trough at 1.5 Km above mean sea level from south Chhattisgarh to south Tamilnadu now runs from central parts of Madhya Pradesh to Goa across Vidarbha and Marathawada.
- ◆ The low pressure area over north Andaman Sea and neighbourhood has become less marked. However, the associated cyclonic circulation extending upto 3.1 km above mean sea level lies over north Andaman Sea and adjoining Arakan coast.

SATELLITE OBSERVATIONS during past 24 hrs and current observation:

Current Observation (based on 0900UTC imagery of INSAT 3D):

Intense Precipitation Advisory for next 3 hrs:

Heavy rainfall spell (>10mm/hr) is likely over Punjab adjoining North Haryana, Himachal Pradesh, adjoining Jammu & Kashmir. Light to moderate rainfall spell is likely over rest Jammu & Kashmir, North Uttarakhand, Assam, Nagaland, Manipur, Central Gangetic west Bengal, Lakshadweep and Bay Islands. (For details kindly refer to <http://sigma.cptec.inpe.br/scope/>).

Thunderstorm Advisory for Next 3 Hrs:

Thunderstorm/Convective cells are likely over Jammu & Kashmir, Punjab, North Haryana, Himachal Pradesh, North Uttarkhand, Assam, Meghalaya, Nagaland, Manipur, Lakshadweep, West Central Jharkhand, Central Gangetic West Bengal. (For details kindly refer to <http://www.rapid.imd.gov.in/>).

Low Level Circulation (LLC) over Andaman Sea:

Broken low/medium clouds with embedded moderate to intense convection seen over Gulf of Martaban & neighbourhood in association with Low Level Circulation over the area (**Minimum CTT minus 66 DEG C**).

Western Disturbance (WD):

Scattered multi-layered clouds seen over Northeast Afghanistan, North Pakistan, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, and over the area between Lat 37.0N to 42.0N, Long 70.0E to 86.0E in association with Western Disturbance over the area.

Westerly Trough:-

Trough in westerlies runs roughly along long 64.0deg E & north of lat 30.0deg N.

Clouds descriptions within India:

Scattered low/medium clouds with embedded moderate to intense convection seen over Jammu & Kashmir, Himachal Pradesh, Punjab, North Haryana, North Uttarakhand, Sub-Himalayan West Bengal, Sikkim, Arunachal Pradesh, Assam, Nagaland, Manipur, Meghalaya, central Gangetic West Bengal, Jharkhand and Bay Islands. Scattered low/medium clouds with embedded isolated weak to moderate convection seen over rest Uttarakhand, Northwest Chhattisgarh and Mizoram. Scattered low/medium clouds seen over Southeast Rajasthan, South Interior Karnataka, Rayalaseema, Kerala and Tamilnadu.

Arabian Sea:-

Broken low/medium clouds with embedded moderate to intense convection seen over Lakshadweep & neighbourhood.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convective seen over Andaman Sea & Southeast Bay south of Lat 9.0deg N.

Past Weather:

Convection (during last 24 hrs):

Intense to Very Intense convection was observed over South Chhattisgarh Odisha Coastal Andhra Pradesh North Kerala North-East Tamilnadu and

Moderate to Intense convection was observed over J&K Himachal Pradesh Uttarakhand Punjab East Rajasthan North-West Madhya Pradesh North Chhattisgarh Bihar Jharkhand West Bengal Sikkim North-East States Telangana South Interior Karnataka South Kerala South Tamilnadu Andaman & Nicobar islands.

OLR:

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

Synoptic Features:**Westerly Trough& jet Stream:**

Westerly Trough roughly along Longitude 64.0E & North Of Latitude 30.0N.

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** is observed over Bihar Jharkhand Sikkim West Bengal. Positive **Low Level Convergence** is observed over Indian region.

Positive **Vorticity (850 hPa)** is observed over North Rajasthan Haryana Delhi South Uttar Pradesh adjoining Madhya Pradesh Telangana.

Precipitation:**IMR:**

Rainfall up-to 90-150 mm observed over Coastal Andhra Pradesh and

Rainfall up-to 70-90 mm observed over South Chhattisgarh South Odisha and

Rainfall up-to 50-70 mm observed over North Kerala North-East Tamilnadu and

Rainfall up-to 20-30 mm observed over Himachal Pradesh Uttarakhand South parts of South Interior Karnataka Lakshadweep Andaman & Nicobar Islands and

Rainfall up-to 01-20 mm observed over J&K North Punjab East Rajasthan East Bihar North-East Jharkhand Sikkim Sub Himalayan West Bengal North-East States North Odisha North Chhattisgarh North-West Tamilnadu & South Kerala.

HEM:-

Rainfall up-to 69.5-138.9 mm observed over South Coastal Andhra Pradesh

Rainfall up-to 27.8 to 69.5 mm observed over South-West J&K Himachal Pradesh Uttarakhand Manipur Mizoram South Chhattisgarh South Odisha North Coastal Andhra Pradesh North Kerala North-East Tamilnadu and

Rainfall up-to 07-20.8 mm observed over East Bihar Sikkim rest North-East States and

Rainfall up-to 0.1-07 mm observed over North Punjab North-East Jharkhand North-West Tamilnadu & South Kerala

RADAR and RAPID RGB Observation:

Strong multiple convections are seen over Jharkhand and East Gangetic West Bengal in DWR composite at 1500 IST. DWR Chennai and Kolkata domains at 1530 IST indicate strong multiple echoes with dBZ >55 and height more than 15km.

RAPID RGB Satellite imagery at 1430IST indicates significant convection over Jammu & Kashmir, Himachal Pradesh, North Uttarakhand, Punjab, Haryana, North Chhattisgarh, Northeast Gangetic West Bengal adjoining Sub-Himalayan West Bengal, Sikkim, Assam, Arunachal Pradesh, Nagaland, Manipur, South Interior Karnataka adjoining Rayalaseema 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 decrease 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	02.05.2018	02.05.2018
PM10 (micro-g/m ³)	140	133
PM2.5 (micro-g/m ³)	69	65

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

Low level Cycirs, Troughs:

12UTC of Day 2-3: Weak CYCIR over NW India and over Bihar region.

Confluence & Wind Discontinuity Regions:

12 UTC of Day 0-4: 925 hPa N-S discontinuity over Southern Peninsular India

12UTC of Day 0-1: 925 hPa SW-NE discontinuity MP-Chhattisgarh-Odisha

Synoptic Systems:

00&12 UTC of Day 0-1: WD as a weak trough over J &K.

12 UTC of Day 2-4: Trough at 850 hPa over WB and adjoining Bangladesh .

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: NE_NMMT, Jammu_Kashmir, West_RJ, East_RJ, West_MP, Madhya_Maharashtra, Chhattisgarh, NI_Karnataka,

Day1: Gangetic_WB, Odisha, East_MP, Madhya_Maharashtra, Chhattisgarh, TN_Puducherry, NI_Karnataka, SI_Karnataka,

Day2: Jharkhand, East_RJ, West_MP, East_MP, Madhya_Maharashtra, Vidarbha, TN_Puducherry, NI_Karnataka, SI_Karnataka,

Day3: Assam_Meghalaya, East_RJ, East_MP, Madhya_Maharashtra, Chhattisgarh, NI_Karnataka, SI_Karnataka,

Day4: Assam_Meghalaya, NE_NMMT, Madhya_Maharashtra, NI_Karnataka

4. Low level Vorticity:-Positive Vorticity:

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

Day0: Jammu_Kashmir, West_RJ, Chhattisgarh,

Day1: Bihar, Hry_Chhd_Delhi, Coastal_AP,

Day2: Bihar, Hry_Chhd_Delhi,

Day3: Assam_Meghalaya, Jharkhand, Hry_Chhd_Delhi, Punjab,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Bihar, Uttarakhand, Himachal_Pradesh, Madhya_Maharashtra

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, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, East_RJ, Odisha, West_MP, East_MP, Konkan_Goa, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, East_RJ, Odisha, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day3: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Chhattisgarh, Coastal_AP, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, West_UP, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, TN_Puducherry, Coastal_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, Assam_Meghalaya, NE_NMMT, 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, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, SI_Karnataka,

Day1: Arunachal_Pradesh, NE_NMMT, 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, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, SI_Karnataka,

Day2: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana,

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

Day4: Arunachal_Pradesh, Sub_Himalayan_WB, Bihar, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, 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, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, East_RJ, Odisha, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

Day1: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, East_RJ, Odisha, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day2: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

Day3: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, East_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day4: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Uttarakhand, Punjab, Jammu_Kashmir, Odisha, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Assam_Meghalaya, NE_NMMT, Bihar, Uttarakhand, Punjab, Jammu_Kashmir,

Day2: Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Chhattisgarh, Andaman_Nicobar,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, West_UP, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Andaman_Nicobar,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, SI_Karnataka,

Day5: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Jammu_Kashmir

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

1. Synoptic Systems:

The analysis based on 00 UTC indicates a cyclonic circulation over North Haryana and adjoining Punjab region in lower troposphere. The forecast shows this circulation will move eastward till day 3. Another cyclonic circulation is seen in the analysis over GWB and adjoining areas. The forecast shows it will persist for next 24 hours. The analysis shows an East- West Trough in the lower Troposphere extending from North west Rajasthan to Manipur across the cyclonic circulation over Haryana and GWB. The forecast shows the trough will persist for next 48 hours. A North –South Trough from North Madhya Maharashtra to south Tamil Nadu. The forecast shows eastward shift of the trough in next 48 hours. The analysis shows a cyclonic circulation over North Pakistan and adjoining west Rajasthan in lower troposphere (925hPa). The forecast shows eastward movement of the circulation till day 2.

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 North- South Trough, the East- West Trough from North West Rajasthan to Eastern parts of India, along the cyclonic circulations, over parts of GWB, Orissa, Bihar, Jharkhand and NE states during next 3 days. It is inferred that parts of North West Rajasthan, Punjab, Haryana, Delhi, West Uttar Pradesh, Madhya Pradesh and adjoining areas have Positive Vorticity from day 1 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 is seen over parts of J&K, Punjab, Himachal Pradesh, Uttarakhand, Haryana and Delhi, 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, Madhya Pradesh, Chhattisgarh, coastal areas along the east coast and west coast, Sikkim, Assam, Meghalaya, Tripura and adjoining area during next 3 days; Maximum value of the index is seen over parts of GWB, SHWB, Orissa, Bihar, Jharkhand, Uttar Pradesh, Chhattisgarh, Telangana, Gujarat, Rajasthan, Punjab, Haryana, Delhi, Madhya Pradesh, North Madhya Maharashtra, Vidarbha, Andhra Pradesh, coastal Maharashtra, coastal Karnataka, Kerala and coastal Tamil Nadu on day 1; over parts of Uttar Pradesh, Bihar, Jharkhand, Orissa, GWB, Andhra Pradesh, Chhattisgarh, Vidarbha, Telangana, Coastal areas along the west coast, Gujarat and south west Rajasthan on day 2; over parts of Orissa, Andhra Pradesh, coastal Tamil Nadu, Coastal areas along the East coast, Telangana, Chhattisgarh, East Vidarbha and Part of North Madhya Maharashtra on day 3.

Lifted Index (< -2): The threshold value of the index is below -2 over parts of Gujarat, Rajasthan, Punjab, Haryana, Delhi, Uttar Pradesh, J&K, Himachal Pradesh, Uttarakhand, 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; maximum negative value of the index less than -10 is seen over parts of GWB and Orissa on day 1; and Andhra Pradesh during next 3 days. Over some parts of Telangana on day 3.

Total Total Index (> 50): The threshold value of the index is > 50 is seen over most of the parts of the country except Gujarat, Madhya Maharashtra, north west Marathwada, extreme south peninsular India and coastal areas along the west coast on day 1; over most of the parts of the country except South West Rajasthan, Gujarat, South west Madhya Pradesh, Madhya Maharashtra, Marathwada, Karnataka, Kerala and coastal areas along the west coast on day 2 and 3; the maximum value of the index >60 is seen over parts of Orissa on day 1.

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, some parts of Marathwada and west Vidarbha on day 2 and 3; maximum value of the index greater than 800 is seen over parts of GWB and Orissa on day 1.

CAPE (> 1000): Mostly seen over J&K, Punjab, Haryana, Delhi, Rajasthan, Himachal Pradesh, Uttarakhand, Uttar Pradesh, southern peninsular India, along west coast and east coast, parts of 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; Maximum value of the index greater than 2500 is seen mostly over parts of Gujarat, GWB, Orissa, Andhra Pradesh, Telangana, Coastal Tamil Nadu, coastal Kerala and Chhattisgarh during next 3 days; over parts of coastal Maharashtra 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, Marathwada, and West Vidarbha region during next 3 days; maximum value of the index greater than 400 is seen over parts of Gujarat, South West Rajasthan, west Uttar Pradesh, Chhattisgarh, North Madhya Pradesh, south Madhya Maharashtra, Orissa, Punjab, Haryana, coastal Maharashtra on day 1; over parts of Gujarat, south west Rajasthan, Orissa, Jharkhand, Chhattisgarh, south Uttar Pradesh, East Madhya Pradesh on day 2; over some parts of Punjab and Haryana on day 3..

5. Rainfall Activity:

70- 130 mm Rainfall: over parts of Orissa on day 1 and 2.

40- 70 mm Rainfall: over parts of GWB, Jharkhand, Orissa and Chhattisgarh on day 1 and 2; over parts of Andhra Pradesh, South Interior Karnataka and Tamil Nadu on day 1; over some parts of North Tamil Nadu on day 3.

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

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, Marathwada during next 3 days; over parts of Rajasthan, Haryana, Delhi and adjoining areas and West Madhya Pradesh on day 1..

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

1. Model Reflectivity (Max. dBZ):

> 25 dBZ Model Reflectivity: Over parts of J&K, Punjab, Haryana, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, North West Rajasthan, GWB, Sikkim, Orissa, Bihar, Jharkhand, SHWB, Kerala, Tamil Nadu, South Karnataka, Chhattisgarh and NE states on day 1; over parts of J&K, Haryana, Delhi, West Uttar Pradesh, Himachal Pradesh, Uttarakhand, Chhattisgarh, East Madhya Pradesh, Vidarbha, Orissa, GWB, Bihar, Jharkhand, Andhra Pradesh, Assam, Tripura and adjoining areas on day 2; over parts of J&K, GWB, Orissa, North Bihar, NE states and some parts of Andhra Pradesh and Telangana on day 3; maximum value of the Model reflectivity is seen over parts of GWB, SHWB, Orissa, Bihar, Jharkhand, Tamil Nadu, Kerala, parts of Punjab, J&K, Haryana, Himachal Pradesh, Uttarakhand, East Uttar Pradesh on day 1; over parts of Bihar, Jharkhand, GWB and Orissa on day 2; over some parts of Tripura and adjoining areas 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, Konkan and Goa, Kerala, Andhra Pradesh, Tamil Nadu, Bihar, Jharkhand, Orissa, GWB, SHWB, NE states and East Uttar Pradesh during the next 3 days; below threshold value is seen over parts of J&K, Punjab, Uttarakhand, Himachal Pradesh, West Uttar Pradesh, Chhattisgarh on day 1; over some parts of Chhattisgarh, Punjab and Telangana on day 2; over parts of Chhattisgarh, Gujarat and Telangana on day 3; the maximum value of the index is seen over parts of J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Rajasthan, Madhya Pradesh, Uttar Pradesh, GWB, Orissa, Madhya Maharashtra, Marathawada, Vidarbha, Bihar, Jharkhand, Telangana, Chhattisgarh, Karnataka and Gujarat on day 1 and 2; over parts of Punjab, Haryana, Delhi, Rajasthan, Madhya Pradesh, Vidarbha, Madhya Maharashtra, Marathawada, Telangana, Karnataka and Chhattisgarh on day 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 J&K, Himachal Pradesh, Uttarakhand, Punjab Haryana, Delhi, Rajasthan, 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, Chhattisgarh, Telangana, Vidarbha, Karnataka, Konkan and Goa, Gujarat and coastal Maharashtra on day 1 and 2; over parts of Orissa, Kerala, Karnataka, south coastal Maharashtra, Konkan and Goa 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 during next 3 days; the maximum value of the index > 400 is seen over parts of Punjab, Gujarat, Rajasthan, Jharkhand, Orissa, Chhattisgarh, North Coastal Maharashtra, Vidarbha, Uttar Pradesh, Telangana Madhya Pradesh, Punjab, Haryana, Delhi, Uttarakhand, Telangana on day 1 and 2; over parts of Gujarat, Rajasthan, Madhya Maharashtra, Madhya Pradesh, Uttar Pradesh and Chhattisgarh on day 3.

3. Rainfall and Thunderstorm Activity:

Above 130 mm Rainfall: over some parts of GWB and Kolkata on day 2.

70- 130 mm Rainfall: over parts of Bihar and Tamil Nadu on day 1; over parts GWB and Orissa on day 1 and 2.

40- 70 mm Rainfall: over parts of GWB, Orissa, SHWB and Jharkhand on day 1 and 2; over parts of East Uttar Pradesh, Tamil Nadu and Kerala on day 1; over some parts of Tripura and adjoining areas on day 3.

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

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

3. IOP ADVISORY FOR 24 and 48Hrs:

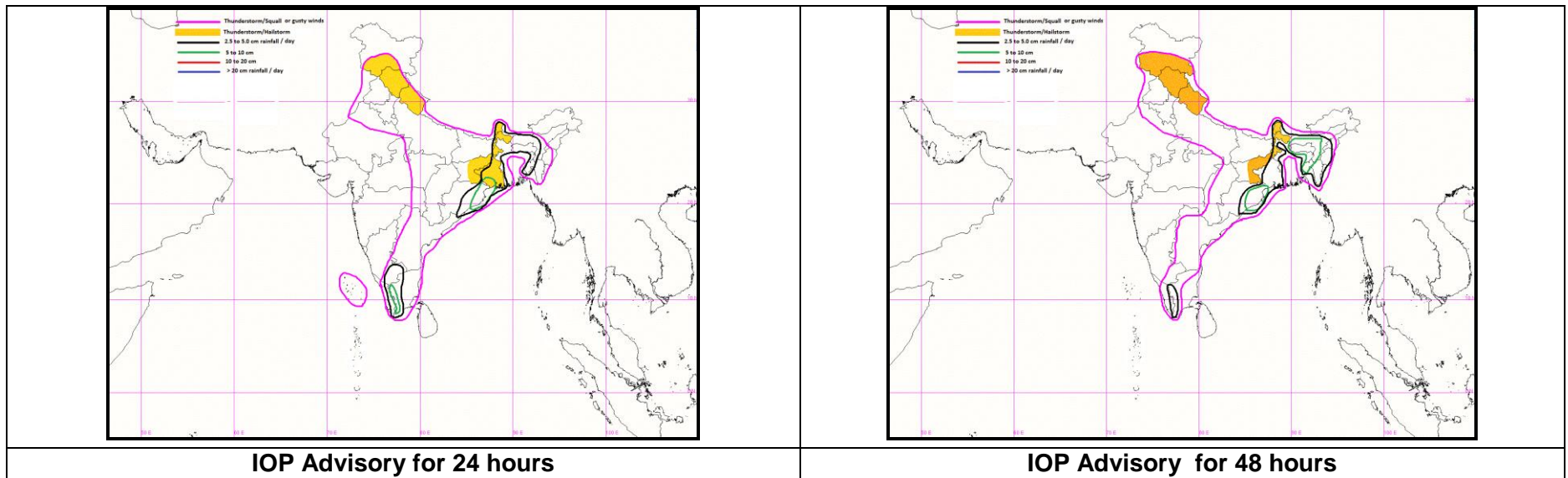
Summary and Conclusions:

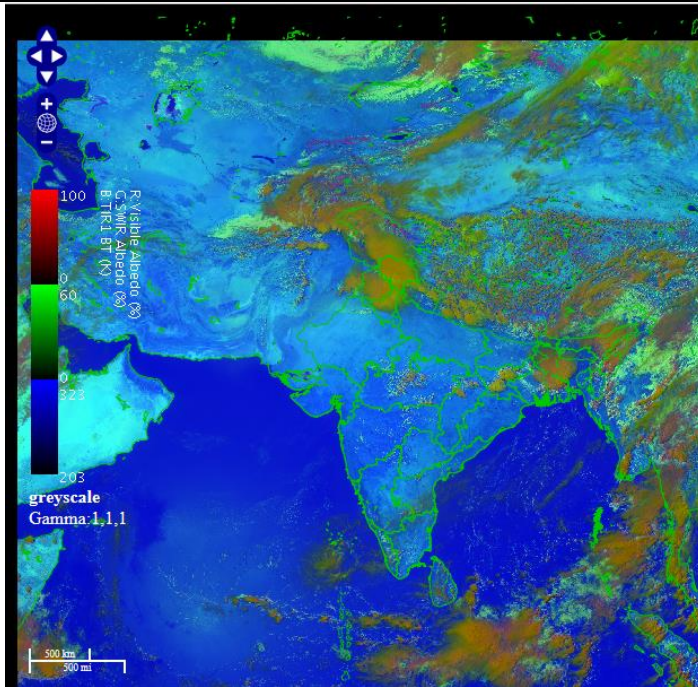
- Most thermodynamic indices (T-STORM Initiation Index, TTI Index, K-Index, Lifted Index, CAPE, CINE) from IMD GFS deterministic model indicate high probability of thunderstorm occurrence over the entire Indian region excluding West Madhya Pradesh and Maharashtra, on day 1, with the probability increasing over North and east India on day 2. SWEAT index, which also accounts for the wind shear between 850 and 500 hPa levels, indicates a maximum probability of convection over East India and East peninsular India on day 1 and increasing on day 2. The 850-200 hPa wind shear maxima indicate high wind shear across the plains of North and Central India on day 1, decreasing on day 2.
- Synoptic analysis indicates an eastwest trough extending upto 1.5 km above mean sea level runs from northwest Rajasthan to Manipur across a cyclonic circulation over Haryana, Uttar Pradesh and another cyclonic circulation over Gangetic West Bengal and Assam & Meghalaya. There is also a northsouth trough from north Madhya Maharashtra to south Tamilnadu extending upto 0.9 km above mean sea level and another trough above it from Madhya Pradesh to Goa. ECMWF and IMD GFS deterministic models indicate that the cyclonic circulation over Gangetic West Bengal is likely to become more prominent in the 12 UTC charts. As a result of the east-west trough, moisture from the Bay of Bengal is being pumped into North India along with easterly flow on both day 1 and day 2. The easterlies are likely to interact with the westerlies due to the westerly trough and result in severe convective weather over the hills of Northwest India as well as the North Indian plains. There is also likelihood of moderate to heavy rainfall over East and Northeast India on day 1 and 2.
- As a result of the north-south trough over the Indian mainland, East coast of India as well as extreme south peninsular India is also likely to be active on day 1, decreasing on day 2.

Day-1 & Day-2:

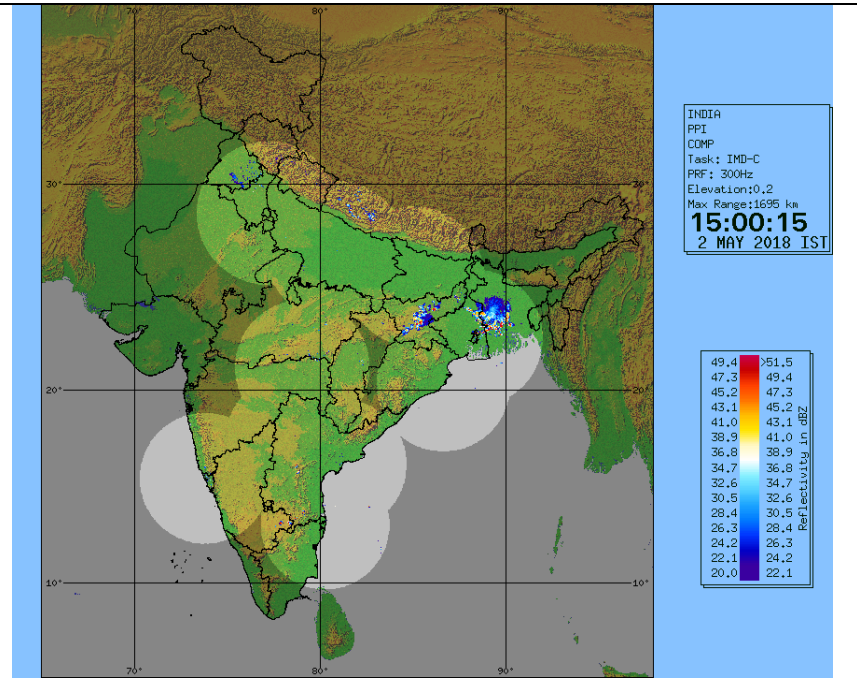
24hour Advisory for IOP:	48hour Advisory for IOP:
<p>Significant Rainfall: West Bengal and Sikkim, Odisha, Nagaland, Manipur, Mizoram, Tripura, Arunachal Pradesh, Assam and Meghalaya North Interior Tamil Nadu, South Interior Karnataka, Kerala</p> <p>Thunderstorm with squall or gusty winds: Interior Tamil Nadu, Kerala, Lakshadweep, South Interior Karnataka, Telengana, Rayalaseema, Coastal Andhra Pradesh Jharkhand, Bihar, Odisha, East Madhya Pradesh, Chhattisgarh, Nagaland, Manipur, Mizoram, Tripura, Assam and Meghalaya Punjab, Haryana, North Rajasthan, East Uttar Pradesh</p> <p>Thunderstorm with squall and hail West Bengal, Sikkim Jammu and Kashmir, Himachal Pradesh, Uttarakhand</p> <p>Thunderstorm and/or Duststorm: West Uttar Pradesh</p>	<p>Significant Rainfall: West Bengal and Sikkim, Odisha, Nagaland, Manipur, Mizoram, Tripura, Arunachal Pradesh, Assam and Meghalaya North Interior Tamil Nadu, Kerala</p> <p>Thunderstorm with squall or gusty winds: Interior Tamil Nadu, Kerala, Telengana, Rayalaseema, Coastal Andhra Pradesh Jharkhand, Bihar, Odisha, Chhattisgarh, Nagaland, Manipur, Mizoram, Tripura, Assam and Meghalaya Punjab, Haryana, North Rajasthan, Uttar Pradesh Gangetic West Bengal, Odisha, Jharkhand, Bihar</p> <p>Thunderstorm with squall and hail Sub Himalayan West Bengal, Sikkim Jammu and Kashmir, Himachal Pradesh, Uttarakhand</p> <p>Thunderstorm and/or Duststorm:- Nil</p>

Graphical Presentation of Potential Areas for Severe Weather:

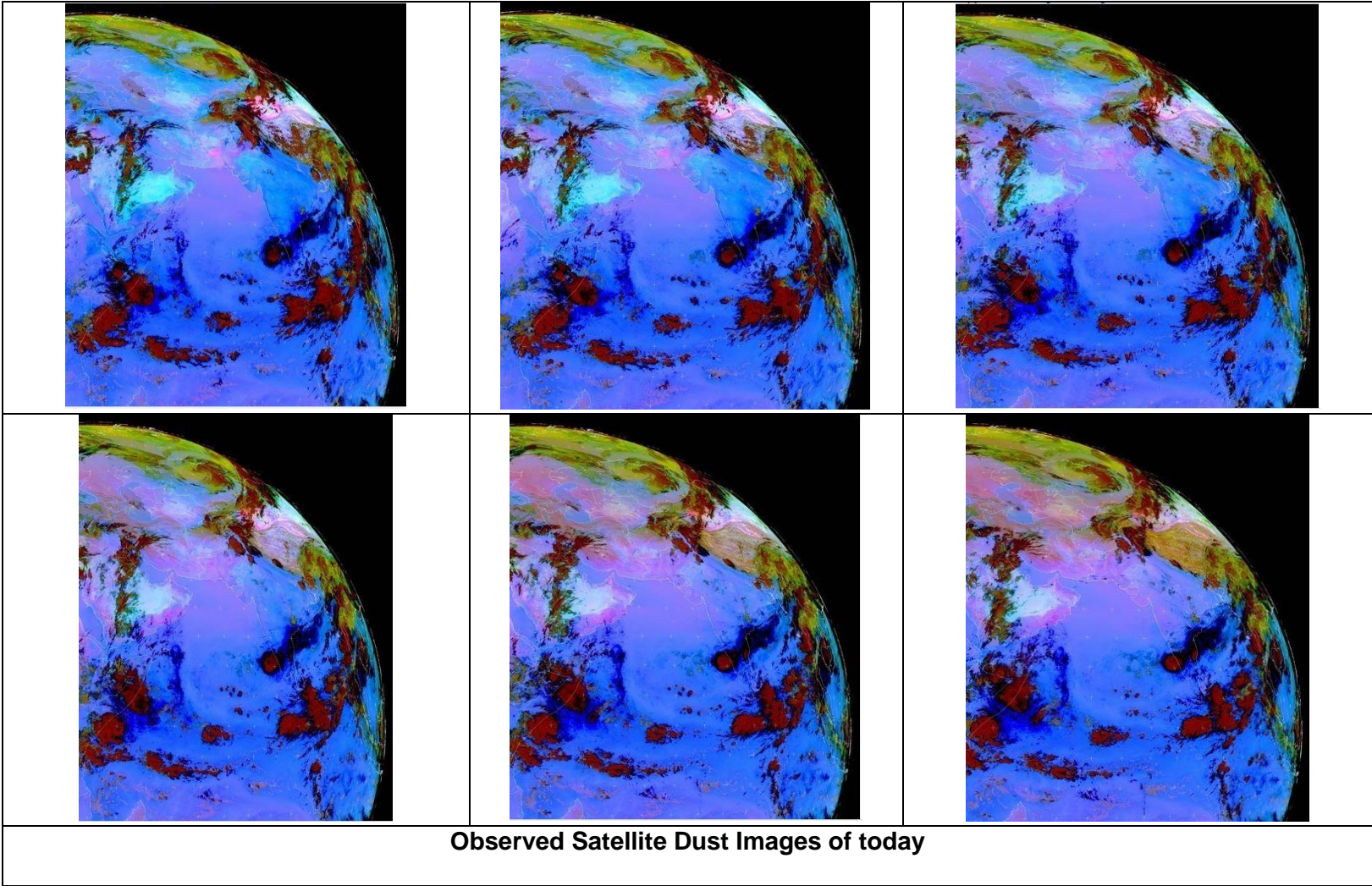




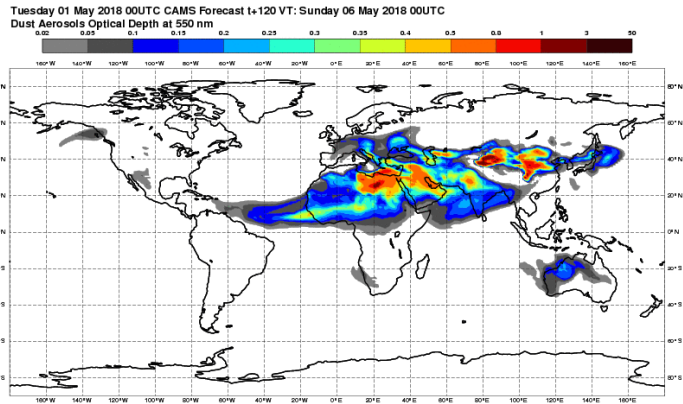
RAPID RGB Imagery at 1430 IST of the Day



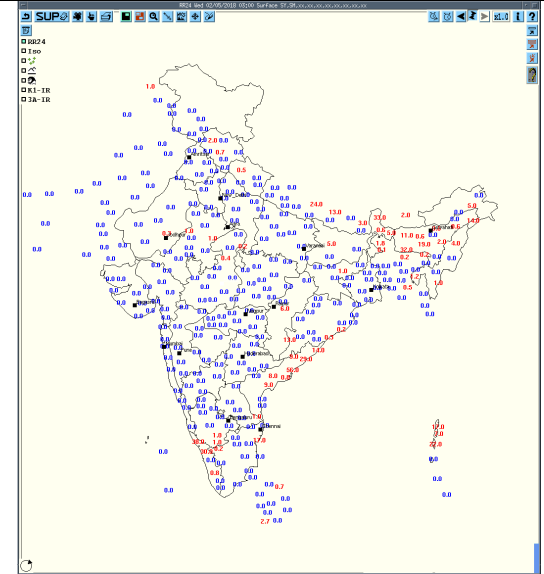
DWR Composite at 1500 IST of the Day



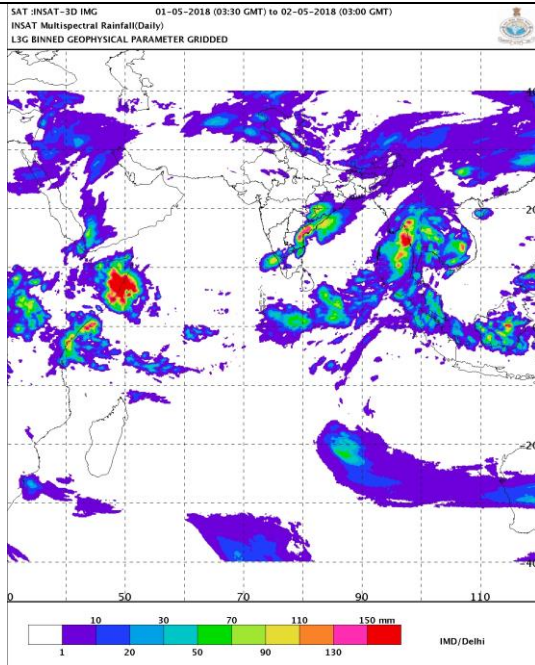
Observed Satellite Dust Images of today



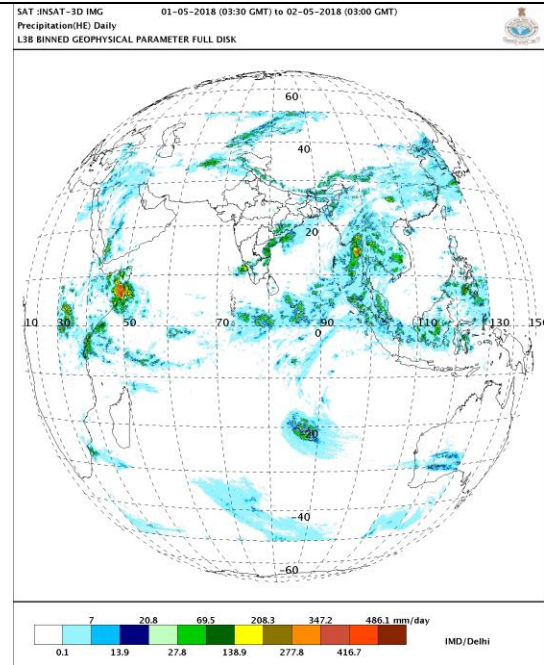
Dust Forecast



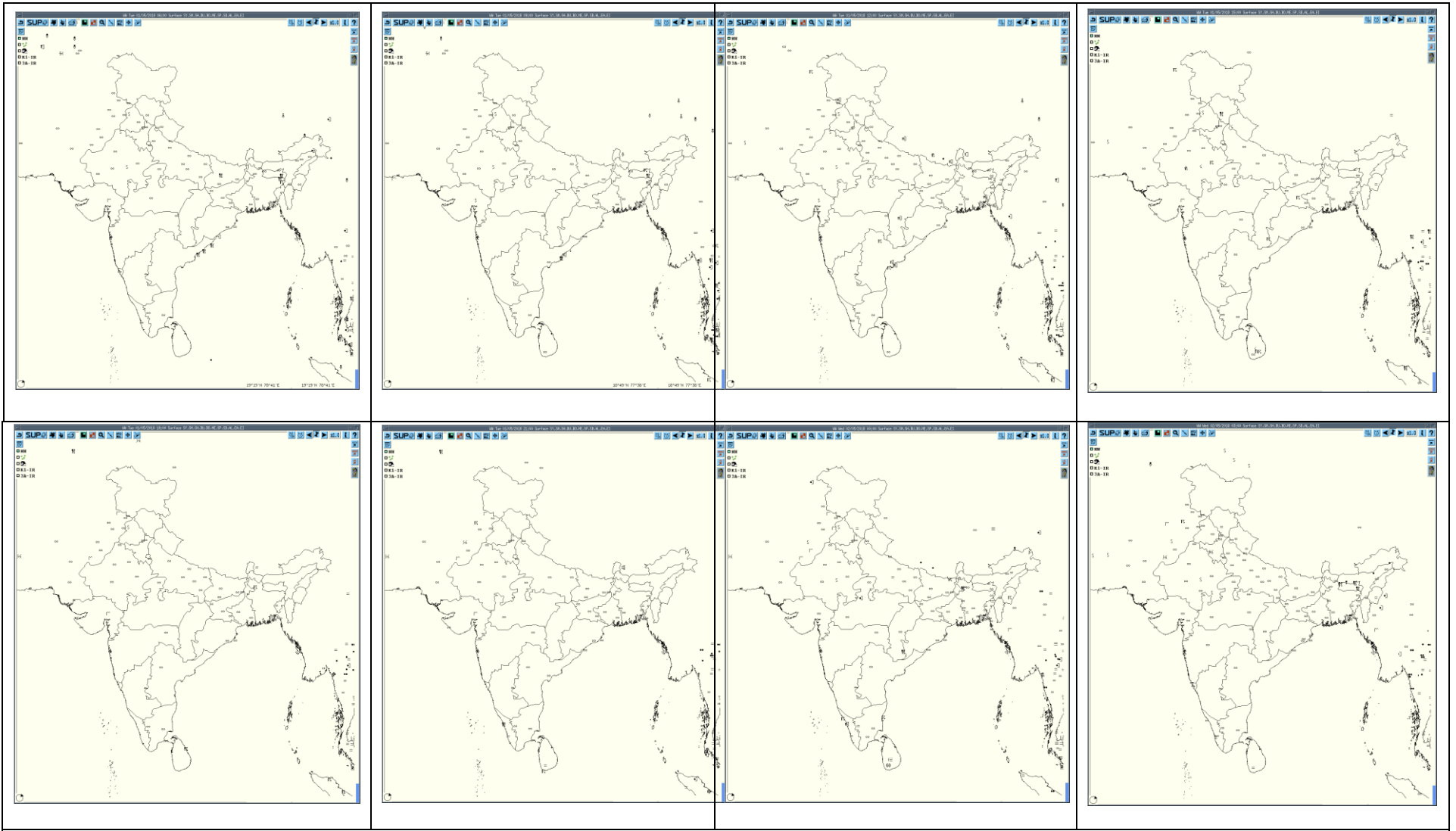
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



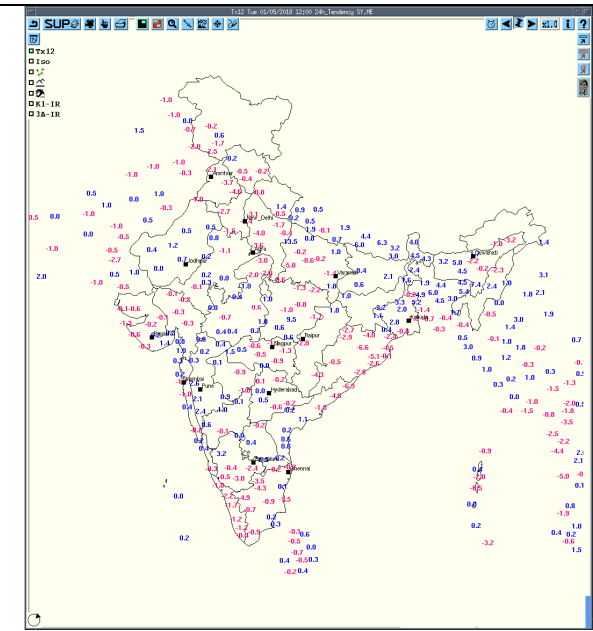
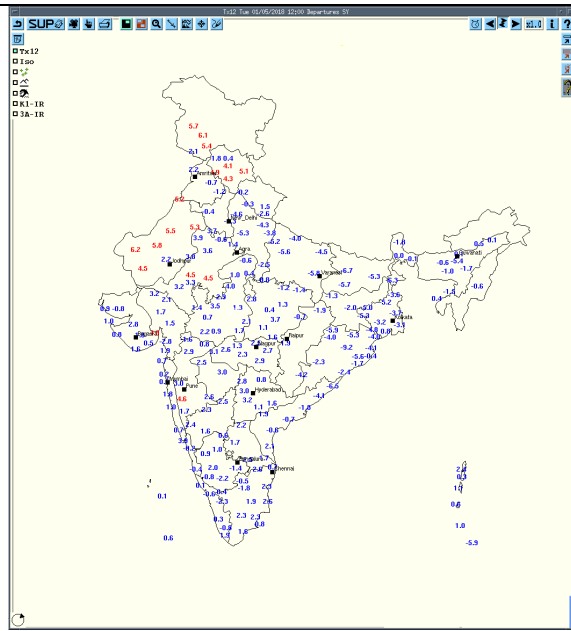
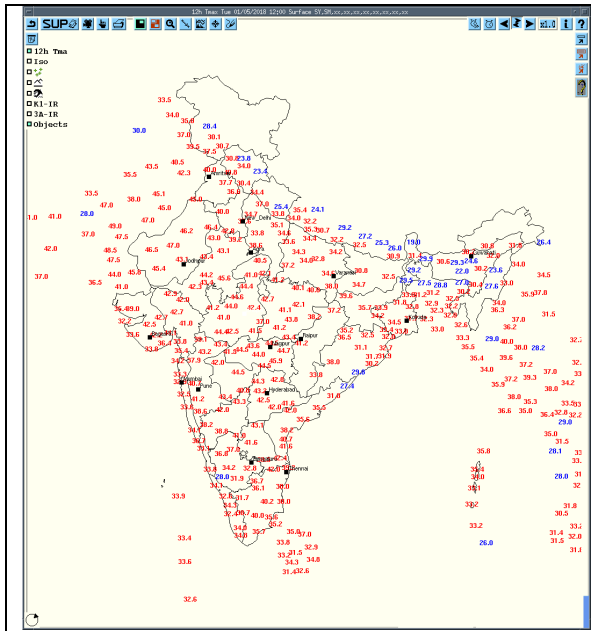
IMR



HEM



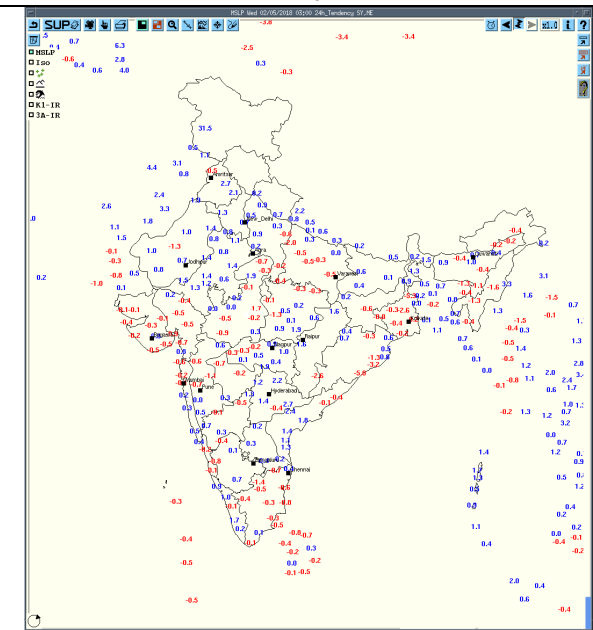
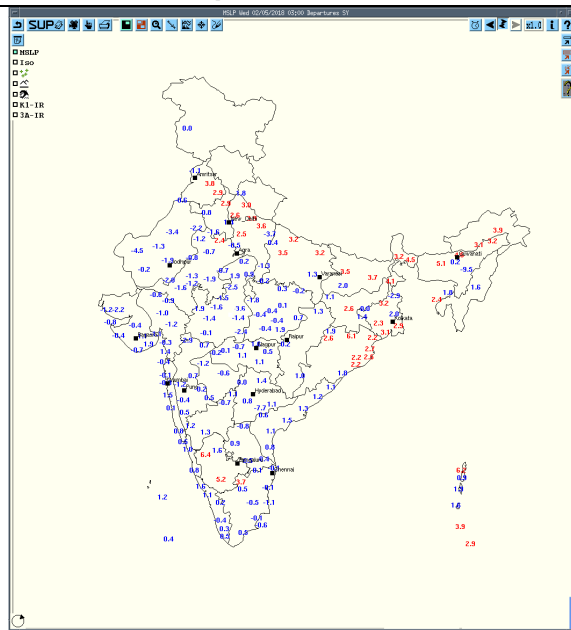
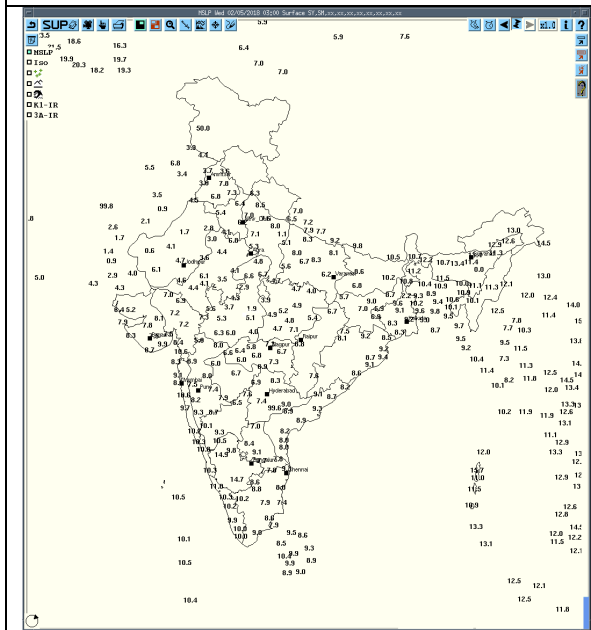
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



Tmax

Departure Tmax

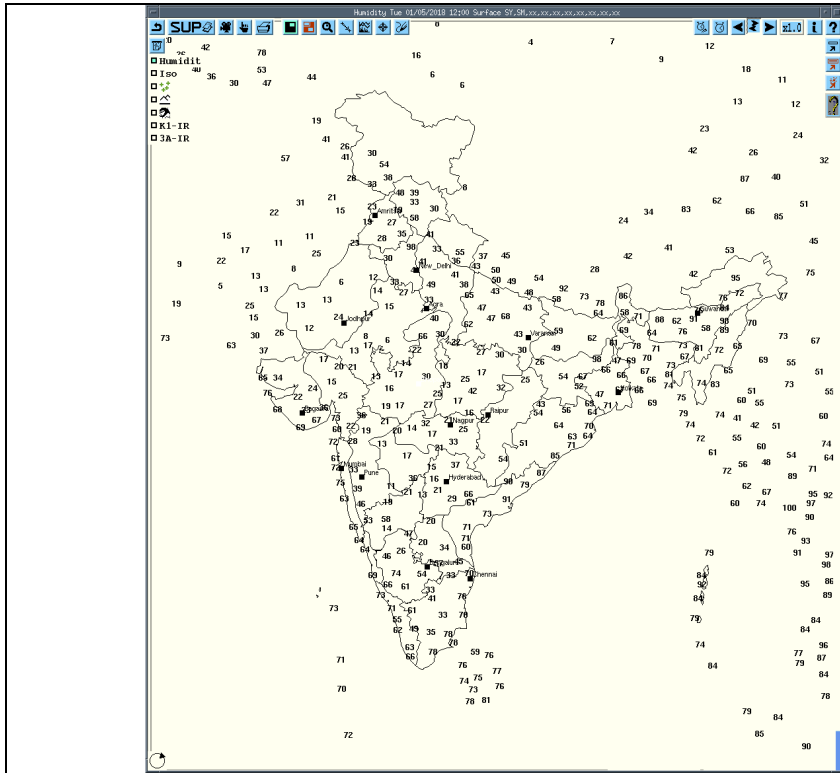
Tendency Tmax



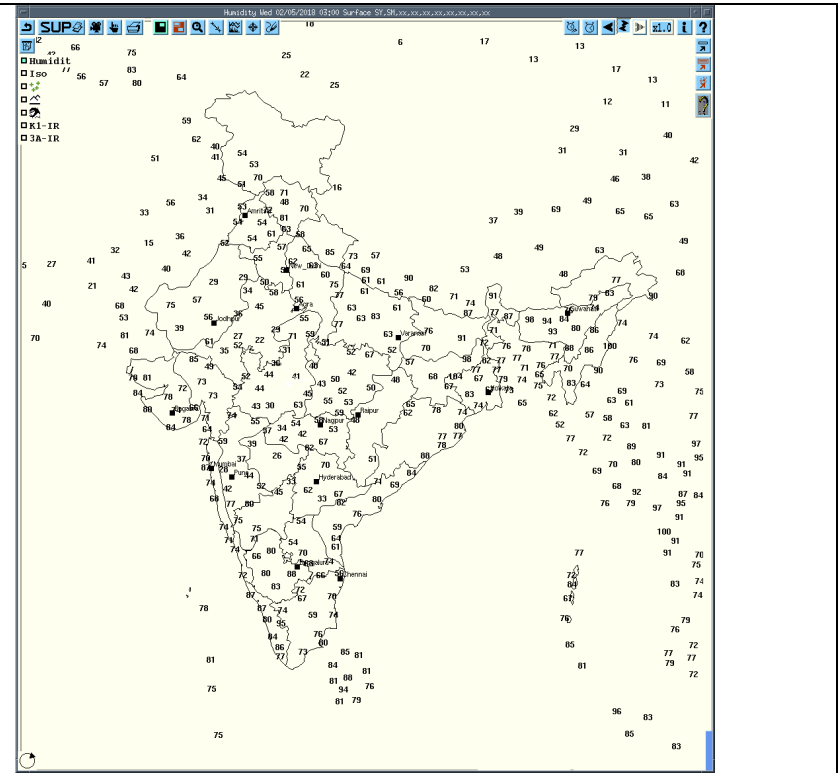
MSLP

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	
Kolkata	02-05-18	010301-020240	NIL	NIL	NOSIG ECHO	NIL	NIL	
	02-05-18	020241-020301	i) Isolated cell with maximum reflectivity of 65.5 dBz at 0251 UTC and maximum height of 11.65 Km at 0251 UTC	Coming from NW Moving in ESE -ward direction	Isolated multi-Cell coming from NW from 0241 UTC. ---cont.	Thunderstorm /Rain /Hail	N/A	
Patiala	02-05-18	010300-020900	No Echo	--	--	--	--	
		010900-011200	MULTIPLE CELLS DBZ 50.5 HT. 9 TO 11 KM	N, NW SECTORS. MOVMENT TOWARDS E-WARDS.		RA/TS	PALAMPUR, MANDI, SUNDERNAGAR, RAMPUR AND ADJ. AREAS.	
		011200 - 011500	MULTIPLE CELLS DBZ 54.0 HT. 10 TO 13 KM	NW SECTORS. MOVMENT TOWARDS E-WARDS.		RA/TS	UTTERKASHI, PALAMPUR, HAMIRPUR, BILASPUR, DEHRADOON, SUNDERNAGAR, AND ADJ. AREAS.	
		011500 - 011800	ISOLATED CELLS DBZ=46.0 HT. 11-12 KM	NE SECTOR MOVEMENT.EA STERLY		RA/TS	DEHRADOON, UTTERKASHI AND ADJ. AREAS	
		011800-020252	No Echo	--	--	--	--	--
Lucknow	02-05-18	010300-020300	Nil	Nil	Nil	Nil	Lucknow	
Jaipur	02-05-18	010300-020300	DWR Shutdown due to technical 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	02-05-18	0600UTC	Multiple cb cells with Maximum reflectivity of 60 dBz and height of 18kms	NW(224 KMS) & E(20KMS) moving Sly	Since last observation CB cells are developing developed and matured well at 0351UTC.	Gusty winds Thunderstorm with heavy rain	Visakhapatnam vizianagaram Eastgodavari Srikakulam dist. (AP) bay of Bengal
		0900UTC	Multiple cb cells with max reflectivity 60 dbz and height 18kms.	140kms(W) and total patch of cb cells moving SE ly.	Another cb cell of 59dbz Westerly 211kms and height 16kms.	Thunderstorms and heavy rain.	TUNI(AP), KAKINADA(AP) VISAKHAPTAM(AP)
		1200UTC	Multiple cb cells WSW with max reflectivity 57dbz and height 14kms.	240kms(WSW) and moving SE ly.	Formation at 09:51UTC.other cells with conviction region mostly over the sea.	Slight rain and overcast.	Visakhapatnam (AP) ELURU(W.G)(AP)
		1500UTC	Multiple cb cells NW with max reflectivity 50dbz and height 14kms.	158 kms(NW) and moving SE ly.	CB cells are with since last observation and dissipating started from 13331 UTC.	Slight rain and overcast.	Koraput (Odisha) and Bay of Bengal
		1800UTC	Convective cells NW with max reflectivity 49dbz and height 7kms.	145 kms(NW) and moving SE ly.	Convective cells are formed since last observation and dissipated.	-	Koraput (Odisha) and Bay of Bengal
		0000UTC	Convective cell NW with max reflectivity 40dbz and height 8kms.	191 kms(NW) and moving Sly.	Convective cell is formed at 2141 UTC and dissipated.	-	Koraput (Odisha)

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	02-05-18	010300 - 010522	NIL	N/A	N/A	N/A	N/A
		010522 - 010712	Single Cell Lat-25.5932N Long-85.1930E Maximum Reflectivity: 44 dBZ Echo Top: 6 KM	Range: 19.9 KM from DWR Patna in West direction Movement: towards East	Warning issued	Thunderstorm, Rain	BHOJPUR, PATNA
		010712 - 012202	NIL	N/A	N/A	N/A	N/A
		012202 - 020140	Isolated Multiple Cells Lat-25.7895N Long-86.8186E Maximum Reflectivity: 45 dBZ Echo Top: 11 KM	Range: 186.9 KM from DWR Patna in ENE direction Movement: towards Stationary	Warning issued	Thunderstorm	SAHARSA, MADHEPURA, KHAGARIA, PURNEA, SUPAUL, ARARIA
		020012 - 020300	Isolated Multiple Cells Lat-25.2689N Long-86.3739E Maximum Reflectivity: 50 dBZ Echo Top: 12 KM	Range: 158.4 KM from DWR Patna in ESE direction Movement: towards Stationary			SAMASTIPUR, BEGUSARAI, KHAGARIA, MUNGER, LAKHISARAI, JAMUI, BHAGALPUR, BANKA

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 Commencement(IST)	Time of end (IST)
Katra	Northwest India	Jammu & Kashmir	Thunderstorm	01-05-18	1620	1700
Sundernagar	Northwest India	Himachal Pradesh	Thunderstorm	01-05-18	750 1914	1835 2045
Ajmer	Northwest India	East Rajasthan	Thunderstorm	01-05-18	1820	2000
Jaipur	Northwest India	East Rajasthan	Thunderstorm	01-05-18	1305	1550
Sawaimadhopur	Northwest India	East Rajasthan	Thunderstorm	01-05-18	1910	2230
Jodhpur	Northwest India	West Rajasthan	Thunderstorm	01-05-18	1925	2015
Ganganagar	Northwest India	West Rajasthan	Thunderstorm	02-05-18	0625	0710

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

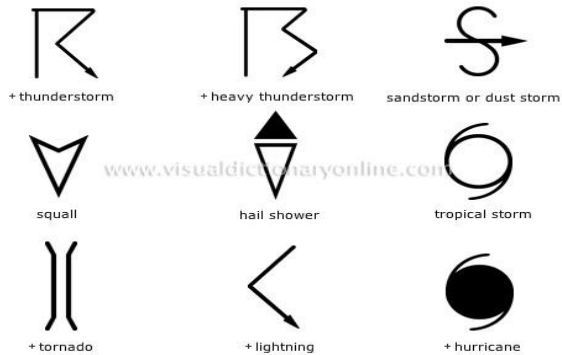
For Radar images of the past 24 hours including mosaic of images:

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