



# India Meteorological Department

## FDP STORM Bulletin No. 51 (26-04-2018)

### 1. CURRENT SYNOPTIC SITUATION:

#### NWFC INFERENCE (0300UTC of the Day):

- ◆ The Western Disturbance as a trough in mid-tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along longitude 71°E to the north of latitude 35°N now seen as a cyclonic circulation over Jammu & Kashmir and neighbourhood at 3.1 km above mean sea level.
- ◆ A cyclonic circulation lies over Haryana & adjoining Punjab and extends upto 1.5 km above mean sea level.
- ◆ The cyclonic circulation over West Uttar Pradesh & neighbourhood persists and now seen upto 1.5 km above mean sea level and a trough runs from this cyclonic circulation to Vidarbha across East Madhya Pradesh at 0.9 km above mean sea level.
- ◆ The cyclonic circulation over West Bengal & neighbourhood now lies over West Bengal & adjoining Bihar between 1.5 km and 2.1 km above mean level.
- ◆ A cyclonic circulation lies over Meghalaya & adjoining east Assam and extends upto 1.5 km above mean sea level.
- ◆ A West-East trough runs from Punjab to east Assam through the centre of the above four cyclonic circulations at 1.5 km above mean sea level.
- ◆ The north-south wind discontinuity from Telangana to south Kerala now runs from Telangana to Lakshadweep area across Coastal Karnataka at 1.5 km above mean sea level.
- ◆ A trough runs from North Interior Karnataka to Tamilnadu across South Interior Karnataka at 0.9 km above mean sea level.
- ◆ A cyclonic circulation lies over south Andaman sea and neighbourhood at 3.1 km above mean sea level.
- ◆ The remnant Western Disturbance as a trough roughly along longitude 90°E to the north of latitude 25°N at 5.8 km above mean sea level has moved away north-eastwards.

#### SATELLITE OBSERVATIONS during past 24 hrs and current observation:

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

#### Intense Precipitation Advisory for next 3 hrs:

Heavy rainfall spell (>15 mm/hr) is likely to be over Nicobar Islands. Moderate rainfall spell (>5 mm/hr) is likely over South Sub-Himalayan West Bengal adjoining Bihar (for details kindly refer to <http://sigma.cptec.inpe.br/scope/>).

### **Thunderstorm Advisory for Next 3 Hrs:**

Thunderstorm cells likely to pass over Nicobar Islands and Northwest Bangladesh (for details kindly refer to <http://www.rapid.imd.gov.in/>).

### **Western Disturbance (WD):**

Scattered multi-layered clouds seen over Northeast Saudi Arabia, Persian Gulf & neighbourhood and South Iran in association with Western Disturbance over the area.

### **Clouds descriptions within India:**

Scattered low/medium clouds with embedded moderate to intense convection seen over Nicobar Islands. Scattered low/medium clouds with embedded isolated weak to moderate convection seen over Northeast Bihar, Sub-Himalayan West Bengal, Sikkim, Northeastern States and North Bangladesh. Scattered low/medium clouds seen over Jammu & Kashmir, North Himachal Pradesh, North Uttarakhand, West-Central Uttar Pradesh, Telangana, Andhra Pradesh, North Kerala, Lakshadweep and Andaman Islands. No significant clouds seen over West India.

### **Arabian Sea:-**

Isolated low/medium clouds with embedded intense to very intense convection seen over Southeast Arabian Sea. Scattered low/medium clouds with embedded moderate to intense convection over South Comorin & neighbourhood.

### **Bay of Bengal & Andaman Sea:**

Scattered low/medium clouds with embedded intense to very intense convection seen over South Andaman Sea and moderate to intense convection seen over south Bay south of lat 10.0deg N.

### **Past Weather:**

#### **Convection (during last 24 hrs):**

Moderate to Intense convection was observed over east Bihar north-east Jharkhand north-east Odisha north GWB SHWB Sikkim north-east states north-central Andhra Pradesh south Karnataka Kerala north Tamilnadu & Nicobar islands.

#### **OLR:-**

Up-to 230wm<sup>-2</sup> observed over Jammu & Kashmir Himachal Pradesh Uttarakhand north Gangetic West Bengal Sub-Himalayan West Bengal Sikkim north-east states north-central Andhra Pradesh south Karnataka Kerala Tamilnadu Andaman & Nicobar islands and Lakshadweep.

#### **Synoptic Features:**

Trough in Westerlies runs roughly along Longitude **71.0°E** & north of Latitude **35.0°N**.

#### **Dynamic Features:**

Up to 30- 40 kts **wind shear** is observed over North India, Central India & North East India and 10-15 kts over south peninsula India.

No Shear tendency and low level convergence was observed over India.

Positive Vorticity observed over Jammu & Kashmir, Himachal Pradesh Uttarakhand Uttar Pradesh Bihar Jharkhand Gangetic West Bengal Karnataka and Rayalaseema adjoining Andhra Pradesh

**Precipitation:**

**IMR:**

Rainfall up-to 20-50 mm observed over Kerala South Karnataka central Coastal Andhra Pradesh and Nicobar Islands.

Rainfall up-to 01-20 mm observed over Jammu and Kashmir north Himachal Pradesh North Uttarakhand north GWB SHWB Sikkim Assam Meghalaya west Arunachal Pradesh north Tripura north-east Odisha adjoining West Bengal some parts of central Coastal Andhra Pradesh & South Karnataka.

**HEM :**

Rainfall up-to 140 mm observed over South Karnataka & Central Kerala Andhra Pradesh and Nicobar.

Rainfall up-to 15 mm observed over South Sub-Himalayan West Bengal east Meghalaya east Assam and Nicobar Islands

**RADAR and RAPID RGB Observation:**

Isolated light to moderate echoes are seen on DWR Lucknow (max DBZ around 40 and height 10-11km) and Hyderabad (max DBZ around 40 and height around 6km) domains at around 1250 IST.

RAPID RGB Satellite imagery at 1130 IST indicates significant convection over Sub-Himalayan West Bengal, Assam, Meghalaya and 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. Widespread higher concentration of dust is observed over North India. Higher concentration of dust to persist for next two days.

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

<b>Delhi – SAFAR analysis &amp; Forecast</b>	<b>26.04.2018</b>	<b>27.04.2018</b>
PM10 (micro-g/m <sup>3</sup> )	245	209
PM2.5 (micro-g/m <sup>3</sup> )	102	86

## 2. NWP MODEL GUIDANCE:

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

#### 1. Weather Systems:

##### Low level Cycirs, Troughs:

00UTC of Day 1: 850 hPa N-S trough over central southern peninsula

00UTC of Day 2-5: 850 and 925 hPa NW-SE trough over NW India

00UTC of Day 2: 925 hPa CYCIR over Punjab

##### Confluence & Wind Discontinuity Regions

12 UTC of Day 0-2: 925 hPa N-S discontinuity over Southern Peninsular India and SW-NE discontinuity over NI Karnataka & Telangana

##### Synoptic Systems:

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

00UTC of Day 2-5: Strong southwesterlies from BoB leading over Bangladesh

**2. Location of jet and jet core (>60kt) at 500hPa: Day 3** over Bangladesh and adjoining WB associated with WD

#### 3. Convergence at 850 hPa:

##### Day/Index: Subdivisions with Lower Level Convergence $> 15 \times 10^{-5} /s$

Day0: Jharkhand, Odisha, West\_MP, Madhya\_Maharashtra, Vidarbha, Chhattisgarh, Coastal\_AP, NI\_Karnataka, SI\_Karnataka,

Day1: Jharkhand, East\_UP, East\_MP, Madhya\_Maharashtra, Chhattisgarh, NI\_Karnataka, SI\_Karnataka,

Day2: Gangetic\_WB, Jharkhand, East\_RJ, Odisha, Madhya\_Maharashtra, Chhattisgarh, TN\_Puducherry, NI\_Karnataka, SI\_Karnataka,

Day3: Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Odisha, Madhya\_Maharashtra, Chhattisgarh, TN\_Puducherry, NI\_Karnataka, SI\_Karnataka, Kerala,

Day4: Assam\_Meghalaya, NE\_NMMT, Jharkhand, Bihar, West\_UP, Uttarakhand, Odisha, East\_MP, Madhya\_Maharashtra, Marathwada, Telangana, TN\_Puducherry, NI\_Karnataka, Kerala

#### 4. Low level Vorticity:-Positive Vorticity:

**Day/Index: Subdivisions with Lower Level Vortex > 15 x 10<sup>-5</sup> /s**

Day0: Jharkhand, Bihar, East\_UP, Odisha, Chhattisgarh, Coastal\_AP,

Day1: Gangetic\_WB, Jharkhand, Bihar, East\_UP, Hry\_Chhd\_Delhi, Punjab, West\_RJ, East\_MP, Madhya\_Maharashtra, NI\_Karnataka,

Day2: Gangetic\_WB, Jharkhand, Himachal\_Pradesh, Madhya\_Maharashtra, Chhattisgarh,

Day3: Assam\_Meghalaya, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, Uttarakhand, Himachal\_Pradesh,

Day4: Assam\_Meghalaya, Bihar, East\_UP, 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, Gangetic\_WB, Jharkhand, Bihar, East\_UP, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, Odisha, Vidarbha, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, SI\_Karnataka, Kerala,

Day1: Arunachal\_Pradesh, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, Odisha, Coastal\_AP, TN\_Puducherry, SI\_Karnataka, Kerala,

Day2: Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, Odisha, Vidarbha, Chhattisgarh,

Day3: Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, Odisha, Saurashtra\_Kutch, Konkan\_Goa, Coastal\_AP, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

Day4: Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Jammu\_Kashmir, Odisha, Konkan\_Goa, Coastal\_AP, 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, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, Odisha, Vidarbha, Chhattisgarh, Coastal\_AP, Telangana,

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, Odisha, East\_MP, Vidarbha, Chhattisgarh, Coastal\_AP,

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, West\_MP, East\_MP, Vidarbha, Chhattisgarh,

Day3: Arunachal\_Pradesh, 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, Saurashtra\_Kutch, Chhattisgarh, Coastal\_AP, Telangana,

Day4: Arunachal\_Pradesh, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, Odisha, East\_MP, Chhattisgarh, Telangana, TN\_Puducherry

## **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, East\_UP, Uttarakhand, Jammu\_Kashmir, Odisha, Vidarbha, Chhattisgarh, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, SI\_Karnataka, Kerala,

Day1: Arunachal\_Pradesh, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, East\_UP, West\_UP, Uttarakhand, Jammu\_Kashmir, Odisha, Chhattisgarh, Coastal\_AP, Telangana, TN\_Puducherry, SI\_Karnataka, Kerala,

Day2: Arunachal\_Pradesh, Assam\_Meghalaya, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, East\_UP, West\_UP, Uttarakhand, Jammu\_Kashmir, Odisha, Madhya\_Maharashtra, Chhattisgarh, Coastal\_AP, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

Day3: Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, East\_UP, West\_UP, Uttarakhand, Odisha, Madhya\_Maharashtra, Coastal\_AP, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

Day4: Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, East\_UP, West\_UP, Uttarakhand, Odisha, Coastal\_AP, 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: Jammu\_Kashmir, Andaman\_Nicobar,

Day2: Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar,

Day3: Arunachal\_Pradesh, Assam\_Meghalaya, Sub\_Himalayan\_WB, Gangetic\_WB, Bihar, Uttarakhand, Odisha,

Day4: Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Bihar, Odisha,

Day5: Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, East\_UP, West\_UP

**\*\*\* Rainfall (>8cm) in day 5 over north Bangladesh and adjoining Meghalaya region**

## 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 Punjab region in lower troposphere (925hPa). The forecast shows it will become less marked on day4. The analysis shows another cyclonic circulation in lower troposphere over west Uttar Pradesh and adjoining areas. A Trough extends from this cyclonic circulation to Vidarbha across east Madhya Pradesh. The forecast shows it will persist for next 72 hours. A cyclonic circulation is seen in the analysis over Meghalaya and adjoining Assam. The forecast shows it will persist till day 3 and will become less marked on day4. An East-West trough is seen in the analysis extending from Punjab and adjoining areas to cyclonic circulation over Uttar Pradesh in lower troposphere. The forecast shows slight southward shift of the trough till day3. Another Trough extends from Telangana to Lakshadweep area across coastal Karnataka. It will persist for next 48 hour forecast. Another North- South oriented Trough is seen in the analysis from North Interior Karnataka across south Interior Karnataka. The forecast shows it will persist for next 72 hours.

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

Although the presence of strong westerlies is found over 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<sup>-1</sup>/s):**

**850hPa Positive Vorticity (>12 x 10<sup>-1</sup>/s):** Low level Positive Vorticity is seen mostly along the North- South Trough and the East-West Trough, over Punjab, Haryana, Delhi and adjoining West Uttar Pradesh during Next 3 days; It is Inferred that some parts of West Rajasthan has Positive Vorticity on day 1 and 2; GWB, Orissa, Bihar, Jharkhand and adjoining areas has 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, East Uttar Pradesh, Rajasthan, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Karnataka, Tamil Nadu, coastal Maharashtra including Mumbai, Konkan & Goa, Vidarbha, Chhattisgarh, coastal areas along the east coast and west coast, Sikkim, Assam, Meghalaya, Tripura and adjoining area during next 3 days; over parts of West Uttar Pradesh and Madhya Pradesh on day 2 and 3; over parts of Uttarakhand, Haryana and adjoining areas on day 3; Maximum value of the index is seen over parts of GWB, SHWB, Orissa, Bihar, Jharkhand, Chhattisgarh, Telangana, Gujarat, South West Rajasthan, Andhra Pradesh, coastal Maharashtra and coastal Tamil Nadu on all 3 days; over parts of East Uttar Pradesh, Karnataka, Konkan and Goa on day 2 and 3; over parts of North Madhya Maharashtra and coastal Kerala on day 2; over parts of Tripura and adjoining areas on day 3.

**Lifted Index (< -2):** The threshold value of the index is below -2 over parts of Gujarat, East Uttar 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, East Madhya Pradesh, Chhattisgarh, Vidarbha, Marathawada, Orissa, GWB, SHWB, Assam, Meghalaya, Tripura and adjoining areas on all 3 days; over parts of west Rajasthan on day 2 and 3; over parts of west Uttar Pradesh and Uttarakhand on day 3; maximum negative value of the index less than -10 is seen over parts of Orissa, Bihar, Jharkhand, GWB, SHWB, Andhra Pradesh, Tripura and adjoining areas on day 1; over parts of GWB, Orissa, coastal Andhra Pradesh on day 2; over parts of GWB and Orissa on day 3.



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

**Sweat Index (> 300):** Although the threshold value of the Index >300 is seen in most parts of the country except central parts of Madhya Pradesh, Northern parts of Rajasthan, Punjab, Haryana, Delhi, Uttar Pradesh, northern parts of Chhattisgarh, west Vidarbha, extreme North West Rajasthan during next 3 days; maximum value of the index greater than 800 is seen over parts of Bihar, GWB, SHWB, Orissa, Jharkhand, Tripura and adjoining areas for next 3 days; over parts of Andhra Pradesh on day 1.

**CAPE (> 1000):** Mostly in areas of southern peninsular India, along west coast and east coast, parts of Orissa, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Tamil Nadu, Karnataka, coastal Maharashtra including Mumbai, Gujarat, Konkan and Goa, East Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, GWB, SHWB, Sikkim, Assam, Meghalaya, Tripura and adjoining areas during next 3 days; over parts of west Uttar Pradesh and south west Rajasthan from day 2 onwards; Maximum value of the index greater than 2500 is seen mostly over parts of GWB, coastal Orissa, Bihar, Jharkhand, coastal Andhra Pradesh, Coastal Tamil Nadu and coastal Kerala on day 1 and 2; over parts of GWB, Coastal Orissa, coastal Andhra Pradesh and coastal Gujarat 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 Punjab, extreme North Rajasthan, Madhya Pradesh, west Vidarbha, Madhya Maharashtra, Marathwada, Himachal Pradesh, Uttarakhand, Haryana, Delhi and north Chhattisgarh on day 1; over most of the part of country except J&K and central part of Madhya Pradesh on day 2 and 3; maximum value of the index greater than 400 is seen over parts of Gujarat, South West Rajasthan, North Madhya Maharashtra and adjoining west Madhya Pradesh region, North Karnataka and adjoining Konkan and Goa during next 3 days; over parts of coastal Maharashtra, Jharkhand, Chhattisgarh, Orissa, East Vidarbha and adjoining areas on day 2; over parts of Uttar Pradesh, Haryana, Andhra Pradesh, Orissa, Chhattisgarh, Telangana, GWB, SHWB, Bihar and Jharkhand on day 3.

## **5. Rainfall Activity:**

10- 40 mm Rainfall: over parts of Sikkim, NE states, Foothills of Himalaya, Uttarakhand, Kerala and Tamil Nadu during next 3 days; over parts of Himachal Pradesh on day 2 and 3.

Up to 10 mm rainfall: Over parts of J&K, Foothills of Himalaya, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Sikkim, NE states, GWB, SHWB, Orissa, Andhra Pradesh, Kerala, Karnataka, Tamil Nadu, Bihar, Jharkhand, Chhattisgarh during next 3 days; over parts of Vidarbha on day 1; over parts of Punjab, Haryana, Delhi, Rajasthan, West Uttar Pradesh and north west Madhya Pradesh on day 2; over parts of Madhya Pradesh, Rajasthan, West Uttar Pradesh, south Madhya Maharashtra and North Interior Karnataka on day 3..



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

### **1. Model Reflectivity (Max. dBZ): > 25 dBZ Model Reflectivity:**

Over parts of J&K, GWB, Sikkim, Assam, Orissa, Chhattisgarh, northern parts of East Uttar Pradesh adjoining Uttar Pradesh, Tripura and adjoining areas, Kerala and Tamil Nadu on day 1; over parts of J&K, Orissa, Andhra Pradesh, adjoining Chhattisgarh, South Madhya Maharashtra, adjoining North Karnataka, Assam, Arunachal Pradesh on day 2; over parts of J&K, Uttarakhand, East Madhya Pradesh and adjoining areas, GWB, Orissa, Bihar, Jharkhand, Sikkim, SHWB, Assam, Arunachal Pradesh, Meghalaya, Tripura, Mizoram, Nagaland and adjoining areas on day 3; maximum value of the Model reflectivity is seen over parts of GWB and adjoining Orissa on day 1; over parts of SHWB, Jharkhand and Northeast Bihar and Sikkim 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, Konkan and Goa, Kerala, Andhra Pradesh and Tamil Nadu during the next 3 days; below threshold value is seen over some parts South Madhya Maharashtra, coastal Maharashtra and North Interior Karnataka on day 1; over some parts of Bihar, Jharkhand, GWB, SHWB, Sikkim and NE states 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, Bihar, Jharkhand, GWB, Orissa, Madhya Maharashtra, Marathawada, Vidarbha, Jharkhand, Telangana, Chhattisgarh, Karnataka and Gujarat during next 3 days.

**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, southern parts of Madhya Maharashtra, parts of Bihar, Jharkhand, East Uttar Pradesh, Chhattisgarh, Vidarbha, Orissa, GWB and Kolkata, SHWB, parts of Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Telangana, Rayalaseema, Extreme south peninsular India, Assam, Meghalaya, Tripura and adjoining areas on all 3 days; over some parts of West Uttar Pradesh on day 2 and 3; over some parts of Punjab, Himachal Pradesh and Uttarakhand on day 3; Maximum value of the index greater than 3500 is seen over the parts of south interior Karnataka, Kerala, Orissa, coastal Andhra Pradesh, GWB, Kerala and Tamil Nadu on day 1; over parts of Orissa, GWB, Andhra Pradesh, Jharkhand and Kerala and Tamil Nadu on day 2; Telangana on day 1; over parts of GWB, Jharkhand, coastal Maharashtra, south Madhya Maharashtra, Konkan and Goa, 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 Himachal Pradesh, Uttarakhand, Haryana, Delhi, North Rajasthan, Madhya Pradesh, North Chhattisgarh, west Vidarbha, North Madhya Maharashtra and Marathawada on day 1; over most of the parts of country except central parts of Madhya Pradesh, North west Rajasthan, west Vidarbha and north Madhya Maharashtra and Marathawada on day 2; over most of the parts of country except central parts of Madhya Pradesh on day 3; the maximum value of the index > 400 is seen over parts of Gujarat, south west Rajasthan, Bihar, Jharkhand, GWB, Orissa, Chhattisgarh, Coastal Maharashtra, Vidarbha, Uttar Pradesh, Telangana and East Madhya Pradesh during next 3 days; over parts of Punjab, Haryana, Delhi, Himachal Pradesh, Uttarakhand, Rajasthan, West Madhya Pradesh, Andhra Pradesh and North Karnataka on day 2 and 3; over parts of North and South Interior Karnataka, Konkan & Goa, Tripura and adjoining areas on day 3..

### **3. Rainfall and thunderstorm activity:**

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

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

### 3. IOP ADVISORY FOR 24 and 48Hrs:

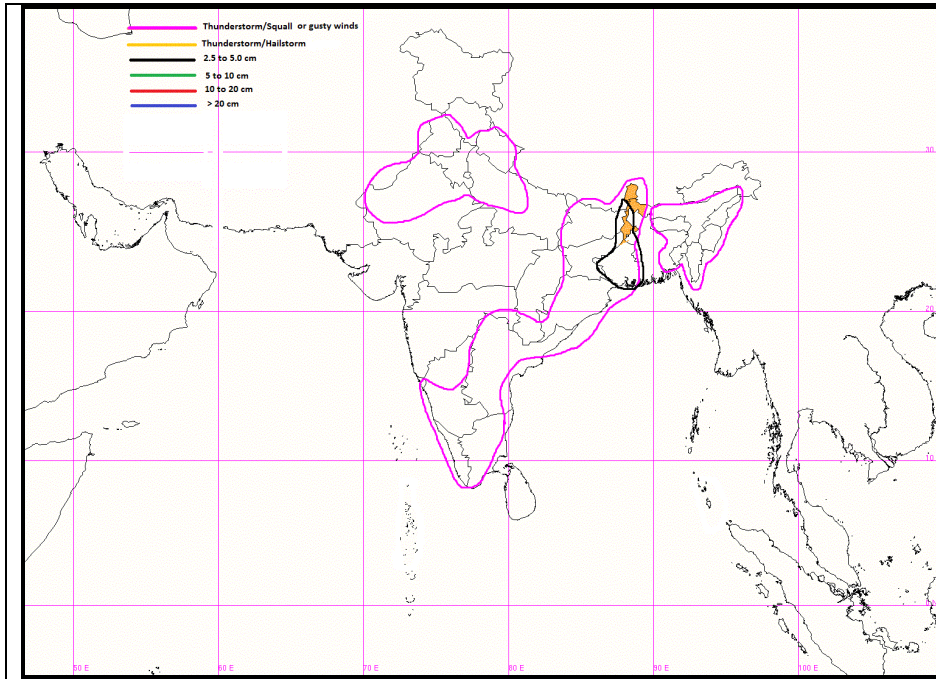
#### Summary and Conclusions:

- Synoptic analysis indicates that a cyclonic circulation lies over Haryana & adjoining Punjab, this will give rise to the thunderstorm with gusty winds activity over Punjab, Uttarakhand and Haryana on Day-1.
- Due to the cyclonic circulation over West Bengal & neighborhood now lies over West Bengal & adjoining Biha, the area most likely to be affected by the thunderstorm with gusty winds are Bihar, GWB and SHWB may receive hailstorms on Day-1. This activity may continue to Day-2 over the same region.
- A trough runs from North Interior Karnataka to Tamilnadu across South Interior Karnataka and the northsouth wind discontinuity from Telangana to Lakshadweep area across Coastal Karnataka.
- This will be triggering the thunderstorm with gusty winds activity over Kerala, South Interior Karnataka and Telangana, Rayalaseema on Day-1.

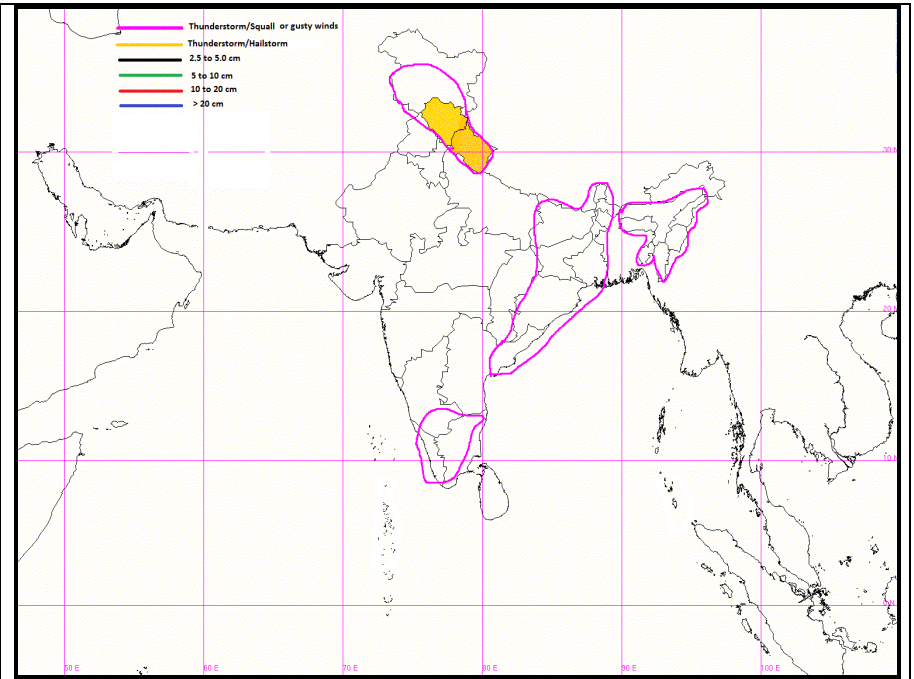
#### Day-1 & Day-2:

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

# Graphical Presentation of Potential Areas for Severe Weather:

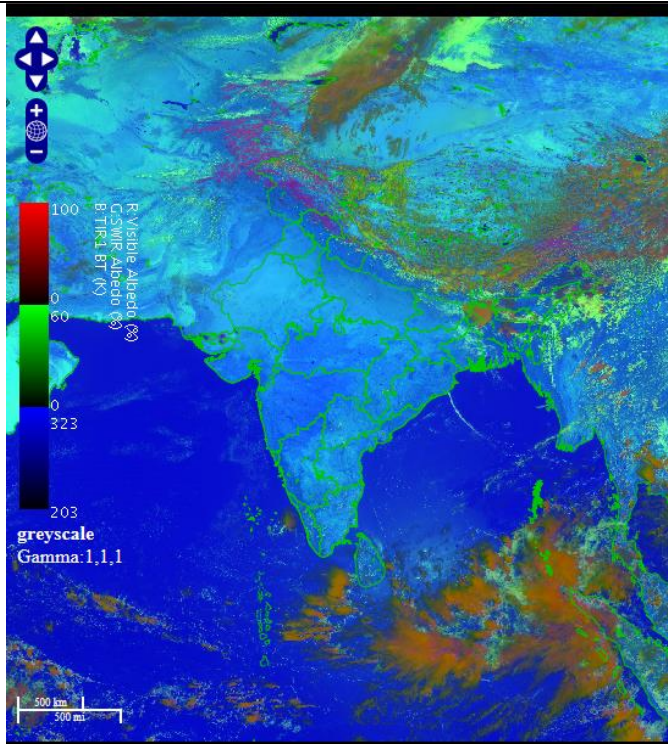


IOP Advisory for 24 hours

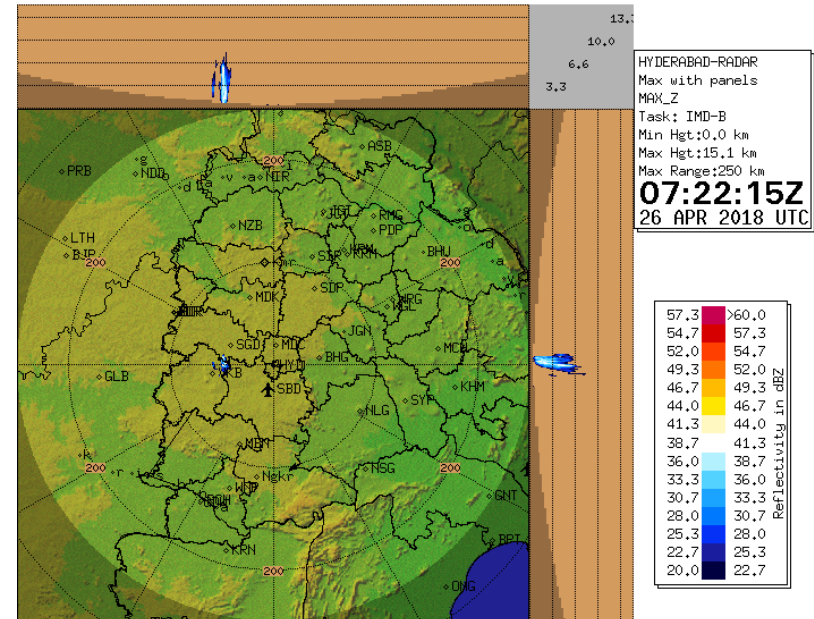


IOP Advisory for 48 hours

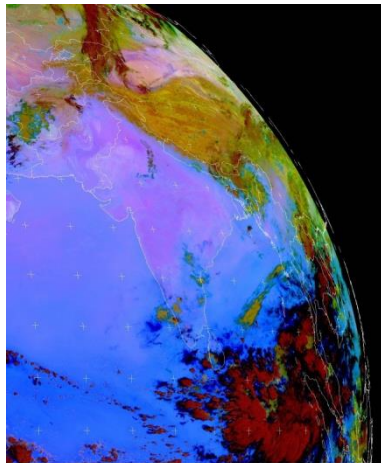




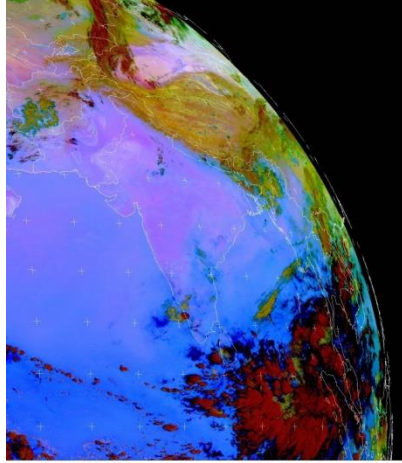
RAPID RGB Imagery at 1130 IST of the Day



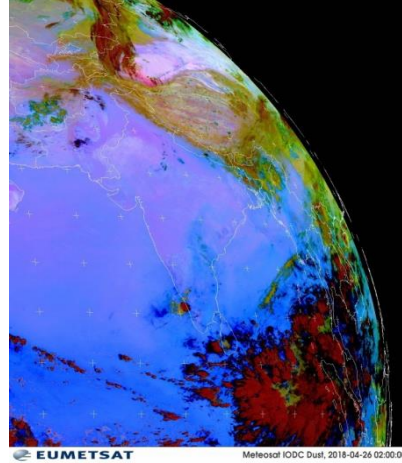
DWR Hyderabad at 1252 IST of the Day



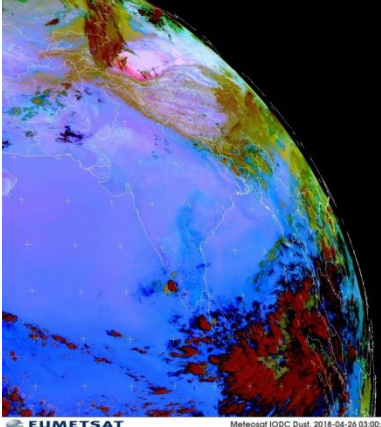
EUMETSAT Meleosol IOOC Dust, 2018-04-26 00:00:00



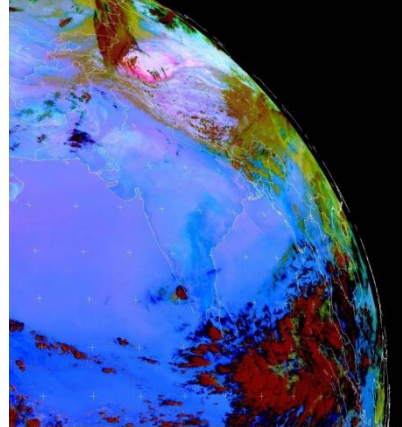
EUMETSAT Meleosol IOOC Dust, 2018-04-26 01:00:00



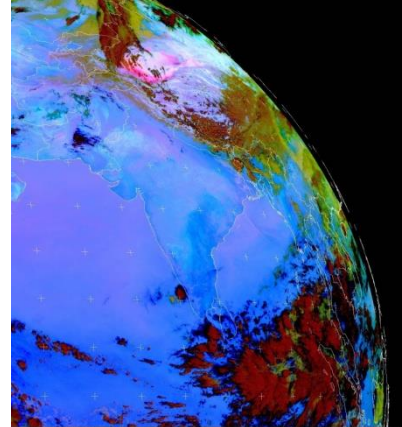
EUMETSAT Meleosol IOOC Dust, 2018-04-26 02:00:00



EUMETSAT Meleosol IOOC Dust, 2018-04-26 03:00:00



EUMETSAT Meleosol IOOC Dust, 2018-04-26 04:00:00

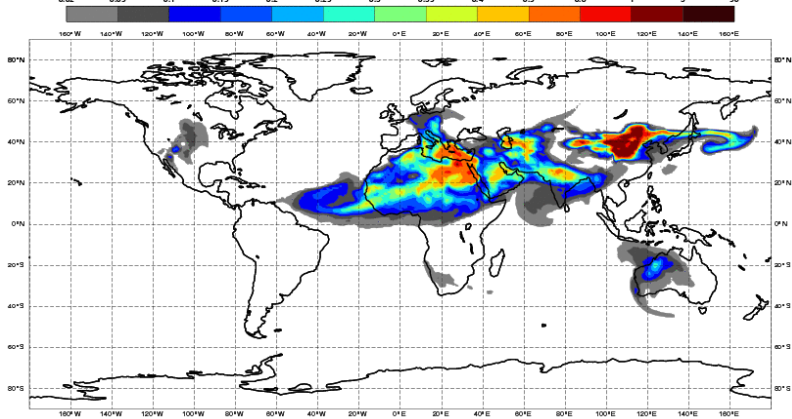


EUMETSAT Meleosol IOOC Dust, 2018-04-26 05:00:00

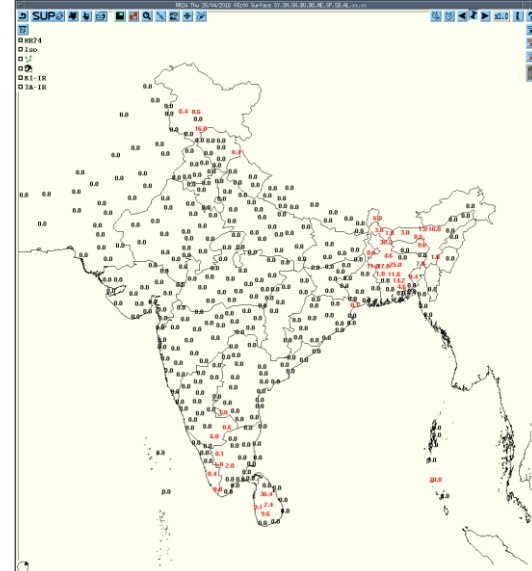
Observed Satellite Dust Images on 26-04-2018



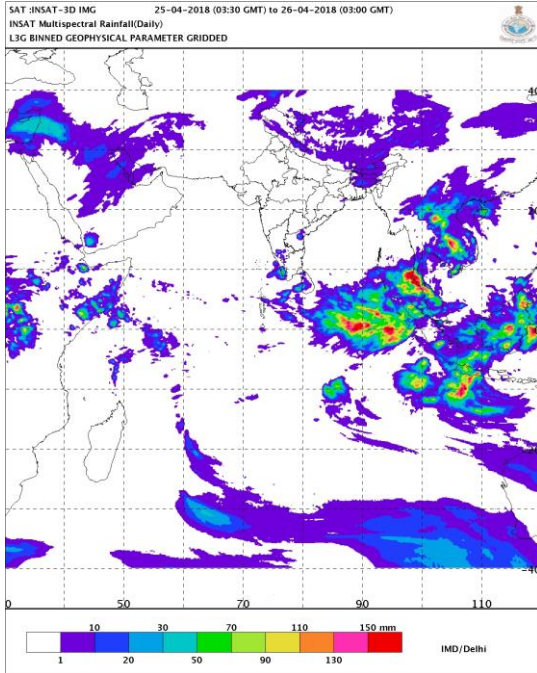
Wednesday 25 April 2018 00UTC CAMS Forecast t+120 VT: Monday 30 April 2018 00UTC  
 Dust Aerosols Optical Depth at 550 nm



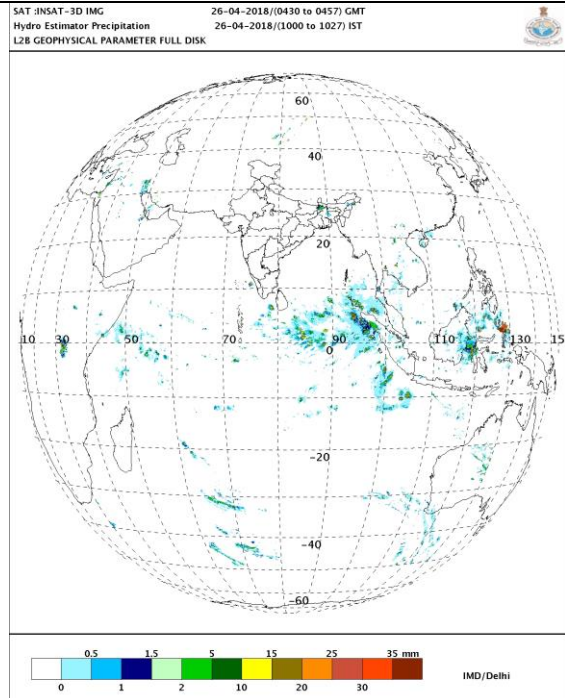
**Dust Forecast**



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

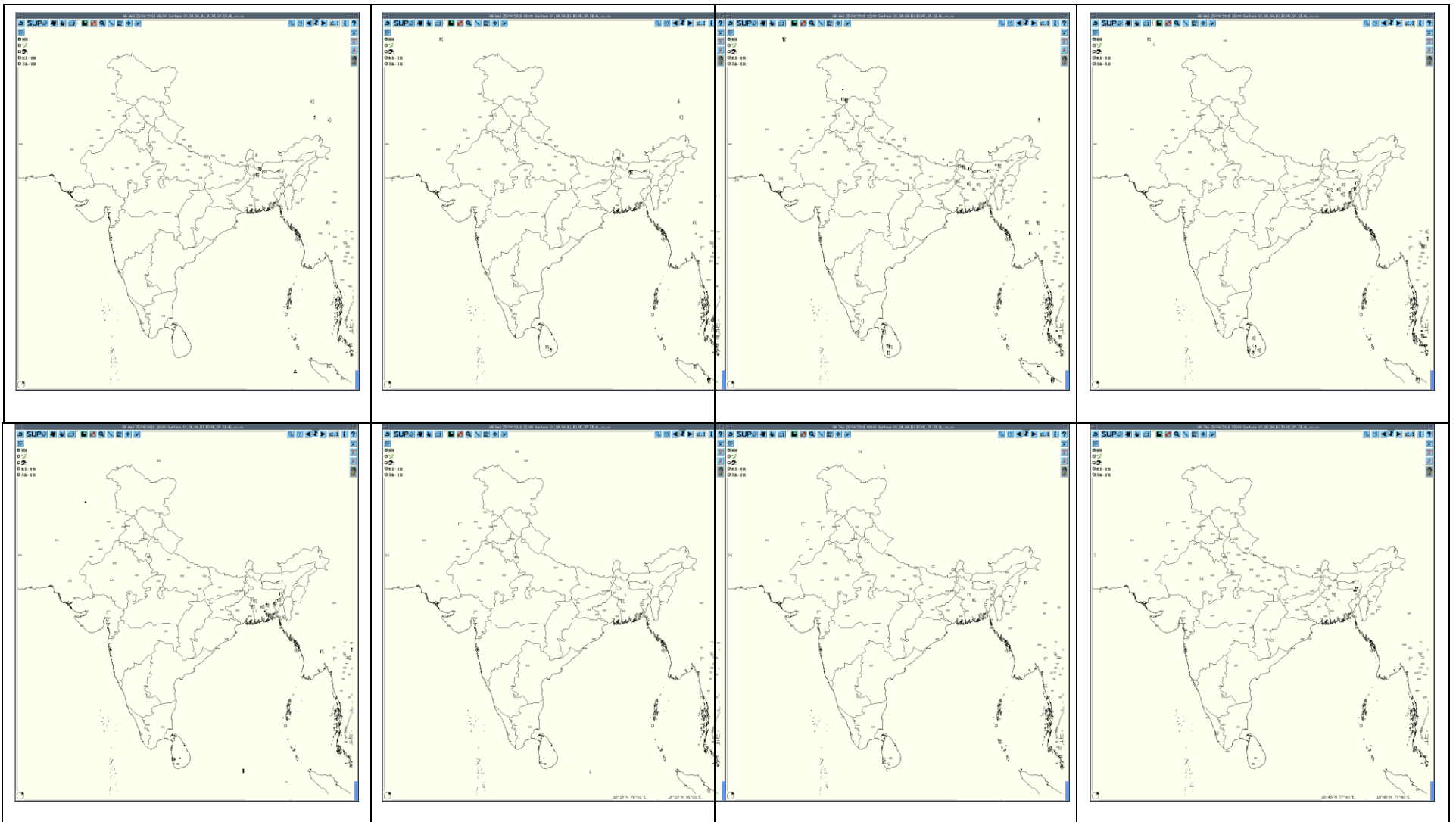


**HEM rainfall**

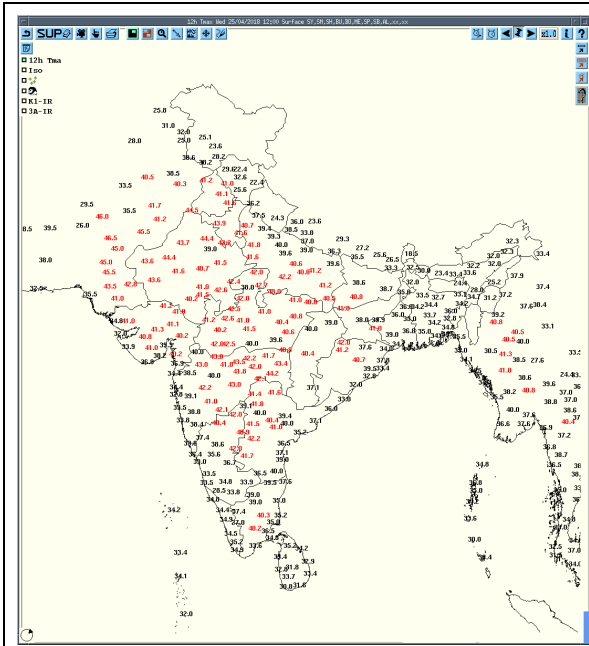


**IMR Rainfall**

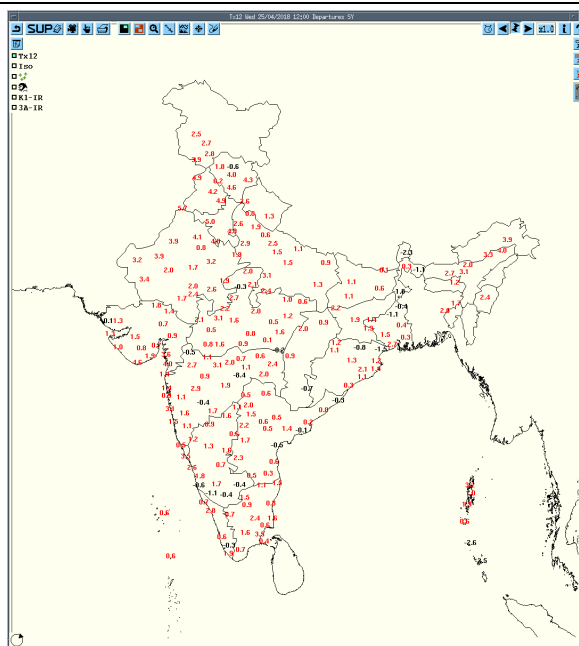




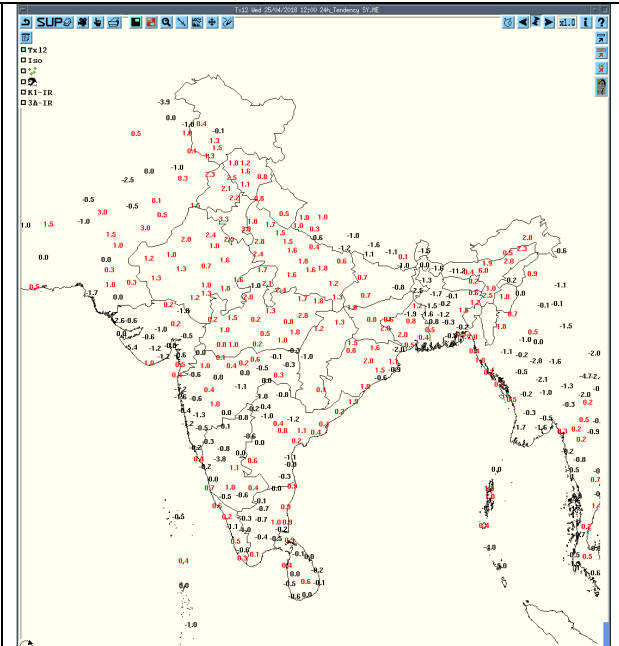
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



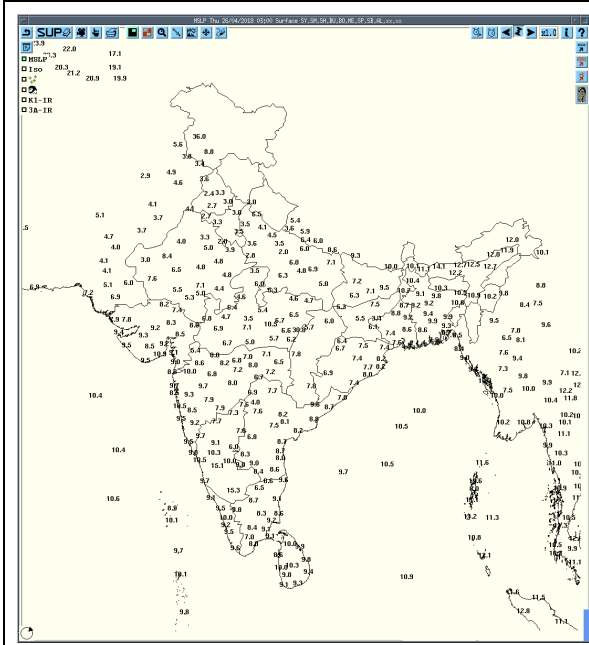
Tmax



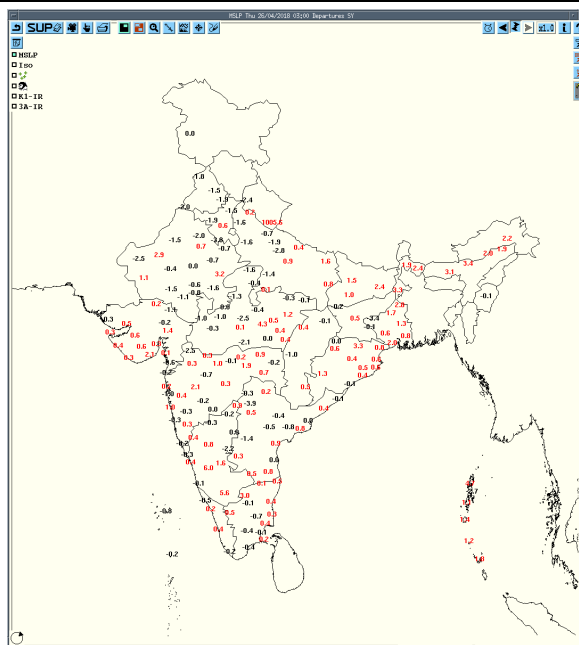
Departure Tmax



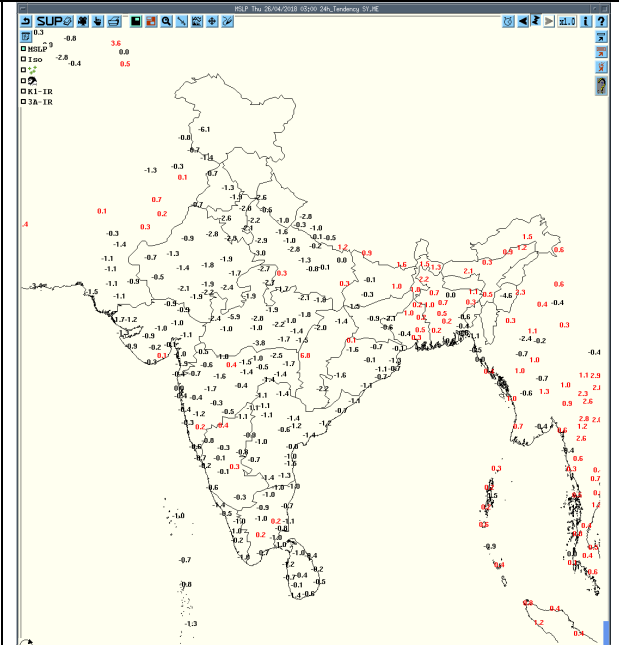
Tendency Tmax



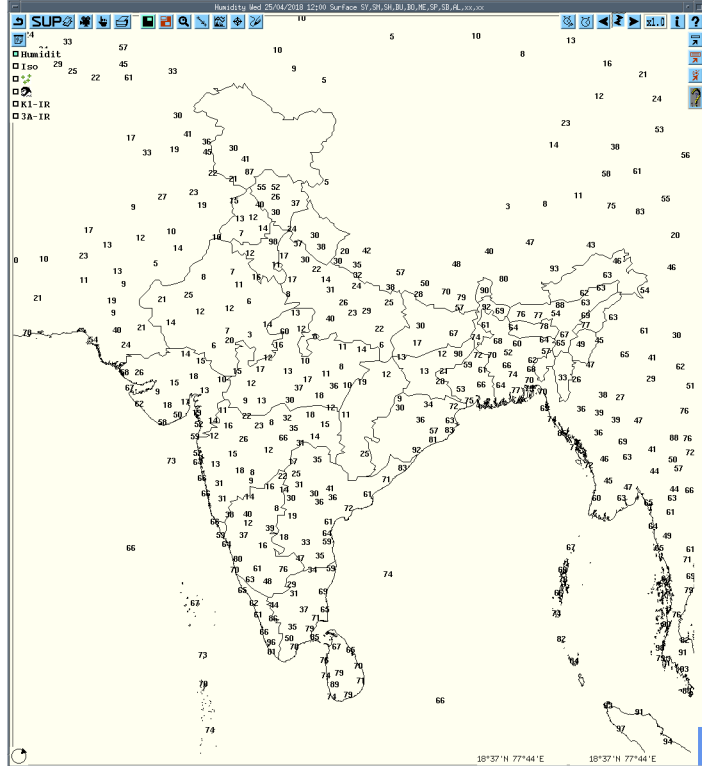
MSLP



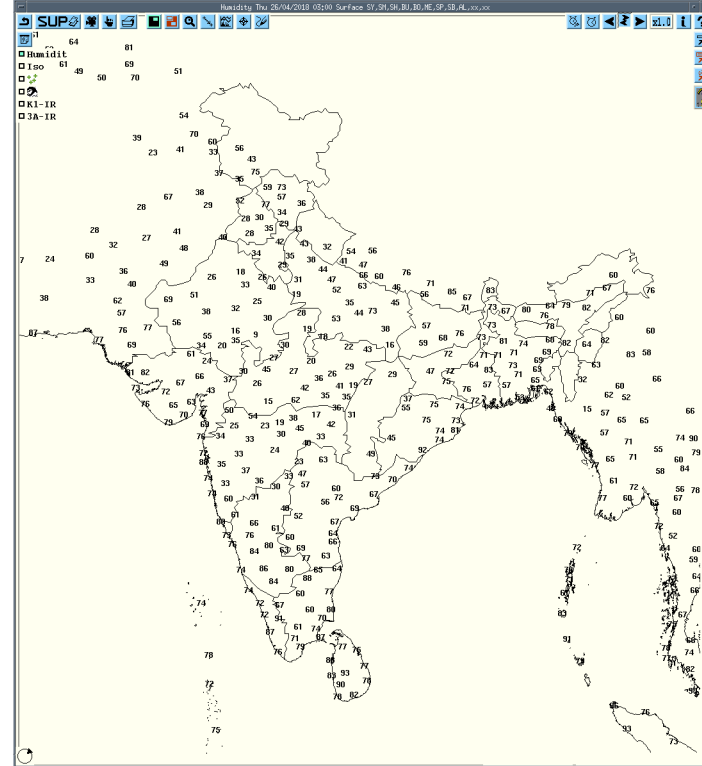
Departure MSLP



Tendency MSLP



**RH at 12UTC yesterday**



**RH at 03UTC today**

## Past 24 hours DWR Report:

Radar Station name	Date	Time interval of observation (UTC)	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	26-04-18	251500	Conviction region of reflectivity 35dbz and height 4kms	Moving SE ly	184kms(WSW) formed at 12:21 UTC.	-	-
		251800	Conviction region SSE (over the sea) with reflectivity45dbz and height 2kms.	110kms(SSE) over the sea at 16:21UTC and moving Easterly	dissipating	-	
Patiala	26-04-18	Radar under annual maintenance					
Lucknow	26-04-18	250300-260300	Nil	Nil	Nil	Nil	Nil
Jaipur	26-04-18	250300-260300	Nil	Nil	Nil	Nil	Nil
Agartala	26-04-18	250300-261400 (DWR operational from 0100 to 1400UTC)	MLTPL CELLS FORMATION OVER ADJ B'DESH @251000Z SUBSEQUENTLY BECOMING SQUALL LINE@251100Z;18 KMS,60dBZ	160 kms NW,E'ly	Both the squalls persisted when DWR was put in standby mode owing to powercut & NO GENSET back-up.	+TSRA accompanied with squally winds over entire WEST TRIPURA districts.	WEST TRIPURA,KHOWAI,DH ALAI, UDAYPUR,NORTH TRIPURA DISTS.
			MLTPL CELLS FORMATION OVER ADJ B'DESH @250930Z SUBSEQUENTLY BECOMING SQUALL LINE@251100Z;18 KMS,60dBZ	++250kms ,NW,E'ly			

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	26-04-18	250301-250741	NIL	NIL	NOSIG ECHO	NIL	NIL
		250752-251111	1)Single cell with maximum reflectivity of 67.0 dBz at 0852 UTC and maximum height of 16.03 Km at 0842 UTC	NW (234.6 km) Moving in SE-ward direction.	Single cell developed at NW at 0752 UTC at a distance 234.6 Km) from radar. Matured and dissipated at 1031 UTC in NNW at a distance of 168.7 km from radar.	Thunderstorm /Rain /Hail	N/A
			2) Single cell with maximum reflectivity of 63.5 dBz at 1001 UTC and maximum height of 14.69 Km at 1001 UTC	SW (229.5 km) Moving in E-ward thereafter ENE ward direction	Single cell developed at SW at 0911 UTC at a distance 229.5 Km) from radar. Matured and dissipated at 1111 UTC in SW at a distance of 177.1 km from radar.	Thunderstorm /Rain /Hail	N/A
		251121-251511	NIL	NIL	NOSIG ECHO	NIL	NIL
		251511-252001	Multi Isolated cell with maximum reflectivity of 63.0 dBz at 1612 UTC and maximum height of 10.12 Km at 1612 UTC	NORTH(186.7 km) Moving in EAST-ward direction.	Multi isolated Cell started forming at 1511 UTC at NORTH (186.7 Km) from radar. Matured, dissipated in ENE at 2001 UTC at a distance 180.3 km from radar.	Thunderstorm /Rain	N/A
252001-260300	NIL	NIL	NOSIG ECHO	NIL	NIL		

**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)
Qazigund	Northwest India	Jammu & Kashmir	Thunderstorm	25-04-18	1515	1520
Banihal	Northwest India	Jammu & Kashmir	Thunderstorm	25-04-18	1450 1750	1530 1820
Batote	Northwest India	Jammu & Kashmir	Thunderstorm	25-04-18	1655	1730
Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm	25-04-18	1615	1800
Itanagar	Northeast India	Arunachal Pradesh	<b>Squall from SW with max wind 32Kts</b>	<b>25-04-18</b>	<b>1908</b>	<b>1910</b>
Silchar	Northeast India	Assam	Thunderstorm	25-04-18	2040	2130
Tezpur	Northeast India	Assam	Thunderstorm	25-04-18	1710	2005
Dhubri	Northeast India	Assam	Thunderstorm	25-04-18	1148, 1740	1515, 1800
Guwahati	Northeast India	Assam	Thunderstorm	25-04-18	1455	1945
			<b>Squall from SW with max wind 31Kts</b>	<b>25-04-18</b>	<b>1449</b>	<b>1450</b>
Barapani	Northeast India	Meghalaya	Thunderstorm	25-04-18	1320	1415
Lengpui	Northeast India	Mizoram	Thunderstorm	25-04-18	2200	2230
Kailasahar	Northeast India	Tripura	Thunderstorm	25-04-18	1830	2200
Agartala	Northeast India	Tripura	Thunderstorm	25/26-04-18	251820	260050
			<b>Squall from NW with max wind 64Kts</b>	<b>25-04-18</b>	<b>1812</b>	<b>1813</b>
			<b>Squall from NW with max wind 73Kts</b>	<b>25-04-18</b>	<b>1942</b>	<b>1944</b>
Gangtok	East India	Sikkim	Thunderstorm	25-04-18	1350	1425
Tadong	East India	Sikkim	Thunderstorm	25-04-18	1410	1440
Coochbehar	East India	West Bengal (SHWB)	Thunderstorm	25-04-18	1035, 1615	1135, 1800
Jalpaiguri	East India	West Bengal (SHWB)	Thunderstorm	25-04-18	1532	1730
Malda	East India	West Bengal (SHWB)	Thunderstorm	25-04-18	1600	1900
Balasore	East India	Odisha	Thunderstorm	25-04-18	1545	1630
Alappuzha	South India	Kerala	Thunderstorm	25-04-18	1845	1950
Thiruvananthapuram AP	South India	Kerala	Thunderstorm	25-04-18	1345	1830
Thiruvananthapuram City	South India	Kerala	Thunderstorm	25-04-18	1330	1620
Yelahanka IAF	South India	Karnataka (SIK)	Thunderstorm	25-04-18	1545	1700
Madikeri	South India	Karnataka (SIK)	Thunderstorm	25-04-18	1415	1530
Bengaluru KIAL	South India	Karnataka (SIK)	Thunderstorm	25-04-18	1539	1609
Coimbatore	South India	Tamilnadu	Thunderstorm	25-04-18	1800	2020

## 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](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/](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](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](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](http://satellite.imd.gov.in/img/3Ddaily_imr.jpg)

HEM: [http://satellite.imd.gov.in/img/3Ddaily\\_he.jpg](http://satellite.imd.gov.in/img/3Ddaily_he.jpg)

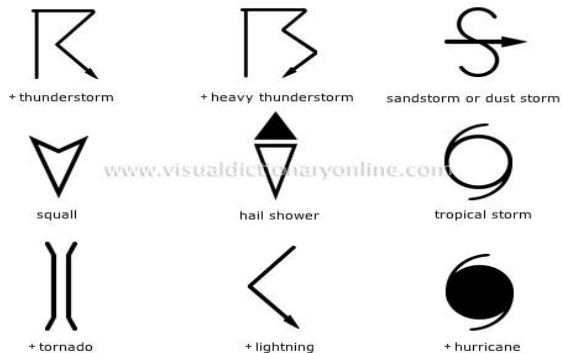
ForRadarimagesofthepast24hoursincludingmosaicofimages:

[http://ddgmui.imd.gov.in/dwr\\_img/](http://ddgmui.imd.gov.in/dwr_img/)

Satellite sounder based T- Phigram

[http://satellite.imd.gov.in/mAndhra\\_Pradesh\\_skm2.html](http://satellite.imd.gov.in/mAndhra_Pradesh_skm2.html)

## WEATHER SYMBOLS:



∞	haze
☁	smoke
☁	dust or sand storm
☁	fog
☁	drizzle
•	rain
*	snow
▽	showers
△	hail
☁	thunderstorm
<b>Weather Symbols</b>	