India Meteorological Department

FDP STORM Bulletin No.75 (19-05-2017)

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. The NLM, is likely to persist over the same region during next 4-5 days.
The trough at mean sea level from south coastal Andhra Pradesh to Comorin area persists.
The upper air cyclonic circulation over Punjab & neighbourhood extending upto 0.9 Km above mean sea level persists. A trough runs from this system to southeast Madhya Pradesh across northeast Rajasthan and extends upto 0.9 km above mean sea level.
The trough from west Bihar to west central Bay of Bengal now runs from Bihar to west central Bay of Bengal, off north Andhra Pradesh coast at 1.5 km above mean sea level.
The upper air cyclonic circulation over north Chhattisgarh & adjoining Odisha now lies over south Chhattisgarh & adjoining Odisha and extends upto 0.9 km above mean sea level.
The Western Disturbance as a trough in mid-tropospheric westerlies roughly along longitude 75.0°E and north of latitude 30.0°N has moved away east-north-east-wards.
The upper air cyclonic circulation over Tripura & neighbourhood has become less marked.
The upper air cyclonic circulation over Gulf of Martaban & neighbourhood has moved away north-east-wards

SATELLITE OBSERVATIONS during past 24hrs and current observation:

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

Convective Activity:

Cell No	Date/Time (UTC)	Area/Location	CTT (- Deg C)	Movement	Remarks
1	19/0500	SW Utter Pradesh	48		Developing
	0600	do	51		
	0700	SW Uttar Pradesh extreme SE Haryana adjoining S Delhi, extreme NE Rajasthan	50		
	0800	do	58		
	0900	do	58		
		do	58		
2	19/0500	S Assam, adjoining Tripura	60		Developing
	0600	S Assam, adjoining Tripura, adjoining Mizoram	66		
	0700	SE Assam, adjoining N Tripura, Mizoram	67		
	0800	do	81		
	0900	do	66		

Cloud Description:

Broken low/medium clouds with embedded moderate to intense convection were seen over extreme NE Rajasthan. Scattered low/medium clouds with embedded moderate to intense convection were seen over J & K, SW Uttar Pradesh, S Haryana, adjoining Delhi, E Uttarakhand, SE Assam, Manipur, Mizoram, Tripura, and Bay Islands. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Himachal Pradesh, rest E Assam, Arunachal Pradesh, Nagaland and Manipur. Scattered low/medium clouds with embedded weak to moderate convection were seen over N Madhya Pradesh. Scattered low/medium clouds were seen over rest Uttar Pradesh, rest Madhya Pradesh, Marathawada, Vidarbha and rest parts of South India.

Arabian Sea:

Scattered low/medium clouds with embedded intense to very intense convection were seen over southwest Arabian Sea. Scattered low/medium clouds with embedded moderate to intense convection were seen over southeast 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, Gulf of Martaban and Tenasserim coast.

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 North-East States South Interior Karnataka Andhra Pradesh Kerala and Tamilnadu.

OLR:-

Upto **200** wm^{-2} was observed over East J&K, South Interior Karnataka Kerala West Tamilnadu. Upto **230** wm^{-2} was observed over Rest J&K, Himachal Pradesh, North Uttarakhand Delhi North East Odisha East Jharkhand West Gangetic West Bengal Rest Tamilnadu. Upto **250** wm^{-2} was observed over Sikkim Meghalaya Arunachal Pradesh Assam Nagaland.

Westerly Trough & Jet-Stream:

Trough in Westerlies runs roughly along longitude 76.0E North of Lat. 24.0N.

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 Gujarat Rajasthan Coastal Andhra Pradesh and Positive shear tendency is observed over rest India.

A positive Vorticity field is observed over Odisha North Coastal Andhra Pradesh Extreme South Tamilnadu.

Negative low level convergence observed over Bihar and Positive low level convergence observed over rest parts of India.

Precipitation:

IMR:

Rainfall Up to 110 mm was observed over South East Jharkhand.

Rainfall Up to 50 mm was observed over North East Odisha West Gangetic West Bengal South Interior Karnataka West Tamilnadu Kerala East. Rainfall Up to 10mm was observed over Meghalaya. Rainfall Up to 10mm was observed over East J&K Himachal Pradesh North Uttarakhand South Haryana Delhi North East Rajasthan West Assam Nagaland Manipur.

HEM:.

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

Rainfall Up to 14 mm was observed over South West J&K Himachal Pradesh Meghalaya.

Rainfall Up to 07 mm was observed over Haryana Delhi North West Uttar Pradesh North East Rajasthan West Bengal Assam Nagaland Manipur.

RADAR and RAPID Observation:

DWR Composite at 1700 hrs IST indicated significant convection over North Tamilnadu, S Andhra Pradesh, Odisha, N Rajasthan, East Jharkhand adjoining West Bengal.

RAPID RGB Satellite imagery at 1600hrs IST indicated significant convective activity over N Rajasthan, Haryana, West Uttar Pradesh, N Madhya Pradesh, J & K, Himachal Pradesh, Uttarakhand, East Jharkhand adjoining West Bengal, Sikkim, South Assam, Nagaland, Manipur, Mizoram, Tripura and Nicobar 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 2-3 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.

Over Arabian Sea a weak CYCIR at 850 hPa is seen near 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^-5 /s):**

Day0: West RJ, East RJ, Odisha, Saurashtra Kutch, Coastal AP,

Day1: Punjab, West RJ,

Day2: Assam Meghalaya, Uttarakhand, Chhattisgarh, Telangana, Rayalaseema,

Day3: Jharkhand, West UP, Hry Chd Delhi, Punjab, Odisha, Madhya Maharashtra, Vidarbha, NI Karnataka, SI Karnataka,

Day4: Assam Meghalaya, Odisha, Madhya Maharashtra, NI Karnataka, SI 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: Assam Meghalaya, TN Puducherry,

Day1: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, TN Puducherry,

Day2: Arunachal Pradesh, Assam Meghalaya, Uttarakhand, Punjab, TN Puducherry,

Day3: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Bihar, Uttarakhand, Odisha, TN Puducherry,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, TN Puducherry, NI Karnataka, Kerala.

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

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

Day0: Arunachal Pradesh, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Hry Chd Delhi, Punjab, 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,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

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

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Madhya Maharashtra, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

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

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, SI Karnataka, Kerala.

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, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Coastal AP,

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

Day2: 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, Coastal AP, TN Puducherry,

Day3: 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, East MP, Coastal AP, TN Puducherry,

Day4: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, West MP, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, SI Karnataka.

8. Rainfall and thunder storm activity:

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

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

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

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Punjab, Jammu Kashmir, Andaman Nicobar,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Andaman Nicobar,

Day5: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Himachal Pradesh, Jammu Kashmir, Andaman Nicobar.

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 Bihar & adjoining east UP, Jharkhand, centre of the CICIR, extending upto the Coastal AP region almost persists during next 5 days with N-S trough extend up to Tamil Nadu region during days 3 to 5.

Another CYCIR over northeast Rajasthan and adjoining Pakistan 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 x 10^{-1}/s):

Analysis shows low level positive vorticity mainly over the foothills of Himalaya. The high vorticity belts confine over eastern coastal states over GWB, Odisha, Coastal AP and Chhattisgarh region along with the 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):

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 particularly over the Gujarat region 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.

Sweat Index (> 400): 00UTC shows significant values over major parts along Bihar, Jharkhand, GWB, Chhattisgarh, GWB, Coastal AP and also over west coast of India (particularly over the Gujarat region).

CAPE (> 1000): Mostly along east coast of India over east UP, Bihar, Jharkhand, GWB, Odisha Chhattisgarh, and adjoining AP regions along with parts in south peninsular region and western parts of Gujarat and Rajasthan regions 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 (Particularly over Gujarat) and over the west Rajasthan region for the next 2-3 days..

5. Rainfall and thunderstorm activity:

10-40 mm rainfall is forecasted tomorrow over foot hills, Uttarakhand, Himachal, NE states, parts of coastal Odisha and also over the southern peninsula.

Rainfall activity over these regions likely to continue for next 2-3 days with with likely increase of rainfall over Punjab and adjoining region on day 3 forecast.

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

1. Model Reflectivity (Max.dBz): (>25 dBZ))

15-40 dBZ over parts of North GWB, Jharkhand and parts of NE states during today (10 UTC to 14 UTC).

15-40 dBZ over isolated regions of NCR region, Odisha, GWB and Kerala, NE states 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 with particularly over Gujarat during next 3 days. The higher CAPE value also seen over Rajasthan and adjoining North India particularly during day 2 and day 3.

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 North-eastern states for next 1-3 days along with that over the Kerala coast.

On day one the high rainfall belt is likely to be over GWB, Odisha and Jharkhand region.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:
Presently, the upper air cyclonic circulation over Punjab & neighbourhood extending upto 0.9 Km above mean sea level persists. A trough runs from this system to southeast Madhya Pradesh across northeast Rajasthan and extends upto 0.9 km above mean sea level. Due to which Himachal Pradesh and Uttrakhand may experience thunder storm with gusty wind on Day-1. On Day-2, the activity will increases over Haryana and Uttar Pradesh and Punjab.

The trough at mean sea level from south coastal Andhra Pradesh to Comorin area persists. This will give rise to thunder storm with gusty wind over Interior Karnataka, Kerala and Raylseema on Day-1.

The trough from west Bihar to west central Bay of Bengal now runs from Bihar to east central Bay of Bengal, off north Andhra Pradesh coast at 1.5 km above mean sea level. This will give rise to thunder storm with gusty wind over Bihar, Jharkhand, Parts of Orissa and SHWB, Sikkim on Day-1.

24 hour Advisory for IOP:
Kerala, Interior Tamilnadu, South and North Interior Karnataka, Coastal Karnataka, Rayalaseema
Gangetic west Bengal, Sub Himalayan West Bengal, Sikkim, Orissa, Bihar, Jharkhand
Himachal Pradesh, Uttarakhand,
Assam, Meghalaya, Manipur, Mizoram and Nagaland, Tripura
N Rajasthan, Haryana, W Uttar Pradesh

48 hour Advisory for IOP:

Kerala, Interior Tamilnadu, North & South Interior Karnataka, Coastal Karnataka, Rayalaseema
Sikkim, Sub Himalayan West Bengal, Bihar
West and East Rajasthan
Punjab, Haryana, West and East UP

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
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Past24hourHEMandIMRrainfall(upto03UTCoftoday)
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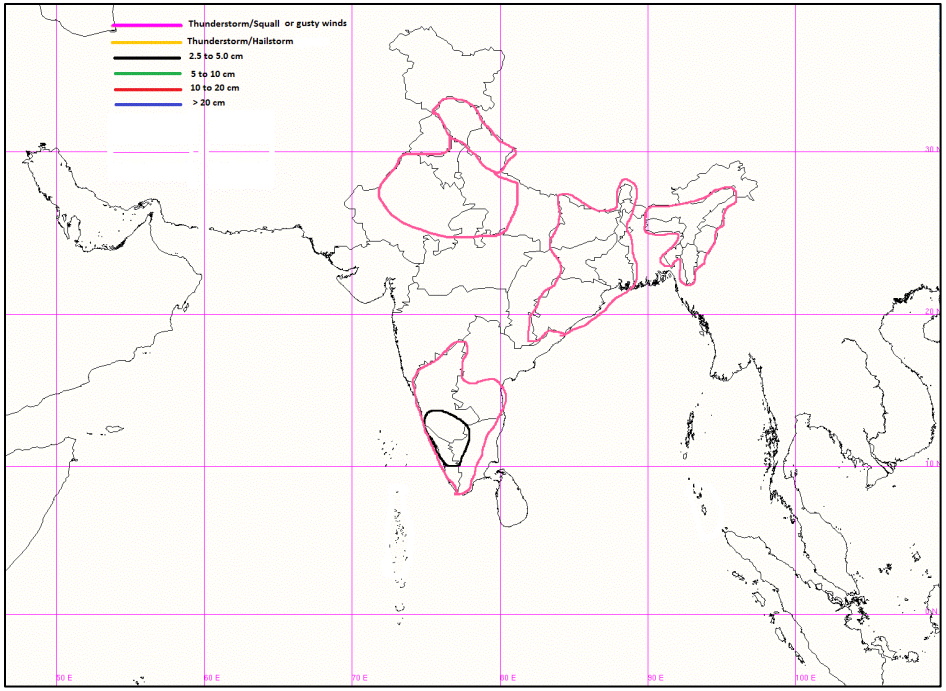
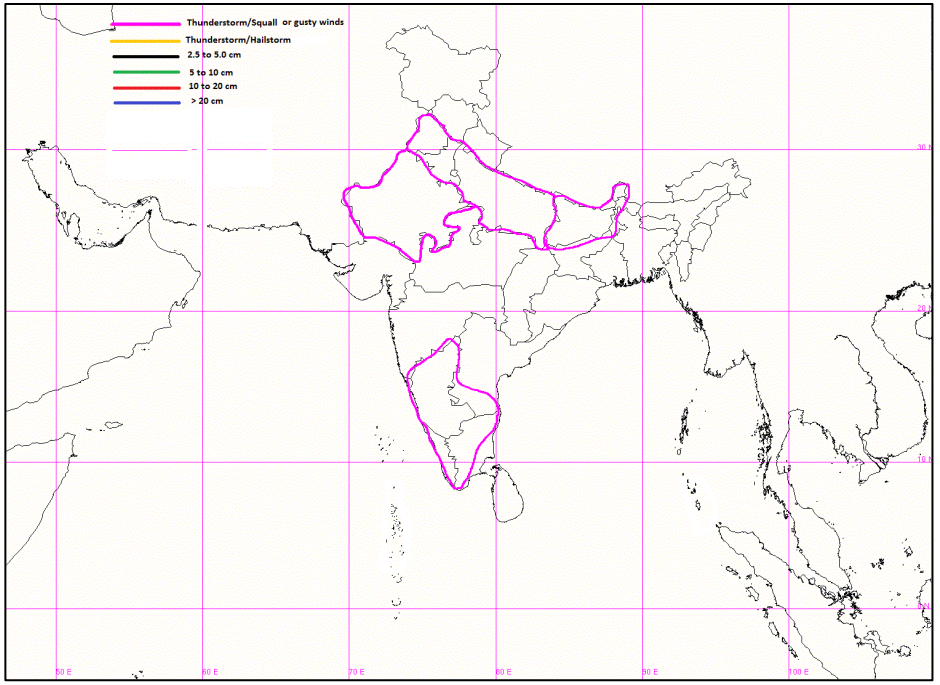
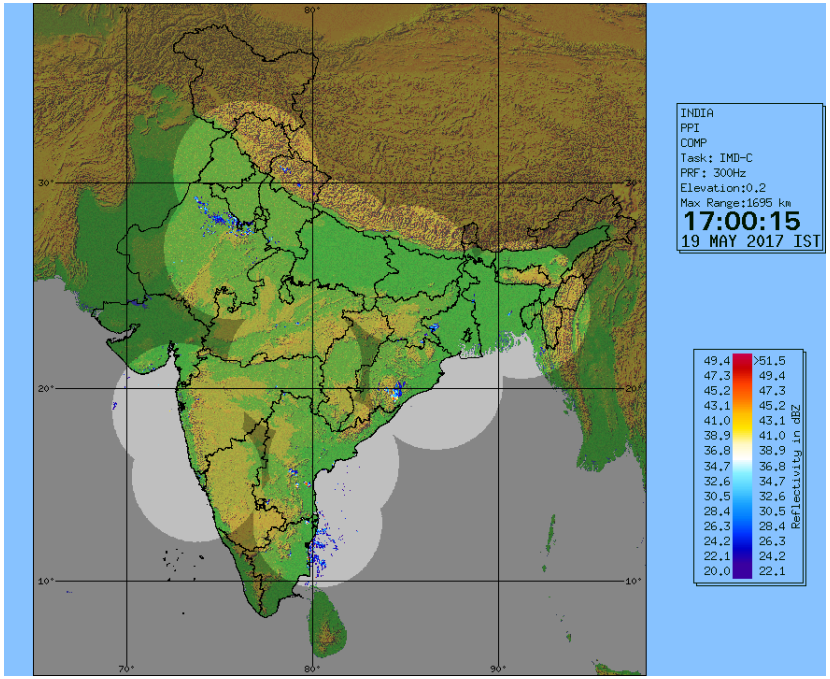
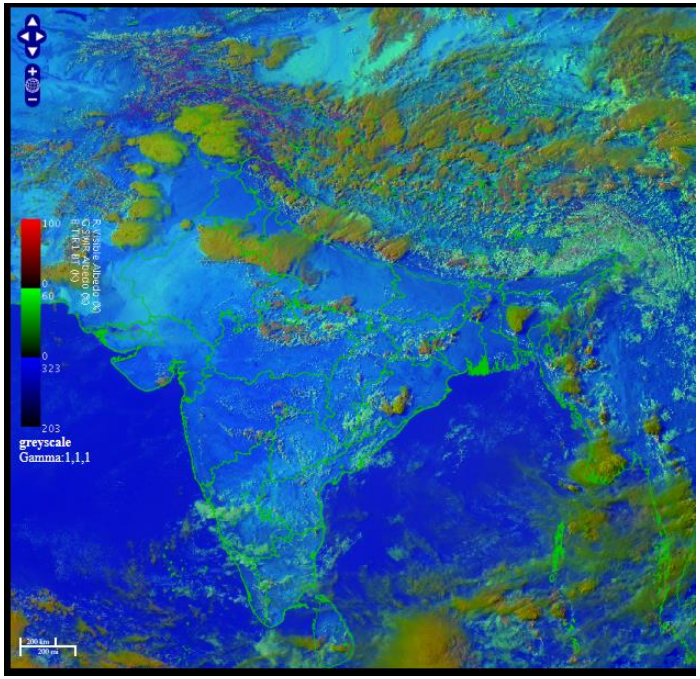
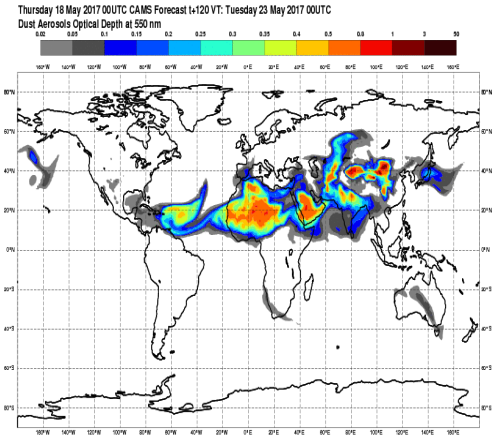


IOP Advisory for 24 hours

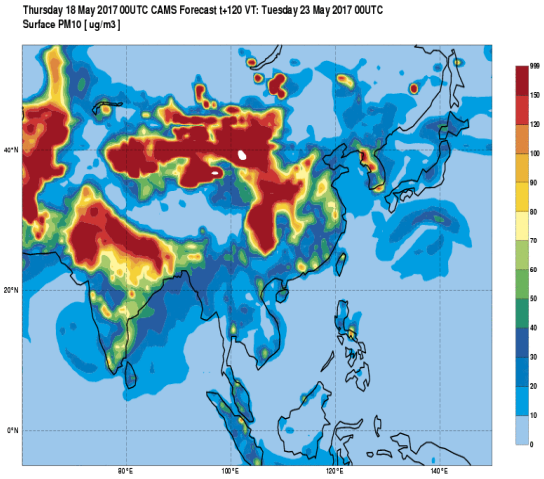


IOP Advisory for 48 hours

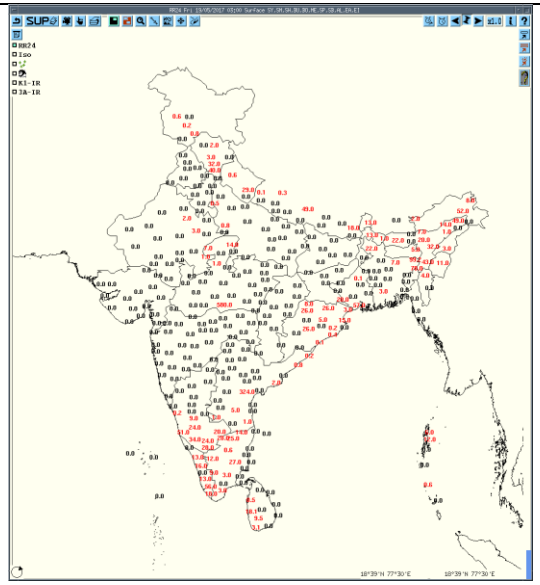
	
DWR Composite at 1700 hrs IST	**RAPID RGB Satellite Imagery at 1600 hrs IST of today**



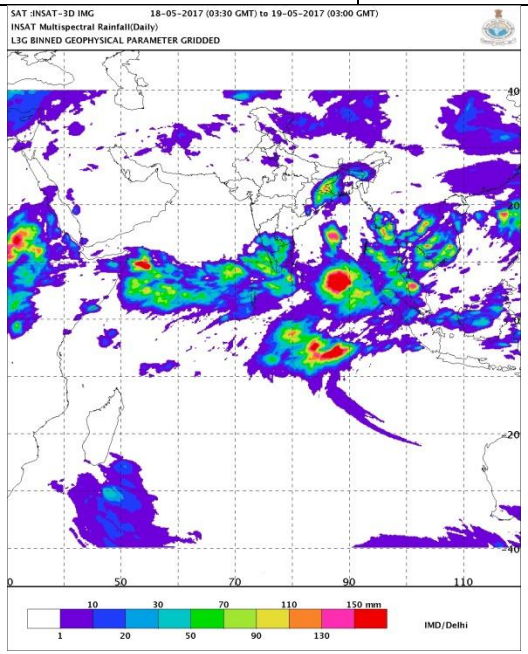
Forecast Dust Concentration for 00UTC of 23rd May

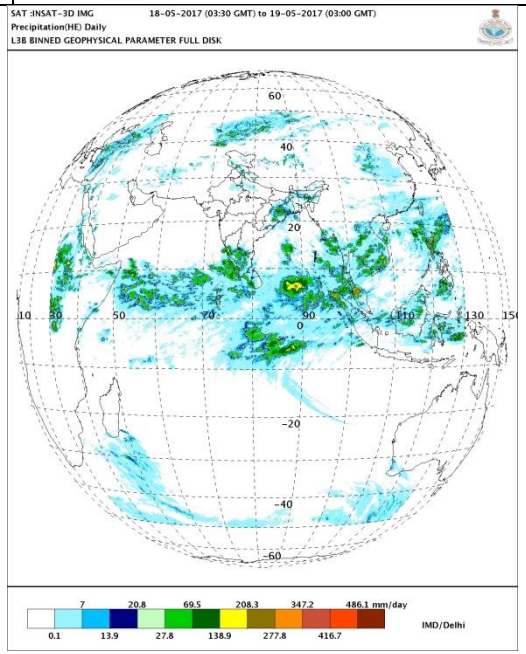


PM10 Forecast for 00UTC of 23rd May

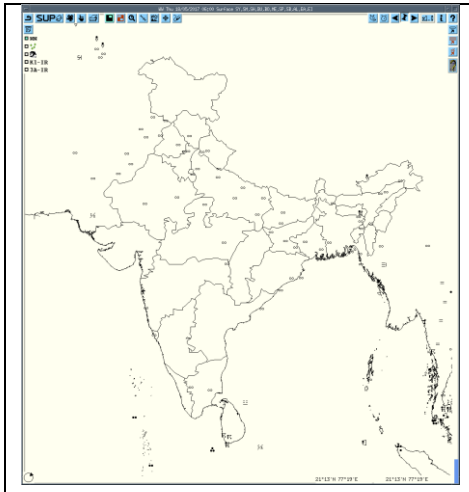
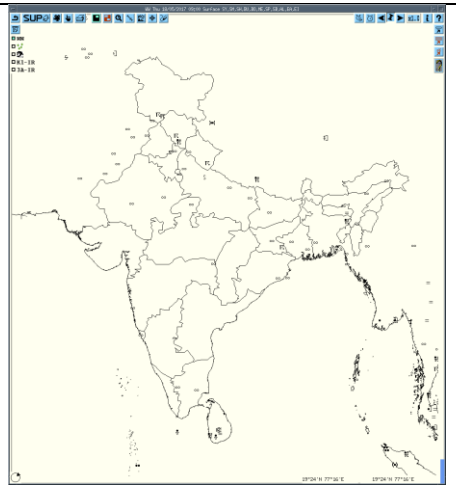
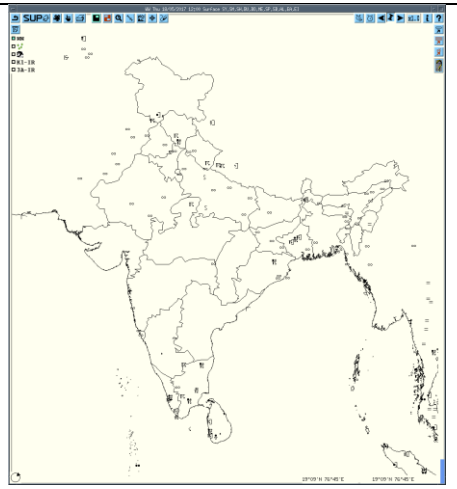
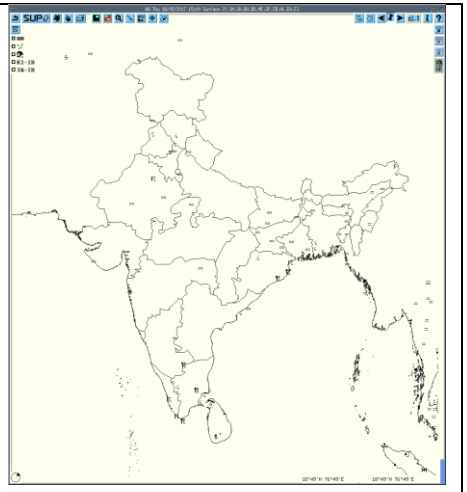
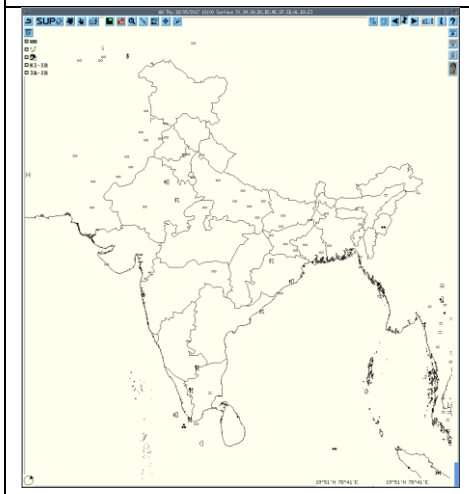
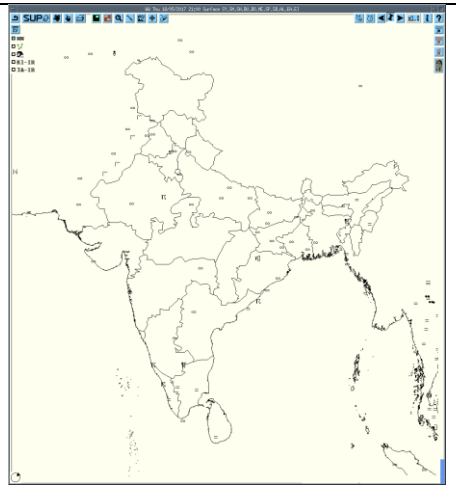
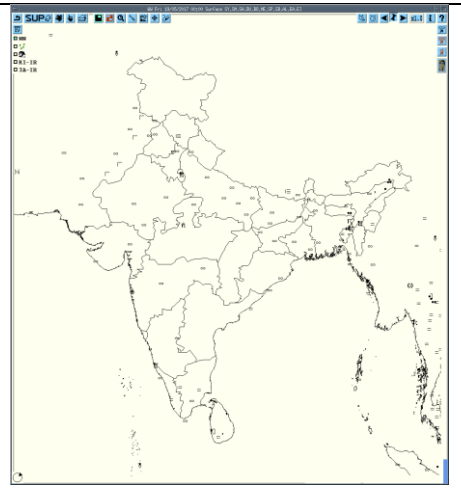
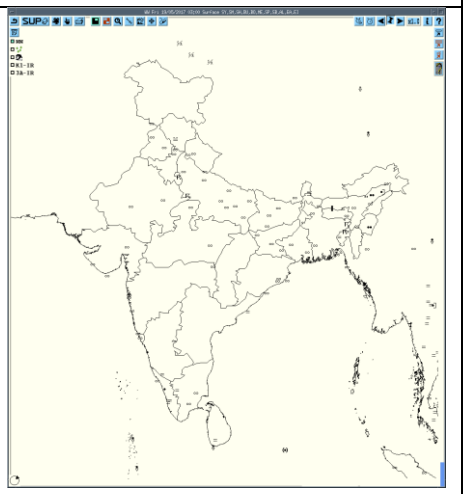


Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today

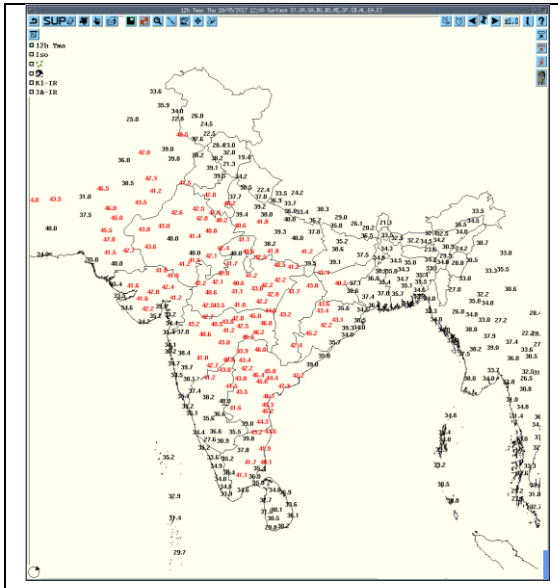
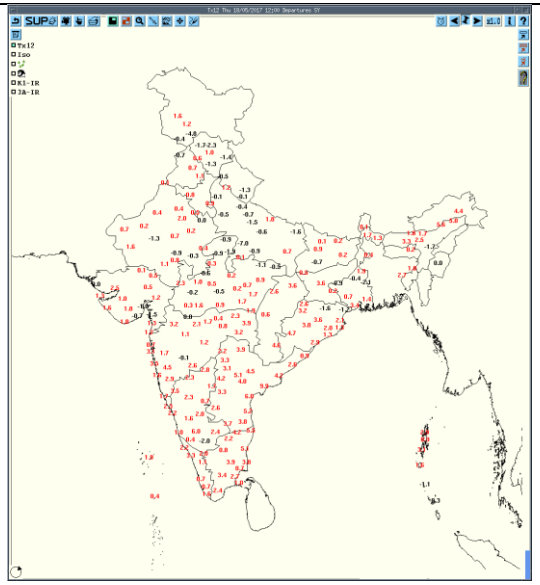
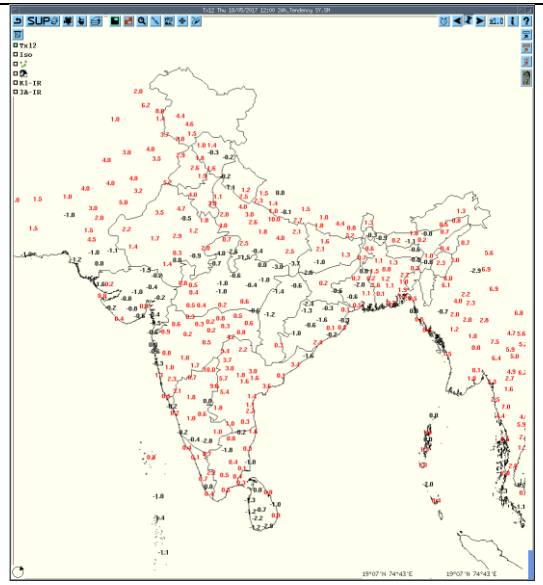
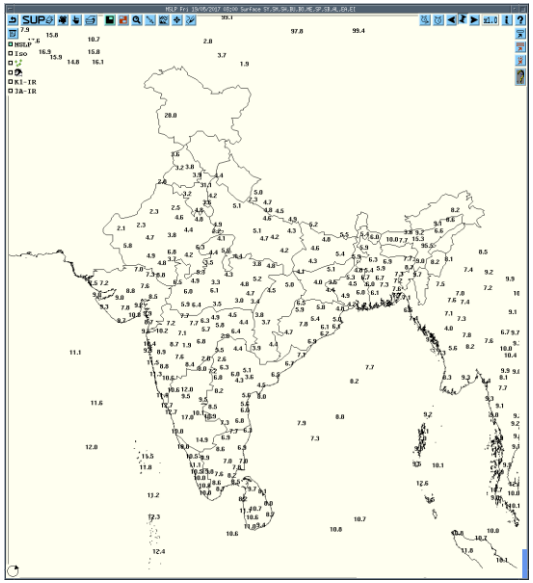
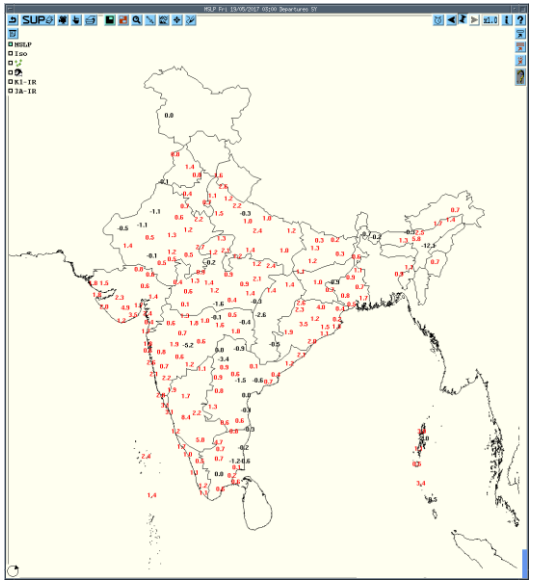
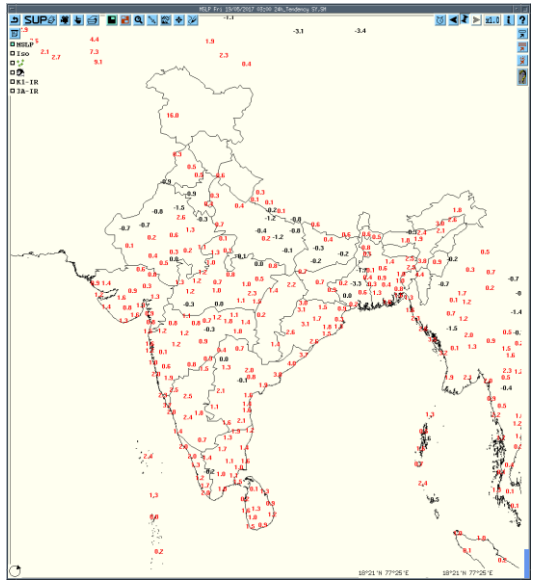


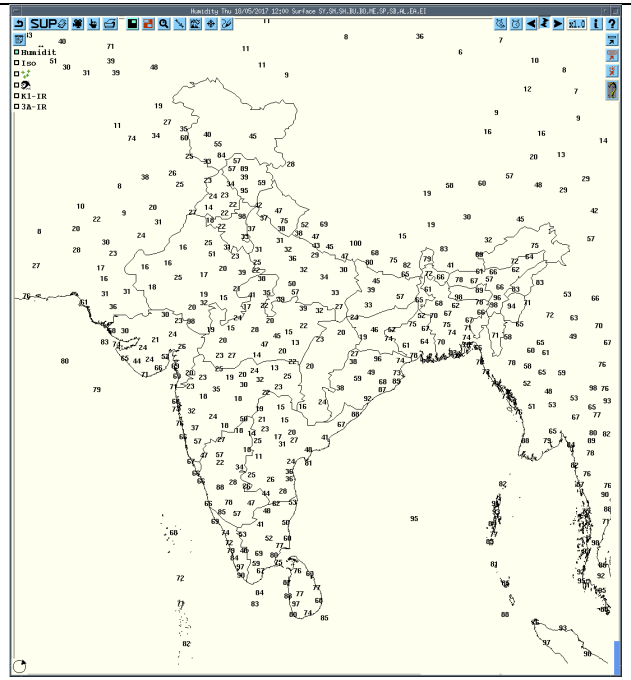
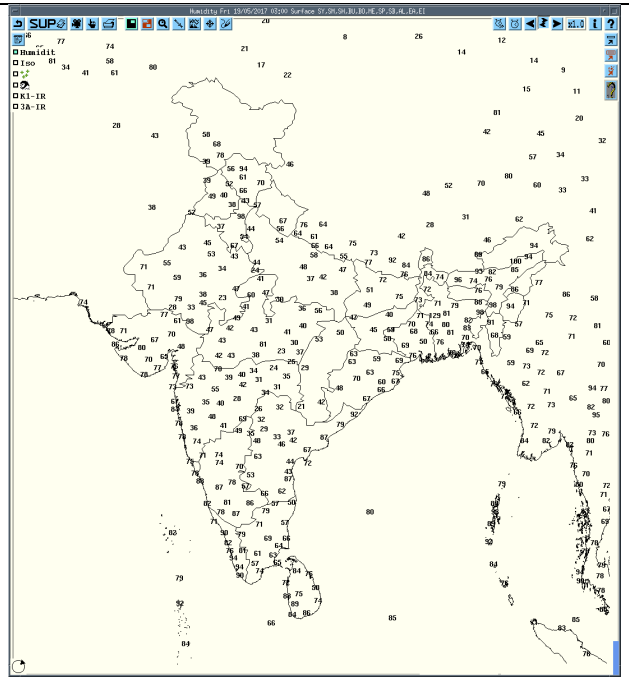


IMR Rainfall	HEM Rainfall

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

		
max	**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	Shillong	NE India	Meghalaya	Thunderstorm
18-05-17	0900UTC	Banihal, Batote, Bhaderwah,	NW India	J & K	Thunderstorm
		Shimla	NW India	Himachal Pradesh	Thunderstorm
		Shimla (AP)	NW India	Himachal Pradesh	Thunderstorm
		Mukteshwar	NW India	Uttarakhand	Thunderstorm
		Jamshedpur	E India	Jharkhand	Thunderstorm
18-05-17	1200UTC	Jammu	NW India	J & K	Thunderstorm
		Sundernagar, Shimla	NW India	Himachal Pradesh	Thunderstorm
		Mukteshwar	NW India	Uttarakhand	Thunderstorm
		Gwalior	C India	Madhya Pradesh	Thunderstorm
		Bagdogra, Shantiniketan, Panagarh, Bankura	E India	West Bengal	Thunderstorm
		Keonjhargarh	E India	Odisha	Thunderstorm
		Bengaluru (HAL & City)	S India	Karnataka	Thunderstorm
		Vellore, Tiruchirappalli, Kodaikanal, Madurai	S India	Tamilnadu	Thunderstorm
		Cochin (City and AP), Punalar	S India	Kerala	Thunderstorm
		Thiruvananthapuram	S India	**Kerala**	**Thunderstorm with Hail**
					Thunderstorm
18-05-17	1500UTC	Sundernagar	NW India	Himachal Pradesh	Lightening
		Churu	NW India	Rajasthan	Thunderstorm
		Jharsuguda	E India	Odisha	Lightening
		Bhubaneshwar, Chandbali, Balasore	E India	Odisha	Thunderstorm
		Digha	E India	West Bengal	Thunderstorm
		Tuni	S India	Andhra Pradesh	Lightening
		Bengaluru	S India	Karnataka	Thunderstorm
		Kanyakumari, Tiruchirappalli,	S India	Tamilnadu	Thunderstorm
		Coimbatore, Atirampattinam, Nagapattinam, Tondi	S India	Tamilnadu	Lightening
		Karaikal	S India	Puducherry	Lightening
		Cochin, Thiruvananthapuram,	S India	Kerala	Lightening
18-05-17	1800UTC	Churu, Jaipur	NW India	Rajasthan	Thunderstorm
		Jharsuguda, Bhubaneshwar	E India	Odisha	Thunderstorm
		Chandbali	E India	Odisha	Lightening
		Vishakhapatnam	S India	Andhra Pradeah	Thunderstorm
		Nagapattinam	S India	Tamilnadu	Lightening
		Thiruvananthapuram	S India	Kerala	Thunderstorm

		Coimbatore	S India	Tamilnadu	Thunderstorm
		Bengaluru	S India	Karnataka	Thunderstorm
		Aminidivi	S India	Lakshadweep & Minicoy Islands	Lightening
		Agartala	NE India	Tripura	Lightening
18-05-17	2100UTC	Jaipur	NW India	Rajasthan	Thunderstorm
		Jharsuguda	E India	Odisha	Thunderstorm
		Bajpe, Bengaluru	S India	Karnataka	Thunderstorm
		Kozhikode	S India	Kerala	Thunderstorm
		Aminidivi	S India	Lakshadweep & Minicoy Islands	Lightening
		Agartala	NE India	Tripura	Lightening
19-05-17	0000UTC	Safdarjung	NW India	Delhi	Thunderstorm
		Guna	**C India**	**Madhya Pradesh**	**Thunderstorm with hail**
		Bajpe	S India	Karnataka	Thunderstorm
		Kailasahar	NE India	Tripura	Thunderstorm
		Silchar	NE India	Assam	Thunderstorm
19-05-17	0300 UTC	Palam, Safdarjung	NW India	Delhi	Thunderstorm
		Agra	NW India	Uttar Pradesh	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)**
Mukteshwar	NW India	Uttarakhand	Thunderstorm	18-05-17	1132 1700	1600 1900
Tehri	NW India	Uttarakhand	Thunderstorm		1330	1345
Sundernagar	NW India	Himachal Pradesh	Thunderstorm	18-05-17	1355 1415 1545	1400 1440 1925
Shimla	NW India	Himachal Pradesh	Thunderstorm	18-05-17	1400	1830
Qazigund	NW India	J & K	Thunderstorm		1420	1430
Jammu	NW India	J & K	Thunderstorm	18-05-17	1630	1800
Banihal	NW India	J & K	Thunderstorm	18-05-17	1440	1450
Bhaderwah	NW India	J & K	Thunderstorm		1245	1500
Jaipur	NW India	Rajasthan	Thunderstorm	18/19-05-17	18/2240	190250
Pilani	NW India	Rajasthan	Thunderstorm	18-05-17	2100	2300
Sikar	NW India	Rajasthan	Thunderstorm		1700 2100	1900 2200
Phalodi	NW India	Rajasthan	Thunderstorm	18-05-17	2300	2400
Hardoi	NW India	Uttar Pradesh	Thunderstorm	19-05-17	0800	0820
Kanpur	NW India	Uttar Pradesh	Thunderstorm	19-05-17	0700	0730
Jhansi	C India	Uttar Pradesh	Thunderstorm	18-05-17	1300	1340
Guna	C India	Madhya Pradesh	Thunderstorm	19-05-17	0400	0550
Silchar	NE India	Assam	Thunderstorm	18-05-17 19-05-17	1510 0430	1600 0700
Cherrapunjee	NE India	Meghalay	Thunderstorm	18-05-17	1232	1250
Kailasahar	NE India	Tripura	Thunderstorm	19-05-17	0500	0740
Kalingapatnam	S India	Andhra Pradesh (CAP)	Thunderstorm	19-05-17	0100	0330
Visakhapatnam	S India	Andhra Pradesh (CAP)	Thunderstorm	18/19-05-17	182245 190430	190100 190545
Narsapur	S India	Andhra Pradesh (CAP)	Thunderstorm	19-05-17	0315	0420
Tirupati AP	S India	Andhra Pradesh(Rayalaseema)	Thunderstorm	18-05-17	1800	2100

Safdarjung	NW India	Delhi	Thunderstorm	19-05-17	0510 0805	0535 0840
Palam	NW India	Delhi	Thunderstorm	19-05-17	0751	0840
Karipur A P	S India	Kerala	Thunderstorm	19-05-17	0015	0430
Aminidivi	S India	Lakshadweep Islands	Thunderstorm	19-05-17	0630	0650
Thiruvananthapuram City	S India	Kerala	Thunderstorm	18-05-17	1315	1405
					1605	1830
Alappuzha	S India	Kerala	thunderstorm	18-05-17	1820	2215
Jamshedpur	E India	Jharkhand	Thunderstorm	18-05-17	1410	1700
Asansol	E India	West Bengal	Thunderstorm	18-05-17	1500	1810
Keonjhargarh	E India	Odisha	Thunderstorm	18-05-17	1650	1800
Balasore	E India	Odisha	Thunderstorm	18-05-17	1740	2150
Bhubaneswar	E India	Odisha	Thunderstorm	18-05-17	1800	1900
Digha	E India	West Bengal	Thunderstorm	18-05-17	1810	2250
			Lightening	18-05-17	1750	2350
Chandbali	E India	Odisha	Thunderstorm Lightening	18-05-17	1945	2025
				19-05-17	0230	0230
Haldia	E India	West Bengal	Thunderstorm Lightening	18-05-17	2004	2110
				18-05-17	1920	2120
Jharsuguda	E India	Odisha	Thunderstorm Lightening	18/19-05-17	182205	190045
				18/19-05-17	181920	190130
Sambalpur	E India	Odisha	Thunderstorm Lightening	18/19-05-17	182300	190130
				18/19-05-17	182230	190100
Hirakud	E India	Odisha	Thunderstorm	18/19-05-17	182340	190030
Malda	E India	West Bengal	Lightening	19-05-17	0200	0330
Paradeep	E India	Odisha	Lightening	18-05-17	2000	2100
Puri	E India	Odisha	Lightening	18-05-17	1830	1855
				18-05-17	1915	2210
Tirupattur	S India	Tamilnadu(North)	Thunderstorm	18-05-17	1745	1825

					2030	2100
Dharmapuri	S India	Tamilnadu(North)	Thunderstorm	18-05-17	1900	2300
Kodaikanal	S India	Tamilnadu(South)	Thunderstorm	18-05-17	1515	1800
Yercaud	S India	Tamilnadu(North)	Thunderstorm	18-05-17	1900	2000
Kanyakumari	S India	Tamilnadu(South)	Thunderstorm	18-05-17	1915	2045
Trichy	S India	Tamilnadu(North)	Thunderstorm	18-05-17	1708	2120
Kovilangulam	S India	Tamilnadu(North)	Thunderstorm	18-05-17	1800	1900

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	19/05/17 19/05/17 19/05/17	0730-1000 UTC	Multiple cell with average height of 5.3 km maximum reflectivity 52 dBZ	Cell develop 0730 to 1000 UTC towards north east & E of Jaipur and moves towards NE at speed 25-30 km/hr	Cells continuous forming from 0730 UTC NE & E of Jaipur and maximum refelectivity during 0840-0920 UTC	---	Alwar, Bharatpur, Dausa, Karauli
		1000-1250 UTC	Multiple cells with average height of 5.0 km maximum reflectivity 56 dBZ	Multiple Cells develop 1000 to 1250 UTC towards North East, South & Nort West and moves towards east at speed 25 to 30 km/hr.	Cells continuous forming from 1000 UTC North East, South & Nort West of Jaipur and maximum refelectivity during 1000-1250 UTC and died down at 1320 UTC	Moderate Thunderstorm	Sikar, Ajmer, Dausa, Karauli, Bharatpur, Tonk
		1250-2250	Multiple cells with average height of 5 km maximum reflectivity 54 dBZ	Multiple Cells develop 1250 to 2250 UTC towards NW and moves towards NE at speed 40-45 km/hr.	Cells continuous forming from 1250 UTC NW of Jaipur and maximum refelectivity during 1310-1420 UTC and 1450-2130 UTC and died down at 2250 UTC	Moderate Thunderstorm	Nagur, Churu, sikar, Jhunjhunu, Dausa, Jaipur,Karauli, Sawaimadhopur
Patna	19-05-17	180300-190300	Nil				
Patiala	19-05-17	18 MAY 0302 UTC-TO 0602 UTC	No significant Echo	---	-------	-----	--------
		18MAY 0602 UTC-TO 0902 UTC	Multiple cells Max= 57.0 dBz Ht.= 10-12 km	Formation in NE sector. MOVEMENT SE-WARDS.	-------	----------	SOLAN

		18MAY 0902UTC-TO 1202 UTC	Multiple cells Max= 56.0 dBz Ht.=11-13 km	Formation in NE sector. MOVEMENT SE-WARDS.			SHIMLA, NAHAN,SOLAN, MANDI
		18 MAY 1202 UTC TO 1502 UTC	Multiple cells Max= 55.5 dBz Ht.=10-12 km	Formation in NE sector. MOVEMENT SE-WARDS.		-	MANDI , BILASHPUR
		18MAY 1502UTC-TO 1802 UTC	No significant Echo	----------	-------	----------	----------
		18MAY 1802UTC-TO 2102 UTC	No significant Echo	----------	-------	----------	----------
		18MAY 2102UTC-TO 0002 UTC	No significant Echo	----------	----------	----------	----------
		19MAY 0002UTC-TO 0252 UTC	No significant Echo	----------	----------	----------	
Nagpur	19-05-17	180300-190300	Nil				
Mumbai	19-05-17	180300-190259	Nil				
Paradeep	19-05-17	0300-0900 UTC	Isolated cell seen developing in Keonjhar at 1230 IST with reflectivity values ranging between 38-52 dBZ and eights exceeding 14kms..	Position: Lat:21.45 degree N Lon:86.68 degree E Movement: NWly	NIL	TS with rain	Keonjhar Bhadrak and Jajpur

		0900-1500 UTC	Isolated single cells seen to develop in the NW SECTOR of the RADAR with maximum reflectivity of 55 dBZ and heights exceeding 14 km.	Postion: Scattered all along the NW sector of RADAR from 260-30 degrees(clockwise.) Movement: NWly	These cells later transform into convective regions after 1500 UTC.	TS with rain. Hailstorms also expected.	Keonjhar, Jajpur, Cuttack, Baleshwar, Dhenkanal, Sambalpur, Debagarh, Mayurbhanj, Ganjam, Angul, Nayagarh, Khorda, Puri and Jagatsinghpur.
Machilipatnam	19-05-17	0941 to 1101 UTC	Isolated Multiple cells average height of 9.5 km with maximum reflectivity of 54.5dBZ	W(225KM) and moving SW ly direction with average speed of 11.8 kmph	Cell started forming at 0941UTC, at W (225km) from Radar the maximum reflectivity during 0941 to 1101 UTC and died down at 1111UTC	Possibility of Thunder storm with rain and winds.	Ongole District
		1101 to 1211UTC	Isolated Multiple cells average height of 10.0km with maximum reflectivity of 60.0 dBZ	SW (198KM) and moving NWy direction with average speed of 10 kmph	Cells started forming at 1101UTC at SW (198KM) from Radar the maximum reflectivity during 1101 to 1211 and died Down at 1221UTC	Possibility of Thunder storm with hail and light winds.	Nellore District
		1021 to 1131UTC	Isolated Multiple cells average height of 13.8km with maximum reflectivity of 55.5 dBZ	NE (247M). The cell is stationary.	Cells started forming at 1021UTC at NE(247km) from Radar the maximum reflectivity during 1021 to 1131 and died Down at 1141UTC	Possibility of Thunder storm with Rain winds.	Visakhapatnam, District
		2111 to 2151UTC	Isolated Multiple cells average height of 3.8 km with maximum reflectivity of 48 dBZ	W (133M). The cell is stationary.	Cells started forming at 211UTC at W(133km) from radar the maximum reflectivity during 2111 to 2151 and died Down at 2201UTC	Possibility of Thunder storm with Rain and light winds.	Guntur District

Agartala	19-05-17	180400 - 181440	Multiple cells with Maximum Height 09km and maximum reflectivity 45 dBZ (at 0620 UTC of 18.05.17)	Formed 120 km N NW of AGT at 0400 UTC and moved SE-wards at around 35 kmph	Cells Dissipated at 1440 UTC over Central part of Assam	TS with light rain	East Khasi Hills District of Meghalaya
		181250 - 181520	Single cell Maximum Height 14km and maximum reflectivity 42 dBZ (at 1400 UTC of 18.05.17)	Formed 220 km SW of AGT at 1250 UTC and moved E-wards at around 20 kmph	Cells Dissipated at 1520 UTC over BD	N/A	N/A
		181500 - 190300	Multi cells developed two distinct Squall line over Meghalaya and adjoining BD with Maximum Height 14 km and maximum reflectivity 45 dBZ(at 2050 UTC of over BD	Formed 370 km NW of AGT at 1500 UTC and moved SE-wards at around 40 kmph	Cell persist over Mizoram at 0300 UTC	TS with light/ moderate rain	North, Unakoti, Dhalai districts of Tripura
		182000 - 190300	Multiple cells made squall line at 2230UTC over BD with Maximum Height 11km and maximum reflectivity 41 dBZ (at 0240 UTC of 19.05.17)	Formed 310 KM NW of AGT at 2000 UTC and moved SE wards with 50kmph	Cell persist over East BD at 0300 UTC	N/A	N/A
Kolkata	19-05-17	0301-0730 UTC	NIL	NIL	NO SIG ECHO	NIL	N/A
		0731-1001 UTC	Isolated cell at a position 21.933 N/ 86.425 E/ 250.9 Degree/ 210.7 km away from radar transformed into big cells with maximum reflectivity of 57.0 dBz at 0911 UTC and maximum height of 9.23 Km at 0911 UTC	SW (210 km) Moving in SE-ly direction.	A cell formed at 0731 UTC in SW at a distance of 210.7 km from radar. Matured and dissipated at 1001UTC in SW	Thunderstorm Hail/ Rain	N/A
		0731-1901 UTC	Isolated cell at a position 23.318 N/ 86.199 E/ 291.1 Degree/ 235.7 km	WNW (235 km) Moving in SE-ly direction.	A cell formed at 0731 UTC in WNW at a distance of 235 km from radar. Matured and	Thunderstorm Hail/ Rain	N/A

			away from radar transformed into multi cell system with maximum reflectivity of 61.0 dBz at 0841 UTC and maximum height of 16.30 Km at 0841 UTC		moving into Bay of Bengal at 1301 UTC in SW at a distance of 130.8 km from radar and later dissipated at 1901 UTC		
		0931-1221 UTC	Isolated cell at a position 23.940 N/ 87.185 E/ 322.1 Degree/ 193.5 km away from radar transformed into big cell with maximum reflectivity of 61.5 dBz at 0941 UTC and maximum height of 14.60 Km at 0931 UTC	NNW (193 km) Moving in SE-ly direction.	A cell formed at 0731 UTC in WNW at a distance of 235 km from radar. Matured and dissipated at 1221 UTC in SW	Thunderstorm Hail/ Rain	N/A
		1311-1511 UTC	Isolated cell transformed into big cell with maximum reflectivity of 62.5 dBz at 1411 UTC and maximum height of 15.49 Km at 1421 UTC	ENE (125.9 km) Moving in SE-ly direction.	A cell formed at 1311 UTC in ENE (125.9 km) from radar. Matured and dissipated at 1511UTC in ESE at a distance of 160.0 km from radar.	Thunderstorm Hail/ Rain	N/A
		1911-2351 UTC	NIL	NIL	NO SIG ECHO	NIL	N/A
		0001-0301 UTC	NIL	NIL	NO SIG ECHO	NIL	N/A