



India Meteorological Department
FDP STORM Bulletin No.76 (20-05-2017)

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.

Conditions are likely to become favourable for further advance of southwest monsoon into some more parts of southwest, southeast and east central Bay of Bengal after 3 days.

The upper air cyclonic circulation over Punjab & neighbourhood extending upto 0.9 Km above mean sea level persists. However the trough from this system to southeast Madhya Pradesh across northeast Rajasthan extending upto 0.9 km above mean sea level has become less marked.

An upper air cyclonic circulation lies over southwest Rajasthan & neighbourhood and extends upto 2.1 Km above mean sea level.

An upper air cyclonic circulation lies over central Uttar Pradesh & neighbourhood and extends upto 0.9 Km above mean sea level.

The upper air cyclonic circulation over south Chhattisgarh & adjoining Odisha extending upto 0.9 km above mean sea level persists. A trough runs from this system to south Coastal Andhra Pradesh and extends upto 1.5 Km above mean sea level.

A trough in westerlies runs roughly along Long. 92.0° E and north of Lat. 23° N between 2.1 Km to 3.6 Km above mean sea level.

The trough at mean sea level from south coastal Andhra Pradesh to Comorin area persists and now runs off Tamilnadu coast.

The trough from Bihar to west central Bay of Bengal off north Andhra Pradesh coast at 1.5 km above mean sea level has become less marked.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

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

Convective Activity:

| Cell No | Date/time (UTC) | Location/Area | MIN CTT (- DEG C) | Movement | Remarks |
|---------|-----------------|--|-------------------|----------|---------|
| 1 | 20/0900 | Extreme S Odisha, adjoining N Coastal Andhra Pradesh | 80 | --- | ---- |

Western Disturbance:

Scattered multi-layered clouds were seen over J & K, Himachal Pradesh, Haryana, Delhi and Uttarakhand in association with WD over the Area.

Cloud Description:

Scattered low/medium clouds with embedded intense to very intense convection were seen over extreme S Odisha and N Coastal Andhra Pradesh. Scattered low/medium clouds with embedded moderate to intense convection were seen over W Odisha, E Bangladesh and E Assam adjoining Nagaland. Scattered low/medium clouds with embedded isolated weak convection were seen over Karnataka, rest Andhra Pradesh, W Tamilnadu & Bay Islands. Scattered low/medium clouds were seen over NW Uttar Pradesh, Chhattisgarh, Jharkhand, W

Gangetic West Bengal, Sikkim, Arunachal Pradesh, rest Nagaland, Rajasthan, Madhya Pradesh, Vidarbha, Marathwada and rest parts of South India.

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 North Rajasthan Uttarakhand North West Uttar Pradesh, Bihar Jharkhand Odisha West Bengal Assam Tripura Mizoram South Interior Karnataka Andhra Pradesh Kerala Tamilnadu .

OLR:-

Upto **200** wm^{-2} was observed over WEST J&K. Upto **230** wm^{-2} was observed over Rest J&K, Himachal Pradesh, Uttarakhand South East Uttar Pradesh North Rajasthan Meghalaya Arunachal Pradesh Assam Manipur. Upto **250** wm^{-2} was observed over Delhi Sikkim Nagaland. South Interior Karnataka South Andhra Pradesh Kerala Tamilnadu

Westerly Trough & Jet-Stream:

No Trough & Jet Stream observed over India.

Dynamic Features:

Low to Medium wind shear is observed over India.

Positive shear tendency is observed over the India.

A positive Vorticity field is observed over Saurashtra Rajasthan North Andhra Pradesh South Chhattisgarh.

Positive low level convergence observed over West Uttar Pradesh Andhra Pradesh Karnataka Kerala Tamilnadu and Negative low level convergence observed over rest parts of India.

Precipitation:

IMR:

Rainfall Up to **30** mm was observed over West J&K. Rainfall Up to **20** mm was observed over Himachal Pradesh Uttarakhand North Rajasthan. Rainfall Up to **10** mm was observed over Punjab Haryana Delhi West Uttar Pradesh Coastal Odisha Meghalaya East Assam West Gangetic West Bengal Manipur Mizoram Tripura.

HEM:.

Rainfall Up to 70 mm was observed over South West J&K Himachal Pradesh Uttarakhand Meghalaya South Interior Karnataka adjoining Tamilnadu.

Rainfall Up to 14 mm was observed over Coastal Karnataka Coastal Odisha.

Rainfall Up to 07 mm was observed over Punjab Haryana Delhi North Rajasthan West Uttar Pradesh West Bengal Rest North East States

RADAR and RAPID Observation:

DWR Composite at 1600hrs IST indicated significant convective activity over N Coastal Andhra Pradesh, Odisha, SE Jharkhand adjoining West Bengal and N Coastal Tamilnadu.

RAPID RGB Satellite imagery at 1530hrs IST indicated convective clouds over Odisha adjoining N Andhra Pradesh, adjoining Jharkhand, adjoining West Bengal, Kerala & adjoining Tamilnadu, South Interior Karnataka, J & K, HP, Uttarakhand, E Assam adjoining Nagaland and Lakshadweep & mimicry Islands area.

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 994hPa.

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

A CYCIR is seen over Arabian Sea: from Day-0 to Day-4 moving westwards.

Over South Interior Karnataka a CYCIR at 925 hPa is seen near in Day-0 to Day-2 which is moving eastwards over Bay of Bengal in Day-3 and 4..

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 > 15×10^{-5} /s):

Day0: West RJ,

Day1: East UP, Himachal Pradesh, West RJ, Odisha,

Day2: Jharkhand, Odisha, Telangana,

Day3: Gangetic WB, Jharkhand, Odisha, Telangana, NI Karnataka,

Day4: Jharkhand, West UP, East RJ, Odisha, West MP, Madhya Maharashtra, NI Karnataka

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

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

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Bihar, Himachal Pradesh, TN Puducherry,

Day1: Arunachal Pradesh, Assam Meghalaya, Himachal Pradesh, Jammu Kashmir,

Day2: Arunachal Pradesh, Assam Meghalaya, TN Puducherry, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Odisha, TN Puducherry, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, Jharkhand, TN Puducherry, NI Karnataka.

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

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

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Saurashtra Kutch, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Guj Reg, Saurashtra Kutch, 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, East UP, West UP, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, 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, Gangetic WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Guj Reg, Saurashtra Kutch, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

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

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, 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, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, East MP, Guj Reg, Saurashtra Kutch, Coastal AP, Telangana, TN Puducherry,

Day1: Arunachal Pradesh, Sub Himalayan WB, Bihar, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Guj Reg, Saurashtra Kutch, Coastal AP, TN Puducherry,

Day2: Arunachal Pradesh, Sub Himalayan WB, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, West MP, Guj Reg, Saurashtra Kutch, Coastal AP, SI Karnataka,

Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana,

Day4: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathawada, Vidarbha, Chhattisgarh, Telangana, Rayalaseema, NI Karnataka

8. Rainfall and thunder storm activity:

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

Day1: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Andaman Nicobar,

Day2: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB,

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Himachal Pradesh, Andaman Nicobar, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Kerala.

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

1. Weather Systems:

00 UTC analyses shows a CICIR over Chhattisgarh and adjoining Odisha region and is associated with a N-S oriented trough from Jharkhand, centre of the CICIR, extending through Odisha, Chhattisgarh and Coastal AP region almost persists during next 5 days.

A CICIR over south Bay of Bengal and adjoining central Bay of Bengal on day 1, which is likely to be a system from day 2 onwards while moving northwest-ward.

Another CYCIR over northwest Rajasthan, adjoining Punjab on day 3 to day 5.

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 ($>12 \times 10^{-1}/s$):

Analysis shows low level positive vorticity mainly over the foothills of Himalaya, eastern coastal states over GWB, Odisha, Coastal AP and Chhattisgarh region and also over the Northwest parts of Rajasthan

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

T-Storm Initiation Index (> 4): Significant threshold values are noticed over Jharkhand, GWB, Odisha, Chhattisgarh and coastal AP in the analysis field. Forecast shows high threshold values over west coast of India, Northwest India along with the eastern coastal states covering Jharkhand, GWB, Odisha, Coastal AP during next 3 days.

Lifted Index (< -2): The areas with index less than -2 mainly lies over Bihar, GWB, Odisha, coastal AP during next 3 days along with that over the west coast regions and northwest parts of India.

Sweat Index (> 400): 00UTC shows significant values over major parts along Bihar, Jharkhand, GWB, Chhattisgarh, Odisha, Coastal AP and also over west coast of India and north-western parts of India.

CAPE (> 1000): Mostly over UP, Bihar, Jharkhand; along east coast of India over GWB, Odisha Chhattisgarh, coastal AP and TN regions; over the western coast and north-western parts of India during the next 3days.

CIN (50-150): Peak CIN values are found in some areas along east coast over GWB, Odisha, coastal AP and Tamil Nadu and also along the west coast of India and north-western parts of India during next 2-3 days.

5. Rainfall and thunderstorm activity:

10-40 mm rainfall is forecasted tomorrow over NE states, parts of coastal Odisha and coastal AP, TN and Kerala region, foot hills and parts of NW India.

Rainfall activity over these regions likely to continue for next 2-3 days with likely increase of areas over the north-western parts of India.

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

1. Model Reflectivity (Max.dBz):

15-40 dBZ over parts of North GWB, Jharkhand and parts of NE states during today (10 UTC to 14 UTC). Significant values of dBZ is also seen over parts of NCR and adjoining areas.

15-40 dBZ over regions of NCR region and adjoining met subdivisions; over Odisha, GWB, Jharkhand, Bihar region during next 2 days

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

CAPE (> 1000): Mostly along east coast of India, over east UP, Bihar, Jharkhand, Odisha, SHWB, GWB, coastal AP, west coast and also parts of Northwest India Gujarat during next 3 days.

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

3. Rainfall and thunderstorm activity:

10-40 mm over North-eastern states, extreme south peninsula and parts of Northwest India for next 1-3 days.

In addition, on day one the rainfall belt is likely over some coastal parts of Odisha, Andhra Pradesh, GWB regions

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

Presently, 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. Conditions are likely to become favourable for further advance of southwest monsoon into some more parts of southwest, southeast and east-central Bay of Bengal after 3 days, with which the rainfall activity over Bay islands will pick up.

The upper air cyclonic circulation which persists over Punjab & neighbourhood is expected to give rise to thunder storm with squalls on day 1 and thunder storm accompanied by hail on day 2 over Punjab, Haryana and neighbouring regions.

An upper air cyclonic circulation lies over southwest Rajasthan & neighbourhood and extends upto 2.1 Km above mean sea level. Moisture incursion is taking place in the lower levels from Arabian Sea and as a result, thunderstorm with squall is expected on day 1 and day 2 over Rajasthan.

The upper air cyclonic circulation lies over central Uttar Pradesh & neighbourhood and extending upto 0.9 Km above mean sea level and the overlying upper level divergence will favour the development of thunder squall on day1 over UP.

The trough in westerlies which runs roughly along Long. 92.0° E to the north of Lat. 23° N between 2.1 Km to 3.6 Km above mean sea level will cause thunderstorm with gusty winds to develop over Assam and Meghalaya on day 1.

24 hour Advisory for IOP:

South Interior Karnataka,
Himachal Pradesh, Uttarakhand, Punjab, Haryana, Rajasthan, East and west UP
Assam, Meghalaya
Kerala, Rayalaseema, Odisha, North Coastal Andhra Pradesh

48 hour Advisory for IOP:

Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West UP,
West and East Rajasthan
Punjab, Haryana,

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

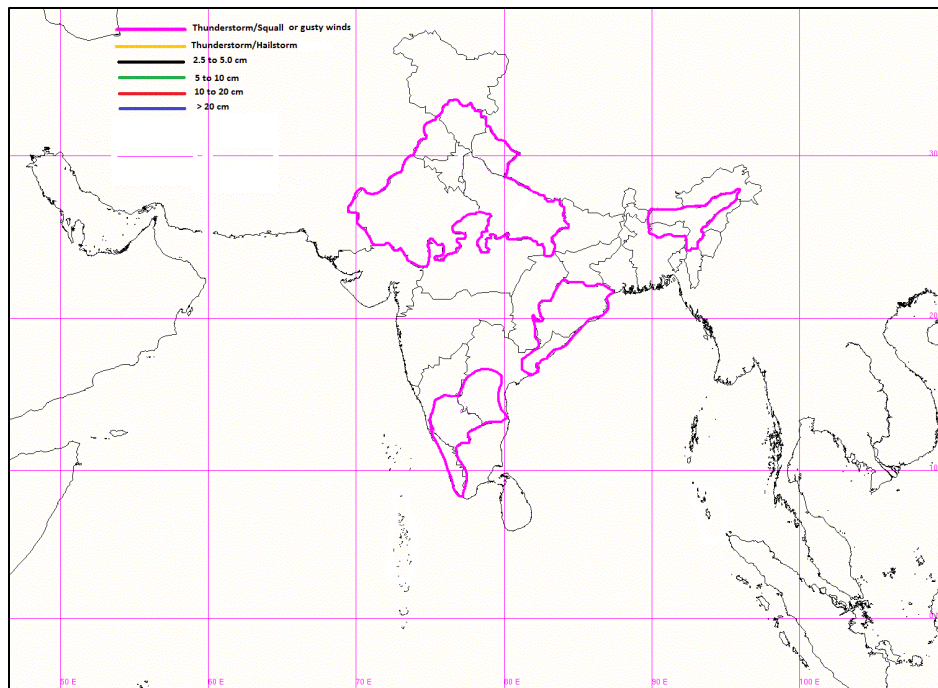
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

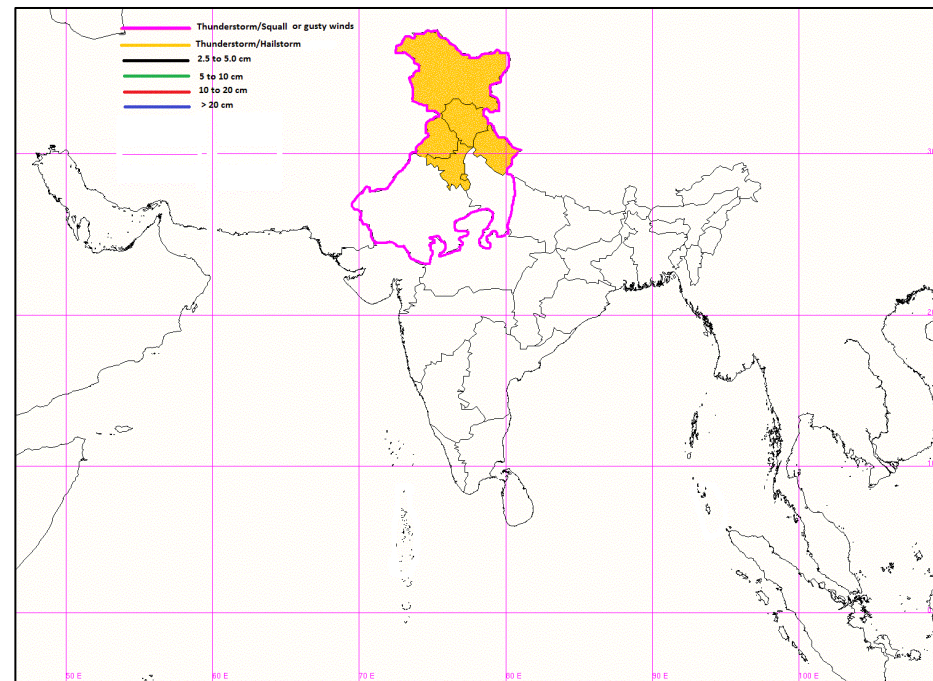
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T- Phigram

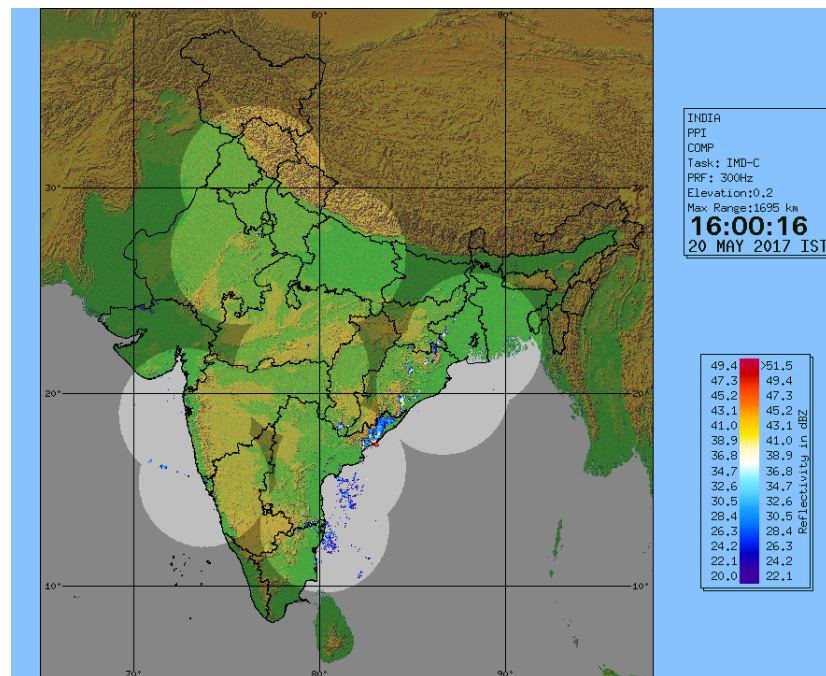
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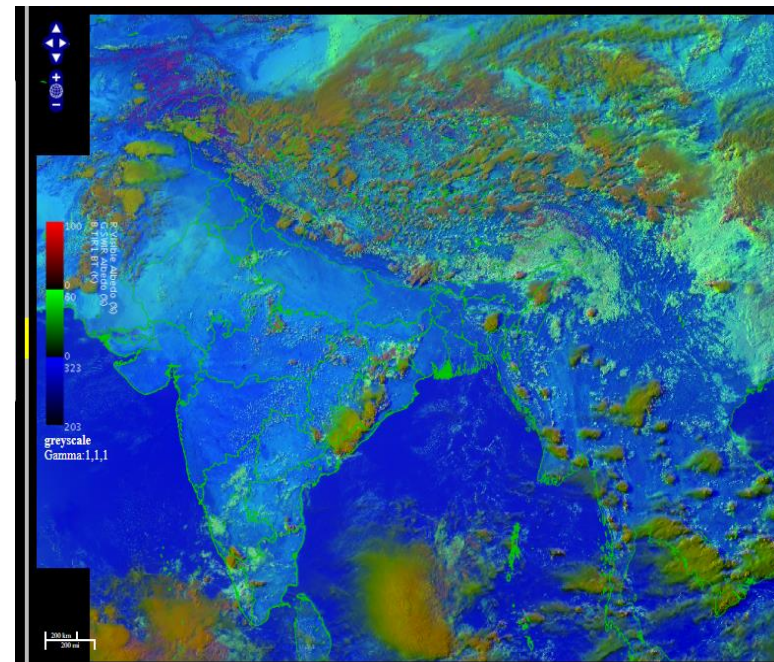
IOP Advisory for 24 hours



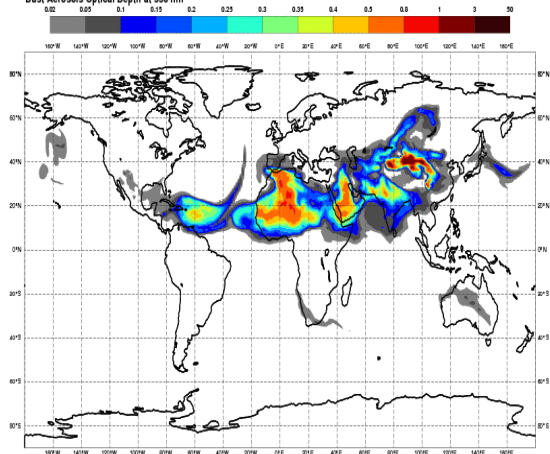
IOP Advisory for 48 hours



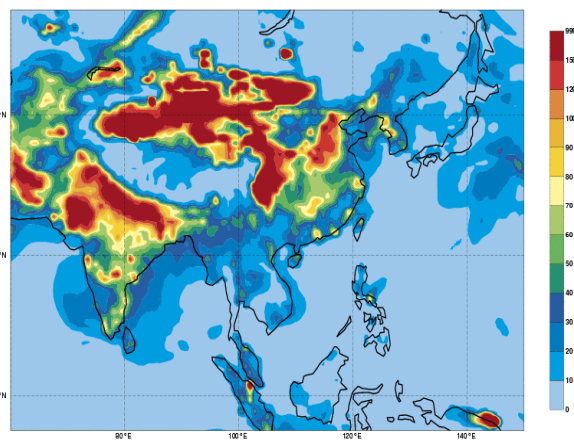
DWR Composite at 1600 hrs IST



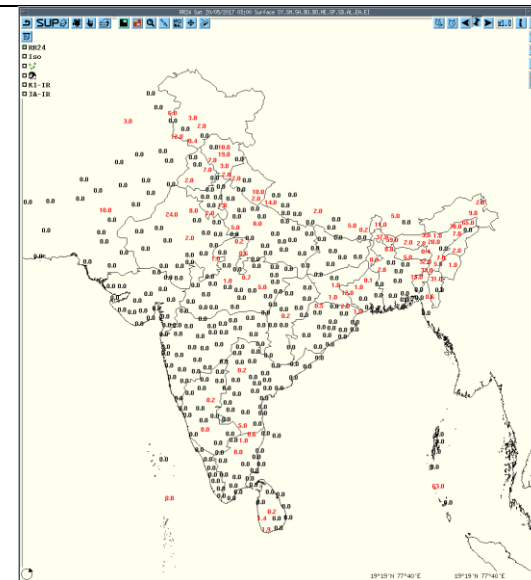
RAPID RGB Satellite Imagery at 1530 hrs IST of today



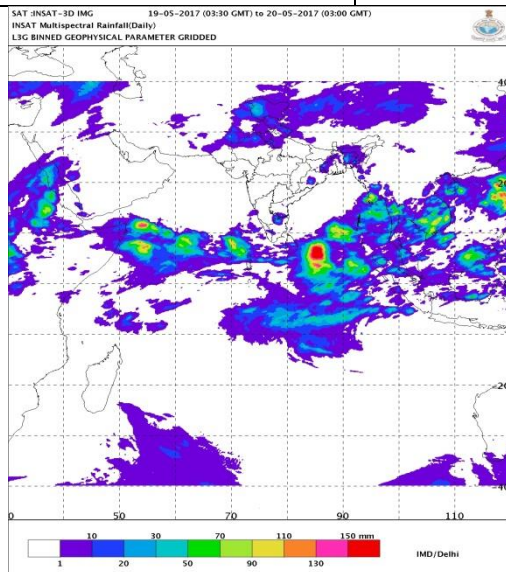
Forecast Dust Concentration for 00UTC of 24th May



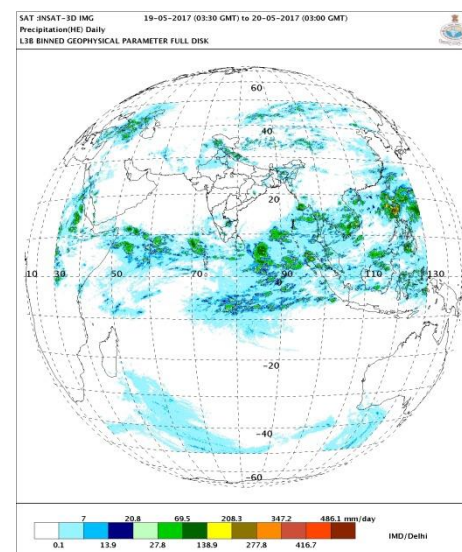
PM10 Forecast for 00UTC of 24th May



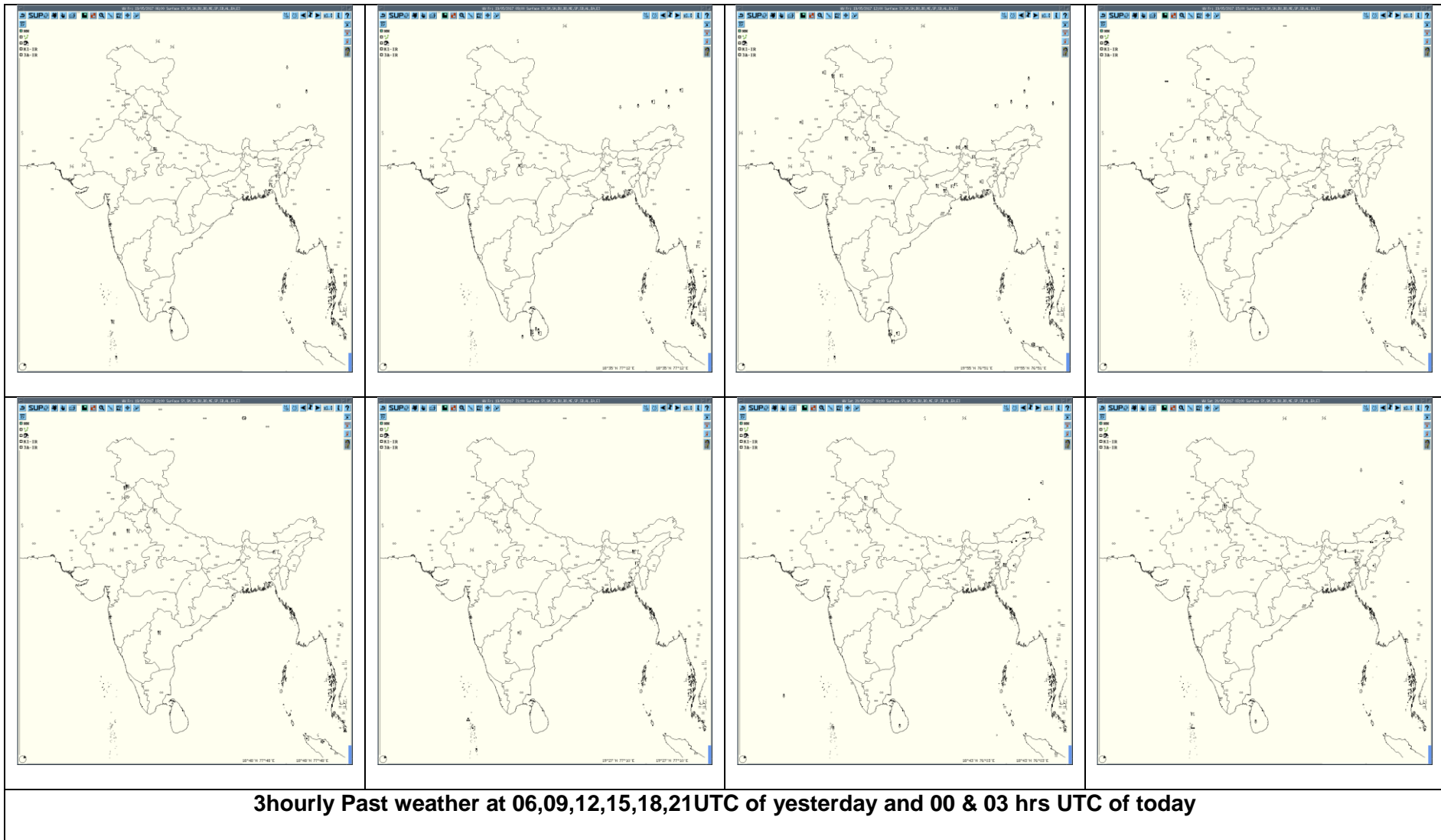
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



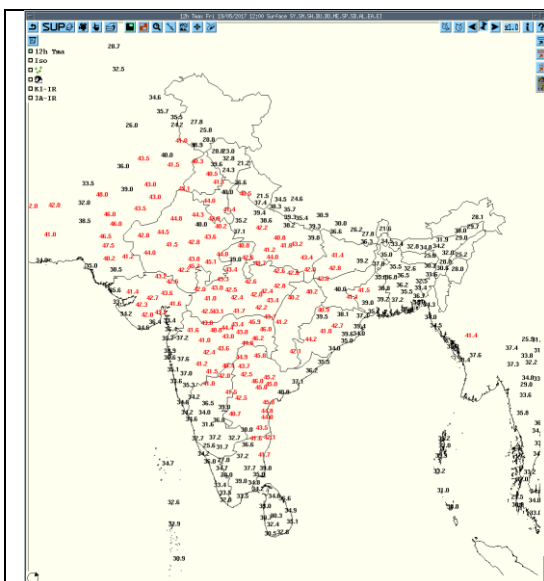
IMR Rainfall



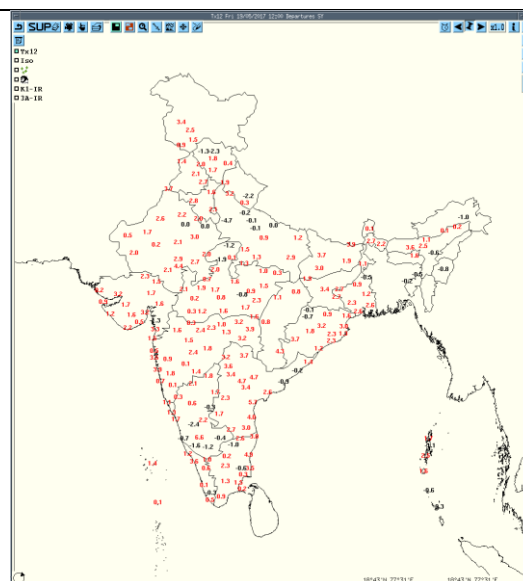
HEM Rainfall



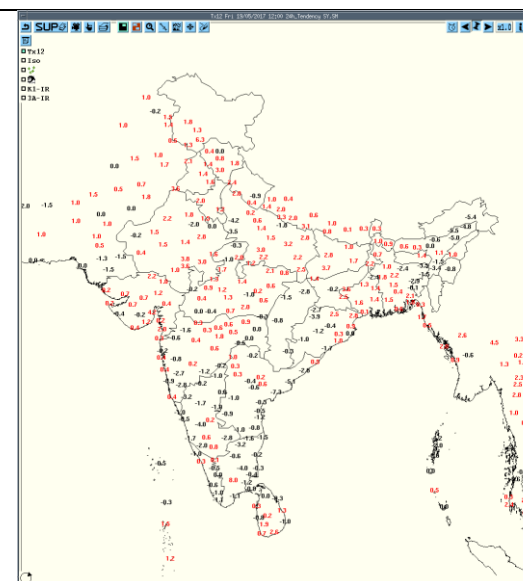
3hourly Past weather at 06,09,12,15,18,21UTC of yesterday and 00 & 03 hrs UTC of today



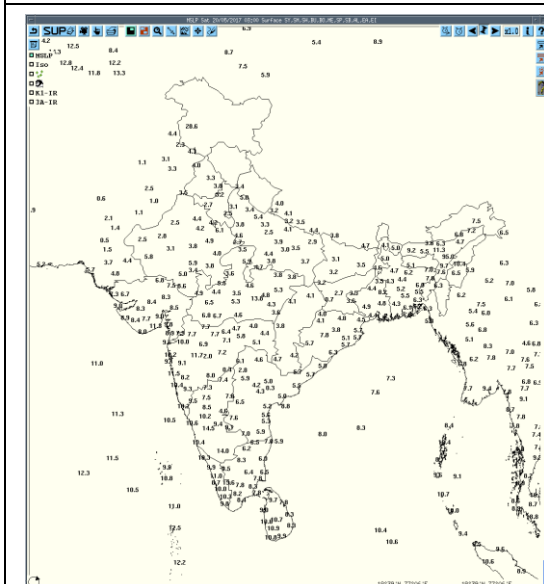
Tmax



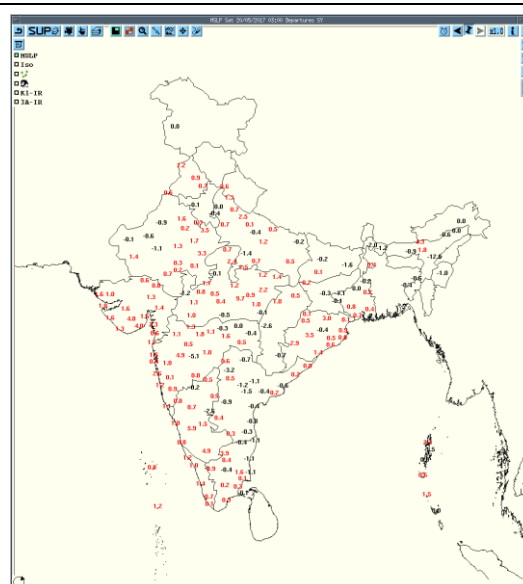
Departure Tmax



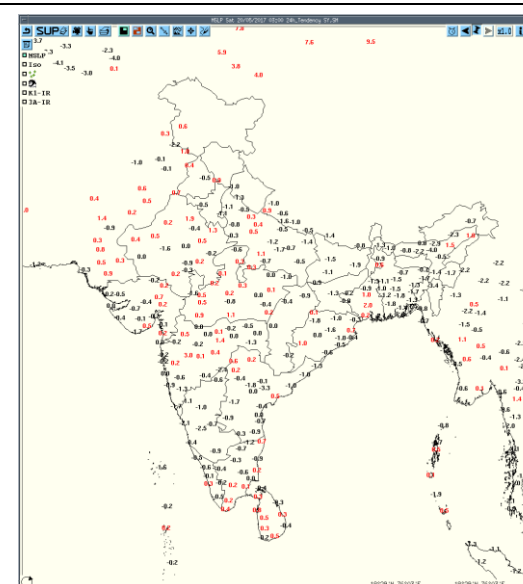
Tendency Tmax



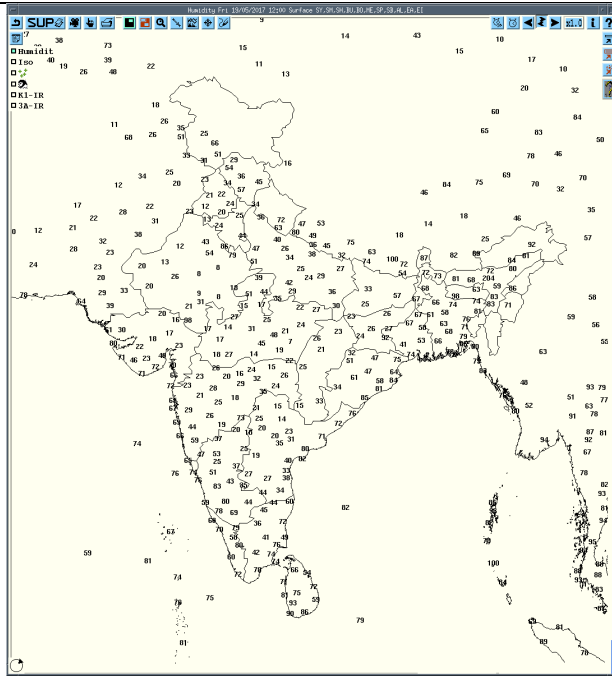
MSLP



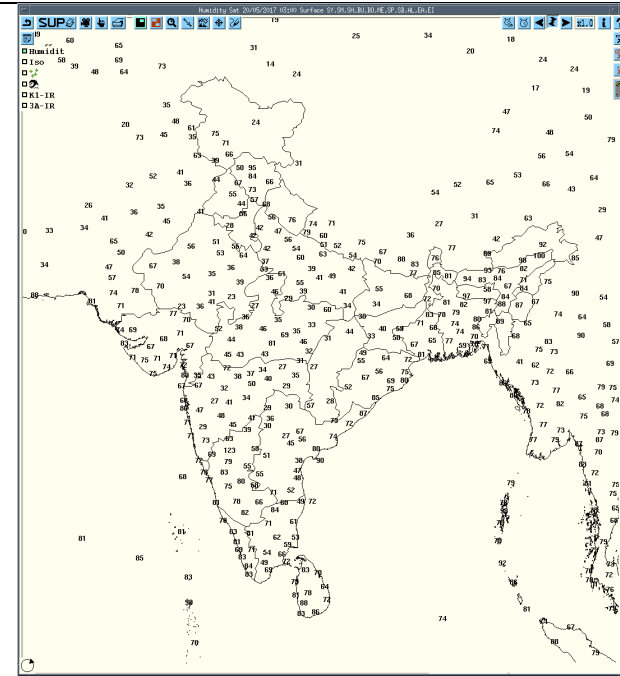
Departure MSLP



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 |
| 18-05-17 | 0600UTC | Minicoy | S India | Andaman & Nicobar Islands | Thunderstorm |
| | | Agra | NW India | Uttar Pradesh | Thunderstorm |
| | | Kailasahar | NE India | Tripura | Thunderstorm |
| 19-05-17 | 0900UTC | Jhansi | NW India | Uttar Pradesh | Thunderstorm |
| | | Malda | E India | West Bengal | Thunderstorm |
| 19-05-17 | 1200UTC | Kupwara, Banihal | NW India | J & K | Thunderstorm |
| | | Tehri | NW India | Uttarakhand | Thunderstorm |
| | | Agra | NW India | Uttar Pradesh | Thunderstorm |
| | | Churu | NW India | Rajasthan | Thunderstorm |
| | | Jabalpur | C India | Madhya Pradesh | Thunderstorm |
| | | Gangtok | E India | Sikkim | Thunderstorm |
| | | Cooch Behar, Panagarh, Bankura | E India | West Bengal | Thunderstorm |
| | | Jabalpur, Ranchi | E India | Jharkhand | Thunderstorm |
| 19-05-17 | 1500UTC | Bikaner, Churu | NW India | Rajasthan | Thunderstorm |
| | | Ajmer | NW India | Rajasthan | Thunderstorm with Duststorm |
| | | Bankura | E India | West Bengal | Lightening |
| 19-05-17 | 1800UTC | Jammu | NW India | J & K | Thunderstorm |
| | | Dehradun | NW India | Uttarakhand | Thunderstorm |
| | | Churu | NW India | Rajasthan | Thunderstorm |
| | | Bikaner | NW India | Rajasthan | Thunderstorm with hail |
| | | Guwahati | NE India | Assam | Thunderstorm with hail |
| | | Tezpur | NE India | Assam | Lightening |
| | | Pendra Road | C India | Chhattisgarh | Lightening |
| | | Hyderabad | S India | Telangana | Thunderstorm |
| 19-05-17 | 2100UTC | Amritsar | NW India | Punjab | Duststorm |
| | | Guwahati | NE India | Assam | Thunderstorm |
| | | Hyderabad | S India | Telangana | Thunderstorm |
| 20-05-17 | 0000UTC | Sundernagar | NW India | Himachal Pradesh | Thunderstorm |
| | | Dehradun | NW India | Uttarakhand | Thunderstorm |
| | | Silchar | NE India | Assam | Thunderstorm |
| 20-05-17 | 0300 UTC | Chandigarh | NW India | Chandigarh | Thunderstorm |
| | | Minicoy | S India | Andaman & Nicobar Islands | Thunderstorm |

Realized TS/HS/SQ during past 24 hours ending at 0300UTC of today (received from RMCs/MCs)

| Name of Station Reporting | Region | STATE | Weather Event (TS/Hail/Squall) | Date | Time of Commencement (IST) | Time of end (IST) |
|----------------------------------|---------------|---------------------|--|--------------------------|-----------------------------------|--------------------------|
| Dehradun | NW India | Uttarakhand | Thunderstorm | 19-05-2017 20-05-2017 | 2145 0500 | 2340 0615 |
| Mukteshwar | NW India | Uttarakhand | Thunderstorm | 19-05-2017 20-05-2017 | 1300 0540 | 1615 0710 |
| Pantnagar | NW India | Uttarakhand | Thunderstorm | 19/20-05-17 | 192100 | 200400 |
| Tehri | NW India | Uttarakhand | Thunderstorm | 19-05-17 | 1710 1920 | 1920 2330 |
| Amritsar | NW India | Punjab | Thunderstorm | 19/20-05-17 | 192315 | 200300 |
| Ludhiana | NW India | Punjab | Thunderstorm | 19/20-05-17 | DURING NIGHT | |
| | | | | | 0700 | 0720 |
| Chandigarh | NW India | Chandigarh | Thunderstorm | 20-05-17 | 0200- 0810 | 0310 0830 |
| Jhansi | NW India | Uttar Pradesh(West) | Thunderstorm | 19-05-17 | 1340 | 1500 |
| Qazigund | NW India | J & K | Thunderstorm | 19-05-17 | 1655 1830 | 1705 2110 |
| | | | Hailstorm with hail dimeter 0.5cm | 19-05-17 | 1830 | 1840 |
| Pahalgam | NW India | J & K | | 19-05-17 | 1735 | 1945 |
| Kupwara | NW India | J & K | Thunderstorm | 19-05-17 | 1455 1700 | 1520 1800 |
| Kukernag | NW India | J & K | Thunderstorm | 19-05-17 | 1810 | 1920 |
| Jammu | NW India | J & K | Thunderstorm | 19-05-17 | 1915 2240 | 1940 2350 |
| Banihal | NW India | J & K | Thunderstorm | 19-05-17 | 1440 | 1450 |
| Sagar | C India | Madhya Pradesh | Thunderstorm | 19-05-17 | 1445 | 1600 |
| Raipur | C India | Chhattisgarh | Thunderstorm | 19-05-17 | 1505 | 1525 |
| Ajmer | NW India | Rajasthan | Thunderstorm | 19-05-17 | 1900 | 2100 |
| Pilani | NW India | Rajasthan | Thunderstorm | 19-05-17 | 1515 | 2130 |
| | | | Hailstorm with hail diameter XX | 19-05-17 | 1615 | 1620 |
| Sikar | NW India | Rajasthan | Thunderstorm | 19-05-17 | 2000 | 2030 |
| Churu | NW India | Rajasthan | Thunderstorm | 19/20-05-17 | 191415 | 200015 |
| | | | Hailstorm with hail diameter XX | 19-05-17 | 1435 | 1440 |

| | | | | | | |
|--------------|----------|-------------------------------|--------------|-------------|---------------|---------------|
| Agartala | NE India | Tripura | Thunderstorm | 19-05-17 | 0845 | 0950 |
| Jorhat | NE India | Assam | Thunderstorm | 19-05-17 | 0915 | 1150 |
| Lengpui | NE India | Mizoram | Thunderstorm | 19-05-17 | 1055 | 1230 |
| Dhubri | NE India | Assam | Thunderstorm | 19-05-17 | 1945 0550 | 2100 0610 |
| | | | | 20-05-17 | 0550 | 0610 |
| Guwahati | NE India | Assam | Thunderstorm | 19-05-17 | 2200, 0150 | 2340, 0245 |
| Silchar | NE India | Assam | Thunderstorm | 20-05-17 | 0400 | 0630 |
| Kailasahar | NE India | Tripura | Thunderstorm | 20-05-17 | 0500 | 1140 |
| Cherrapunjee | NE India | Meghalaya | Thunderstorm | 20-05-17 | 0715 | 0810 |
| Hyderabad | S India | Telangana | Thunderstorm | 19-05-17 | 2245 | 2400 |
| Tirupati | S India | Andhra Pradesh(RYSM) | Thunderstorm | 19-05-17 | 1840 | 1920 |
| Minicoy | S India | Lakshadweep & Minicoy Islands | thunderstorm | 20-05-17 | 0530 | 0600 |
| Malda | E India | West Bengal(SHWB) | Thunderstorm | 19-05-17 | 1415 | 1520 |
| Asansol | E India | West Bengal(GWB) | Thunderstorm | 19-05-17 | 1545 | 1615 |
| Gangtok | E India | Sikkim | Thunderstorm | 19-05-17 | 1610 | 1830 |
| Tadong | E India | Sikkim | Thunderstorm | 19-05-17 | 1635 | 1800 |
| Ranchi | E India | Jharkhand | Thunderstorm | 19-05-17 | 1725 | 1740 |
| Jharsuguda | E India | Odisha | Thunderstorm | 19-05-17 | 2335 | 2350 |
| | | | Lightening | 19/20-05-17 | 1850 | 2000 |
| | | | | | 192350 | 200015 |
| Digha | E India | West Bengal(GWB) | Thunderstorm | 19/20-05-17 | 192350 | 200015 |
| Yercaud | S India | Tamilnadu (North) | Thunderstorm | 19/20-05-17 | 192300 | 200030 |
| M.O Salem | S India | Tamilnadu (North) | Thunderstorm | 20-05-17 | 0015 | 0050 |
| Tiruttani | S India | Tamilnadu (North) | Thunderstorm | 19-05-17 | 1800 | 2000 |

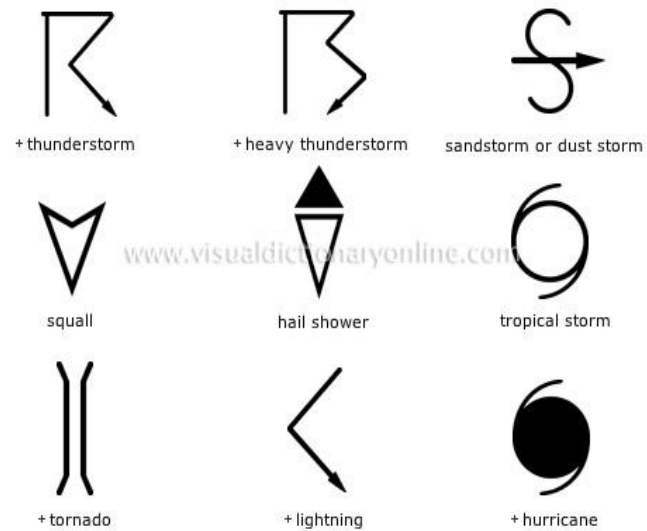
Past 24 hours DWR Report:

| 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 |
|--------------------|-------------------|------------------------------------|--|--|--|---|--|
| JAIPUR | 20-05-17 | 190300-190612 | Multiple cell with average height of 6.5 km maximum reflectivity 55.5 dBZ | Cell develop 0300 to 0612 UTC towards north -east of jaipur and movment south-east at speed 12-24 km/hr | Cells continuous forming from 0300 UTC NE & E of Jaipur and maximum refelectivity during 0412-0542 UTC and died down at 0612 utc | --- | Alwar, Bharatpur, Dausa, Karauli |
| | | 190632-200032 | Multiple cells with average height of 8.0 km maximum reflectivity 52.0 dBZ | Multiple Cells develop 0632 to 0002 UTC towards North East,north & Nort West and moves towards south east at speed 21 to 40 km/hr. | Cells continuous forming from 0632 UTC North East, north ,west,south-west & Nort West of Jaipur and maximum refelectivity during 0900-1332 UTC and died down at 0002 UTC | Moderate Thunderstorm and hail-storm at isolated places | Sikar,ajmer nagaur Dausa, Karauli,alawar,chur u,jhunjhunu Bharatpur, dholpur |
| Patna | 20-05-17 | 190300-200300 | Nil | -- | --- | --- | --- |
| Patiala | 20-05-17 | 190302-190902 | No significant Echo | --- | ----- | ----- | ----- |
| | | 190902-191202 | Multiple cells Max= 50.0 dBz Ht.= 11-13 km | Formation in NE,SW sector. MOVEMENT SE-WARDS. | ----- | ----- | RAMPUR,UTTERK ASHI,MOHINDER GARH |
| | | 191202-191502 | Multiple cells Max= 53.5 dBz Ht.=12-13 km | Formation in NE sector. MOVEMENT SE-WARDS. | | | MOHINDERGARH, GANGOTRI LOHARU |

| | | | | | | | |
|---------|----------|---------------|--|--|---|--------------------------------------|--|
| | | 191502-191802 | Multiple cells Max= 54.0 dBz Ht.=9-11 km | Formation in NE,NW sector. MOVEMENT SE-WARDS. | | - | AMRITSAR,DEHRADUN,MUSSORIE ,BHUNTHER |
| | | 191802-192102 | Multiple cells Max= 53.0 dBz Ht.=9-11 km | FORMATION IN WEST DIRECTION ,MOVEMENT IN EAST DIRECTION - | | | BARNALA,BATHINDA,KHANNA,LUDHIANA |
| | | 192102-200002 | Multiple cells Max= 57.0 dBz Ht.=10-12 km | FORMATION IN WEST DIRECTION ,MOVEMENT IN EAST DIRECTION | ----- | ----- | CHANDIGARH,SANGRUR,KAITHAL,DEVOGARH |
| | | 192102-200252 | Multiple cells Max= 52.0 dBz Ht.=9-11 km | FORMATION IN NORTH WEST DIRECTION ,MOVEMENT IN SOUTH EAST DIRECTION | ----- | ----- | AMBALA,LUDHIANA,ROPAR,CHANDIGARH,NANGAL,NAWANSHAHR |
| Kolkata | 20-05-17 | 190301-190901 | NIL | NIL | NO ECHO | NIL | NIL |
| | | 190901-191211 | 1.Isolated single cells with maximum reflectivity of 63.0 dBz at 1131 UTC and maximum height of 13.2 km at 1031 UTC | 1. N (244 km) moving in ESE-ly/ SE-ly direction with a speed of 43.6 kmph. | 1. Isolated single cells formed in N at a distance of 244 km from Radar at 0911 UTC. Matured and dissipated at 1211 UTC in NNE at a distance of 201 km from Radar | Hailstorm/Thunderstorm /Squall/ Rain | N/A |
| | | 191011-191251 | 2. Isolated single cells with maximum reflectivity of 64.5 dBz at 1151 UTC and maximum height of 13.9 km at 1051 UTC | 2. NW (191 km) moving SE-ly direction with a speed of 29.2 kmph. | 2. Isolated single cells formed in NW at a distance of 191 km from Radar at 1011 UTC. Matured and dissipated at 1251 UTC in NW at a distance of 125 km from Radar | Hailstorm/Thunderstorm /Squall/ Rain | N/A |
| | | 191431-191931 | Isolated single cells with maximum reflectivity of 58.5 dBz at 1641 UTC and maximum height of 8.15 km at 1631 UTC | 1.WSW (245.8 km) moving in SE-ly direction | 1. Isolated single cells formed in WSW at a distance of 245 km from Radar at 1431 UTC. Matured and dissipated at 1931 UTC in SW at a distance of 75 km from Radar | Hailstorm/Thunderstorm /Squall/ Rain | N/A |

| | | | | | | | |
|----------|----------|-----------------|---|--|--|-------------------------------|---|
| | | 200001-200300 | NIL | NIL | NO ECHO | NIL | NIL |
| Agartala | 20-05-17 | 190300 - 190800 | Multiple cells with Maximum Height 13km and maximum reflectivity 41.5dBZ (at 0310 UTC over east Bangladesh | Formed 310 KM NW of AGT at 2000UTC of 18.05 2017 and moved SE wards with 50kmph | Cells Dissipated at 0800 UTC over Mizoram | TS with light / moderate rain | North, Unakoti district of Tripura, Mamit district of Mizoram |
| | | 190420 - 191020 | Multiple cell Maximum Height 12km and maximum reflectivity 45 dBZ at 0620 UTC at west Tripura | Formed 40 km WSW of AGT and moved SE-wards at around 25 kmph | Cells Dissipated at 1020 UTC over south Mizoram and Adj Bangladesh | N/A | N/A |
| | | 180810 - 191330 | Single cell Maximum Height 14km and maximum reflectivity 46.5 dBZ at 1012 UTC over East Bangladesh | Formed 130 km W, NW of AGT and moved E-wards at around 25 kmph | Cells Dissipated at 1330 UTC over south Bangladesh | N/A | N/A |
| | | 191150 - 200010 | Multiple with Maximum Height 14km and maximum reflectivity 43.5 dBZ at 1922 150km NW from DWR Agt. | Formed 350 KM NW of AGT and moved SE wards with 25kmph | Cell Dissipated at 0010 UTC over E-Meghalaya & South Assam | TS with light rain | East Khasi Hills district of Meghalaya |
| Paradeep | 20-05-17 | 0300-0500 | Convective regions formed at 0832hrs ist in wsw sector of Radar around 250km away with average reflectivity of 30dbz and height of 4 km. | Position-Lat-19.7 N Long-84.5 E Direction-Westerly | Isolated Cells formed over sea around 1002 hrs ist. | Rain | Koraput, Gajapati & Ganjam, |
| | | 0800-1900 | Convective regions became Isolated cells after 1450hrs IST in Western sector around 250km away from Radar Station at height starting from 5 kms to 14 kms with reflectivity of 30 dBZ | Position-Lat-20.2 N Long-84.4 E Direction-Westerly These clouds moved towards East direction and weakened gradually. | Dissipated around 1500 utc. | Ts with rain | Nawarangpur, Bhawanipatna, Rayagada, Nayagarh, & Ganjam. |

| | | | | | | | |
|----------|----------|--|---|--|--|--------------|--|
| | | | to 50 dBZ . Also a single cell developed at North sector around 240km away from Radar at 1702 hrs Ist with reflectivity range 30-50dbz and average height of 10km. | Position- Lat-22.4 N Long-86.0 E Direction- Westerly. These clouds moved towards East direction and weakened gradually. | Dissipitated around 1900 utc. | Ts with rain | Jharsuguda, Sundargarh,Keonjhar, Mayurbhanj,Balasore. |
| Nagpur | 20-05-17 | 0302-0742 | Single | 230km-241km south direction, moving SE-LY. | MaxZ height of clouds 5.6 -8.4 km | NIL | Isolated places of district Chandrapur, Pusad, Adlabad and Hingoli |
| | | 0822-0942 | Multiple | 77km-236km E direction | MaxZ height of clouds 1.5- 8.2km | | |
| | | 0922-1122 | Multiple | 175km -208 km E direction, moving SE-Ly | MaxZ height of clouds 3.5-6 km | | |
| | | 1622-2352 0022 (20 th May) | Multiple | 13km-82 km N direction, moving E-Ly | MaxZ height of clouds 1.2-7.0 km | | |
| | | 0002-0252 | Nil | -- | -- | -- | -- |
| Srinagar | 20-05-17 | 190300-200300 | Multiple cells developed in all direction of DWR Srinagar at 0700utc with max. reflectivity 50-55 DBZ and average height 9 km | Developed at around 0700 utc till 1700utc .(From 2050utc-0300utc image not display due to non availability of internet) | Thunder and light rain reported from Phalgam . Qazigund | NIL | QUZIGUND |
| Karaikal | 20-05-17 | 190300-200300 | --- | -- | DWR U/S | --- | --- |



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