



India Meteorological Department

FDP STORM Bulletin No. 61 (06-05-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

- ◆ The Western Disturbance as a cyclonic circulation over Jammu & Kashmir and adjoining Himachal Pradesh at 3.1 km above mean sea level persists.
- ◆ Another Western Disturbance as an upper air cyclonic circulation over Iran & neighbourhood now lies over Iran & adjoining Afghanistan at 3.1 km above mean sea level with a trough aloft with its axis at 5.8 km above mean sea level runs roughly along long 62°E to the north of Lat 30°N.
- ◆ The trough at mean sea level from West Rajasthan to Jharkhand across East Rajasthan and Madhya Pradesh persists and now extends upto 1.5 km above mean sea level. The embedded cyclonic circulation over East Rajasthan and adjoining West Madhya Pradesh now lies over northeast Rajasthan & adjoining West Madhya Pradesh and now extends upto 1.5 km above mean sea level.
- ◆ The cyclonic circulation extending upto 0.9 km above mean sea level over Sub Himalayan West Bengal & Sikkim and neighbourhood persists.
- ◆ Another north south trough from Marathwada to south Interior Karnataka now runs from north Madhya Maharashtra to east central Arabian Sea off Karnataka coast at 1.5 Km above mean sea level.
- ◆ The cyclonic circulation over south Tamilnadu & neighbourhood now lies over Maldives Lakshadweep area and extends upto 3.1 km above mean sea level.
- ◆ A north south trough at 1.5 km above mean sea level runs roughly along long 86°E to the north of Lat 22 °N.

SATELLITE OBSERVATIONS during past 24 hrs and current observation:

Current Observation (based on 0600UTC imagery of INSAT 3D):

Western Disturbance (WD):

Scattered multi-layered clouds with embedded moderate to intense convection seen over North Iran, adjoining Afghanistan, North Pakistan, Jammu & Kashmir, Himachal Pradesh, Uttarakhand and North Punjab in association with Western Disturbance over the area.

Clouds descriptions within India:

Scattered low/medium clouds with embedded moderate to intense convection seen over Jammu & Kashmir (**Minimum CTT Minus 56 Deg C**), Uttarakhand and North Punjab (**Minimum CTT Minus 48 Deg C**). Scattered low/medium clouds seen over South Punjab, Haryana, West Uttar Pradesh, North Interior Karnataka and North Coastal Andhra Pradesh. Scattered low/medium clouds with embedded isolated weak to moderate convection seen over Sikkim, Northeast states, Northeast Rajasthan, Madhya Pradesh, Vidarbha, Marathwada, South Konkan & Goa, South Interior Karnataka, Tamilnadu, Lakshadweep and Bay Islands.

Arabian Sea:-

Scattered low/medium clouds with embedded moderate to intense convection seen over Southeast Arabian Sea.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convective seen over South Bay, South Andaman Sea & Gulf of Martaban.

Past Weather:

Convection (during last 24 hrs):

Moderate to Intense convection was observed over J&K Himachal Pradesh Uttarakhand Punjab Haryana South Jharkhand Odisha Gangetic West Bengal Sikkim North-East States North Coastal Andhra Pradesh Karnataka Kerala Tamilnadu Lakshadweep Andaman & Nicobar islands and Weak to Moderate convection observed over North Rajasthan Delhi North-West Uttar Pradesh North Madhya Pradesh North Chhattisgarh Vidarbha & Telangana.

OLR: - .

Up-to 230 wm^{-2} observed over J & K, Himachal Pradesh, North Uttarakhand, Arunachal Pradesh, South Assam, Manipur, Mizoram, Tripura, Kerala, South Tamilnadu, Lakshadweep & Nicobar islands.

Synoptic Features:

Westerly Trough & Jet Stream: roughly along Longitude 62.0E & North of Latitude 30.0N.

Dynamic Features:

Up to 30- 80 knots **Wind Shear** is observed over North India, Central India & North-East India and 05-20 knots over south peninsula India.

Negative shear tendency observed over J & K, Himachal Pradesh & Punjab.

Positive Vorticity (850 hPa) is observed over Punjab Himachal Pradesh Uttarakhand East Uttar Pradesh Extreme North Rajasthan East Madhya Pradesh Jharkhand Gangetic West Bengal North-East States & North Interior Karnataka .

Negative Low Level Convergence observed over J&K Himachal Pradesh Uttarakhand South Rajasthan East Gujarat West Madhya Pradesh Coastal Karnataka Coastal Andhra Pradesh and **Positive Low Level Convergence** is observed over rest Indian.

Precipitation:**IMR:**

Rainfall up to 90-130 mm observed over Tripura and

Rainfall up to 50-90 mm observed over Gangetic West Bengal South Kerala and

Rainfall up to 20-50 mm observed over Extreme South-East Jharkhand Extreme North -East Odisha Mizoram North Kerala North-West Tamilnadu Lakshadweep and

Rainfall up to 01-20 mm observed over J&K Himachal Pradesh North Punjab North Uttarakhand South Assam Manipur North Coastal Andhra Pradesh South Interior Karnataka South Tamilnadu Andaman & Nicobar islands.

HEM:

Rainfall up to 27.8 -69.5 mm observed over West J&K North Himachal Pradesh North Punjab North Uttarakhand Kerala West Tamilnadu

Rainfall up-to 07-20.8 mm observed over Manipur Mizoram Tripura Gangetic West Bengal North Coastal Andhra Pradesh Lakshadweep.

Rainfall up-to 0.1-14 mm observed over Punjab Arunachal Pradesh South Interior Karnataka Andaman & Nicobar islands.

RADAR and RAPID RGB Observation:

Light to moderate convection was seen on DWR Agartala, Srinagar and Patiala domains at around 1400IST.

RAPID RGB Satellite imagery at 1300IST indicates convective clouds over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh, South Assam, Nagaland, Southeast Coastal Tamilnadu and Nicobar Islands.

Environmental Condition (dust etc) and its Forecast based on 00UTC of date:

Higher Dust concentration was observed over northern Africa, Arab countries and western part of India. Dust concentration is expected to remain high for next few days over IGP and north India.

Particulate matter concentration is expected to remain in poor to very poor category for next 2 days in Delhi.

Delhi – SAFAR analysis & Forecast	06.05.2018	07.05.2018
PM10 (micro-g/m ³)	266	319
PM2.5 (micro-g/m ³)	105	126

2. NWP MODEL GUIDANCE:**NCMRWF (NCUM forecast based on 00UTC the day):**

Not received due to technical reasons.

IMD GFS based on 00UTC the day & IMD WRF (9km based on 00UTC of the day):

Not received due to GFS model analysis data has not received at IMD account.

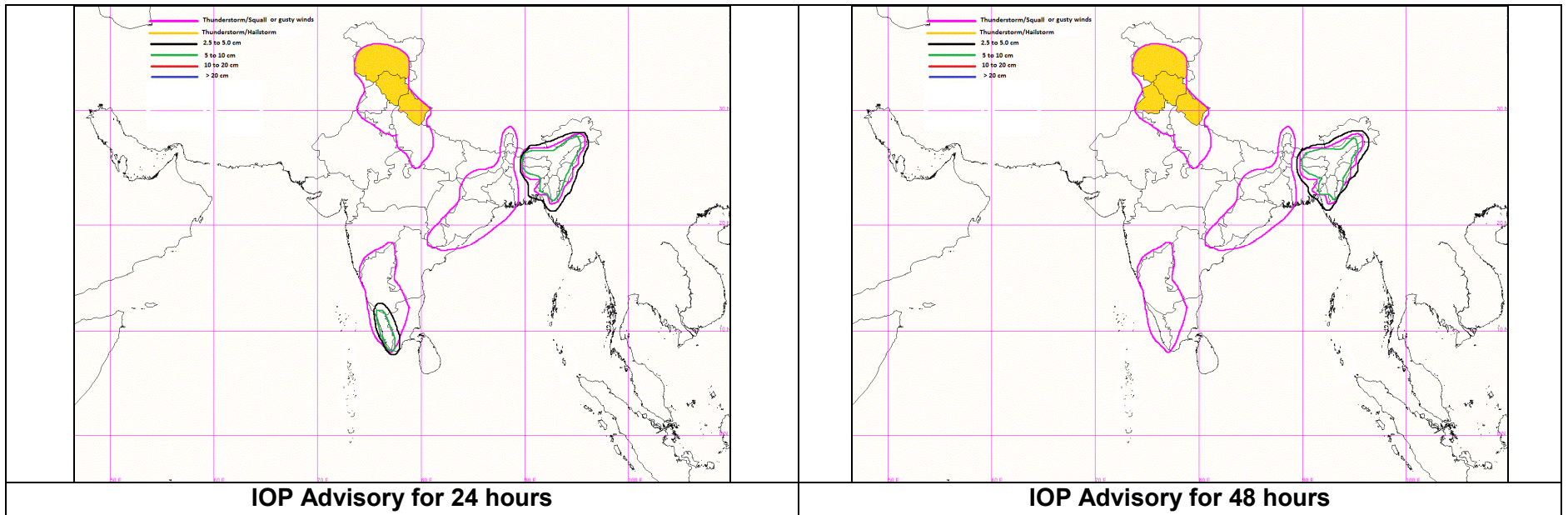
Summary and Conclusions:

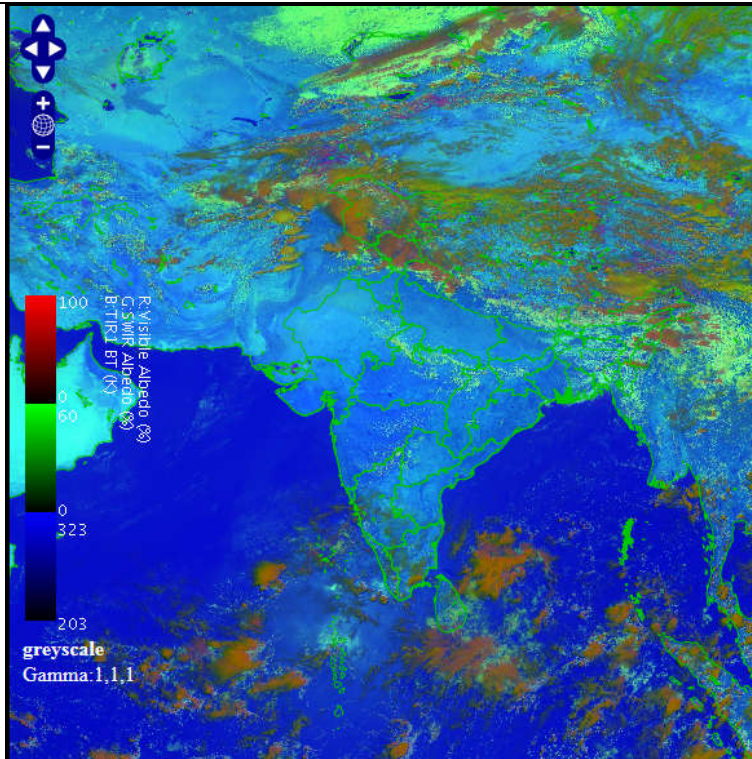
- Synoptic analysis indicates that due to the existence of the Western Disturbance as a cyclonic circulation over Jammu & Kashmir and adjoining Himachal Pradesh, the J&K, Himachal Pradesh and Uttarakhand may get thunderstorm with hail on Day-1 and Day-2. The thunderstorm with gusty winds may occur over Punjab, Haryana and West UP on Day-1.
- Due to the cyclonic circulation over Sub Himalayan West Bengal & Sikkim, these area including GWB and Orissa may get the thunderstorm with gusty winds on Day-1.
- The cyclonic circulation over south Tamilnadu & neighbourhood now lies over Maldives, Lakshadweep area. This will give rise to the thunderstorm with gusty winds activity mainly over Kerala and South and North Interior Karnataka on Day-1. Kerala may likely to get heavy rainfall on Day-1.

Day-1 & Day-2:

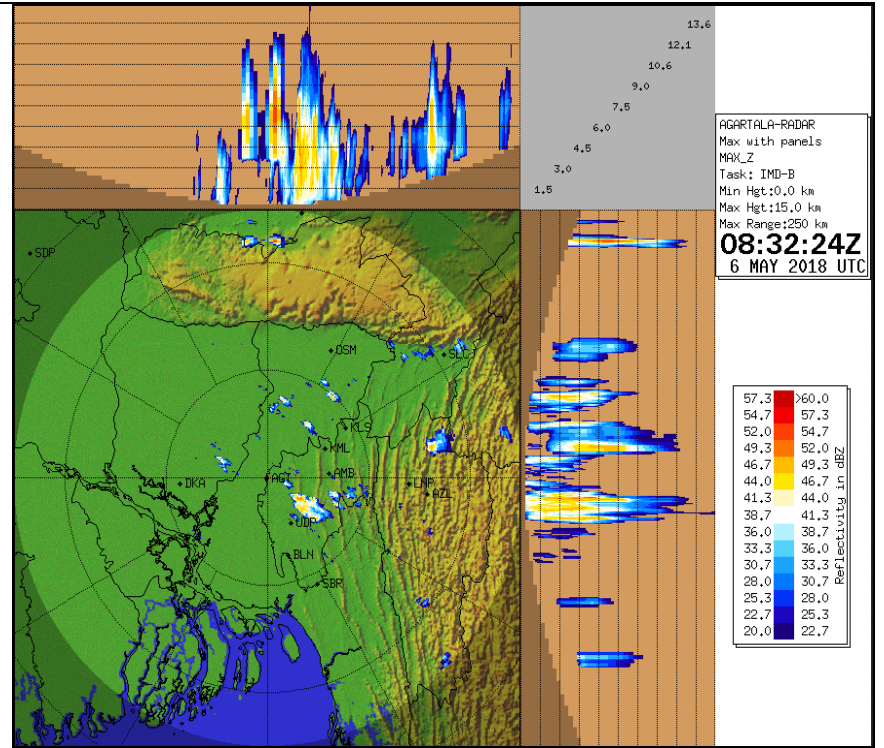
24 hour Advisory for IOP:	48 hour Advisory for IOP:
<p>Rainfall: Assam and Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Kerala</p> <p>Thunderstorm with squall or gusty winds: Tamil Nadu, Kerala, South Interior North Interior Karnataka, Punjab, Haryana, Delhi, West Uttar Pradesh West Bengal & Sikkim, Jharkhand, Odisha</p> <p>Thunderstorm with squall and hail Jammu and Kashmir, Himachal Pradesh, Uttarakhand</p> <p>Duststorm: Rajasthan</p>	<p>Rainfall: Assam and Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Kerala</p> <p>Thunderstorm with squall or gusty winds: Interior Tamil Nadu, Kerala, South Interior North Interior Karnataka, Haryana, Delhi, West Uttar Pradesh West Bengal & Sikkim, Jharkhand, Odisha</p> <p>Thunderstorm with squall and hail Jammu and Kashmir, Punjab, Himachal Pradesh, Uttarakhand</p> <p>Duststorm: Rajasthan</p>

Graphical Presentation of Potential Areas for Severe Weather:

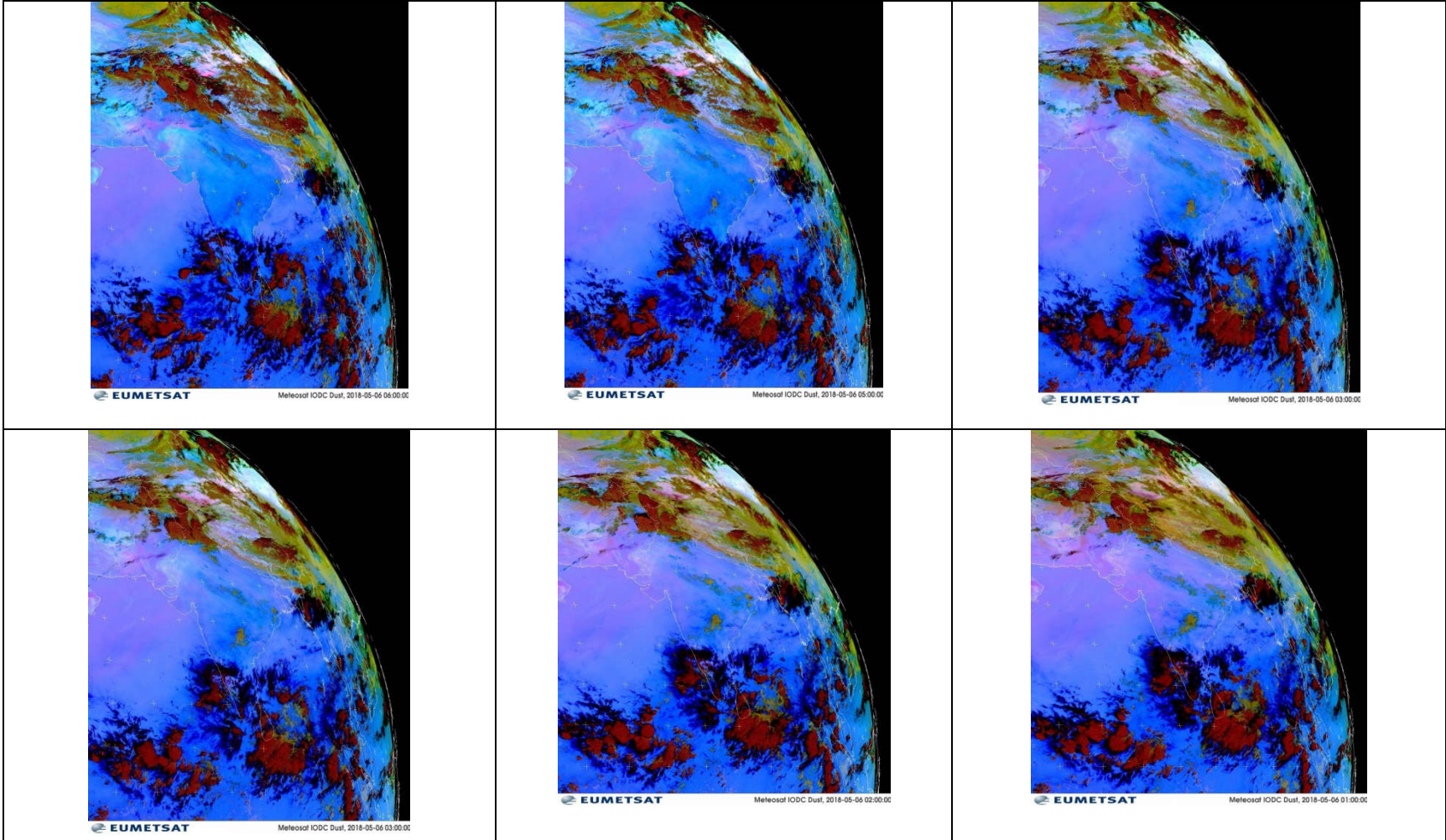




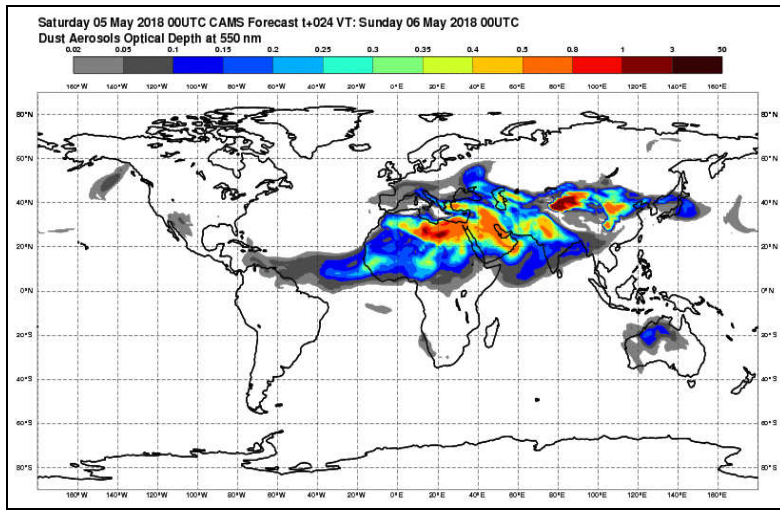
RAPID RGB Imagery at 1300 IST of the Day



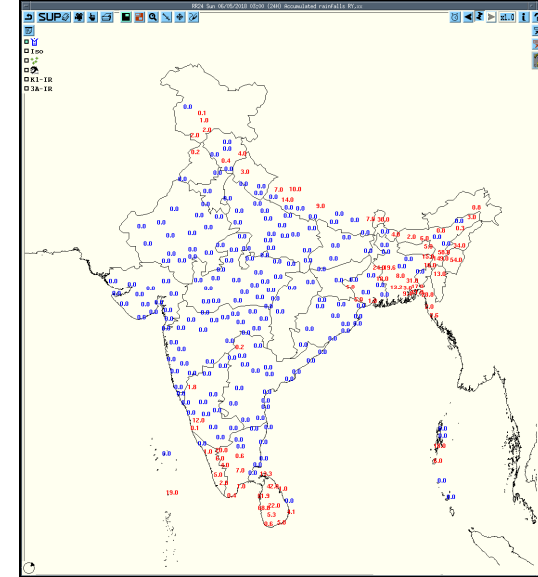
DWR Agartala at 1402 IST of the Day



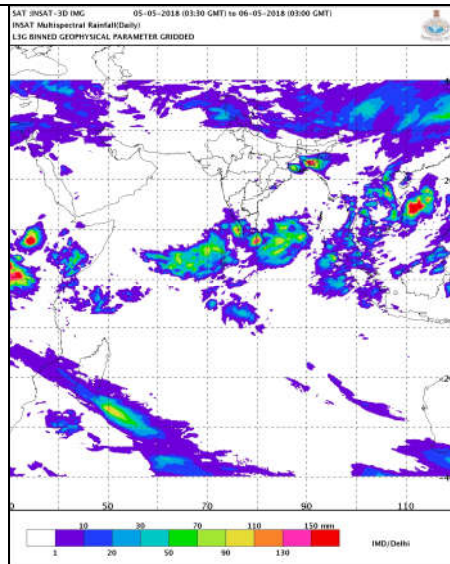
Observed Satellite Dust Images of today



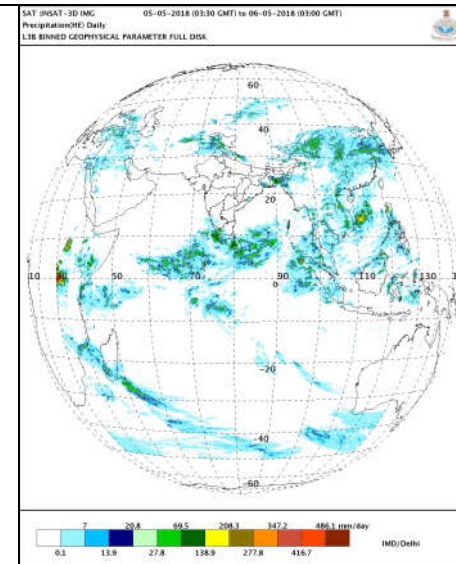
Dust Forecast



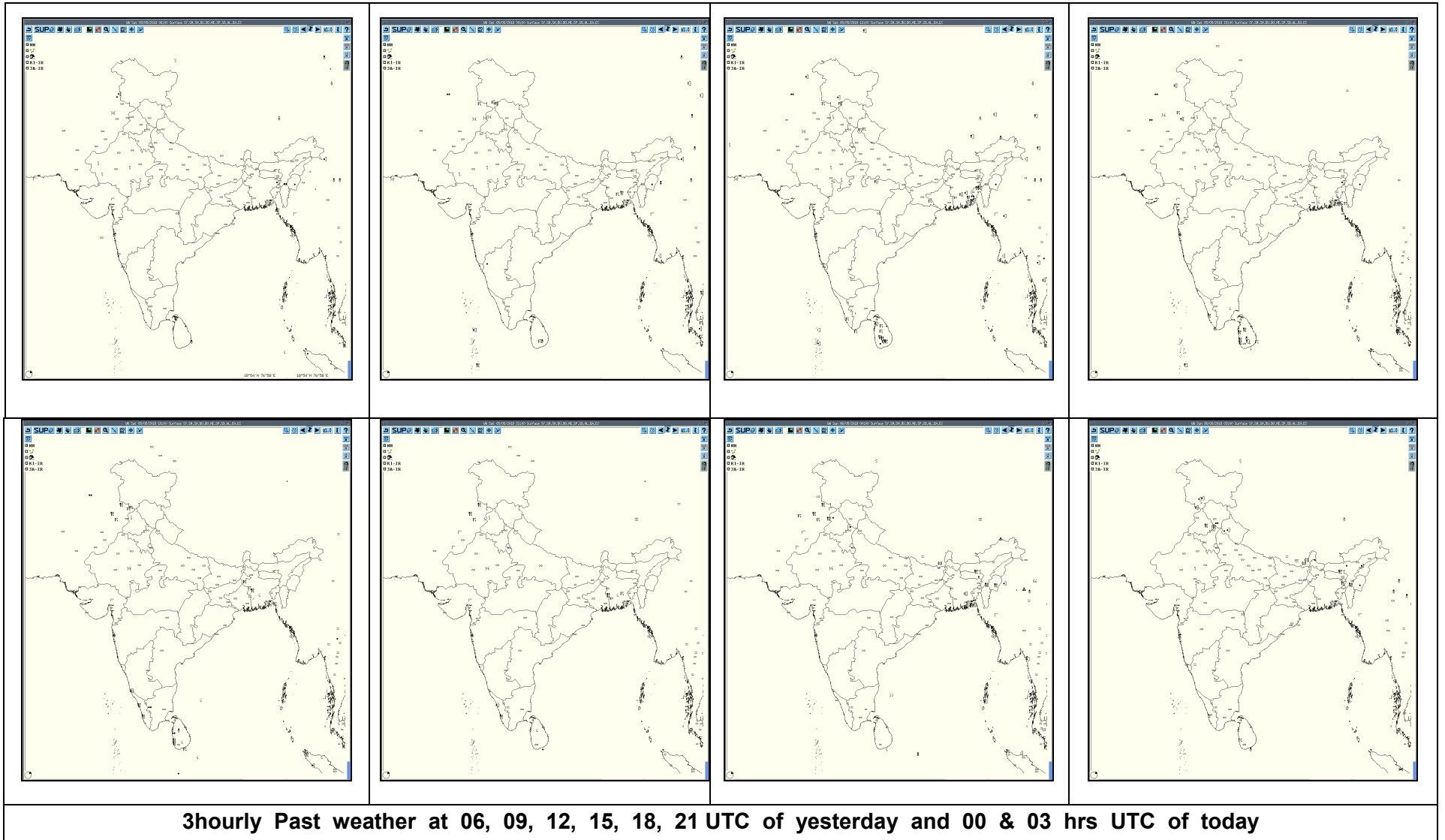
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



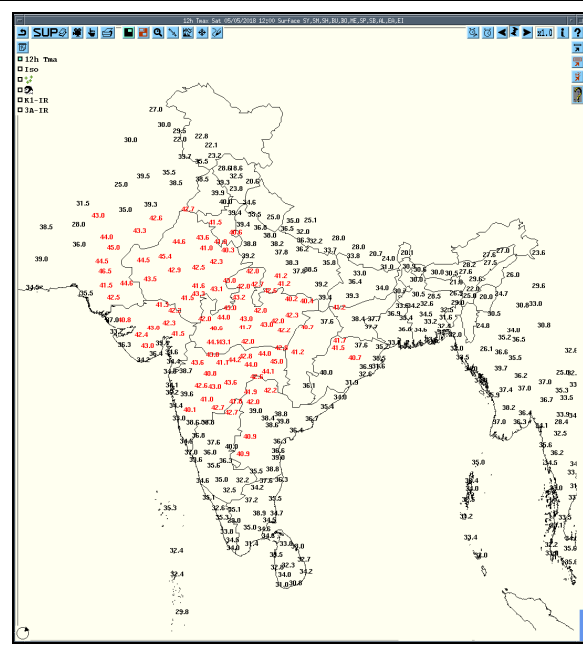
IMR



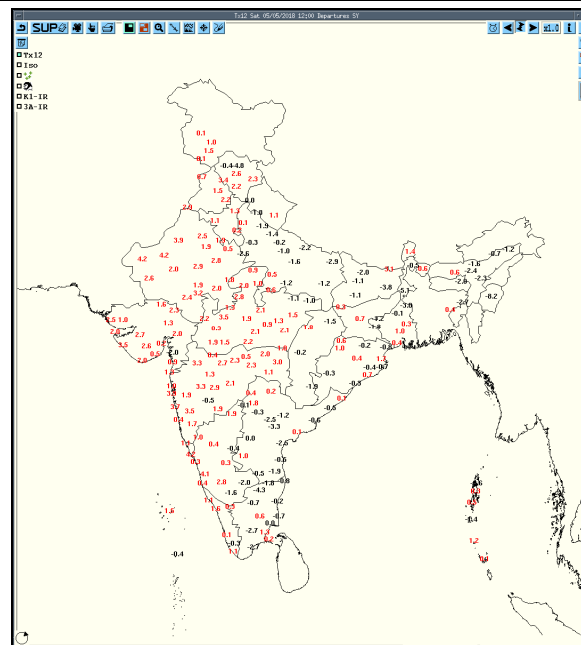
HEM



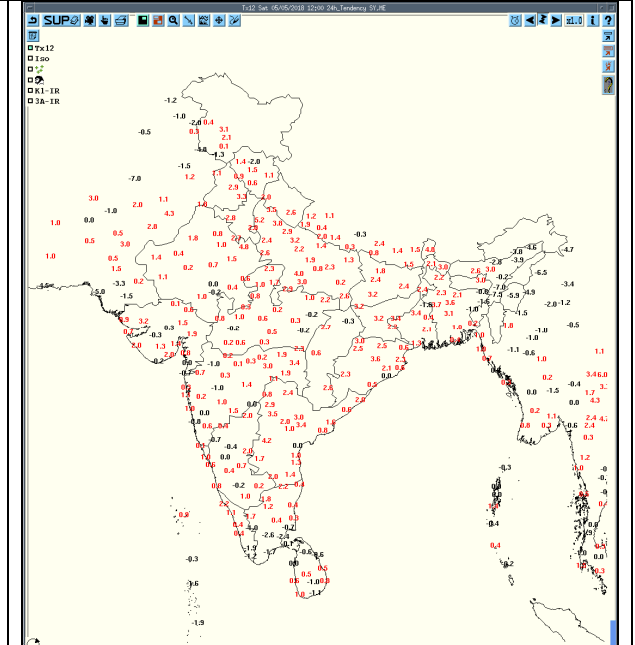
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



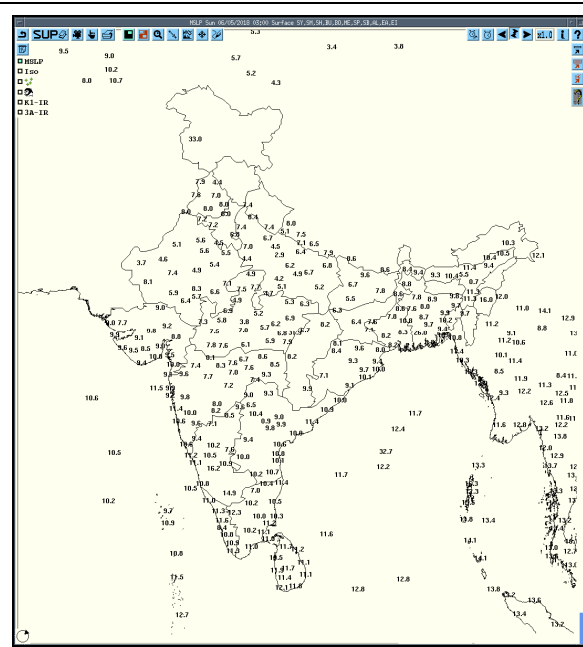
Tmax



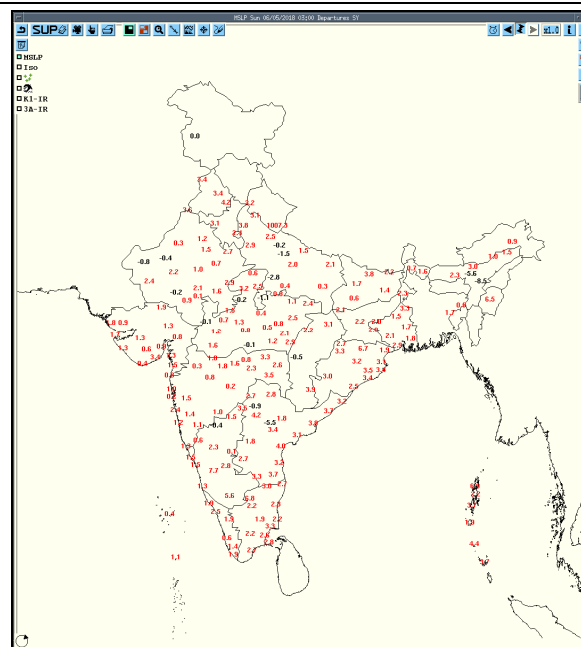
Departure Tmax



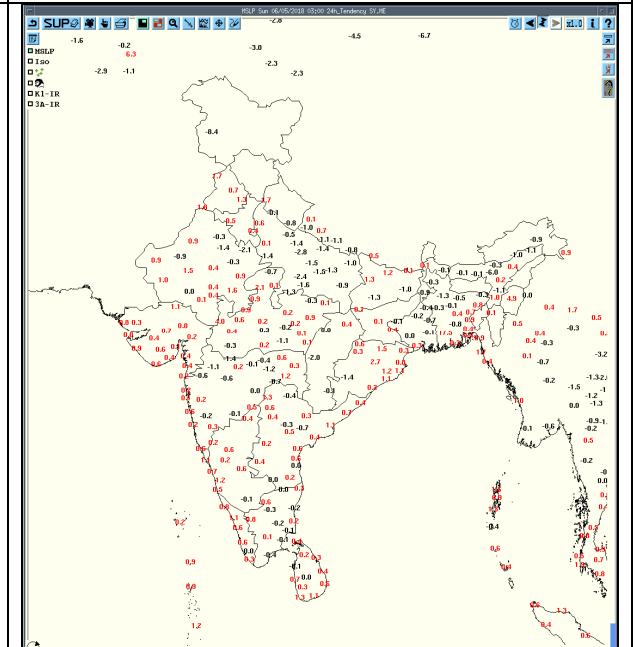
Tendency Tmax



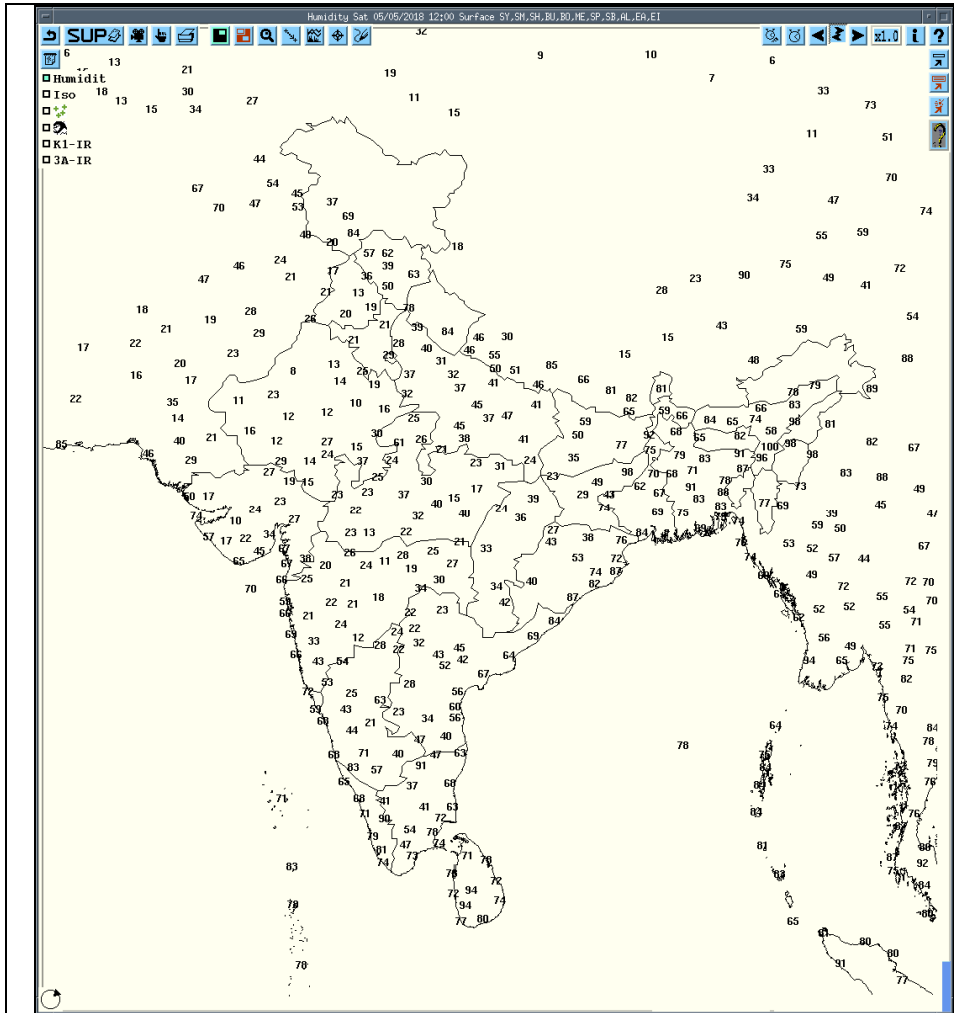
MSLP



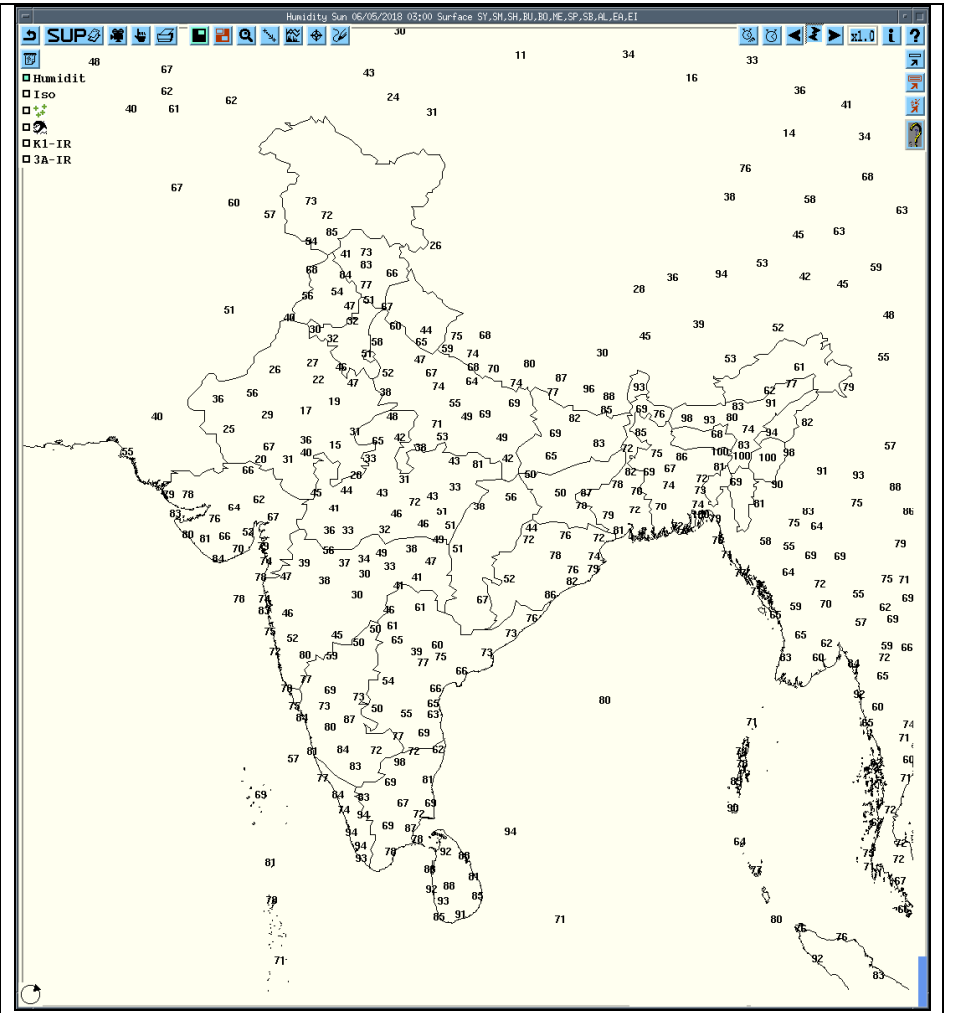
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

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	Associate d severe weather if any	Districts affected
Patiala	06-05-2018	05/0300 – 05/0600	NO ECHO	-----			-----
		05/0600 -05/0900	MULTIPLE CELLS DBZ 42.0 HT. 09-10 KM	N SECTORS. .MOVMENT TOWARDS E- WARDS.		RA/TS	Palampur, Hamirpur, Mandi, Nduan, Dalhousie, Bhunter And Adj. Areas.
		05/0900- 05/1200	MULTIPLE CELLS DBZ 60.5 HT. 12 TO 13 KM	NE SECTORS. .MOVMENT TOWARDS SE- WARDS.		HAIL/RA/ TS	Dehradoon, Bilaspur, Nalagrah, Solun. Mussorie And Adj. Areas.
		05/1200 – 05/1500	MULTIPLE CELLS DBZ 51.5 HT. 09-10 KM	NE SECTORS. .MOVMENT TOWARDS SE- WARDS.		RA/TS/DS	Mussorie,Dehradoon, Rishikesh And Adj. Areas.
		05/1500 -05/1800	MULTIPLE CELLS DBZ 37.5 HT. 07-08 KM	NW SECTORS. .MOVMENT TOWARDS E- WARDS.		RA/TS	Amrits, Ferozpur And Adj. Areas.
		05/1800 – 05/2100	MULTIPLE CELLS DBZ 42.0 HT. 06-07 KM	NW SECTORS. .MOVMENT TOWARDS E- WARDS.		RA/TS	Amritsar, Ferozpur,Gurdaspur,Abohar, Tarntarn, Fridkot, Mansa And Adj. Areas.
		05/2100- 06/0000	MULTIPLE CELLS DBZ 43.5 HT. 06-07 KM	NW,NE,SE SECTORS. .MOVMENT TOWARDS E- WARDS.		RA/TS	Moga,Zira,Ludhiana, Jalandhar,Patiala,Hoishpur, Mansa Faridkot, Pehowa, Ambala, Chandigrah And Adj. Areas.
		06/0000-06/0252	MULTIPLE CELLS DBZ 44.0 HT. 07-08 KM	NE,NW,SE SECTORS. .MOVMENT TOWARDS E- WARDS.		RA/TS	Amritsar,Gurdaspur,Faridkot, Patiala, Chandigrah, Jalandhar, Barnala, Karnal,Panipat, Faradbad And Adj. Areas.
Jaipur	06-05-2018	05/0300-06/0300	Nil	Nil	Nil	Nil	Nil

Radar Station Name	Date	Time Interval of Observation (UTC)	Organisation of 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
Kolkata	05-05-2018	0301-0851	NIL	NIL	NOSIG ECHO	NIL	NIL
		0901- 1701	Multi celled system with maximum reflectivity of 65.5 dBz at 0951 UTC and maximum height more than 18 Km at 1121 UTC	Coming from W Moving in E-ward then ESE-ward then SE-ward direction	Multi celled system coming from W from 0901 UTC. Matured and dissipated at 1701 UTC in EAST at a distance of 157.9 Km from Radar.	Thunderstorm /Rain/Hail	N/A
		0931 – 1551	Multi Isolated cell developed at a position 22.828 N/ 86.011 E/ 277.4 Degree/ 241.9 km with maximum reflectivity of 61.5 dBz at 1311 UTC and maximum height of 15.2 Km at 1241 UTC	W (241.9 km) Moving in SE-ward direction.	Multi Cells started forming at 0931 UTC at W (241.9 Km) from radar. Matured and formed a big celled system moving into Bay of Bengal completely at 1551 UTC in South at a distance of 119.8 Km from Radar.	Thunderstorm /Rain	N/A
		1531 – 2311	Multi Isolated cell developed at a position 24.467 N/ 88.318 E/ 358.9 Degree/ 211.0 km with maximum reflectivity of 62.5 dBz at 1811 UTC and maximum height of 15.25 Km at 1701 UTC	North (211.0 km) Moving in SE-ward direction.	Multi Cells started forming at 1531 UTC at N (211.9 Km) from radar. Matured and formed multi big celled system moving into Bay of Bangladesh completely at 2311 UTC in NE at a distance of 88.5 Km from Radar.	Thunderstorm /Rain	N/A
	05-05-2018	0001-0300	NIL	NIL	NOSIG ECHO	NIL	NIL
	06-05-2018						
Patna	06/05/2018	050300-051722	NIL	N/A	N/A	N/A	N/A
		051722-051812	Single Cell Lat-24.8022N Long-87.3896E Maximum Reflectivity: 43.5 dBZ Echo Top: 14.4 KM	Range: 231.6 KM from DWR Patna in ESE direction Movement: towards ESE	Warning issued	N/A	Bhagalpur, Banka
		051812-060300	NIL	N/A	N/A	N/A	N/A

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	Associate d severe weather if any	Districts affected
Visakhapatnam	05/05/18	0900UTC	Cb cell of reflectivity 52dbz and height 4kms	119kms(NW) Moving SE ly.	-	-	-
		1200UTC	Multiple cb cells from W TO NE with max reflectivity 58dbz and height 17kms.	78kms(NW) Moving SE ly, observation at 10:21 UTC.	Multiple cells of same intensity and height at 10:41 UTC.	-	Koraput (odissa) NAYAGARH (ODISSA)
		1500UTC	Isolated cb cells at North with max reflectivity 55dbz and height 16kms.	152kms (N) Moving SEly	Cells developed and dissipating started from 1241 UTC	-	Rayagada (odissa)

Realised past 24hrs TS/SQ/HS Data:

Realised TS/HS/SQ during past 24hours ending at 0300UTC of today (received from RMCs/MCs)						
Name of Station Reporting	Region	State/Sub Division	Weather Event (TS/Hail/Squall)	Date	Time of Commencement (IST)	Time of end (IST)
Qazigund	Northwest India	Jammu & Kashmir	Thunderstorm	05-05-18	1350	1445
Pahalgam	Northwest India	Jammu & Kashmir	Thunderstorm	05-05-18	1452	1455
Jammu	Northwest India	Jammu & Kashmir	Thunderstorm	05-05-18	2100	0700
Batote	Northwest India	Jammu & Kashmir	Thunderstorm	05-05-18	1320	1345
Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm	05-05-18	1245	1645
Shimla	Northwest India	Himachal Pradesh	Thunderstorm	05-05-18	1547	1625
Ludhiana	Northwest India	Punjab	Thunderstorm	05-05-18	During Night	
Chandigarh	Northwest India	Haryana	Thunderstorm	06-05-18	0800	0830
Dehradun	Northwest India	Uttarakhand	Thunderstorm	05-05-18	1554	1740
Tehri	Northwest India	Uttarakhand	Thunderstorm	05-05-18	1540 1810	1720 1930
Malda	East India	SHWB	Thunderstorm	05-05-18	2215	2400
Jamshedpur	East India	Jharkhand	Thunderstorm	05-05-18	1540	1800
Silchar	Northeast India	Assam	Thunderstorm	05-05-18	05/2100	06/0830
Guwahati	Northeast India	Assam	Thunderstorm	05/06-05-18	05/0245 06/0745	05/0445 06/0830
Dhubri	Northeast India	Assam	Thunderstorm	06-05-18	06/0000	06/0500
Imphal	Northeast India	Manipur	Thunderstorm	06-05-18	06/0500	06/0830
Lengpui	Northeast India	Mizoram	Thunderstorm	05-05-18	05/0830	05/1110
Kailasahar	Northeast India	Tripura	Thunderstorm	05-05-18	05/0830 05/1630	05/0930 05/1800
Mangaluru AP	South India	Coastal Karnataka	Thunderstorm	05-05-18	2158	2320
RS/RW Mangaluru	South India	Coastal Karnataka	Thunderstorm	05-05-18	2225	2320
Chamarajanagara	South India	North Interior Karnataka	Thunderstorm	05-05-18	2330	0000
Kodaikanal	South India	Tamilnadu	Thunderstorm	05-05-18	1730	1800
Kanyakumari	South India	Tamilnadu	Thunderstorm	05-05-18	1720	1730

IMPORTANT LINKS:

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 RANDHRA PRADESHID tool:

http://rAndhra_Pradeshid.imd.gov.in/

Low Level Winds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR_2017/?C=M;O=D

Upper level winds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/HLW/MAR_2017/?C=M;O=D

Past24hourHEMandIMRrainfall(upto03UTCoftoday)

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

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

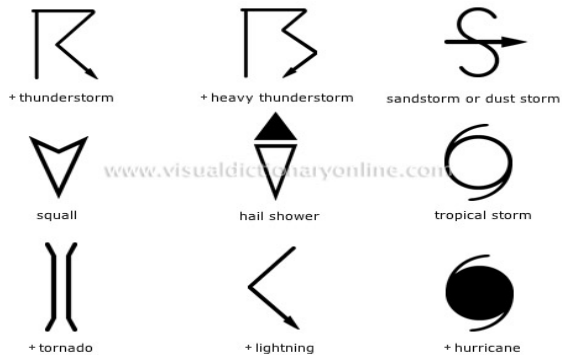
ForRadarimagesofthepast24hoursincludingmosaicofimages:

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

Satellite sounder based T- Phigram

http://satellite.imd.gov.in/mAndhra_Pradesh_skm2.html

WEATHER SYMBOLS:



	haze
	smoke
	dust or sand storm
	fog
	drizzle
	rain
	snow
	showers
	hail
	thunderstorm

Weather Symbols