



**India Meteorological Department**  
**FDP STORM Bulletin No.77 (21-05-2017)**

**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 is likely to develop over South East Bay of Bengal & neighbourhood during next 24 hours. With the development of upper air cyclonic circulation, 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 during subsequent 2-3 days.

A Western Disturbance as an upper air cyclonic circulation lies over north Pakistan & neighbourhood between 4.5 and 5.8 Km above mean sea level.

The upper air cyclonic circulation over Punjab & neighbourhood, now lies over northwest Uttar Pradesh & neighbourhood between 2.1 and 3.6 Km above mean sea level.

The upper air cyclonic circulation over southwest Rajasthan & neighbourhood, now lies over southwest Rajasthan & adjoining south Pakistan and extends upto 3.1 Km above mean sea level.

The upper air cyclonic circulation over central Uttar Pradesh & neighbourhood, now seen as a trough from west Bihar to north Chhattisgarh 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. The trough from this system to south Coastal Andhra Pradesh, now runs from this system to Rayalaseema and extends upto 0.9 Km above mean sea level.

The trough in westerlies roughly along Long. 92.0° E and north of Lat. 23.0° N, now runs 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.

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

The trough at mean sea level from south coastal Andhra Pradesh to Comorin area off Tamilnadu coast has become less marked.

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

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

**Convective Activity: Nil**

**Western Disturbance:**

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

**Cloud Description:**

Scattered low/medium clouds with embedded weak to moderate convection were seen over Coastal Andhra Pradesh, S Rayalaseema, South Interior Karnataka, Kerala, Tamilnadu, Lakshadweep and Bay Islands. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over SW Uttar Pradesh, W Odisha, Jharkhand and C Assam. Scattered low/medium clouds with embedded isolated weak convection were seen over Madhya Pradesh. Scattered low/medium clouds were seen over E Uttar Pradesh, rest Rajasthan, Gujarat, Maharashtra and rest parts of East & 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 & Andaman Sea. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over EC Bay of Bengal.

**Past Weather:**

**Convection:-**

Moderate to Intense convection was observed over J & K Himachal Pradesh Punjab North Rajasthan Uttarakhand Haryana Delhi North West Uttar Pradesh, Bihar Jharkhand Odisha West Bengal North East States South Interior Karnataka Andhra Pradesh Kerala Tamilnadu.

**OLR:-**

Upto **200**  $\text{wm}^{-2}$  was observed over East J&K Kerala North West Tamilnadu adjoining South Interior Karnataka. Upto **230**  $\text{wm}^{-2}$  was observed over Rest J&K, Himachal Pradesh Uttarakhand North West Rajasthan South West Odisha adjoining North Andhra Pradesh South East Jharkhand South West Bengal adjoining Odisha Sub Himalayan West Bengal Sikkim Meghalaya Arunachal Pradesh Assam Nagaland South Interior Karnataka Rest 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 East Madhya Pradesh Chhattisgarh Odisha South Coastal Andhra Pradesh.

Negative low level convergence observed over Himachal Pradesh Maharashtra Bihar West Bengal and Positive low level convergence observed over rest parts of India

**Precipitation:**

**IMR:**

Rainfall Up to **50** mm was observed over Odisha adjoining West Bengal South Interior Karnataka North West Tamilnadu North Kerala. Rainfall Up to **20** mm was observed over South Kerala. Rainfall Up to **10** mm was observed over J&K Punjab West Haryana Uttarakhand North West Rajasthan North East States Rest Tamilnadu South Andhra Pradesh.

**HEM:.**

Rainfall Up to **70** mm was observed over Coastal Odisha South Interior Karnataka North West Tamilnadu North Kerala.

Rainfall Up to **14** mm was observed over South West J&K Uttarakhand North East States

Rainfall Up to **07** mm was observed over Punjab West Haryana North West Rajasthan South Jharkhand South West Bengal Rest Tamilnadu.

**RADAR and RAPID Observation:**

Isolated/multiple echoes were seen in DWR Delhi, Patiala & Jaipur (max. dBZ around 50 and height 10-12km), DWR Machilipatnam (max. dBZ around 55 and height 13-15km), DWR Kolkata (max. dBZ around 55 and height 10km) at 1100UTC(1630hrs IST).

Latest DWR composite not available

RAPID RGB Satellite imagery at 1530hrs IST indicated significant convective activity over J & K, HP, Uttarakhand, Haryana, Rajasthan, W UP, North Coastal Andhra Pradesh and Lakshadweep & Minicoy Islands.

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

Dust concentration was observed over northern Africa and some parts of eastern Asia. Dust concentration is expected to increase over western and northern India for next five days.

High PM10 concentration was observed over north-western and northern India. PM10 concentration is expected decrease over northern India for 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 on Day-0,3 and 4.

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

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

**Over SIKarnataka 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 x 10<sup>-5</sup> /s):**

Day0: East UP, West RJ, West MP, Chhattisgarh,

Day1: Jharkhand, Chhattisgarh,

Day2: Arunachal Pradesh, Assam Meghalaya, Gangetic WB, Jharkhand, Madhya Maharashtra, Chhattisgarh, TN Puducherry, NI Karnataka,

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Hry Chd Delhi, Jammu Kashmir, Odisha, Saurashtra Kutch, Madhya Maharashtra, Coastal AP, TN Puducherry, NI Karnataka, SI Karnataka,

Day4: Assam Meghalaya, Bihar, East UP, West MP, East MP, Madhya Maharashtra, Vidarbha, Chhattisgarh, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka

#### 4. Low level Vorticity:-Positive Vorticity (>15 x 10<sup>-5</sup>/s):

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

Day0: Arunachal Pradesh, Assam Meghalaya, Uttarakhand, West RJ, TN Puducherry,

Day1: Arunachal Pradesh, Assam Meghalaya, Gangetic WB,

Day2: Arunachal Pradesh, Assam Meghalaya, Gangetic WB, Bihar, Saurashtra Kutch, TN Puducherry,

Day3: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Bihar, Saurashtra Kutch, TN Puducherry, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Bihar, Saurashtra Kutch, TN Puducherry, NI Karnataka, Kerala

#### 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, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

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

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

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

Day4: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

#### **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, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, 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, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

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

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Madhya Maharashtra, Marathwada, 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, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Guj Reg, Saurashtra Kutch, Coastal AP, Telangana, SI Karnataka,

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

Day2: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh,

Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Vidarbha, Chhattisgarh, Telangana, Rayalaseema, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day4: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, West MP, East MP, Konkan Goa, Madhya Maharashtra, Marathawada, Vidarbha, Chhattisgarh, Telangana, 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, Jammu Kashmir,  
Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Jammu Kashmir, TN Puducherry, Kerala,  
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jammu Kashmir, Rayalaseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,  
Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Vidarbha, Chhattisgarh, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, SI Karnataka, 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 a N-S oriented trough extend from this towards Coastal AP region during day 1. During subsequent 2 days (Days 2 and day 3) the N-S trough extends northward upto Bihar and adjoining east UP region from coastal AP region. .

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

#### **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<sup>-1</sup>/s):**

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

**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 eastern 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 3 days.

**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, extreme southern parts of India and parts of NW India.

Rainfall activity over these regions likely to continue for next 2-3 days with likely decrease over Northwest India from day 2 and increase over NE states and south peninsula from days 3.

### **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 and south peninsula.

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 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

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

#### **Summary and Conclusions:**

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

Presently, an upper air cyclonic circulation is likely to develop over South East Bay of Bengal & neighbourhood during next 24 hours. With the development of upper air cyclonic circulation, conditions are likely to become favorable for further advance of southwest monsoon into some more parts of southwest, southeast and east central Bay of Bengal during subsequent 2-.3 days. Andaman and Nicobar Islands may experience the heavy rainfall activity on Day-1.

A Western Disturbance as an upper air cyclonic circulation lies over north Pakistan & neighborhood between 4.5 and 5.8 Km above mean sea level. Due to this system, entire northern parts of county will receive thunderstorm with hail activities on Day-1 and Day2.

The upper air cyclonic circulation over south Chhattisgarh & adjoining Odisha extending upto 0.9 km above mean sea level persists. The trough from this system to Rayalaseema and extends upto 0.9 Km above mean sea level. This will give rise to thunderstorm with gusty winds activities over Orissa, Jharkhand, Bihar and SHWB on Day-1.

##### **24 hour Advisory for IOP:**

Andaman and Nicobar Islands

Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West and East UP

West and East Rajasthan, Haryana, Punjab

East Assam.

Kerala, South and North Interior Karnataka, Coastal Karnataka, Interior Tamilnadu, North Coastal Andhra Pradesh, Rayalaseema

Orissa, Bihar, Jharkhand, West Bengal, Sikkim

##### **48 hour Advisory for IOP:**

Andaman and Nicobar Islands

Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West and East UP

West and East Rajasthan, Haryana, Punjab

Kerala, South and North Interior Karnataka, North Coastal Andhra Pradesh, Interior Tamilnadu

Odisha



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 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](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)

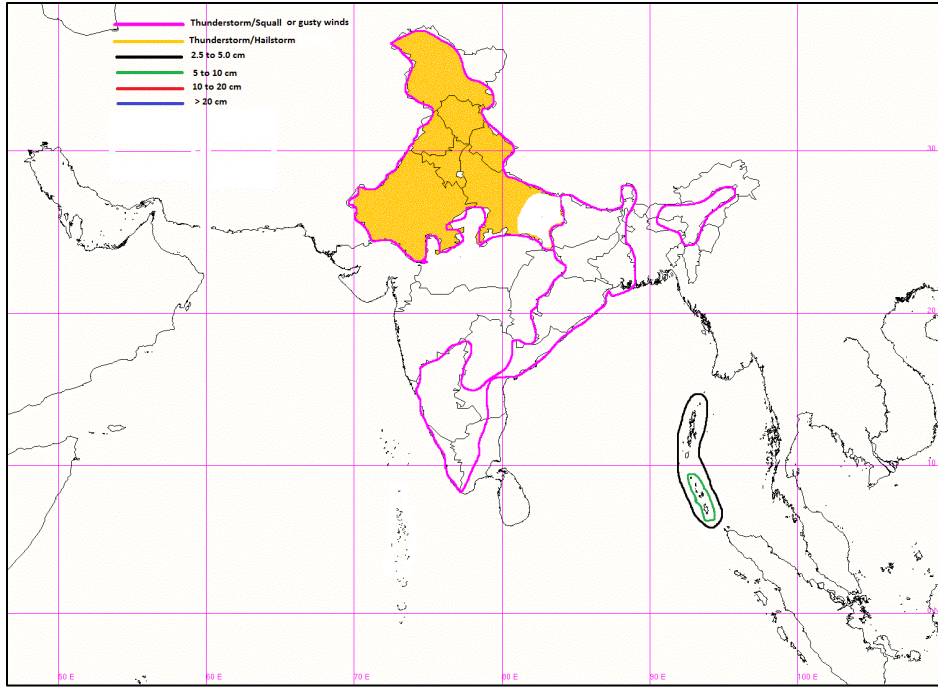
ForRadarimagesofthepast24hoursincludingmosaicofimages:

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

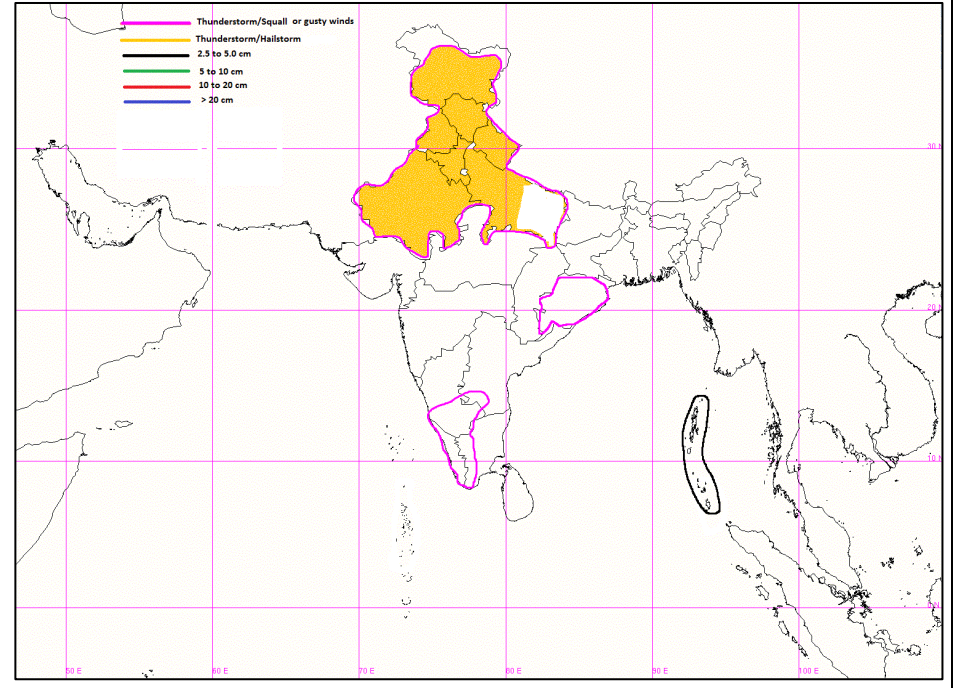
Satellite sounder based T- Phigram

[http://satellite.imd.gov.in/map\\_skm2.html](http://satellite.imd.gov.in/map_skm2.html)

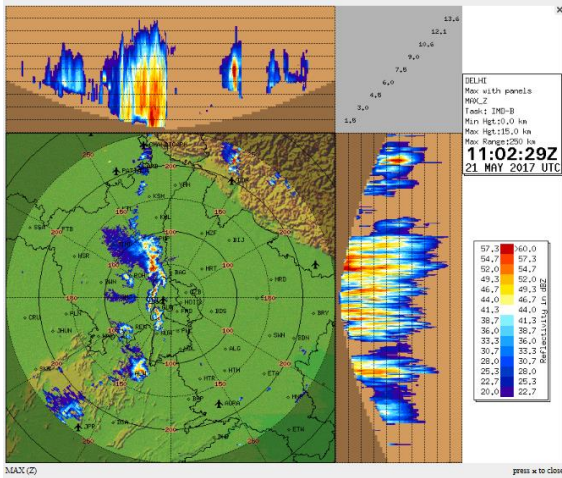




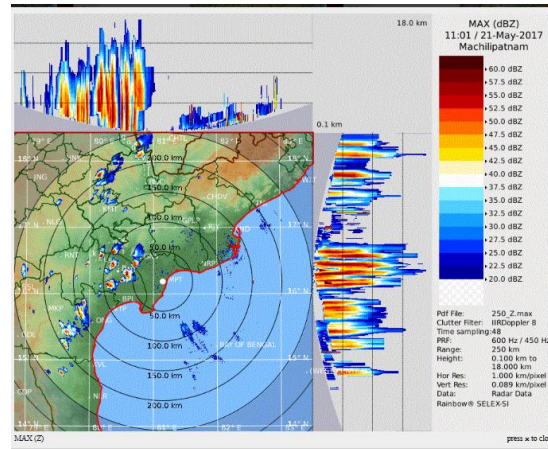
**IOP Advisory for 24 hours**



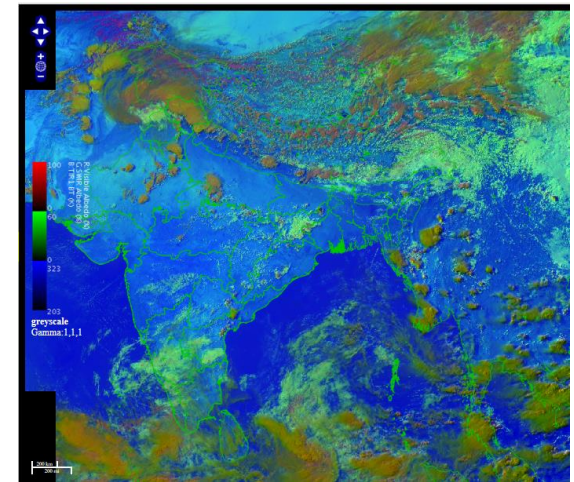
**IOP Advisory for 48 hours**



DWR Delhi at 1102UTC(1632hrs IST)



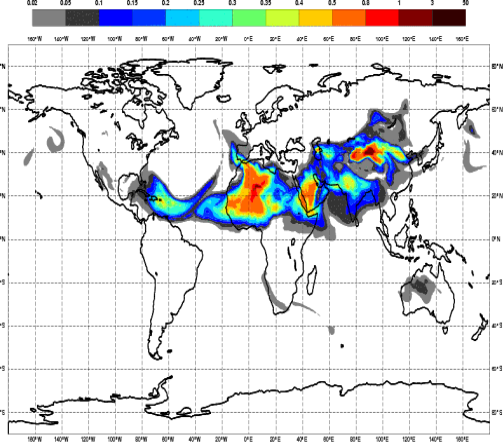
DWR Machilipatnam  
1101UTC(1631hrs IST)



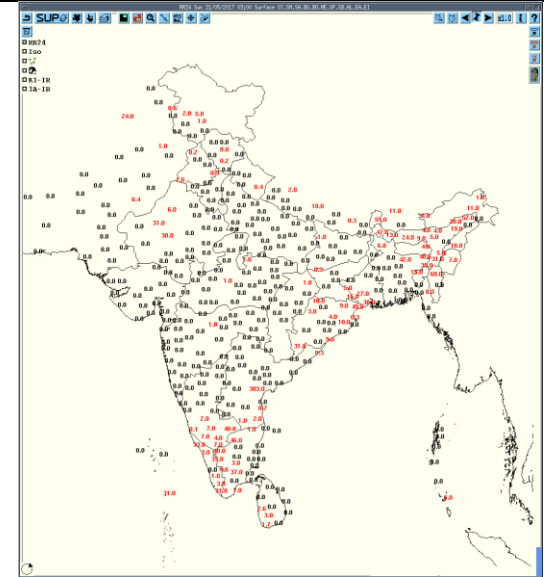
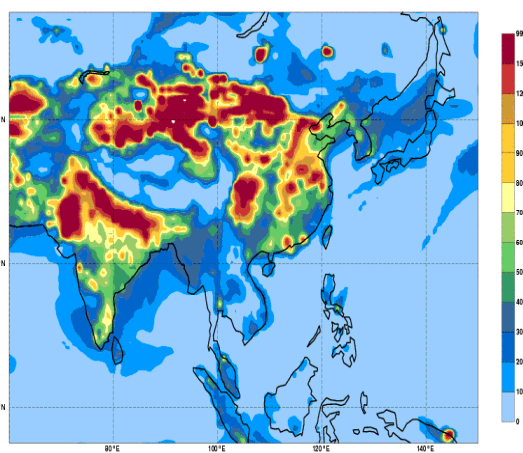
RAPID RGB Satellite Imagery at 1530 hrs  
IST of today



Saturday 20 May 2017 00UTC CAMS Forecast (+120 VT: Thursday 25 May 2017 00UTC)



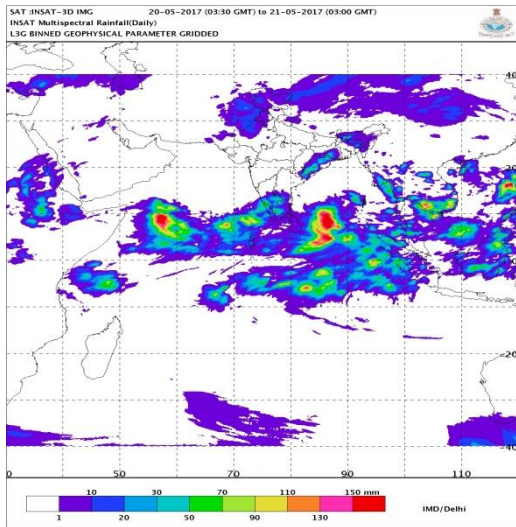
Saturday 20 May 2017 00UTC CAMS Forecast (+120 VT: Thursday 25 May 2017 00UTC)



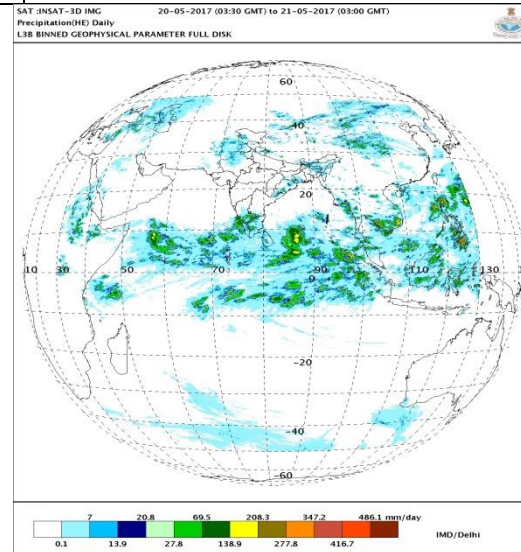
**Forecast Dust Concentration for 00UTC of 25<sup>th</sup> May**

**PM10 Forecast for 00UTC of 25<sup>th</sup> May**

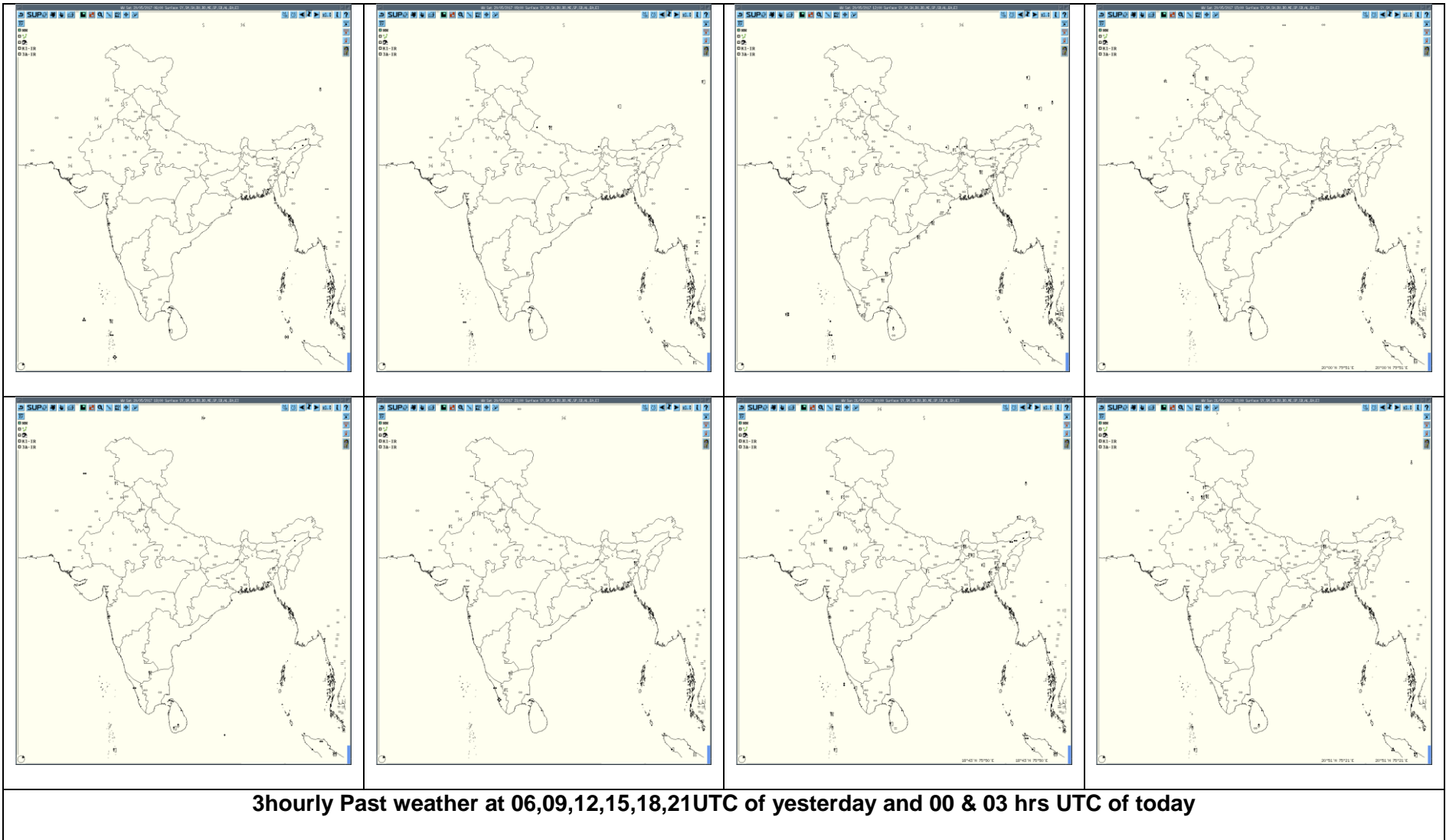
**Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today**

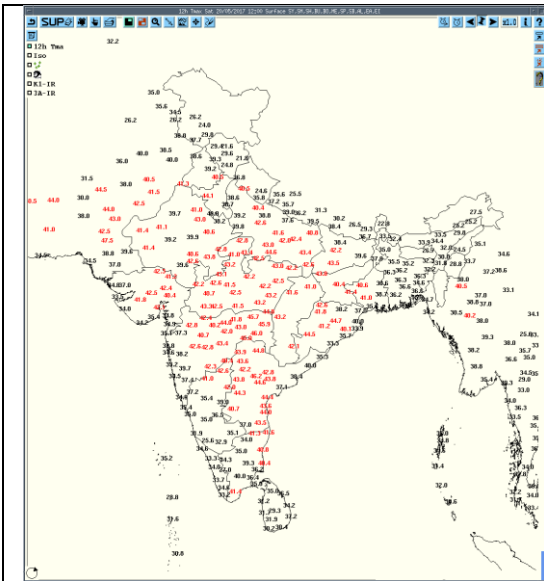


**IMR Rainfall**

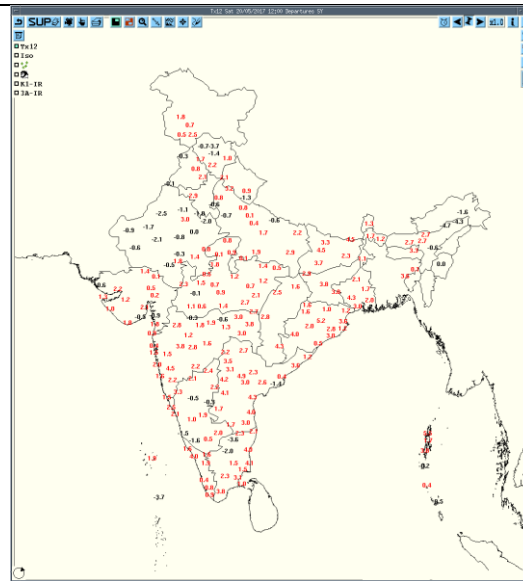


**HEM Rainfall**

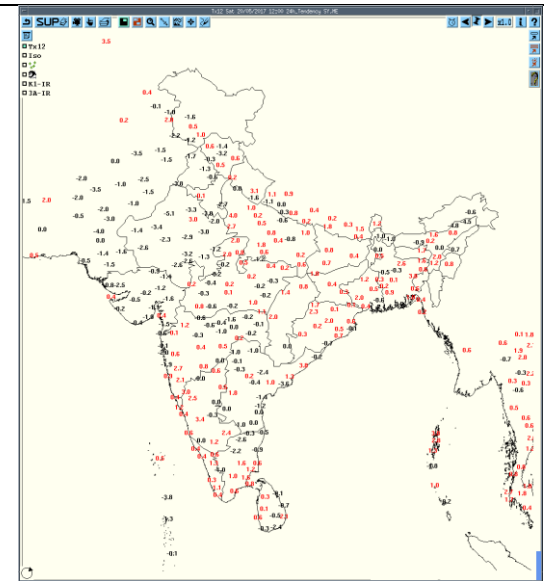




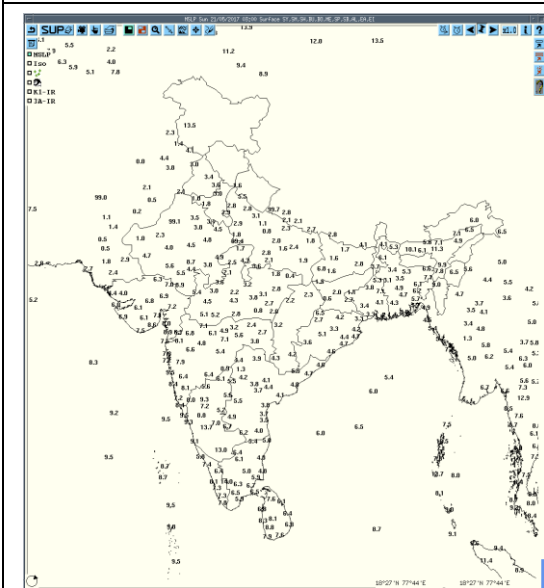
Tmax



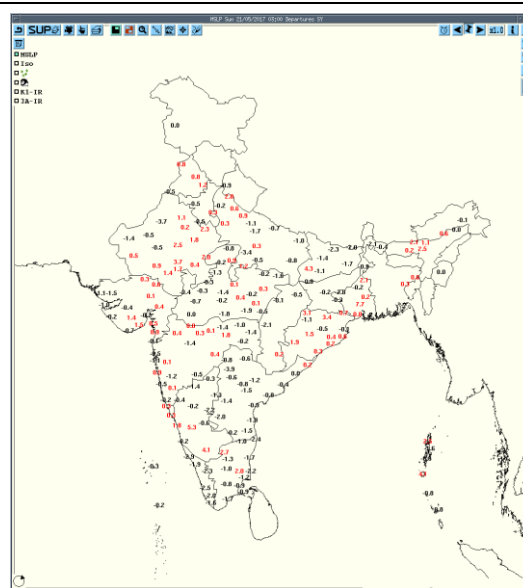
Departure Tmax



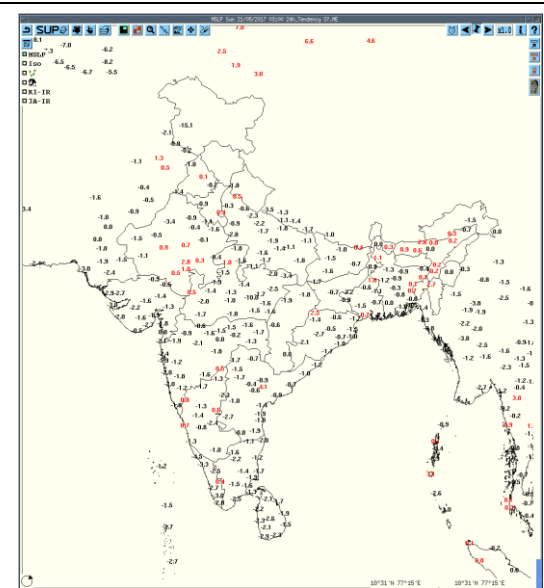
Tendency Tmax



MSLP



Departure MSLP



Tendency MSLP



Realized weather past 24hours (Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
20-05-17	0600UTC	Minicoy	S India	Lakshadweep & Minicoy Islands	Thunderstorm
20-05-17	0900UTC	Jharsuguda	E India	Odisha	Thunderstorm
		Tirupati	S India	Andhra Pradesh	Thunderstorm
20-05-17	1200UTC	Phalodi	NW India	Rajasthan	Thunderstorm
		Bagdogra	NE India	West Bengal	Thunderstorm
		Kailasahar	NE India	Tripura	Thunderstorm
		Keonjhargarh, Gopalpur	E India	Odisha	Thunderstorm
		Pendra Road	C India	Chhattisgarh	Thunderstorm
		Vishakhapatnam, Tirupati	S India	Andhra Pradesh	Thunderstorm
		Vellore, Kodaikanal	S India	Tamilnadu	Thunderstorm
		Punalar, Kozhikode	S India	Kerala	Thunderstorm
20-05-17	1500UTC	Srinagar	NW India	J & K	Thunderstorm
		Ajmer	NW India	Rajasthan	Lightening
		Kozhikode, Thiruvananthapuram	S India	Kerala	
		Bengaluru	S India	Karnataka	Lightening
		Tiruchirappalli	S India	Tamilnadu	Lightening
		Ramagundam	S India	Telangana	
		Bhubaneshwar, Balasore	E India	Odisha	
		Chandbali	E India	Odisha	Lightening
		Ambikapur	C India	Chhattisgarh	
Digha	E India	West Bengal			
20-05-17	1800UTC	Bikaner	NW India	Rajasthan	Lightening
		Bengaluru	S India	Karnataka	Thunderstorm
20-05-17	2100UTC	Bikaner	NW India	Rajasthan	Liughtening
		Bengaluru	S India	Karnataka	Thunderstorm
		Coimbatore	S India	Tamilnadu	Thunderstorm
21-05-17	0000UTC	Phalodi, Jodhpur, Ganganagar	NW India	Rajasthan	Thunderstorm
		Ajmer	NW India	Rajasthan	Duststorm
		Minicoy	S India	Lakshadweep & Minicoy Islands	
		Bengaluru	S India	Karnataka	
		Kailasahar, Agartala	NE India	Tripura	
		Silchar	NE India	Assam	



21-05-17	0300 UTC	Amritsar	NW India	Punjab	Thunderstorm
		Bagdogra	E India	West Bengal	Thunderstorm
		Lengpui	NE India	Mizoram	

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)
Mukteshwar	NW India	Uttarakhand	Thunderstorm	20-05-2017	1445 1545	1505 1600
Tehri	NW India	Uttarakhand	Thunderstorm	20-05-2017	1410	1420
Agartala	NE India	Tripura	Thunderstorm	21-05-17	0335	0550
Kailashahar	NE india	Tripura	Thunderstorm	20-05-17 21-05-17	1610 0500	1800 0650
Patiala	NW India	Punjab	Thunderstorm	20-05-2017	0915	0940
Amritsar	NW India	Punjab	Thunderstorm	21-05-17	0740	0830
Chandigarh	NW India	Chandigarh	Thunderstorm	20-05-2017	0830	0835
Srinagar	NW India	J & K	Thunderstorm	20-05-2017	1815 1830 2050	1825 1900 2100
Qazigund	NW India	J & K	Thunderstorm	20-05-2017	1910	2035
Pahalgam	NW India	J & K	Thunderstorm	20-05-2017	2015	2245
Kupwara	NW India	J & K	Thunderstorm	20-05-2017	1640	1700
Kukernag	NW India	J & K	Thunderstorm	20-05-2017	1950	2110
Banihal	NW India	J & K	Thunderstorm	20-05-2017	1740	1820
Jhansi	NW India	Uttar Pradesh(West)	Thunderstorm	20-05-2017	1620	1650
Kailasahar	NE India	Tripura	Thunderstorm	20-05-17 21-05-17	1610 0500	1800 0650
Lengpui	NE India	Mizoram	Thunderstorm	20-05-17 21-05-17	1725 0515	1915 0830
Dhubri	NE India	Assam	Thunderstorm	20-05-17 21-05-17	2000 0700	2100 0735
Guwahati	NE India	Assam	Thunderstorm	20-05-17	2215	0220
Silchar	NE India	Assam	Thunderstorm	20-05-17	2300	0630

Agartala	NE India	Tripura	Thunderstorm	21-05-17	0335	0550
Ambikapur	C India	Chhattisgarh	Thunderstorm	20-05-17	1940	2145
Pendra Rd	C India	Chhattisgarh	Thunderstorm	20-05-17	1600	1730
Pilani	NW India	Rajasthan	Thunderstorm	21-05-17	0315	0500
Vanasthali	NW India	Rajasthan	Thunderstorm	20-05-17	1900	1915
Ganganagar	NW India	Rajasthan	Thunderstorm	21-05-17	0340	0455
Bikaner	NW India	Rajasthan	Thunderstorm	20/21-05-17	202345 210250	210120 210400
Jodhpur	NW India	Rajasthan	Thunderstorm	21-05-17	0145	0635
Phalodi	NW India	Rajasthan Rajasthan	Thunderstorm	21-05-17	0200	0500
			<b>Hailstorm with diameter XX</b>	<b>21-05-17</b>	<b>0400</b>	<b>0415</b>
Jaisalmer	NW India	Rajasthan	Thunderstorm	21-05-17	0235	0310
Bhavnagar	W India	Gujarat	Thunderstorm	20-05-17	2000	XXXX
Alappuzha	S India	Kerala	Thunderstorm	20-05-17	2130	2245
Cial Kochi	S India	Kerala	Thunderstorm	20-05-17	2130 2330	2230 0030
Kannur	S India	Kerala	Thunderstorm	20-05-2017	1750	1845
Karipur A P	S India	Kerala	Thunderstorm	20-05-2017	1753	0050
Kozhikode	S India	Kerala	Thunderstorm	20-05-2017	1630 2025	1740 2140
Thiruvananthapuram Airport	S India	Kerala	Thunderstorm	20-05-2017	1852	2110
Thiruvananthapuram City	S India	Kerala	Thunderstorm	20-05-2017	1900	1950
Minicoy	S India	Lakshadweep & Minicoy Islands	Thunderstorm	21/21-05-17	0830 210505	1500 210545
Coimbatore	S India	Tamilnadu(North)	Thunderstorm	21-05-17	0055	0300
Bengaluru City	S India	Karnataka	Thunderstorm	20/21-05-17	202040	210200
			<b>Squall from E direction with max speed 50kmph</b>	<b>21-05-17</b>	<b>0225</b>	<b>0226</b>
Bengaluru (HAL)	S India	Karnataka	Thunderstorm	20/21-05-17	201830 202050	201920 210110
Yelahanka IAF	S India	Karnataka	Thunderstorm	20/21-05-17	201945	210300

Bengaluru (KIAL)	S India	Karnataka	Thunderstorm	20/21-05-17	202017 210453	210050 210600
Gangtok	E India	Sikkim	Thunderstorm	20-05-2017	1810	2135
Tadong	E India	Sikkim	Thunderstorm	20-05-2017	1805	1940
Haldia	E India	West Bengal	Thunderstorm	20-05-2017	2115	2205
			Lightening	20-05-2017	1840	1900
Digha	E India	West Bengal	Thunderstorm	20-05-2017	2000	2200
			Lightening	20-05-2017	1940	2230
Daltonganj	E India	Jharkhand	Thunderstorm	21-05-17	330	340
Jamshedpur	E India	Jharkhand	Thunderstorm	20-05-2017	1505	1515
Bhubaneswar	E India	Odisha	Thunderstorm	20-05-2017	1915	2010
			Lightening	20-05-2017	1900	2050
Balasore	E India	Odisah	Thunderstorm	20-05-2017	1910	2140
Jharsuguda	E India	Odisha	Thunderstorm	20-05-2017	1400	1520
Gopalpur	E India	Odisha	Thunderstorm	20-05-2017	1645	1830
			<b>Squall from NW direction with max speed 60kmph</b>	<b>20-05-2017</b>	<b>1700</b>	<b>1703</b>
Keonjhar	E India	Odisha	Thunderstorm	20-05-2017	1700	180
Port Blair	E India	Andama & Nicobar Islands	Thunderstorm	20-05-2017	1635	1700
			Thunderstorm	20-05-2017	1750	1925
			Thunderstorm	21-05-17	210035	210300
			Lightening	20/21-05-17	202300	210400

## 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
Nagpur	21-05-17	0230-0502	Single becomes multiple at 0302 in NE	160 km in NNE, moving NE'ly	MaxZ=29.50 with cloud ht.=3.5 to 5.8 km	0230-0502	Single becomes multiple at 0302 in NE
		0752-0922	Single but later becomes multiple	220 km in NE, moving E'ly	MaxZ=29.50 with cloud ht.=5 to 8 km	0752-0922	Single but later becomes multiple
		0822-1132	Single	150 km in NNW, moving E'ly	MaxZ=29.50 with cloud ht.=3 to 8.1 km.. At 1022,MaxZ=41 with cloud ht.=3 to 4.7 km & for rest 3 to 9.3 km.	0822-1132	Single
		0842-1132	Single later becomes multiple	160 km in NE, moving E'ly	MaxZ=39 with cloud ht.=3.5 to 5 km, for rest 30 to 35 dBZ ht. of cloud =3.5 to 9 km	0842-1132	Single later becomes multiple
		0002-0252	Nil			0002-0252	Nil
Paradeep	20-05-2017	0700-1700	First isolated cloud formed at Lat 20.50 deg N and Lon 84.33 deg E having	Cloud region obtained in the radius of 250 km from station at SSW,EAST,NW	All clouds were dissipated after 2200 IST over the sea region.	Thunderstorm And Rain	Phulbani,Kalahandi ,Gajapati, Sambalpur,Jharsu guda,Sonepur

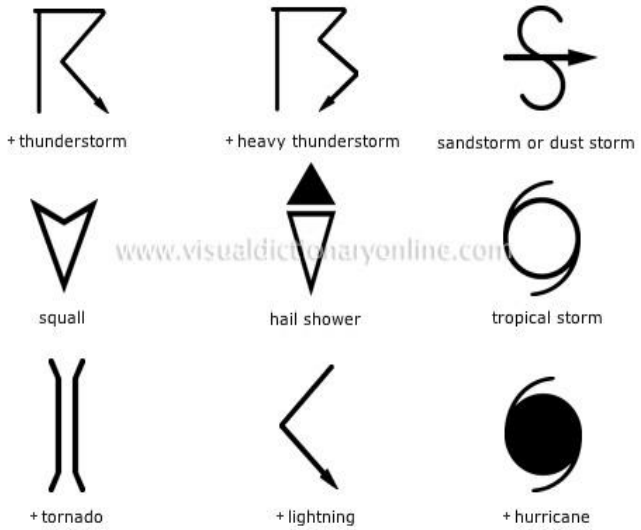
			reflectivity 42 dBZ with an average height of 14 km at 1232 IST. Then after some time convective cloud mass appeared in NW, E, SSW direction. These cloud masses moved towards SE direction with a speed of 35 km/hr having maximum reflectivity 56 dBZ with an average height of 15 km and these were dissipated after moving some distance.	direction. Clouds moved towards SE direction.			Baragarh,Debgarh, Keonjhar, Anugul,Dhenkanal
Jaipur	21-05-17	21/05/17	1140-1400 UTC	Multiple cell with average height of 2.5 km maximum reflectivity 46.0 dBZ	Cell develop 1140 to 1350 UTC towards SW of jaipur and movment SSE at speed 12-26 km/hr	Cells continuous forming from 1140UTC SW of Jaipur and maximum refelectivity during 1150-1350 UTC and died down at 1400 UTC	Moderate Thunderstorm at isolated places
Srinagar	21-05-17	20 MAY 03Z to 21May 03Z(24hrs)	Multiple cells developed in all direction of DWR Srinanar 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 . kukernag Qazigund ;SRINAGAR;KUPWARA ;BANIHAL.	NIL	NIL
Patna	21-05-17	200300-210300	Nil	--	--	--	--
Agartala	21-05-17	200300 - 200400	Multiple cells with Maximum Height 10 km and maximum	Formed 200 km North of DWR AGT at 2330 UTC and moved SE-	At 0400 UTC, cells persisted over South Assam before the DWR	TS with light rain	East Khasi hills district of Meghalaya

			reflectivity 30 dBZ (at 0350 UTC of South Assam)	wards at around 40 kmph	was shut down for maintenance		
		200400-210300	DWR under Maintenance				
Kolkata	21-05-17	0301- 0921 UTC	NIL	NIL	NO ECHO	NIL	NIL
		0931 – 1751 UTC	1.Isolated single cells, transformed into multi cells system with maximum reflectivity of 57.5 dBz at 1051 UTC and maximum height of 11.65 km at 1051 UTC	1. WNW (208.2 km) moving in SE-ly direction with a speed of 32.6 kmph.	1. Isolated single cells formed in WNW at a distance of 208.2 km from Radar at 0931 UTC, Matured and merged with cell no. 2 at 1051 UTC.	Thunderstorm /Squall/ Rain	N/A
			2.Isolated single cell transformed into multi cells system with maximum reflectivity of 63.5 dBz at 1051 UTC and maximum height of 15.05 km at 1021 UTC	2. W (205.4 km) moving in ESE-ly/ SE-ly direction with a speed of 38.0 kmph.	2. Isolated single cells formed in W at a distance of 205.4 km from Radar at 1001 UTC, Matured and merged with cell no. 1 at 1051 UTC.	Hailstorm/Thunderstorm /Squall/ Rain	N/A
			3. Extended multi celled system with maximum reflectivity of 66.0 dBz at 1211 UTC and maximum height of 16.9 km at 1151 UTC	3. From W/196 km To WMW/163 km moving in E-ly/ ESE-ly direction with a speed of 58.7 kmph.	3. Extended multi celled system formed in between W/196 km To WNW/163 km from Radar at 1051 UTC by merging of SN. 1 and 2. Matured and dissipated at 1511 UTC in S at a distance of 71 km from Radar.	Hailstorm/Thunderstorm /Squall/ Rain	N/A
		Time Interval of Observation (UTC)	Organisation of cells (Isolated single cells /multiple cells/ convective regions /squall lines) with height	Formation w.r.t. radar station and Direction of movement	Remarks	Associated Severe Weather if any	Districts affected

			of 20 dBZ echo top and maximum reflectivity				
Patiala	21-05-17	20 MAY 0002 UTC- TO 0302 UTC	Multiple cells Max= 52.0 dBz Ht.= 09-11 km	Formation in NW sector. MOVEMENT SE-WARDS.	-----	-----	AMBALA; LUDHIANA; ROPAR; CHANDIGARH; NANGAL
		20 MAY 0302 UTC- TO 0602 UTC	Multiple cells Max= 51.0 dBz Ht.= 08-11 km	Formation in NW sector. MOVEMENT SE-WARDS.	-----	TS/RA	NAWANSHAR; PATIALA; KALSI.
		20 MAY 0602 UTC- TO 0902 UTC	NO SIGNIFICANT DEVELOPMENT.	-----	-----	-----	
		20 MAY 0902 UTC TO 1802 UTC (09 HRS)	NO SIGNIFICANT DEVELOPMENT.	-----	-----	-----	-----
		20 MAY 2102UTC- TO 0002 UTC	Multiple cells Max= 48.5 dBz Ht.=9-11 km	FORMATION IN WEST SECTOR. DIRECTION ,MOVEMENT IN EAST DIRECTION -			TARANTARAN; KAPURTHLA; JALANDHAR; FAZILKA; MUKTSAR.
		21 MAY 0002 UTC- TO 0302 UTC	Multiple cells Max= 43.5 dBz Ht.=08-10 km	FORMATION IN NW – SECTOR. DIRECTION MOVEMENT IN NNE-WARDS.	-----	RA	AMRITSAR, BATALA, GURDASPUR.
Machilipatnam	21-05-17	0711 to 1221 UTC	Isolated Multiple cells average height of 12 km with maximum reflectivity of 66dBZ	NE(116KM) and moving S ly direction with average speed of 26 kmph	Cell started forming at 0711UTC, at NE (246km) from Radar the maximum reflectivity during 0711 to 1211 UTC and died down at 1221UTC	Possibility of Thunder storm with Hail and rain with moderate winds.	Visakhapatnam and East Godavari Districts
		0841 to 1431UTC	Isolated Multiple cells average height of 10 km with maximum reflectivity of 69.5 dBZ	NE (209KM) and moving E ly direction with average speed of 45 kmph	Cells started forming at 0841UTC at N (232KM ) from Radar the maximum reflectivity during 0851 to 1411 and died	Possibility of Thunder storm with Hail and Rain with strong winds.	Dantewara, Malkangiri, Visakhapatnam and East Godavari Districts



					Down at 1431UTC		
		0951 to 1251UTC	Isolated Multiple cells average height of 8 km with maximum reflectivity of 57.5 dBZ	W (84KM). The cell is stationary.	Cells started forming at 0951UTC at NW(82km) from Radar the maximum reflectivity during 1101 to 1241 and died Down at 1251UTC	Possibility of Thunder storm with Rain winds.	Guntur District
Lucknow	21-05-17	200300-210300	Nil	--	--	--	--



∞	haze
⌋	smoke
⌋→	dust or sand storm
≡	fog
⚡	drizzle
•	rain
✖	snow
▽	showers
△	hail
⌋	thunderstorm
<b>Weather Symbols</b>	