# India Meteorological Department

## FDP STORM Bulletin No.78 (22-05-2017)

## 1. CURRENT SYNOPTIC SITUATION at 0300UTC of the Day:

The Northern Limit of Monsoon (NLM) continues to pass through Lat.5.0°N/Long. 80.0° E, Lat. 8.0° N/Long. 87.0° E, Lat. 13.0 °N/ Long. 92.0° E and Lat. 16.0° N/ Long. 95.0° E.

An upper air cyclonic circulation lies over South East Bay of Bengal & adjoining equatorial Indian Ocean between 1.5 Km & 3.1 Km above mean sea level. With the development of this upper air cyclonic circulation, conditions are becoming favourable for further advance of southwest monsoon into some more parts of southwest, southeast and east-central Bay of Bengal during next 2-3 days.

The Western Disturbance as an upper air cyclonic circulation over north Pakistan & neighbourhood, now lies over north Pakistan and adjoining Jammu & Kashmir between 3.6 and 5.8 Km above mean sea level, with a trough aloft runs roughly along Long. 72.0° E and north of Lat. 25.0° N.

An induced upper air cyclonic circulation lies over Punjab & neighbourhood between 1.5 and 2.1 Km above mean sea level.

The upper air cyclonic circulation over northwest Uttar Pradesh & neighbourhood between 2.1 and 3.6 Km above mean sea level has become less marked.

The upper air cyclonic circulation over southwest Rajasthan & adjoining south Pakistan persists and now extends upto 2.1 Km above mean sea level.

The trough from west Bihar to north Chhattisgarh, extending upto 0.9 Km above mean sea level has become less marked.

The upper air cyclonic circulation over south Chhattisgarh & adjoining Odisha extending upto 0.9 km above mean sea level and trough from this system to Rayalaseema extending upto 0.9 Km above mean sea level has become less marked.

The trough in westerlies roughly along Long. 93.0°E and north of Lat. 23.0° N between 2.1 Km to 3.6 Km above mean sea level has moved away.

The upper air cyclonic circulation over Rayalaseema & neighbourhood at 1.5 Km above mean sea level persists.

An upper air cyclonic circulation lies over southeast Uttar Pradesh & neighbourhood and extends upto 0.9 km above mean sea level. A trough runs from this system to interior Odisha across north Chhattisgarh and extends upto 0.9 Km above mean sea level.

An upper air cyclonic circulation lies over southwest and adjoining west central Arabian Sea and extends upto 1.5 km above mean sea level.

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

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

**Convective Activity:**

| Cell No | Date/time (UTC) | Location/Area | MIN CTT (- DEG C) | Movement | Remarks |
|---|---|---|---|---|---|
| 1 | 22/0000<br>0100<br>0200<br>0300 | C MEGHA<br>E MEGHA ADJ ASSAM<br>DO<br>MEGHA ADJ ASSAM | 74<br>65<br>52<br>57 | | Developing<br><br>Dissipating |

**Western Disturbance:**
Scattered multi-layered clouds with embedded weak to moderate convection over J & K adjoining Pakistan, Himachal Pradesh, Punjab, Haryana adjoining Rajasthan, Delhi, NW Uttar Pradesh and Uttarakhand in association with WD over the Area.
**Westerly Trough:**
Trough in westerlies runs roughly along 72.0ºE north of lat 25.0ºN
**Cloud Description:**
Scattered low/medium clouds with embedded moderate to intense convection were seen over N Sub Himalayan West Bengal, Assam, and Meghalaya. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Andhra Pradesh, South Interior Karnataka, Kerala, Tamilnadu, Lakshadweep and Bay Islands. Scattered low/medium clouds were seen over rest Uttar Pradesh, rest Rajasthan, Madhya Pradesh, Maharashtra, S Bihar, Sikkim, rest NE states, and rest parts of the region.
**Arabian Sea:**
Scattered low/medium clouds with embedded intense to very intense convection were seen over South Arabian Sea.
**Bay of Bengal & Andaman Sea:**
Scattered low/medium clouds with embedded intense to very intense convection were seen over S Bay of Bengal. Scattered low/medium clouds with embedded moderate to intense convection were seen over Andaman Sea.
**Past Weather:**
**Convection:-**
Moderate to Intense convection was observed over J&K Himachal Pradesh Punjab Rajasthan Haryana Delhi Uttarakhand Uttar Pradesh East Bihar East Jharkhand West Bengal Arunachal Assam Meghalaya Telangana Andhra Pradesh South Interior Karnataka Kerala Tamilnadu .
**OLR:-**
Upto **200** $wm^{-2}$ was observed over J&K Himachal Pradesh South Interior Karnataka Kerala Tamilnadu.
Upto **230** $wm^{-2}$ was observed over Punjab Haryana Rajasthan Uttarakhand Sikkim Arunachal Pradesh Andhra Pradesh
**Westerly Trough & Jet-Stream:**
Trough in Westerlies runs roughly along Longitude 73.0E north of Latitude 25.0N**.**
No Jet Stream is observed over India Dynamic Features:

**Dynamic Features:**
Low to Medium wind shear is observed over India.
Negative shear tendency is observed over Saurashtra J&K Himachal Pradesh and Positive shear tendency is observed over rest parts of India
A positive Vorticity field is observed over Saurashtra Punjab Haryana Uttar Pradesh East Madhya Pradesh Chhattisgarh Andhra Pradesh Odisha Jharkhand West Bengal .
Negative low level convergence is observed over North-West & Central parts of India and Positive low level convergence observed over rest parts of India
**Precipitation**:
**IMR**:
Rainfall Up to **30** mm was observed over south Parts of North Coastal Andhra Pradesh. Rainfall Up to **20** mm was observed over J&K Himachal Pradesh Meghalaya.
Rainfall Up to **10** mm was observed over Punjab Rajasthan Haryana Delhi North-West Uttar Pradesh Uttarakhand East Bihar West Bengal West Assam South Interior Karnataka Kerala Tamilnadu.

**HEM**:.
Rainfall Up to **70** mm was observed over South West J&K Himachal Pradesh West Uttarakhand East Meghalaya.
Rainfall Up to **14** mm was observed over Rajasthan south Parts of North Coastal Andhra Pradesh South Interior Karnataka.
Rainfall Up to **07** mm was observed over Punjab Haryana Delhi North West Uttar Pradesh East Uttarakhand East Bihar rest North-East States East Gujarat Kerala West Tamilnadu.

## RADAR and RAPID Observation:

DWR Composite at 1240hrs IST indicated convective activity over S Haryana and South Assam
RAPID RGB Satellite imagery at 1200hrs IST indicated convective clouds over J & K, Himachal Pradesh adjoining Uttarakhand, Haryana adjoining W Uttar Pradesh, S Assam, S Kerala, adjoining S Tamilnadu and Lakshadweep & Minicoy Islands.

## Environmental condition (dust etc) and its forecast based on 00UTC of date:

Higher Dust concentration was observed over north-west Africa . Dust concentration is expected to increase over north India for next five days. High PM10 concentration was observed over Rajasthan and is expected to increase over north India in next five days.

# 2. NWP MODEL GUIDANCE:

## NCMRWF (NCUM Forecasts based on 00 UTC of the day):-

### 1. Weather Systems:

**12UTC Charts of Day 0-4** show evolution of heat low over NW India and adjoining Pakistan with MSLP values lower than 992hPa on Day-3 and 4.

**12UTC charts on days from Day0-4**: show a zones of wind discontinuity at 925 hPa :(i) SW-NE extending from northern Karnataka-Maharashtra region to Jharkhandand WB region.

**A CYCIR is seen over Arabian Sea:** from Day-2 to Day-4 moving westwards.

**A CYCIR is seen over Bay fo Bengal:** from Day-2 to Day-4 moving northwards AP-Odisha Coast on day-5.

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

Weaker core winds at 12 UTC on all days over India

### 3. Convergence at 850 hPa:

(**Day/Index : Subdivisions with Lower Level Convergence > 15 x 10^-5 /s):**

Day0: Jharkhand, West RJ, Odisha, East MP, Madhya Maharashtra, Chhattisgarh, NI Karnataka,

Day1: Gangetic WB, Jharkhand, Chhattisgarh,

Day2: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Bihar, West UP, West RJ, Odisha, Madhya Maharashtra, Chhattisgarh, Telangana,

Day3: Jharkhand, East RJ, West MP, East MP, Madhya Maharashtra, Vidarbha, Chhattisgarh, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day4: Madhya Maharashtra, Chhattisgarh, Coastal AP, NI Karnataka

### 4. Low level Vorticity:-Positive Vorticity (>15 x $10^{-5}$/s):

**(Day/Index : Subdivisions with Lower Level Vortex > 15 x 10^-5 /s):**

Day0: Arunachal Pradesh, Assam Meghalaya,

Day1: Arunachal Pradesh, Assam Meghalaya,

Day2: Arunachal Pradesh, Assam Meghalaya, Saurashtra Kutch, TN Puducherry,
Day3: Assam Meghalaya, Jharkhand, Bihar, West MP, East MP, TN Puducherry, Kerala,
Day4: Arunachal Pradesh, Assam Meghalaya, Bihar, TN Puducherry, Kerala

**5. Showalter Index: -3 to -4[Very unstable]:**

**(Day/Index : Subdivisions with Showalter Index < -4):**

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala

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

**(Day/Index : Subdivisions with K Index > 40**):

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Guj Reg, Saurashtra Kutch, Madhya Maharashtra, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, 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, Himachal Pradesh, Jammu Kashmir, Odisha, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka

**7. Spatial distribution of TTI (TTI >50 [Scattered Thunderstorms few severe)**:

**(Day/Index : Subdivision with Total Totals Index > 52):**

Day0: Arunachal Pradesh, Sub Himalayan WB, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, TN Puducherry,

Day1: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day2: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day3: Arunachal Pradesh, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East RJ, Vidarbha, Chhattisgarh, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka,

Day4: Arunachal Pradesh, Sub Himalayan WB, Bihar, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, Coastal Karnataka, NI Karnataka, SI Karnataka

**8. Rainfall and thunder storm activity:**

**(Day/Index : Subdivisions with Precipitation > 2 cm):**

Day1: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Himachal Pradesh, Jammu Kashmir, TN Puducherry, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, Himachal Pradesh, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Jammu Kashmir, TN Puducherry, Coastal Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, TN Puducherry, SI Karnataka, Kerala,

Day5: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Uttarakhand, Jammu Kashmir, Kerala

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

**1. Weather Systems:**

00 UTC analysis shows an east west trough over UP, Bihar, Jharkhand and adjoining areas. The analysis also shows a trough at low level from this system passing through Odisha and North Andhra. The N-S oriented trough from west UP and Bihar along north Odisha and thereby extending up to interior parts of Tamil Nadu is seen persisting during next 4 to 5 days

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

No presence of jet core over the Indian region for the next 5 days except over a smaller region south of Delhi in the analysis chart.

**3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x $10^{-1}$/s):**

Analysis shows low level positive vorticity **(>12 x $10^{-5}$/s)** mainly over the foothills of Himalaya, along with Interior Odisha, Chhattisgarh and adjoining east MP. The high vorticity belts are mainly confined over regions of Odisha, Chhattisgarh region along with the Himalayan foothills during next 3 days .

**4. Spatial distribution of T-Storm Initiation Index, Lifted Index, Total Total Index, CAPE, CINE and Sweat Index (High potential for thunderstorm):**

Analysis shows low level positive vorticity **(>12 x $10^{-5}$/s)** mainly over the foothills of Himalaya, along with Interior Odisha, Chhattisgarh and adjoining east MP. The high vorticity belts are mainly confined over regions of Odisha, Chhattisgarh region along with the Himalayan foothills during next 3 days.

**5. Rainfall and thunderstorm activity:**

10-40 mm rainfall is forecasted tomorrow over isolated pockets in the north east states and in the Kerala region and is expected to persist for the next 5 days.

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

**1. Model Reflectivity (Max. dBz):**

15-40 dBZ over parts of Delhi, UP and adjoining areas during today

15-40 dbz over parts of the north eastern states in the early morning hours of tomorrow

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

**CAPE (> 1000):** Mostly along GWB, Odisha, coastal AP and TN and along the west coast during next 3 days.

**CIN (50-150):** Higher values over most regions of India except over central India, NW India, J & K region and NE states particularly during morning hours of next three days.

**3. Rainfall and thunderstorm activity:**

10-40 mm over few pockets in north eastern region and is expected to persist for the next 3 days.

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

### Summary and Conclusions:

**Day-1 & Day-2:**

In association with the upper air cyclonic circulation over South East Bay of Bengal & adjoining equatorial Indian Ocean rainfall is likely to increase over the next two days over Andaman and Nicobar Islands.

The western disturbance over north Pakistan and adjoining Jammu & Kashmir and the two upper air cyclonic circulations- one over Punjab and the other over southeast Uttar Pradesh & neighbourhood, thunderstorm activity is expected during the next two days throughout North India. The zone of thunderstorm activity is likely to shift eastwards on day 2.

In association with the upper air cyclonic circulation over Rayalaseema & neighbourhood, and the upper air cyclonic circulation over southwest Arabian Sea, weather is also likely over the south-west peninsular coast of India during the next two days.

**24 hour Advisory for IOP:**

Nicobar Islands
Eastern parts of Sub Himalayan West Bengal, Assam, Meghalaya
South Interior Karnataka, Rayalaseema, Interior Tamil Nadu, Kerala
North-west Madhya Pradesh, Jharkhand, Bihar, Orissa
Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh and Rajasthan

**48 hour Advisory for IOP:**

Andaman and Nicobar Islands
Assam, Meghalaya
South Interior Karnataka, Rayalaseema, Interior Tamil Nadu, Kerala
Jharkhand
Himachal Pradesh, Uttarakhand, Haryana, West UP, East Rajasthan.

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 RAPID tool:
http://rapid.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:
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Satellite sounder based T- Phigram
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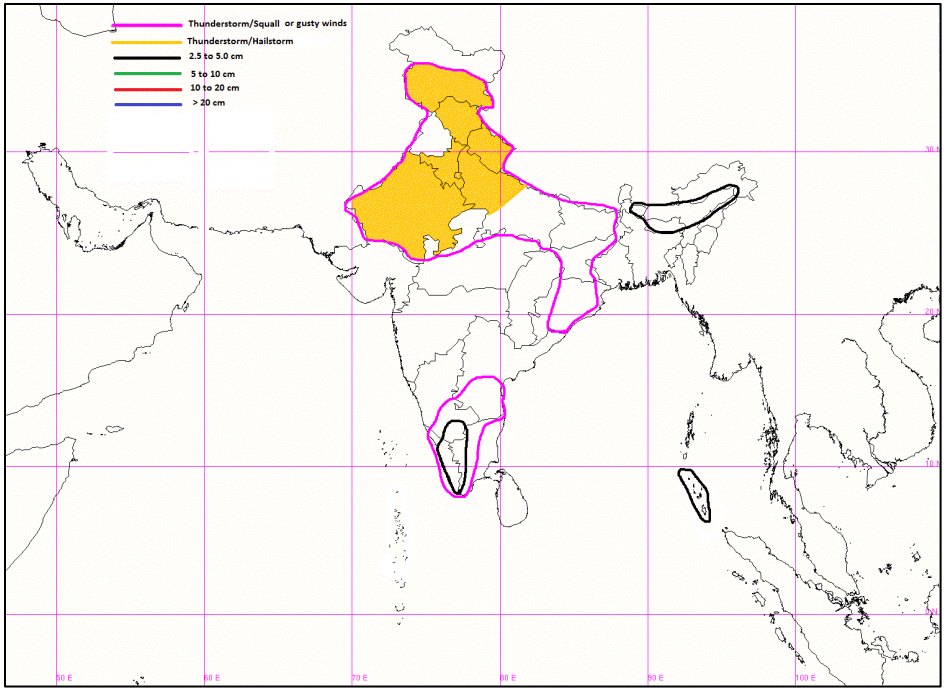
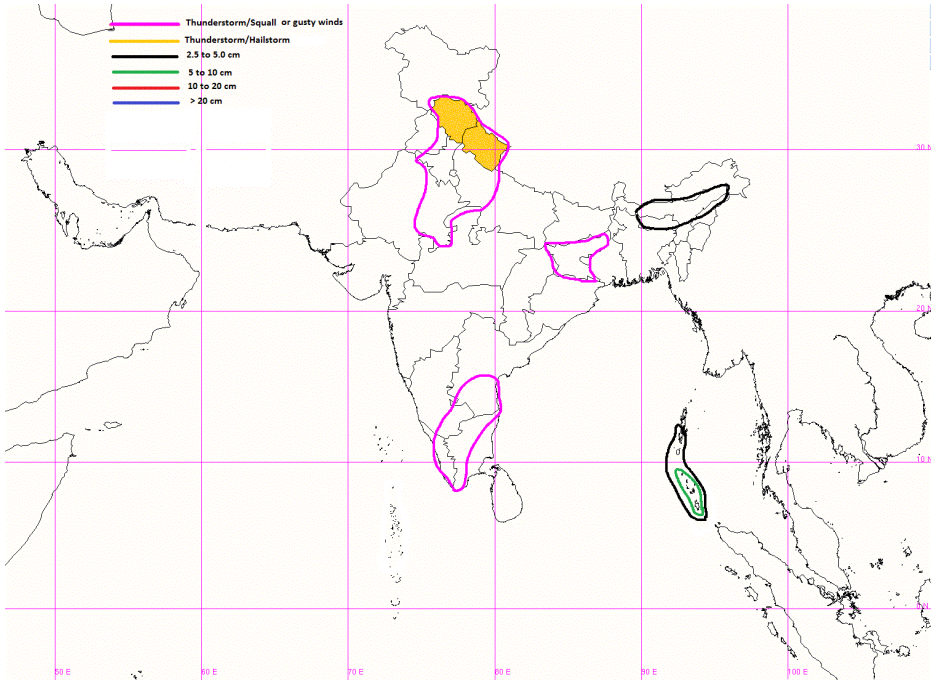



**IOP Advisory for 24 hours**




**IOP Advisory for 48 hours**

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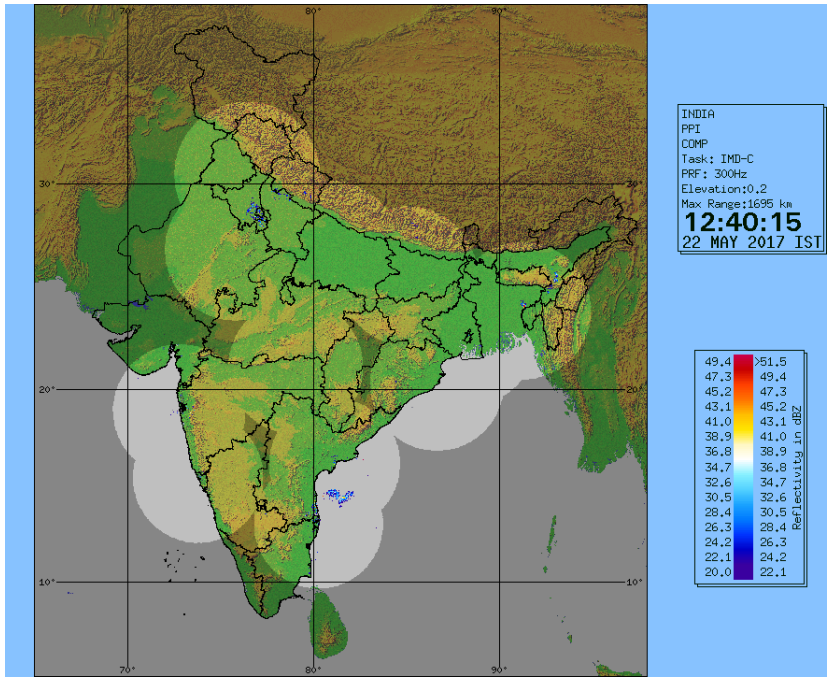
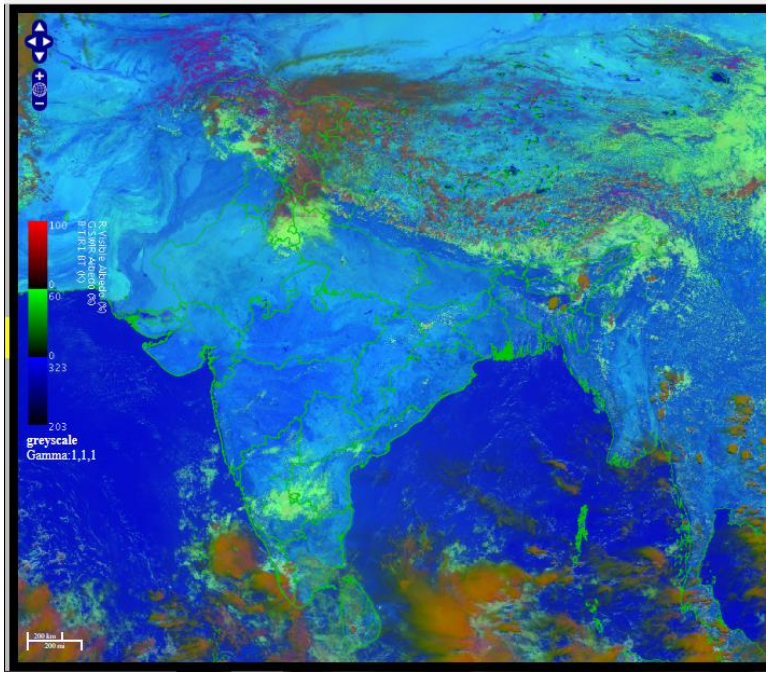
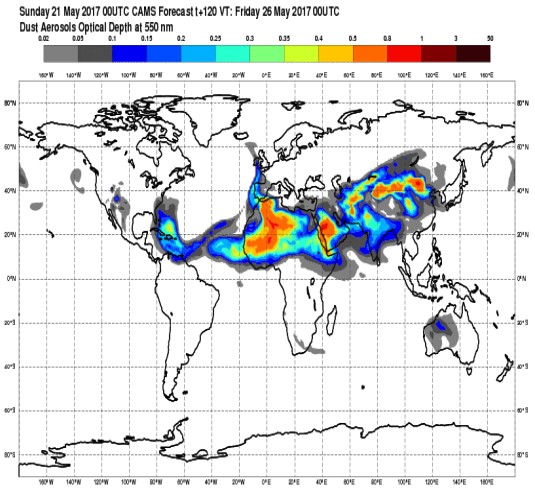
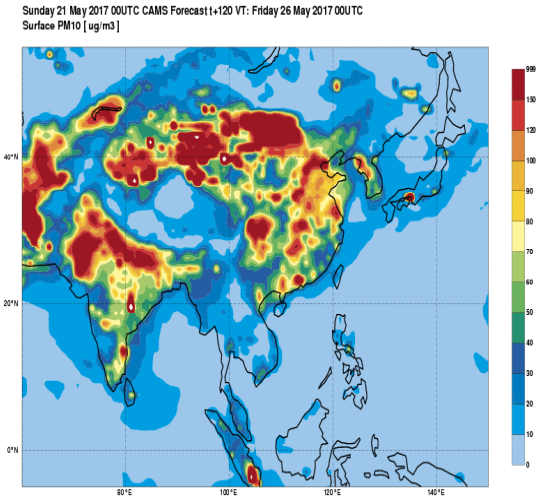
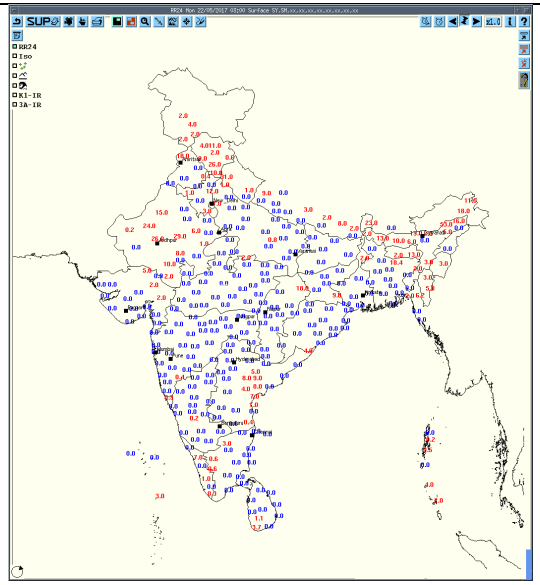
|  |  |
| **DWR Composite at 1240 hrs IST** | **RAPID RGB Satellite Imagery at 1200 hrs IST of today** |



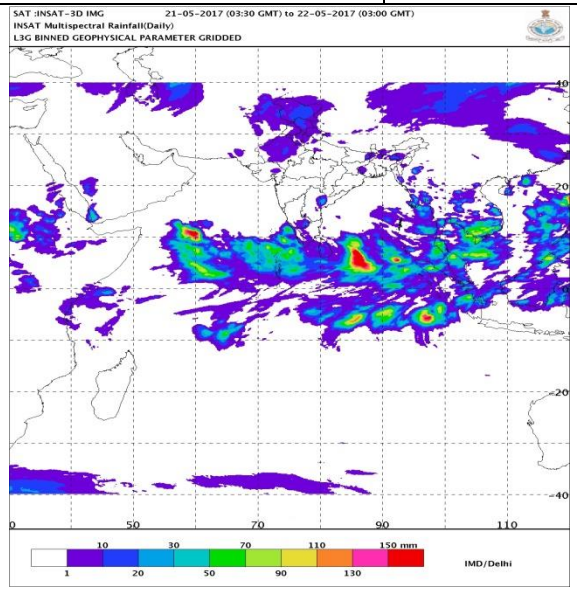

**Forecast Dust Concentration for 00UTC of 26th May**



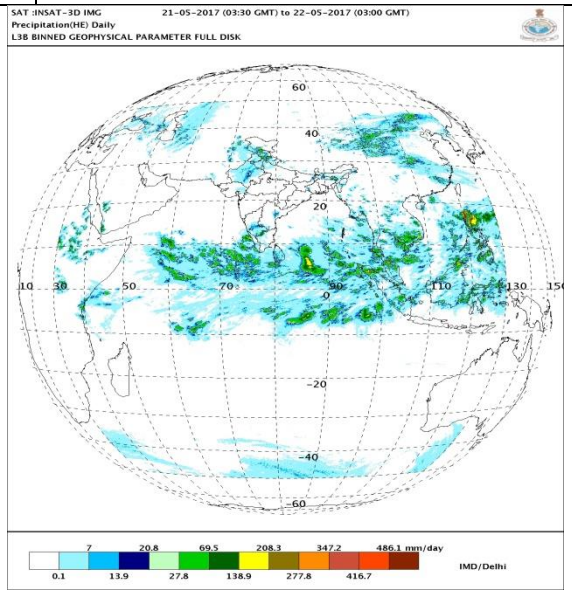

**PM10 Forecast for 00UTC of 26th May**



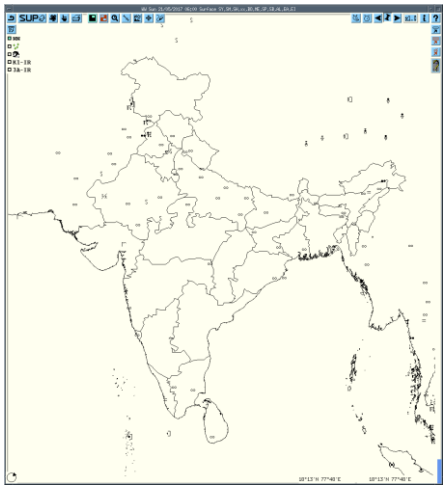
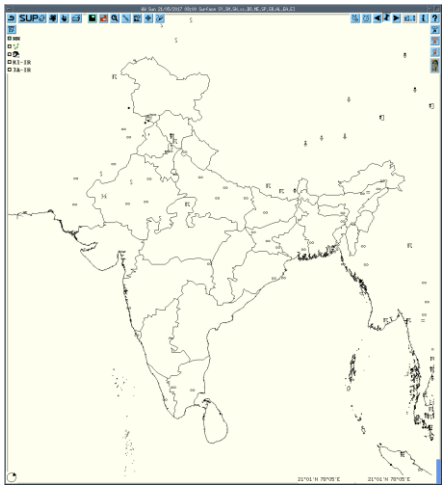
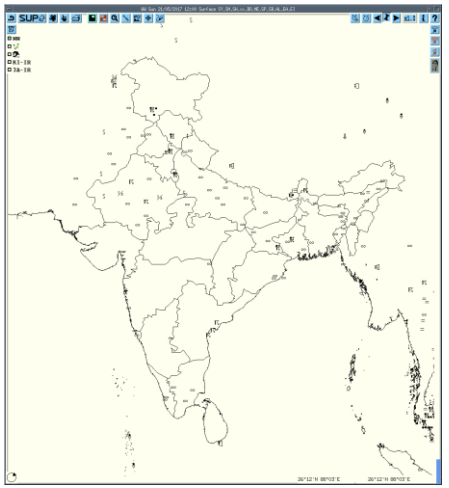
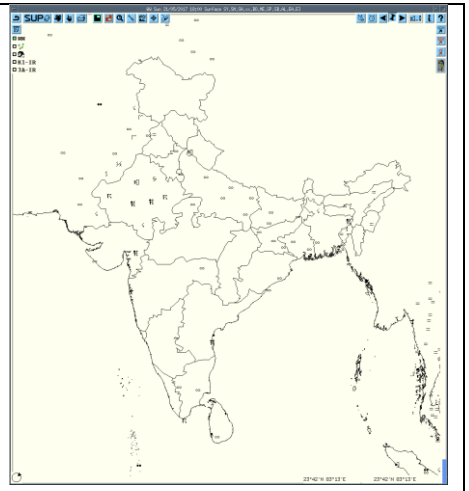
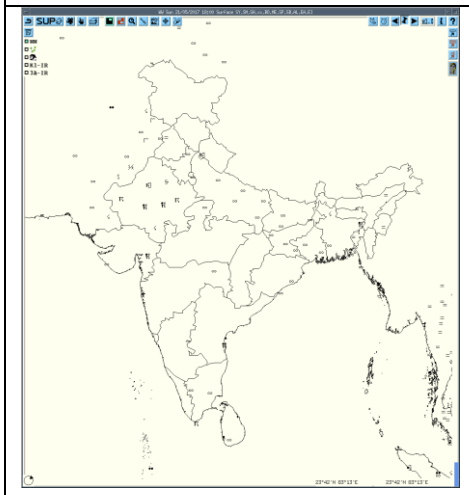
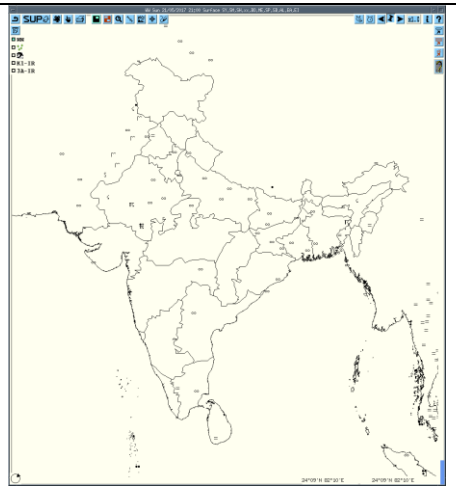
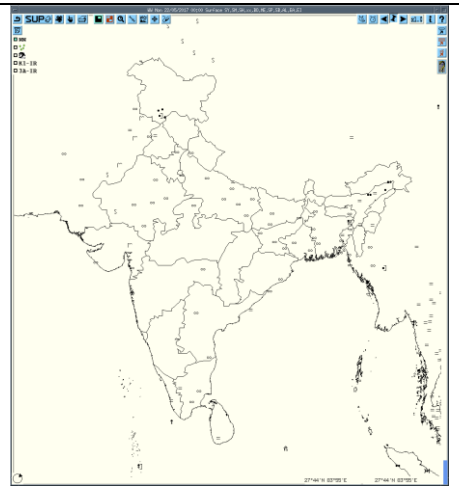
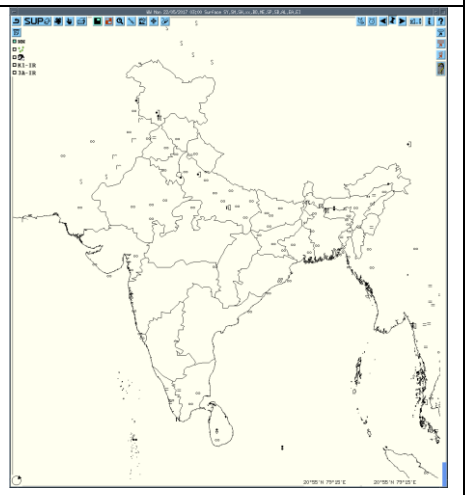
**Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today**



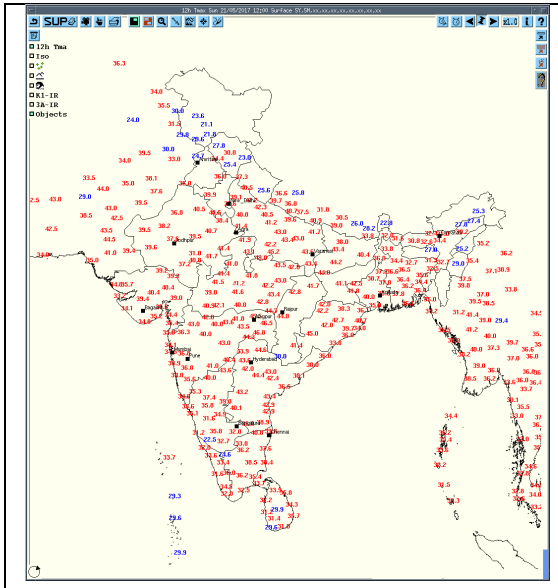
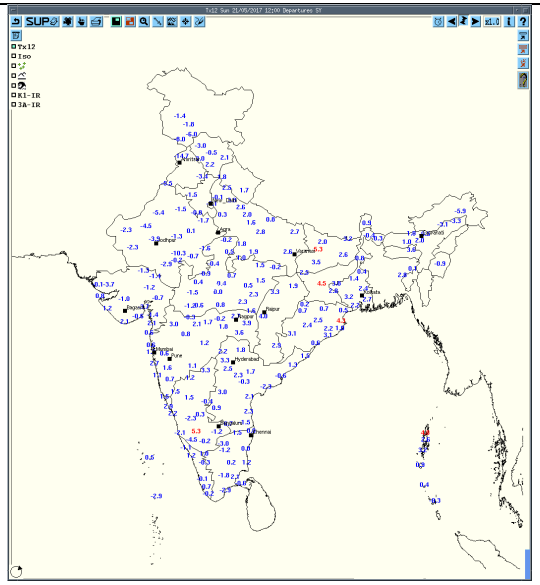
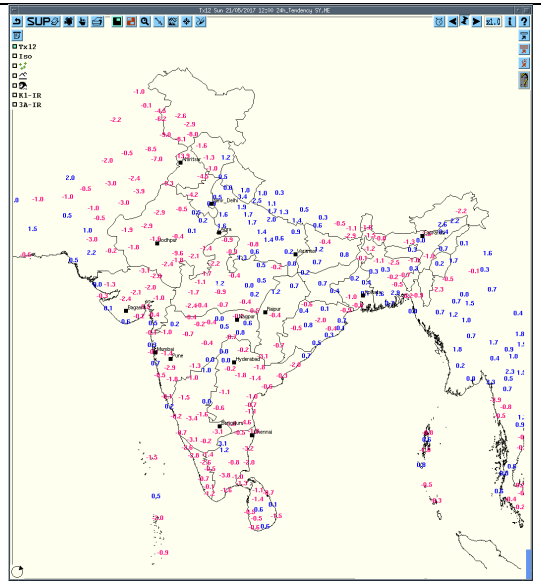
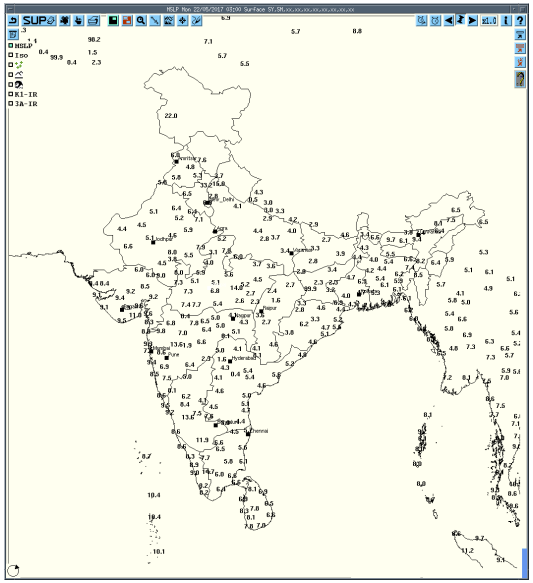
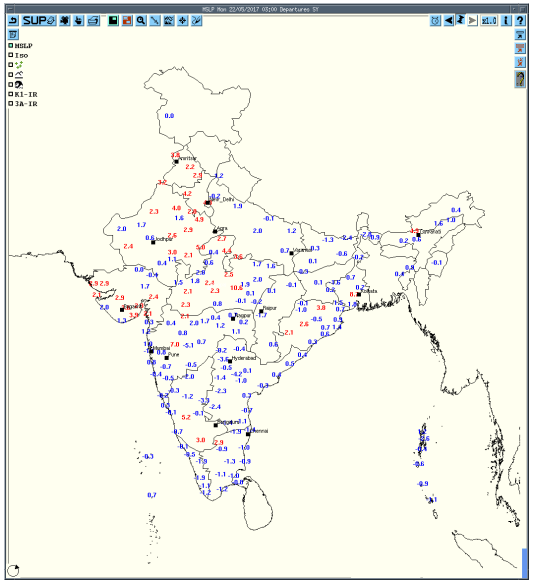
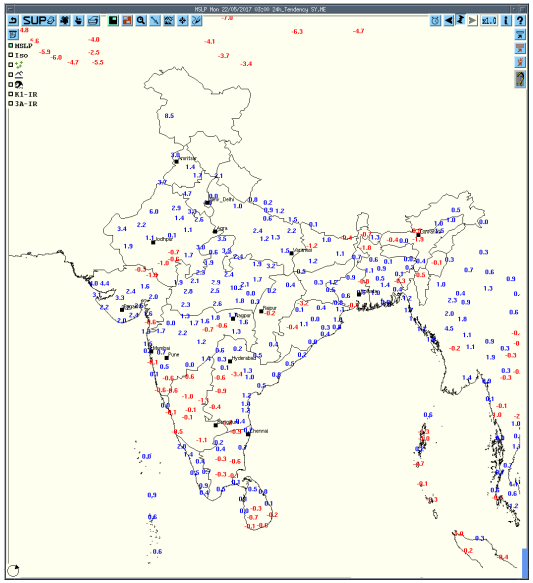

**IMR Rainfall**

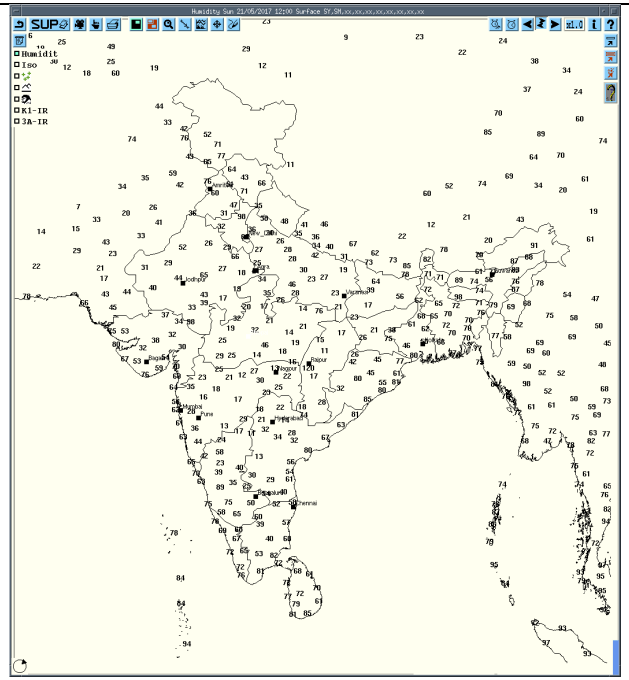
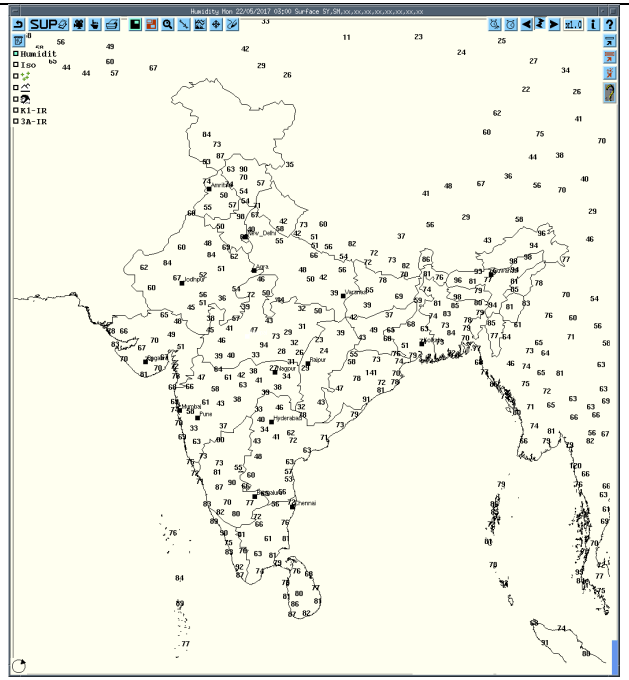



**HEM Rainfall**

**3hourly Past weather at 06,09,12,15,18,21UTC 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** |

| Realized weather past 24hours (Based on SYNERGIE Products) | | | | | |
|---|---|---|---|---|---|
| **Date** | **Time of Reporting** | **Name of Station Reporting** | **Region** | **STATE** | **Weather Event** |
| 21-05-17 | 0600UTC | Amritsar | NW India | Punjab | Thunderstorm |
| 21-05-17 | 0900UTC | Katra | NW India | J & K | Thunderstorm |
| | | Sundernagar, Shimla | NW India | Himachal Pradesh | Thunderstorm |
| | | Gwalior | C India | Madhya Pradesh | Thunderstorm |
| 21-05-17 | 1200UTC | Banihal | NW India | J & K | Thunderstorm |
| | | Sundernagar | NW India | Himachal Pradesh | Thunderstorm |
| | | Ambala | NW India | Haryana | Thunderstorm |
| | | Bikaner, Ajmer | NW India | Rajasthan | Thunderstorm |
| | | Safdarjung, Palam, Delhi Ridge | NW India | Delhi | Thunderstorm |
| | | Vijayawada, Bapatla, Ongole | S India | Andhra Pradesh | Thunderstorm |
| | | Jamshedpur | E India | Jharkhand | Thunderstorm |
| | | Panagarh | E India | West Bengal | Thunderstorm |
| 21-05-17 | 1500UTC | Jodhpur | NW India | Rajasthan | Duststorm |
| | | Ajmer, Jaipur | NW India | Rajasthan | Thunderstorm |
| | | Chandigarh | NW India | Chandigarh | Lightening |
| | | Dehradun | NW India | Uttarakhand | Thunderstorm |
| | | Ahmedabad | W India | Gujarat | Thunderstorm |
| | | Bengaluru | S India | Karnataka | Lightening |
| 21-05-17 | 1800UTC | Jaisalmer, Bikaner, Jodhpur, Ajmer, | NW India | Rajasthan | Thunderstorm |
| | | Churu | NW India | Rajasthan | Duststorm |
| | | Udaipur | NW India | Rajasthan | Lightening |
| | | Baroda | W India | Gujarat | Thunderstorm |
| | | Kavali | S India | Andhra Pradesh | Thunderstorm |
| | | Nellore | S India | Andhra Pradesh | Lightening |
| | | Kanyakumari | S India | Tamilnadu | Thunderstorm |
| 21-05-17 | 2100UTC | Tezpur | NE India | Assam | Lightening |
| | | Jaisalmer, Jodhpur, Udaipur | NW India | Rajasthan | Thunderstorm |
| 22-05-17 | 0000UTC | Kannur | S India | Kerala | Lightening |
| 22-05-17 | 0300 UTC | Batote | NW India | J & K | Thunderstorm |
| | | Fursatganj | NW India | Uttar Pradesh | Thunderstorm |
| | | Bagdogra, Coochbehar | E India | West Bengal | Thunderstorm |
| | | Thiruvananthapuram, Alappuzha | S India | Kerala | Thunderstorm |

## Past 24 hours DWR Report:

| Radar Station name | Date of Reporting | 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 |
|---|---|---|---|---|---|---|---|
| MC JAIPUR | 22/05/17<br>22/05/17 | 0852-2252 UTC | Multiple cell with average height of 7.5 km maximum reflectivity 56.5 dBZ | Cell develop 0842 to 2252 UTC towards NW, W,SW,NE of jaipur and movment E,NE at speed 35-40 km/hr | Cells continuous forming from 0852UTC W,NW,SW,NE of Jaipur and maximum refelectivity during 1052-1342 UTC and died down at 2212 UTC | Moderate Thunderstorm at a few and isolated places | Jaipur,Alwar,Dausa,Pali Rajasamand,Bhilwara,Nagaur,Tonk,Ajmer,Sikar,Chittaurgarh,Bundi,Kota,Bharatpur, Karauli, Sawaimadhopur and Bikaner |
| | | 2332-0302 UTC | Multiple cells with average height of 4.0 km maximum reflectivity 35.5 dBZ | Multiple Cells develop 2322 to 0302 UTC towards North,North East of Jaipur and movment towards east and North East at speed 45-50 km/hr. | Cells continuous forming from 2322 UTC North,North East of Jaipur and maximum refelectivity during 0052-0102UTC and died down at 0302 UTC | Moderate Thunderstorm at isolated places | Jhunjhunu, Pilani,AlwarSikar and Bharatpur |
| Nagpur | 22-05-17 | 210302-220252 | Nil | -- | -- | -- | -- |
| Paradeep | 22-05-17 | 0300-2300 UTC | Isolated single cells seen developing in the NW sector of Radar with heights exceeding 14 kms, average reflectivity value of 30 dBZ and highest reflectivity value of 53 dBZ. | Formed in the NW sector of RADAR in the range of 330-355 degrees and at distance of 200 kms. Direction of movement is NWly. | NIL | TS with Rain. | Mayurbhanj, Keonjhar, Bhadrak and Baleshwar. |
| Bhuj | 22-05-17 | 210430-211200 | Nil | -- | -- | -- | -- |

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|---|---|---|---|---|---|---|---|
| Patna | 22-05-17 | 210300-220300 | Nil | -- | -- | -- | -- |
| Lucknow | 22-05-17 | 210912 UTC TO 211242 UTC | Single cell started forming over 180 Km WSW which after movement to 150 Km W developed in to a multiple cell system. This multiple cell system matured at around 1112 UTC spreading over 100 Km WSW to 120 Km SW from the station. The portion of system along WSW weakened & at around 1152 UTC core of the system was lying 80 Km SW. This intensity lasted up to 1242 UTC. Maximum reflectivity was observed 46 dBZ & height reached 8 Km (20 dBZ echo top) | Previous single cell system moved easterly with avg. velocity 50 Km/h while the multiple cell system moved with velocity 60 Km/h easterly. The system started weakening at around 1412 UTC over 50 Km South & dissipated at 1542 UTC over 100 Km SE. | Radar was not operational between 1255 UTC to 1410 UTC due to power failure. | TS | Raebareli |
| | | 212212 UTC To 220212 UTC | Multiple cell system formed 120 Km SSW to S, weakened with movement and reduced to a single cell system at around 0042 UTC over 50 Km South. Maximum reflectivity was 42 dBZ & height reached 7 Km (20 dBZ echo top). | The system moved with average velocity 50 Km/h NNE & dissipated at around 02212 UTC over 70 Km SE. | | NIL | NIL |
| Patiala | 22-05-17 | 210300-210600 | Multiple cells Max= 47.5 dBz Ht.= 07-10 km | Formation in NW sector. MOVEMENT NE-WARDS. | ------- | -RA/TS | KAPURTHLA ; AMRITSAR; JALANDHAR. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 210600-210900 | Multiple cells Max= 55.0 dBz Ht.= 09-11 km | Formation in NW sector. MOVEMENT NE-WARDS. | ------- | TS/RA | CHANDIGARH; SHIMLA; HOSHIARPUR; NAWANSHAHR; KAPURTHLA; BILASPUR. . |
| | | 210900-211200 | Multiple cells Max= 57.0 dBz Ht.= 09-12 km | Formation in NW sector. MOVEMENT NE-WARDS. | ------- | TS/RA | KARNAL; FARIDABAD; AMBLA; PANIPAT; SONIPAT; JIND, CHANDIGARH; BILASPUR. |
| | | 2112300-211500 | Multiple cells Max= 57.0 dBz Ht.= 09-12 km | Formation in NW sector. MOVEMENT NE-WARDS. | ------- | TS/RA | KARNAL; PANIPAT; SONIPAT; SAHARNPUR; AMBALA. |
| | | 211500-211800 | Multiple cells Max= 52.0 dBz Ht.=9-12 km | FORMATION IN NE SECTOR. DIRECTION ,MOVEMENT IN N-WARDS.RA/TS | | | KALSI; DEHRDOON; SHIMLA; SOLAN. |
| | | 211800-212100 | NO SIGNIFICANT ECHO | ---------- | ---------- | ---------- | ---------- |
| | | 212100-220000 | NO SIGNIFICANT ECHO | ---------- | ---------- | ---------- | ---------- |
| | | 220300-20300 | NO SIGNIFICANT ECHO | ---------- | ---------- | ---------- | ---------- |
| Machilipatnam | 22-05-17 | 210901-211731 | Convective region average height of 13 km with maximum reflectivity of 60.5dBZ in Krishna,64.5dBZ in Khammam, 60dBZ in Nalgonda,63dBZ in Suryapet ,61.5dBZ Prakasam, in Nellore 60dBZ, in Guntur 61.5dbZ respectively | NW,Wand SW and moving initially S ly direction and later E ly with average speed of 30 kmph | Cell started forming at 0901UTC, at NW (100km) from Radar the maximum reflectivity during 0901 to 1721 UTC and died down at 1731UTC | Possibility of Thunder storm with Hail and rain with moderate winds. | Bhadradri Kothagudem, Khammam, Suryapet,Nalgonda ,Krishna,Guntur, Prakasam,Nellore Districts |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Kolkata | 22-05-17 | 210301–210711 | NIL | NIL | NO ECHO | NIL | NIL |
| | | 211011-211601 | Isolated cell transformed into multicelled system with maximum reflectivity of 61.0 dBz at 1201 UTC and maximum height of 17.55 Km at 1301 UTC | NW (215 km) Moving in SE-ly direction. | A cell formed at 1011 UTC in NW (215 km) from radar. Matured and dissipated at 1601 UTC in NNW at a distance of 35.4 km from radar. | Thunderstorm Hail/ Rain | N/A |
| | | 211611 – 212351 | NIL | NIL | NO ECHO | NIL | NIL |
| | | 220001 – 220301 | NIL | NIL | NO ECHO | NIL | NIL |