



India Meteorological Department
FDP STORM Bulletin No.47 (21-04-2017)

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

SYNOPTIC FEATURES:

The trough from Marathawada to Lakshadweep now runs from Marathawada to east-central Arabian sea across North Interior Karnataka at 1.5 Km above mean sea level.

A trough at mean sea level runs from south Punjab to Manipur across south Uttar Pradesh, Bihar, northern parts of West Bengal with embedded cyclonic circulations over Haryana & neighbourhood, southeast Uttar Pradesh & adjoining Bihar and Nagaland, Manipur, Mizoram & Tripura & neighbourhood and extends each upto 0.9 km above mean sea level.

The upper air cyclonic circulation over south Pakistan & neighbourhood now lies over northeast Arabian Sea & adjoining Saurashtra & Kutch between 1.5 km and 3.1 Km above mean sea level.

The feeble western disturbance as an upper air cyclonic circulation over Jammu & Kashmir and neighbourhood now lies over eastern parts of Jammu & Kashmir and neighbourhood at 3.1 km above mean sea level.

The western disturbance as a trough in mid-tropospheric westerlies now runs roughly along longitude 55.0°E and north of latitude 25.0°N.

The upper air cyclonic circulation over West Jharkhand & neighbourhood extending upto 0.9 km above mean sea level has become less marked. The trough from this system to south Tamilnadu across Chhattisgarh, Telangana & coastal Andhra Pradesh has also become less marked.

The north south trough from east Bihar to north Odisha between 2.1 & 3.1 Km above mean sea level has become less marked.

The upper air cyclonic circulation over east Bangladesh and adjoining Tripura & Meghalaya extending upto 0.9 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 and cloud description:

Convective Activity:

Cell No.	Date/Time	Area/Location	CTBT (minus °C)	Movement	Remarks
10(old)	19/2130	Meghalaya, adjoining Bangladesh Assam Manipur, Tripura and Mizoram	58	--	Developing
	2300	do	54	--	--
	21/0000	do	54	--	--
	0100	do	69	--	--
	0200	do	69	--	--
	0300	do	67	--	--
	0530	Assam, Meghalaya adjoining Bangladesh	56		
	0700	do	56		

	0800	do	54		
	0900	do	59		
1 (New)	21/0000	N Kerala adjoining Arabian Sea	77	--	Developing
	0100	do	67	--	--
	0200	do	65	W'ly	--
	0300	do	65		
	0530	Lakshadweep and neighbourhood	75		
	0700	do	65		
	0800	do	52		
	0900	N Kerala, Lakshadweep & neighbourhood	59		
2	0900	SE Andhra Pradesh	63		Developing

Scattered multi-layered clouds seen over J & K, N Himachal Pradesh and E Uttarakhand in association with western disturbance over the area.

Scattered low/medium clouds with embedded moderate to intense convection were seen over Meghalaya, Assam, Nagaland, Manipur, Mizoram, Tripura, Bangladesh, SE Andhra Pradesh, N coastal Andhra Pradesh, south Interior Karnataka, N Kerala, adjoining Arabian Sea and NC Tamilnadu. Broken low/medium clouds with embedded weak to moderate convection were seen over SW Bihar, Jharkhand, Sikkim, and Arunachal Pradesh. Scattered low/medium clouds with embedded weak to moderate convection were seen over rest Kerala, rest Tamilnadu, rest Andhra Pradesh, and Bay Islands. Scattered low/medium clouds were seen over rest Himachal Pradesh, Uttarakhand, east Uttar Pradesh and rest parts of east and south India.

Arabian Sea:

Scattered low/medium clouds with embedded isolated moderate to intense convection were seen over southeast Arabian Sea off Kerala coast.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded isolated moderate to intense convection were seen over south Andaman Sea.

Past Weather:

Convection:

Intense to Very intense convection was observed over E UTRKND ADJ NEPAL, RYLSMA ADJ TN, KER ADJ TN, S ORS, S CHTGH SE JHRKND ADJ GWB, S TRP, MIZORAM.

OLR:- Up to 250 wm^{-2} was over J&K, N PJB, BHR & NE STATES.

Up to 310 wm^{-2} was over RAJ, GUJ, MP, SM MAHA, CHTGH, ORS, JHRKND, TLNGN, NIK.

Up to 340 wm^{-2} was over N M MHA VID.

Jet Stream:

No Jet stream and trough observed over India

Precipitation:

IMR: Rainfall upto 50 was observed over N KER, SIK NW TN ADJ TN, RTP, MIZO. Rainfall upto 20 was observed over extreme J&K, N HP, E UTRKND, N BHR, S ORS & REST NE STATES.

RADAR and RAPID observation:

Isolated/multiple strong echoes were seen in DWR Kolkata (over Bangladesh with dBZ > 55 & height >15km), DWR Chennai (dBZ > 55 & height 12-15km), DWR Machilipatnam (dBZ 50-55 & height 12-16 km) at 1050 UTC (1620hrs IST). Isolated/multiple moderate echoes were also seen in DWR Vishakhapatnam (dBZ 45-50 & height 10-12km), DWR Agartala (dBZ 40 & height 8-12km), DWR Hyderabad (dBZ 45-50 & height 12-15km) and DWR Delhi (dBZ 45-50 & height 10km) at 1050UTC. DWR Composite at 1600 hrs IST indicated significant convective activity over Andhra Pradesh, east Telangana, South Interior Karnataka and North Tamilnadu. It also indicated isolated convection over South Odisha, south Chhattisgarh and south Meghalaya.

RAPID RGP imagery of 1530 hrs IST indicated convective clouds over north-eastern states, Kerala, south Karnataka, Tamilnadu, Andhra Pradesh, east Telangana, Chhattisgarh, South Odisha, Bihar, Jharkhand, Himachal Pradesh, Uttarakhand and south Haryana.

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

Dust concentration was observed over Arabian Peninsula. Dust concentration is expected to increase over north India for next five days.

High PM10 concentration was observed over western India. PM10 concentration is expected increase over north 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 all the days from day-1 to Day-2 show feeble trough over J & K.

12UTC Charts of all the days show **Heat Low over Rajasthan and adjoining Pakistan** and its extension over IG plains is prominent. The **MSLP values are well below 996 hPa over NW India from Day 0 to Day-2.**

12UTC charts on all days from Day0-1 show two zones of wind discontinuity at 925 hPa: (i) SW-NE extending from northern Telangana region to Odisha-WB region. (ii) S-N extending from southern parts of TN to northern parts of Telangana-AP region. During Day3 and Day4 confined to south peninsula, the wind discontinuity is prominent over TN and AP.

At 12UTC from Day0-2 a CYCIR (925 hPa) can be seen over Gangetic WB and Bihar region. Similarly at 850 hPa a CYCIR associated with Heat Low is prominent over Pakistan on Day-2 and 3.

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

Weaker core winds at 12 UTC on Day0-2. Strong core over isolated region over WB and adjoining Bangladesh at 12 UTC on Day 2-4

3. Convergence at 850 hPa:

At 12UTC Day-0 moderate values over isolated locations of Chhattisgarh, over West UP and Haryana in Day-1, over Tripura in Day-2 and Assam, WB and AP in Day-3 and over Assam and AP in Day-4.

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

At 12UTC on Day-0 moderate values over isolated locations of Chhattisgarh, over west UP and Haryana, Jharkhand & WB, and Assam, Meghalaya in Day-1, Mainly over Assam, Meghalaya in Day-2-4

At 00UTC on all days: Strong structure over land extending N-S over peninsula and along IG plains and over Assam.

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

In Day-0: J & K, Uttarakhand, north UP Bihar and southern parts of NE India. Over Odisha AP and over peninsula mainly coastal Karnataka, TN and Kerala.

Day-1-2: J & K, Uttarakhand, north UP and southern parts of NE India. Over WB and Bihar and over peninsula mainly coastal Karnataka TN and Kerala

Day-3-4: reduced activity over eastern India. Over S peninsula mainly active over Kerala

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

In Day-0: J & K, Uttarakhand, north UP Bihar and southern parts of NE India. Over Odisha AP and over peninsula mainly coastal Karnataka TN and Kerala

Day-1-2: J & K, Uttarakhand, north UP and southern parts of NE India. Over WB and Bihar and over peninsula mainly coastal Karnataka TN and Kerala

Day-3-4: reduced activity over eastern India. Over S peninsula mainly active over Kerala

7. Spatial distribution of TTI: TTI >50 [Scattered Thunderstorms few severe]:

At 12UTC : Day0-1: Coastal AP, Odisha, WB, MP, Punjab, Haryana adjoining UP, Rajasthan, Jharkhand J & K, and Uttarakhand, HP.

At 12UTC : Day2: J & K to Bangladesh all along the IG plains. WB and adjoining Odisha. Parts of Rajasthan and TN.

At 12UTC : Day3: Reduced activity over north UP and eastern India.. Active over coast Odisha and AP, coastal Kerala and Karnataka. In west over parts of Gujarat and MP

8. Rainfall and thunder storm activity:

>4 cm/day in Day-1 over Assam, Meghalaya and adjoining Bangladesh and NMMT.

>16cm/day in Day-4&5 over Assam, Meghalaya and Arunachal

>16cm/day in Day 2-4 over Meghalaya and adjoining Bangladesh

>2cm in Day 2 & 3 over J & K

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

1. Weather Systems:

00 UTC analyses shows a low level trough starting from west UP and adjoining regions to Gangetic West Bengal (GWB) regions and this trough will persist for the next 2 days.

Another north-south oriented low level trough starting from Jharkhand and adjoining GWB regions to central India and this trough will persist for the next 2 days.

Analyses also shows a low level CYCIR over NE India and another over Punjab regions, both of this CYCIR will persist for the next 2 days

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

No presence of jet core over the Indian region for the next 3 days.

3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10⁻¹/s):

Analysis shows low level positive vorticity mainly over the foothills of Himalaya, along the west coast of India, east UP, Bihar, SHWB, Jharkhand, GWB and isolated pockets of NE states.

Forecast shows vorticity core zones mainly along the foothills of Himalaya, west coast of India, and isolated pockets of SHWB, GWB and NE states, Marathawada, north interior parts of Karnataka and few pockets along the east coast bordering Odisha and AP along with few regions of the north eastern states for the 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 Gangetic plains, Jharkhand, GWB, along the east of India and few pockets in NE India and along the west coast of India. Forecast shows significantly high threshold values over west coast of India, GWB and eastern coast for the next 3 days.

Lifted Index (< -2): The areas with index less than -2 lies along east coast regions, GWB, Odisha, coastal AP, and along the west coast of India and Kerala coast with gradually the above threshold value mainly extended towards southern coastal regions.

Sweat Index (> 400): 00UTC shows significant values over major parts along with the east coast extending up to coastal AP and also over west coast of India and few isolated pockets in the NE states. The significant zones are confined along east coast of India over GWB, Odisha, Bangladesh and adjoining regions and high value of SI observed over GWB and south AP coastal regions and NE region for next 3 days and also over few pockets in the south west region.

Total Total Index (> 50): Analysis shows significant values over few pockets in Gujarat, MP and adjoining areas. Above threshold value in most regions of central and western India and adjoining northern parts of India along with areas bordering north west India for the next 2-3 days.

CAPE (> 1000): Mostly along east coast of India over Gangetic plains, GWB, Odisha and adjoining AP regions along with parts in south peninsular region and coastal Kerala and Karnataka during the next 3 days.

CINE (50-150): Maximum CINE values are found in some areas of GWB and along east coast over Odisha, coastal AP and Tamil Nadu and also along the west coast of India for the next 2-3 days.

5. Rainfall and thunderstorm activity:

10-40 mm rainfall is forecasted tomorrow over most parts of the NE states and J&K, and some parts of HP, Punjab, Uttarakhand, Orissa and adjoining north AP, Karnataka, north Tamilnadu and Kerala regions. Rainfall activity over NE states will increase from day-1 onwards and light to moderate rainfall activity will continue over J & K, Kerala for the next 3 days.

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

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

Model reflectivity exceeding the threshold value, is forecasted over most parts of NE states, HP, J&K and some parts of Uttarakhand, coastal Orissa and adjoining AP and Kerala on day 1. Model reflectivity exceeding the threshold value are also forecasted over most parts of NE states, J&K regions and some isolated pockets of Orissa, north AP ,Karnataka, north Tamilnadu and Kerala in the day-2 forecast.

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

Total Total Index (> 50) Above threshold values is observed over most parts of NE India, along the east coast of India during next 24 hour.

K-Index (> 35): Above threshold values is observed over most parts of NE India and over Kerala regions during the next 24 hour.

CAPE (> 1000): Mostly along east coast of India over GWB, along the east coast and west coast of India during next 1-2 days. Another zone along west coast of India, particularly over coastal Kerala, coastal Karnataka and Konkan & Goa during next 2 days

CIN (50-150): CIN values are mostly small all over coastal regions of India during all three days of forecasts except some areas over Odisha, GWB, Eastern UP, Bihar, Jharkhand, coastal AP, coastal Karnataka and Konkan-Goa during next 3 days.

3. Rainfall and thunderstorm activity:

Rainfall activity (~ 10-40 mm) is expected to persist till next 2 days over some parts of Punjab, Uttarakhand, Karnataka, north Tamilnadu and most parts of Kerala, NE states, J&K, HP and this rainfall activity will start **increase** from day-1 onwards over most parts of NE states.

3. IOP ADVISORY FOR 24 and 48 Hrs:

Summary and Conclusions:

Day 1 & Day 2:

Presently, the western disturbance as an upper air cyclonic circulation lies over eastern parts of Jammu & Kashmir and neighbourhood at 3.1 km above mean sea level. Due to this, Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana will experience thunder squall with gusty wind activities on Day-1.

A trough at mean sea level runs from south Punjab to Manipur across south Uttar Pradesh, Bihar, northern parts of West Bengal with embedded cyclonic circulations over Haryana & neighbourhood, southeast Uttar Pradesh & adjoining Bihar and Nagaland, Manipur, Mizoram & Tripura & neighbourhood and extends each upto 0.9 km above mean sea level. This will give rise to thunderstorm with hail activities over SHWB, Sikkim, Bihar and gusty wind over West Uttar Pradesh on Day-1.

Another trough from Marathwada to Lakshadweep now runs from Marathwada to east-central Arabian sea across North Interior Karnataka at 1.5 Km above mean sea level. Due to this system, Kerala, South Karnataka, will experience thunder squall with gusty wind on Day-1. Thunder storm with Hail possibilities over North coastal Andhra Pradesh is also there on Day-1.

Assam, Meghalaya and NMMT may experience the heavy rain possibilities in isolated places on Day-1 and Day-2 due to upper air circulation.

24 hour Advisory for IOP:

Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura
Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana and West UP
Bihar, Sub Himalayan West Bengal, Sikkim
Kerala, South Coastal and South Interior Karnataka, Telangana, Rayalaseema, Coastal Andhra Pradesh, Interior Tamilnadu
South Coastal Orissa, GWB
Arunachal Pradesh

48 hour Advisory for IOP:

Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura
Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana and West and East UP
Bihar, Sub Himalayan West Bengal, Sikkim
South Coastal Orissa, GWB

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

Past 24 hour HEM and IMR rainfall (upto 03 UTC of today)

IMR: http://satellite.imd.gov.in/img/3Ddaily_imr.jpg

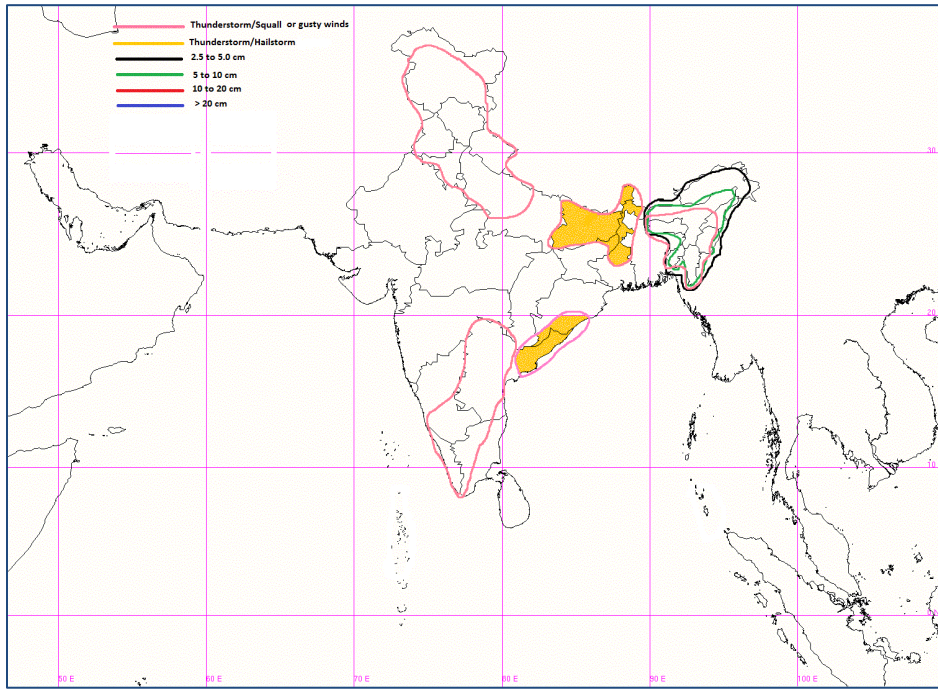
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

For Radar images of the past 24 hours including mosaic of images:

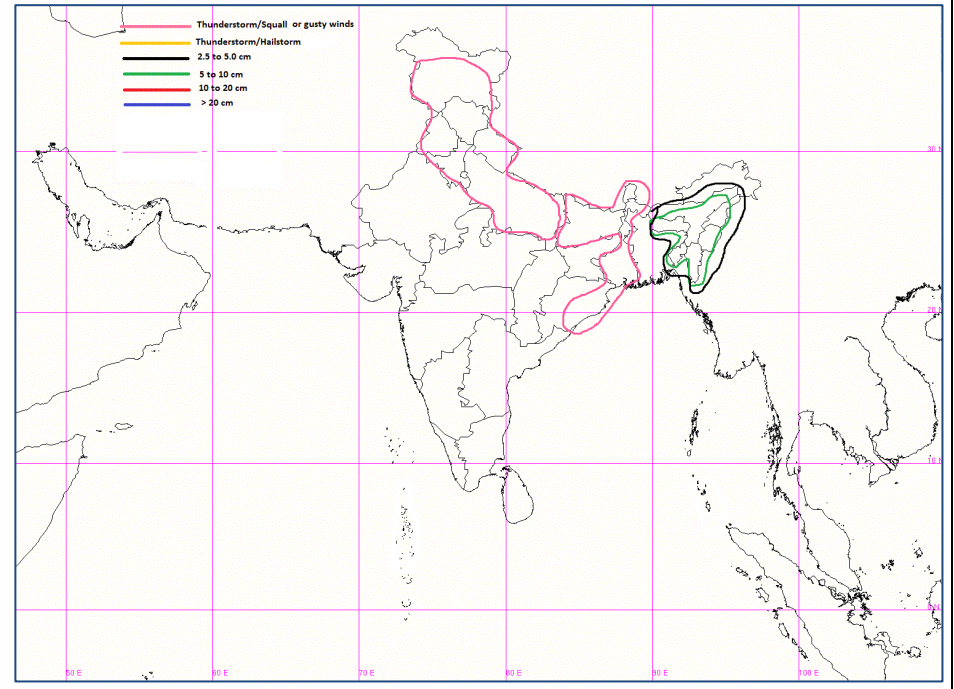
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T-Phigram

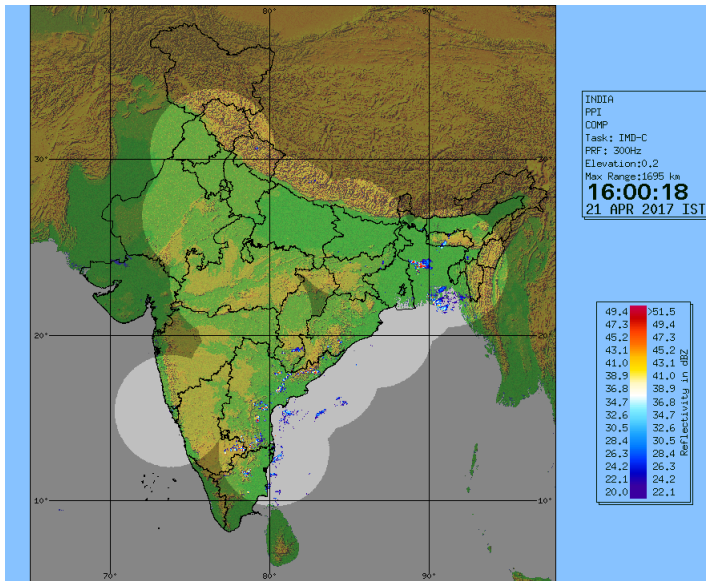
http://satellite.imd.gov.in/map_skm2.html



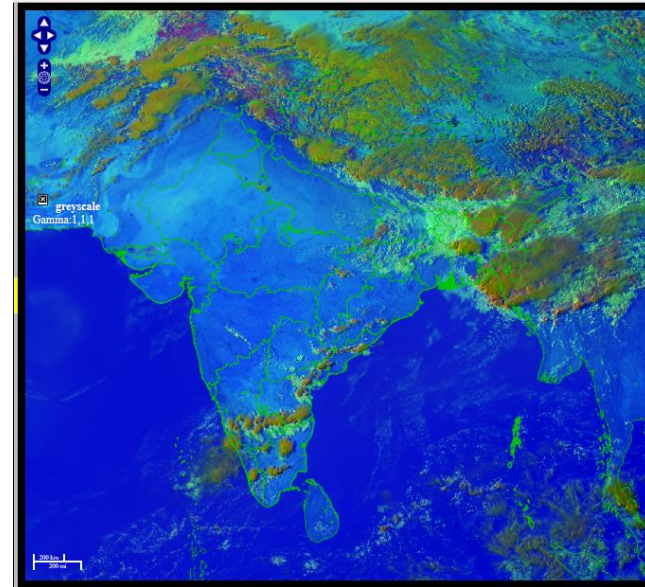
IOP Advisory for 24hours



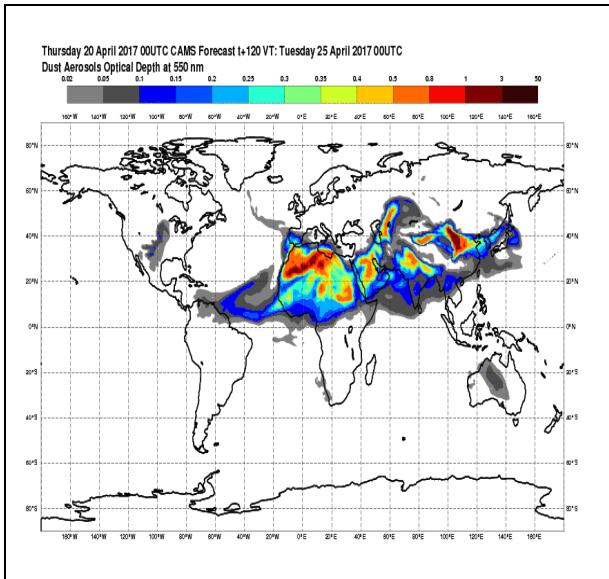
IOP Advisory for 48hours



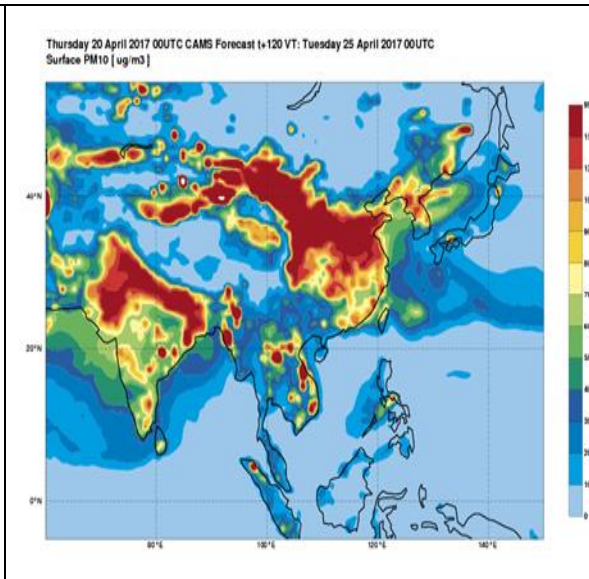
DWR Composite at 1600hrs IST of today



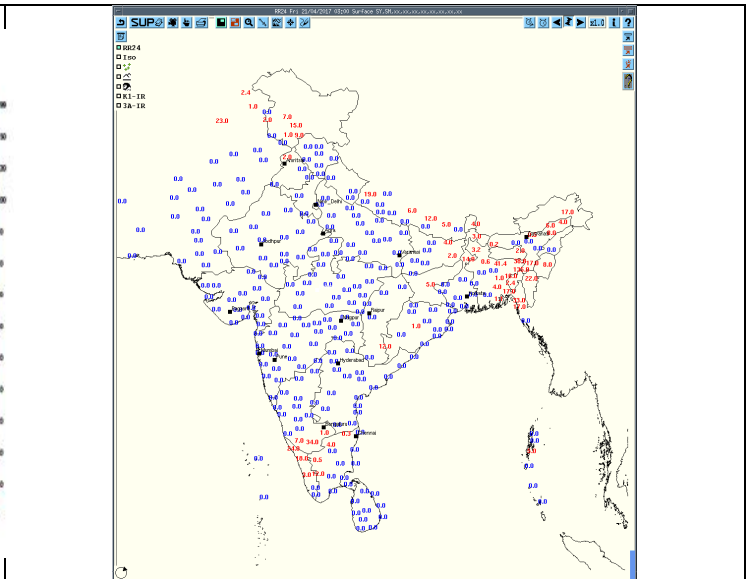
RAPID RGB Image of INSAT 3D at 1600hrs IST of today



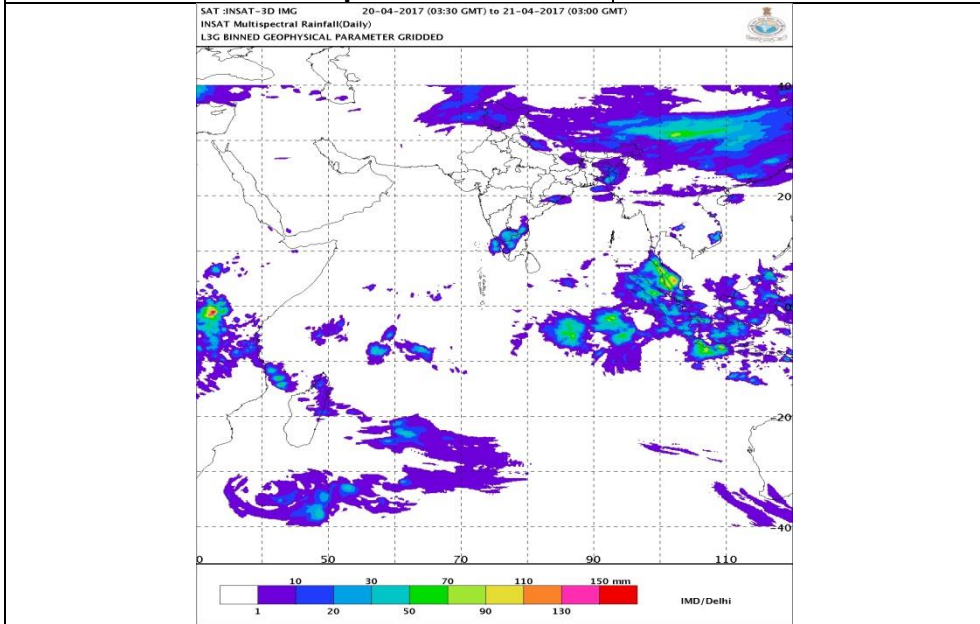
Forecast Dust Concentration for 00UTC of 25th April



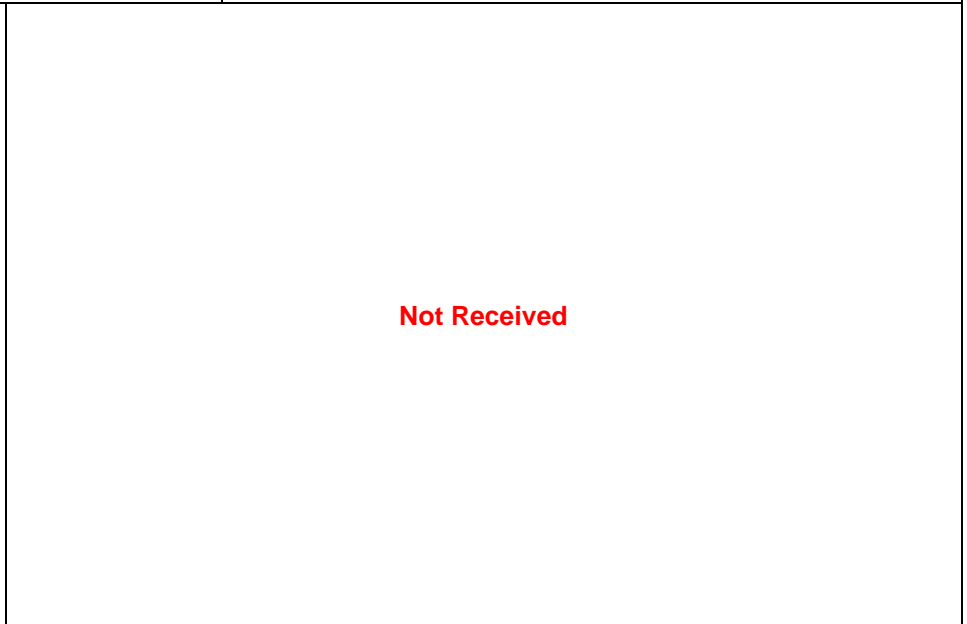
PM10 Forecast for 00UTC of 25th April



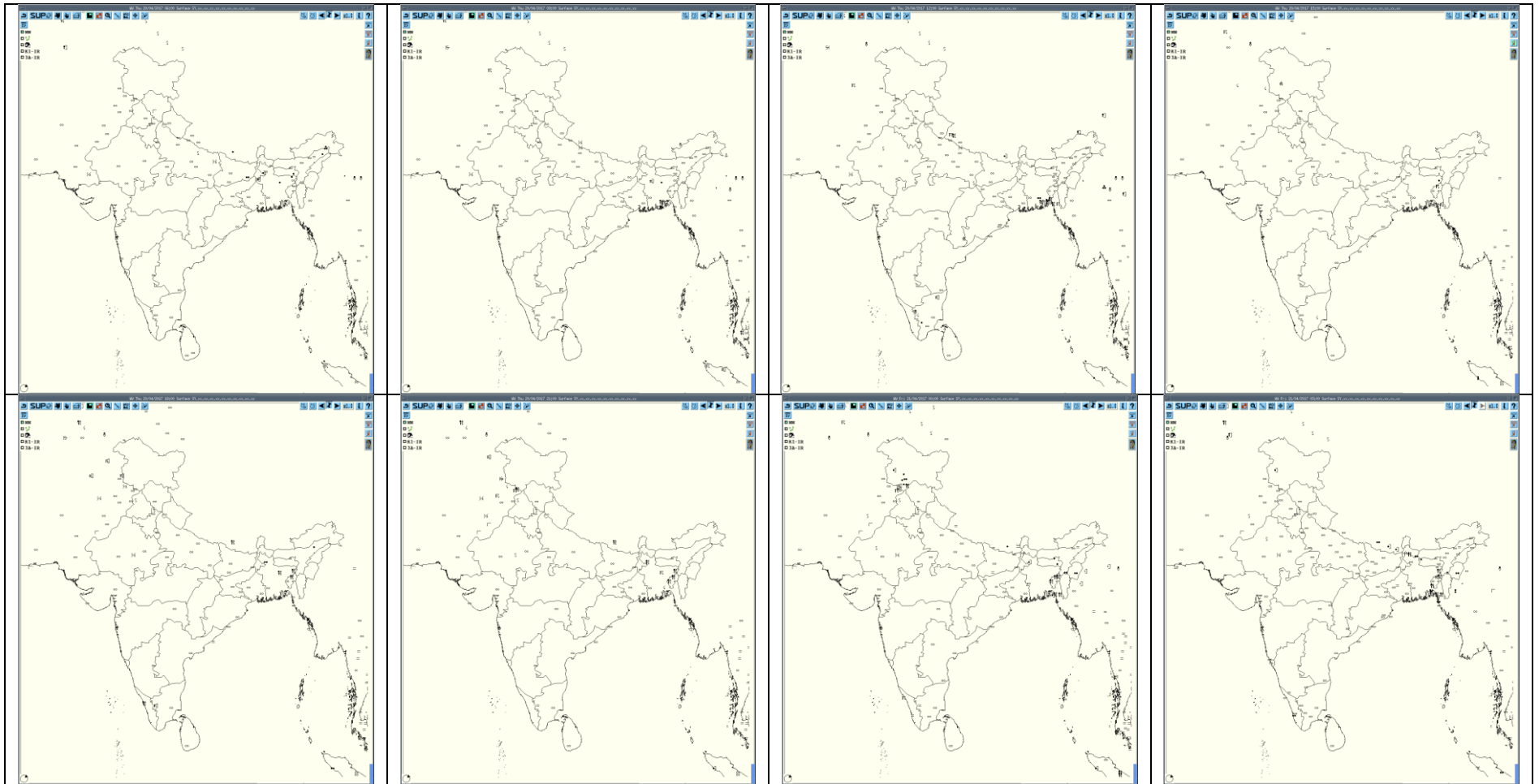
Accumulated 24 Hour rainfall (in red) recorded at 0300 UTC of today



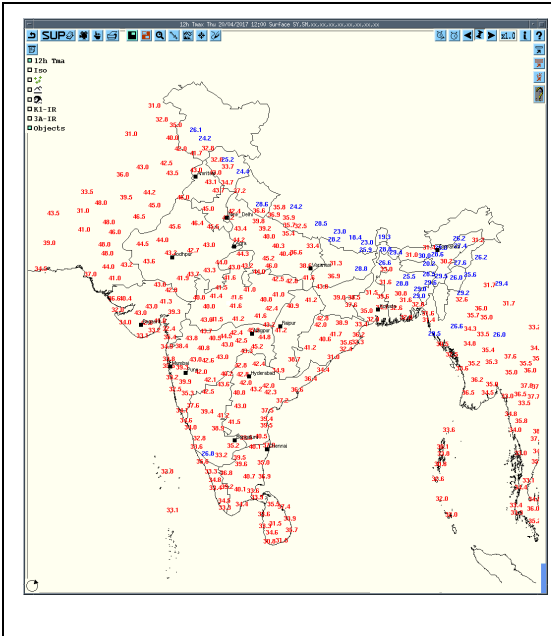
IMR Rainfall



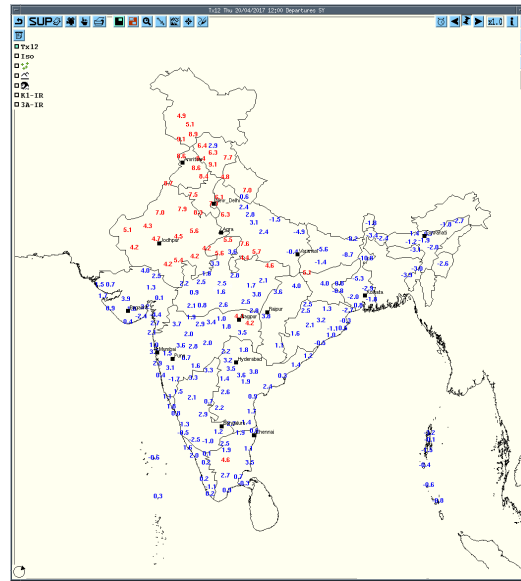
HEM Rainfall



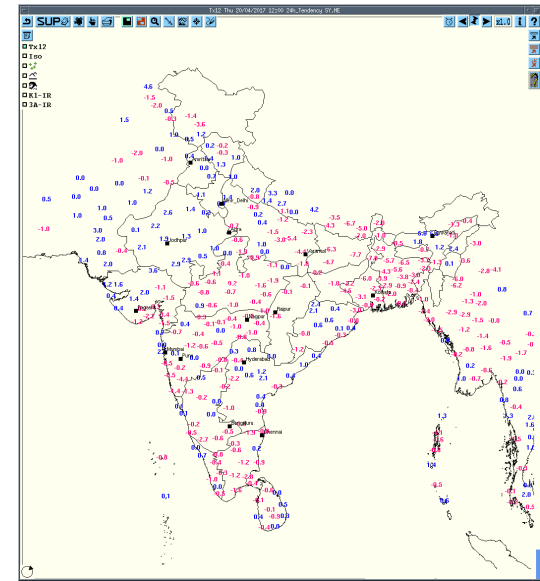
3 hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



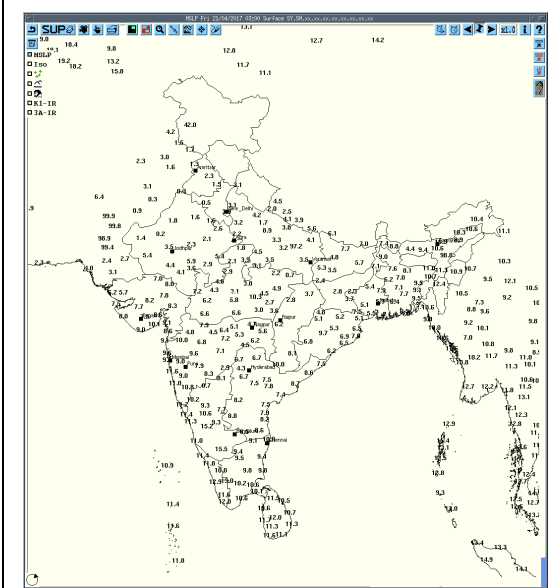
Tmax



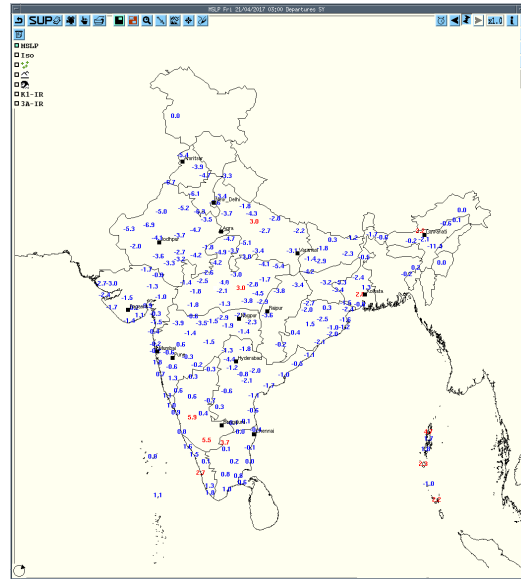
Departure Tmax



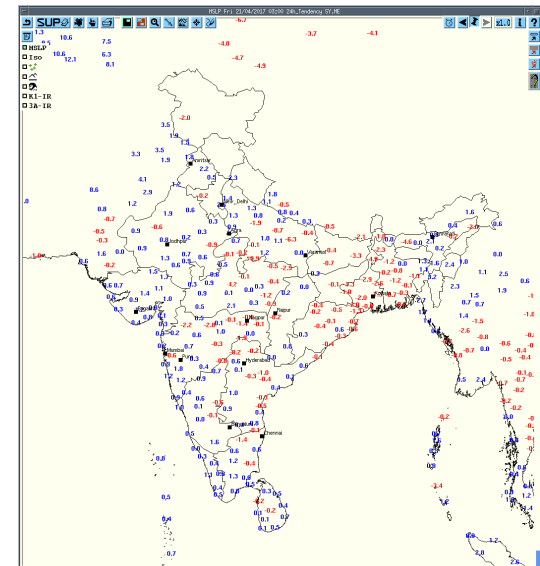
Tendency Tmax



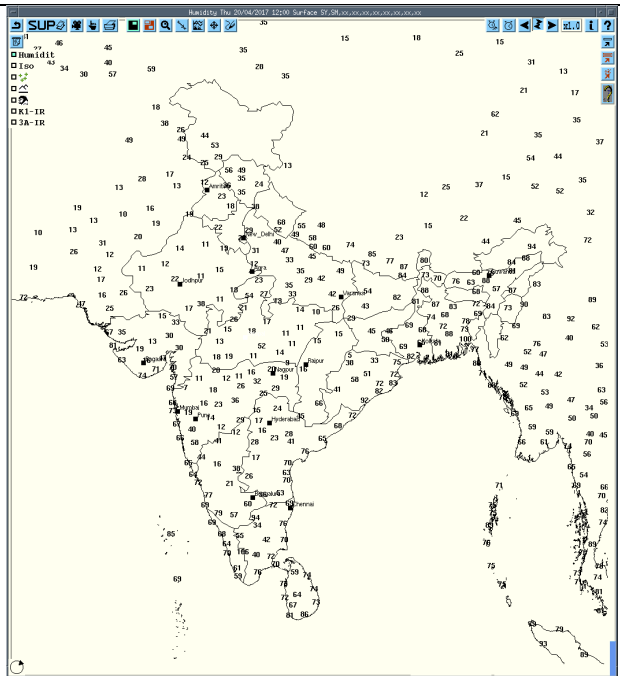
MSLP



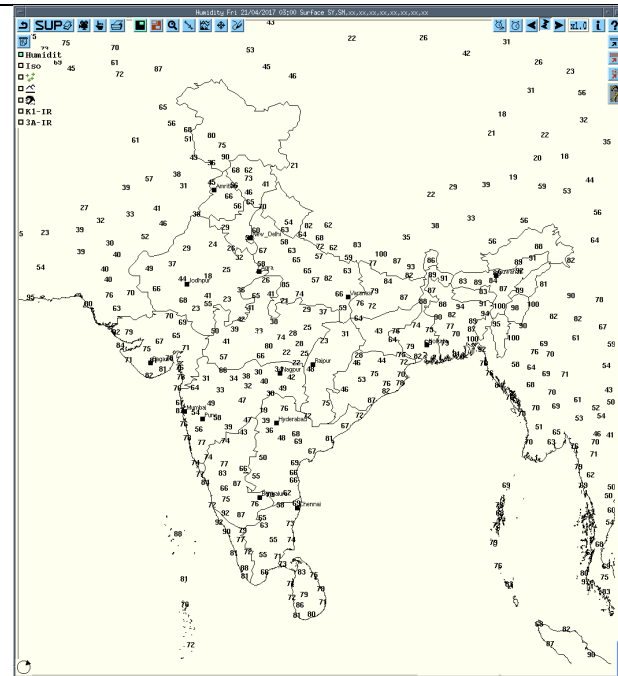
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Realized weather past 24 hours (Based on SYNERGIE Products)

Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
20-04-17	0600 UTC	Malda	East India	West Bengal(SHWB)	Thunderstorm
20-04-17	0900 UTC	Tirupati	South India	Andhra Pradesh	Thunderstorm
20-04-17	1200 UTC	Coonoor, Vellore	South India	Tamilnadu	Thunderstorm
		Coimbatore	South India	Tamilnadu	Lightening
		Jagdapur	Central India	Chhattisgarh	Thunderstorm with Hail
20-04-17	15000 UTC	Srinagar	Northwest India	J & K	Thunderstorm
		Tiruchirappalli	South India	Tamilnadu	Lightening
		Kalingapatnam	South India	Andhra Pradesh	Lightening
20-04-17	1800 UTC	Kozhikode	South India	Kerala	Thunderstorm
		Coimbatore	South India	Tamilnadu	Thunderstorm
20-04-17	2100 UTC	Jammu	Northwest India	J & K	Thunderstorm
		Agartala	Northeast India	Tripura	Thunderstorm
21-04-17	0000 UTC	Kozhikode	South India	Kerala	Thunderstorm
		Agartala, Kailasahar	Northeast India	Tripura	Thunderstorm
		Katra, Jammu, Bhaderwah	Northwest India	J & K	Thunderstorm
21-04-17	0300 UTC	Jalpaiguri	East India	West Bengal (SHWB)	Thunderstorm
		Kailasahar	Northeast India	Tripura)	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)
Jagdalpur	Central India	Chhattisgarh	Thunderstorm	20-04-17	1700	1830
			Hailstorm with hail diameter 0.3-0.5cm	20-04-17	1705	1725
Amritsar	Northwest India	Punjab	Thunderstorm	20-04-17	0641	0758
Srinagar	Northwest India	J & K	Thunderstorm	21/21-04-17	201910 201930 201945 210130	201920 201945 202030 210230
Qazigund	Northwest India	J & K	Thunderstorm	21-04-17	0210	0425
Pahalgam	Northwest India	J & K	Thunderstorm	20-04-17	1945	2100
Kupwara	Northwest India	J & K	Thunderstorm	21-04-17	0745	0750
Kukernag	Northwest India	J & K	Thunderstorm	20/21-04-17	201820 210120	201825 210415
Jammu	Northwest India	J & K	Thunderstorm	21-04-17	0100 0410	0240 0535
Banihal	Northwest India	J & K	Thunderstorm	20-04-17	1900 2130	2010 2400
Batote	Northwest India	J & K	Thunderstorm	21-04-17	0050	0125
Katra	Northwest India	J & K	Thunderstorm	21-04-17	0435	0455
Bhaderwah	Northwest India	J & K	Thunderstorm	21-04-17	0100 0400	0140 0700
Lengpui	Northeast India	Mizoram	Thunderstorm	21-04-17	0300	0700
Kailasahar	Northeast India	Tripura	Thunderstorm	21-04-17	0000	0830
Agartala	Northeast India	Tripura	Thunderstorm	21-04-17	0225	0620
Jalpaiguri	East India	West Bengal(SHWB)	Thunderstorm	21-04-17	0810	0830
Malda	East India	West Bengal(SHWB)	Thunderstorm	20-04-17	0830	1100
Bhagalpur	East India	Bihar	Thunderstorm	20-04-17	0830	0930
Purnia	East India	Bihar	Thunderstorm	20-04-17	0830	0900
Jamshedpur	East India	Jharkhand	Thunderstorm	20-04-17	1600	1630
Ranchi	East India	Jharkhand	Thunderstorm	20-04-17	1255	1410

Sambalpur	East India	Odisha	Lightening	20-04-17	1935	2005
Karipur AP	South India	Kerala	Thunderstorm	20/21-04-17	202015	210015
YELAHANKA IAF	South India	Karnataka	Thunderstorm	20/21-04-17	202130	210030
BENGALURU CITY	South India	Karnataka	Thunderstorm	20-04-17	201515	201630
BANGALORE (AMS)	South India	Karnataka	Thunderstorm	20-04-17	201600	201650
BANGALORE (KIAL)	South India	Karnataka	Thunderstorm	20-04-17	201739	201830
Dharmapuri	South India	Tamilnadu	Thunderstorm	20-04-17	1630 1800	1640 1810
Coonoor	South India	Tamilnadu	Thunderstorm	20-04-17	1700 2100	1730 2200
Kodaikanal	South India	Tamilnadu	Thunderstorm	20-04-17	1600	2300

Past 24 hours DWR Report:

Radar Station name	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
Karaikal	21-04-17	200300-210300	---	---	DWR U/S	---	---
Bhuj	21-04-17	200300-200900	Nil	Nil	Nil	Nil	Nil
Patna	21-04-17	200830-200915	NIL	NIL	N/A	N/A	N/A
		200915-201215	Multiple Cell. Maximum	Range : 108 KM from DWR Patna	NIL	THUNDER-STORM WITH	DARBHANGA , MUZAFFARPUR,

			Reflectivity : 46.0 dBZ Echo Top : 13.0 KM	in North-East. Movement-South East		RAIN	SUPAUL, MADHEPURA, SAHARSA, ARARIA, KHAGADIA, PURNIA, SITAMARHI.
		201215-210830	NIL	NIL	N/A	N/A	N/A
Lucknow	21-04-17	202102-202142	Single isolated cell with average height of 9km and maximum reflectivity of 38 dBZ	NE(165KM) moving in SE'ly Direction at speed of 29km/hr	Single isolated cell started forming at 2112 UTC at NE(170KM) with average height of 8km and weakened at 2252 UTC at ENE(190KM) from RADAR	---	---
		202142-202242	Single cell with average height of 8.5 km and Maximum reflectivity of 38 dBZ	NE(107KM) moving in SE'ly direction at speed of 30km/hr	Single cell started forming at 2132 UTC NE(105KM) with average height of 8km and remained stable up to 2242 UTC	---	---
		202252-202342	Multiple cells with average height of 8.7 Km and maximum reflectivity 30 dBZ	E(120KM) moving in SE'ly direction at speed of 36 km/hr	Multiple cells started forming at 2232 UTC E(120KM) with average height of 8.7 km and merged with the cell at 2242 UTC ,did not intensified and further dissipated at 2342 UTC at ENE(150KM) from radar	---	---
		202252-202332	Single Isolated cell with average height of 10 km and maximum reflectivity of 38 dBZ	NE (150KM) moving in SE'ly direction at speed of 34km/hr	Single isolated cell started forming at 2242 UTC at NE(150KM)with average height of 8.7 km intensified at 2302 UTC ENE(150KM)and weakened at 2332UTC at around ENE(150KM) from radar		

		210002-210052	Single Isolated cell with average height of 8.5 km and Maximum reflectivity of 38 dBZ	NE(50KM) moving in SE'ly direction at speed of 36km/hr	Single cell started forming at 0002 UTC at NE(50KM) with average height of 8km ,intensified at 0012 UTC and dissipated at 0052 UTC at E(50KM) from radar		
		210052-210132	Single isolated cell with average height of 8.7 km and maximum reflectivity of 38 dBZ	NNE(65KM) moving in SE'ly direction at speed of 36km/hr	Single isolated cell started forming at 0032 UTC at NNE(65KM) with average height of 7.5km,did not intensified and dissipated at 0132 UTC at ENE(60KM) from radar		
Paradeep	21-04-17	200300-210000	Isolated cells observed forming after 1500 IST with average height of 08 kms and mximum height of 13 kms reflectivity 34 dBZ having Lat. 19.5deg. N and Long. 84.59 Deg.E The Cells disappear gradually.	Position: Lat.: -19.5 deg.N Long:- 84.59deg.E Range:-Around 150 km to 200km. Movement-NWly.	NIL	TS with rain	Kandhamal, Kalahandi, Nayagarh, Ganjam, Raygada
Agartala	21-04-17	200710-201630	Multiple Cells with Maximum Height 15 km and maximum reflectivity 46 dBZ (at 1230 UTC over Bangladesh-170km SW of DWR AGT)	Formed 220 km SW of DWR AGT at 0710 UTC of 20.04.17 and moved ENE-wards at around 45 kmph	Cells dissipated at 1630 UTC of 20.04.17 over Mizoram	TS with rain	South and Gomati District of Tripura










		201500-210300	Multiple Cells with Maximum Height 15 km and maximum reflectivity 45 dBZ (at 1910 UTC over Meghalaya-200km NW of DWR AGT)	Formed 300 km NW of DWR AGT at 1500 UTC of 20.04.17 and moved ESE-wards at around 45 kmph	At 0300 UTC of 21.04.17, some isolated cells still persist over Meghalaya, South Assam & South Bangladesh	1.TS with Heavy rain in North & Unakoti Districts of Tripura 2.TS with rain in other places	All Districts of Tripura, Mamit District of Mizoram
Kolkata	21-04-17	200311-200631	NIL	NIL	NO ECHO	NIL	NIL
		200641-201401	Isolated single cells with maximum height of 12.0 Km at 0741 UTC and maximum reflectivity of 58.0 dBz at 0711 UTC	ESE (60 km) moving ESE-ly with a speed of 23.1 kmph	Isolated single cells, started forming at 0641 UTC in ESE (60 km) from radar. Did not matured, dissipated at 0841UTC in ESE at a distance of 161 km from Radar.	Thunderstorm /Rain	N/A
			Isolated single cell with maximum height of 15.3 Km at 0931 UTC and maximum reflectivity of 62.5 dBz at 0952 UTC	ENE (147.3 km) moving ESE-ly with a speed of 24.8 kmph	Isolated single cell started forming at 0742 UTC in ENE (147.3 km) from radar. Matured, dissipated at 1321 UTC in E at a distance of 212 Km from radar.	Thunderstorm / Hail/Rain	N/A
200641- 201401	Multicelled system with maximum height of 13.5 Km at 1231 UTC and maximum reflectivity of 59.5 dBz at 1111 UTC	W (243.9 km) moving SE-ly with a speed of 50.8 kmph	Multicelled system, started coming at 0742 UTC from W (243.9 km) from radar. Did not matured, dissipated at 1401UTC in WSW at a distance of 137 km from Radar.	Thunderstorm /Rain	N/A		
		200641- 201401	Isolated single cells with maximum height of 11.9 Km at 1312 UTC and	E to SE (105.8km) moving E-ly with a speed of 37.8 kmph	Isolated single cells started forming at 1211 UTC in E to SE (105.8km) from radar. Did not matured,	Thunderstorm /Rain	N/A

			maximum reflectivity of 58.0 dBz at 1301 UTC		dissipated at 1401UTC in E at a distance of 148 km from Radar.		
		201411-202351	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
		200001 – 200301	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
Vishakhapatnam	21-04-17	200300-200600	Multiple cell of Max reflectivity of 38dBZ with max height of 5 kms.	S(210 km) moving SWly	Multiple cells formed in BOB and not matured well and dissipated.	-	0300 UTC-0600UTC
		200600-200900	Convective region NWly 60 kms Max reflectivity 45 dbz with max height of 8 km and isolated cells NWly 200km Max reflectivity of 50dBZ with max height of 8 km NNEly 250 km Max reflectivity of 50 dbz with maxheight of 10 km	NWly and NNEly moving very slowly Sly	Cells formed in said directions and are in developing/maturing stage.	-	0600 UTC 0900UTC
		200900-201200	Convective region Nly, NNEly 100 km Max reflectivity 57 dbz with max height of 16 km and isolated cells NWly 150km Max reflectivity of 50dBZ with max height of 10 km Nly 60 km Max reflectivity of 50 dbz with maxheight of 8 km	Nly, NNEly, NWly and moving Ely	Cells formed in said directions and full developed matured cells.	-	0900 UTC 1200UTC

		201200-201500	Well organized and matured cell in NNE with max reflectivity 60dbz at 153kms from radar with average height 18kms .	Continued to be formed and moving in SE ly.	Dissipated after it has moved coast in the direction of SE.	-	1200 UTC 1500UTC
		201500-201800	Well organized cell in ENE at 147 kms with max height 10kms and max reflectivity 52Dbz.	Cell is continued to be forming and moving SE ly.	Its reflectivity is continued to be reducing gradually as it is dissipating and ends ar 17.01UTC.	-	1500 UTC 1800UTC
		201800-210000	Convective region at 225 kms of SW with max reflectivity 44dbz and max height 6kms.	Formed at 18.11 UTC/20-04-17 and moving SW ly.	Dissipated at 18.41 UTC /20-04-17	-	1800 UTC 0000UTC
		210000-210300	NIL	NIL	-	-	0000 UTC 0300UTC
Machilipatnam	21-04-17	200841-201011	Isolated cell with average height of 10.9 km with maximum reflectivity of 56dBZ	SW (244.7KM) moving SE ly direction average speed of 3 kmph	Cells started forming at 0841UTC at SW (244.7km) from radar. Maximum reflectivity during 0841 to 0941 and died down at 1011UTC	Possibility of Thunder storm with moderate winds.	Prakasam District
		201031-201341	Isolated cell with multiple cells average height of 10.5km with maximum reflectivity of 59.5 dBZ	NNW(209.6KM) moving SE ly direction average speed of 16 kmph	Cells started forming at 1031UTC at NNW(209.6km) from radar. Maximum reflectivity during 1031 to 1331 and died down at 1341 UTC	Possibility of Thunder storm with hail and Rain with moderate winds.	Khammam District
		201051-201121	Isolated cell with average height of 6.5km with maximum reflectivity of 57 dBZ	W (200KM) moving E ly direction average speed of 6 kmph	Cells started forming at1051UTC at W (200km) from radar. Maximum reflectivity during 1051 to 1121 and died down at 1121 UTC	Possibility of Thunder storm and rain with moderate winds.	Prakasam District

Hyderabad	21-04-17	200702 –201312	Scattered cells with an average height of 9 Km with a max reflectivity of 54 dBZ	SSE (194 Kms) moving in SSE ly Direction at a speed of about 6 Kmph.	Cells started forming at 0702 UTC at SSE (194 Kms) from radar, Matured a bit in size. Max reflectivity was between 0942 and 1002 UTC and dissipated at 1042 UTC.	Moderate Thunderstorm with or without rain	Not known.
		201052 –201132	Scattered cells with an average height of 10.6 Km with a max reflectivity of 55 dBZ	SE (167 Kms) moving in E- ly Direction at a speed of about 6 Kmph.	Cells started forming at 1052 UTC at SE (167 Kms) from radar, Matured a bit in size. Max reflectivity was between 1042 and 1132 UTC and dissipated at 1212 UTC.	Moderate Thunderstorm with or without rain	Not known.
Nagpur	21-04-17	200902-200932	Single	210 km S	< 10 dBZ		
		210002-210302	Nil	Nil	Nil	Nil	Nil

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

		
+ thunderstorm	+ heavy thunderstorm	sandstorm or dust storm
		
squall	hail shower	tropical storm
		
+ tornado	+ lightning	+ hurricane

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