



India Meteorological Department

FDP STORM Bulletin No. 31 (06-04-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

- ◆ The feeble Western Disturbance as an upper air cyclonic circulation over north Pakistan & adjoining Jammu & Kashmir persists and now seen between 3.1 km & 7.6 km above mean sea level.
- ◆ A fresh Western Disturbance is likely to affect Western Himalayan region from 8th April.
- ◆ The cyclonic circulation over northeast Rajasthan & adjoining areas of West Uttar Pradesh and Haryana now lies over northwest Madhya Pradesh & neighbourhood and extends upto 1.5 km above mean sea level.
- ◆ The trough at 0.9 km above mean sea level from the above cyclonic circulation now runs to south Konkan across Madhya Maharashtra.
- ◆ An east west trough runs from West Rajasthan to Jharkhand across the cyclonic circulation over northwest Madhya Pradesh and north Chhattisgarh and extends upto 1.5 km above mean sea level.
- ◆ The cyclonic circulation over north Jharkhand & neighbourhood now lies over central parts of west Bengal and extends between 1.5 km & 3.1 km above mean sea level.
- ◆ The trough in westerlies now runs aloft the above cyclonic circulation roughly along Long. 90°E to the north of Lat. 20°N at 5.8 km above mean sea level.
- ◆ The Cyclonic Circulation extending upto 1.5 km above mean sea level over Equatorial Indian Ocean & adjoining south Sri Lanka now lies over Comorin area and neighbourhood.
- ◆ The trough in easterlies from the above cyclonic circulation to south interior Karnataka across interior Tamilnadu at 0.9 km above mean sea level persists.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

Current Observation (based on 0300UTC imagery of INSAT 3D):

Western Disturbance (WD):

Scattered multi-layered clouds seen over Northeast Saudi Arabia, West Persian Gulf, Afghanistan & neighbourhood in association with WD over the area.

Convective Activity:

Cell No.	Date/Time (UTC)	Area/ Location	Minimum CTBT (Minus deg C)	Movement/ Remarks
1	06/0300	Kerala adjoining Tamilnadu	45	W-WARDS

Clouds descriptions within India:

Scattered low/medium clouds with embedded moderate to intense convection seen over extreme Northwest Rajasthan, North Karnataka, Kerala, South Tamilnadu and Bay Islands. Scattered low/medium clouds with embedded weak to moderate convection seen over Northeastern States and Central Bangladesh. Scattered low/medium clouds with embedded isolated weak to moderate convection seen over Jammu & Kashmir and North Himachal Pradesh. Isolated weak to moderate convection seen over Southeast Rajasthan, Southeast Gujarat, West Madhya Pradesh, Madhya Maharashtra, Marathwada and Konkan & Goa. Scattered low/medium clouds seen over North Uttarakhand, Punjab, Haryana, Delhi extreme West Uttar Pradesh, Northeast Jharkhand, coastal Odisha, North Gangetic West Bengal, Sub-Himalayan West Bengal, Sikkim, rest parts of West and South India.

Arabian Sea:

Scattered low/medium clouds with embedded moderate to intense convection seen over Southeast Arabian Sea off Kerala coast and weak to moderate convection seen over East-central Arabian Sea and Gulf of Cambay.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convection seen over Southeast Bay south of lat 8.0N, adjoining Indian Ocean and weak to moderate convection seen over Andaman Sea.

Past Weather:**Convection (during last 24 hrs):**

Moderate to Intense convection was observed over J&K HP Uttarakhand Haryana north Rajasthan west Uttar Pradesh Bihar Chhattisgarh Odisha GWB SHWB North-East States Telangana north Andhra Pradesh north Karnataka Kerala and weak to moderate convection observed over Gujarat Maharashtra KKN & Goa west Madhya Pradesh and south Tamilnadu.

OLR:-

Upto 230 wm^{-2} was observed over J&K Himachal Pradesh Uttarakhand south Haryana north Rajasthan NW UP east Bihar GWB SHWB SKM NE States Telangana NIK central Kerala west Tamilnadu.

Synoptic features: Trough in Westerlies: Trough in Westerlies roughly along Longitude 90.0E & north of Latitude 21.0N

Dynamic Features:

Up to 40 Knot wind shear is observed over Southern Peninsula, central India and NE States.

No Shear tendency is observed over India.

A positive Vorticity field (about $100 \times 10^{-5}/s$) at 850 hPa is observed over North West Gujarat Vidarbha and east Madhya Pradesh.

Negative Low Level Convergence ($-5 \times 10^{-5}/s$) observed over Sikkim & adjoining area and Positive Low Level Convergence is observed over rest India.

Precipitation:**IMR:**

Rainfall upto 20-30 mm observed over some parts of J&K AND north Uttarakhand.

Rainfall upto 10-20 mm observed over some parts of J&K North Himachal Pradesh north Uttarakhand north Rajasthan NIK and central Kerala.

Rainfall upto 1-10 mm observed over most parts of rest east Bihar GWB SHWB Sikkim Assam Meghalaya Arunachal Pradesh Telangana NIK and some parts of north Himachal Pradesh north Uttarakhand North Rajasthan extreme south Haryana NW UP Jharkhand Odisha Gujarat M Maharashtra Konkan & Goa central Andhra Pradesh South Interior Karnataka and west Tamilnadu.

HEM:

Rainfall upto 01-14 mm observed over J&K north Punjab Himachal Pradesh north Uttarakhand east Bihar south Jharkhand Odisha GWB SHWB south Sikkim NE States Telangana central Andhra Pradesh NIK Gujarat Maharashtra KKN & Goa central Kerala and west Tamilnadu

Convection (during last 24 hrs):

CELL NO.	DATE/ TIME (UTC)	AREA/ LOCATION	MINIMUM CTBT (MINUS DEG C)	MOVEMENT/ REMARKS
1	05/0300	North Punjab adjoining Jammu & Kashmir	63	
	0400	DO	55	
	0500	DO	52	
	0600	DO	52	
	0900	Punjab	--	WEAK
	1200	DO	--	DISSIPATED
2	05/0900	Jharkhand	53	DEVELOPING
	1200	SE Jharkhand adjoining GWB NE Odisha	54	SE-WARDS
	1300	DO	51	
	1400	DO	50	
	1500	NE Odisha adjoining GWB	57	SE-WARDS
	1600	DO	----	DISSIPATED
3	05/0900	N GWB SHWB adjoining BD	51	DEVELOPING
	1200	SHWB	--	WEAKEN
4	05/0900	W Assam	53	DEVELOPING
	1200	W MEGHA C Assam W ARUPR	50	
	1300	DO	----	DISSIPATED
5	05/0900	N Karnataka	49	
	1200	N Karnataka adjoining S MAHA	54	DEVELOPING
	1300	DO	56	
	1400	DO	58	
	1500	DO	-----	MERGED WITH CELL NO. 8
6	05/1200	N Rajasthan adjoining W UP EXT S HARY	56	DEVELOPING
	1300	DO	58	
	1400	DO	60	
	1500	NW Rajasthan NW UP	56	E-WARDS
	1600	NW Rajasthan	56	
	1700	DO	57	E-WARDS
	2130	DO	---	DISSIPATED

CELL NO.	DATE/ TIME (UTC)	AREA/ LOCATION	MINIMUM CTBT (MINUS DEG C)	MOVEMENT/ REMARKS
7	05/1200	SE VID adjoining CHTGH	49	DEVELOPING
	1300	DO	47	
	1400	DO	45	
	1500	DO	---	DISSIPATED
8	05/1200	TLNGN	58	DEVELOPING
	1300	DO	58	
	1400	DO	55	EXPANDING
	1500	NIK TLNGN	50	E-WARDS
	1600	TLNGN adjoining RYLSM	48	
	1700	TLNGN	42	DISSIPATING
9	05/1200	S Odisha	50	DEVELOPING
	1300	DO	45	
	1400	DO	48	DISSIPATED
10	05/1500	SW Rajasthan	55	DEVELOPING
	1600	DO	58	
	1700	DO	62	EXPANDING
	2130	SW Rajasthan adjoining PAK	48	NE-WARDS
	2300	NW Rajasthan adjoining PAK	49	NE-WARDS
	06/0000	EXT NW Rajasthan adjoining EC PAK	51	NE-WARDS
11	05/1700	S KER	45	DEVELOPING
	2130	S KER adjoining S TN	48	EXPANDING
	2300	S KER adjoining TN	50	W-WARDS
	06/0000	KER adjoining TN	52	W-WARDS

RADAR and RAPID RGB Observation:

Moderate Isolated/multiple echoes were seen on DWR Agartala, Delhi, Patiala, Jaipur, Vishakhapatnam, Thiruvananthapuram and Srinagar (dBZ around 45-55 and height around 10-15km). Light convection was also seen on DWR Nagpur and Lucknow at around 1630 IST.

RAPID RGB Satellite imagery at 1530IST indicates significant convection over Himachal Pradesh, Northeast Uttarakhand, Southwest Punjab, Northeast Rajasthan, South Haryana, Delhi, West Assam, Nagaland, Northeast Manipur, North Mizoram, Odisha, North Madhya Pradesh, North Chhattisgarh, Marathwada, North Coastal Andhra Pradesh and some parts of Karnataka.

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

Higher Dust concentration was observed over Arab countries and western part of India. Dust concentration is expected to decrease over north-western part of India for next few days.

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

Delhi – SAFAR analysis & Forecast	06.04.2018	07.04.2018
PM10 (micro-g/m ³)	209	188
PM2.5 (micro-g/m ³)	109	99

2. NWP MODEL GUIDANCE:

NCMRWF (NCUM forecast based on 00UTC the day):

1. Weather Systems:

Low level CYCIRs, Troughs: 12 UTC of Day 0-1:

00 UTC of Day 1: Lower level trough from Central to Peninsular India. A weak CYCIR over Punjab and adjoining area

00 UTC of Day 1-4: at 700 hPa over East, NE & Bangladesh region. In Day 2-4 trough over western Uttar Pradesh moving eastward lies over Bihar and West Bengal in Day 5

Confluence & Wind Discontinuity regions:

12 UTC of Day 0-4: 925 hPa wind discontinuity over interior peninsula extending over Chhattisgarh, Jharkhand and WB region

Synoptic Systems:

12 UTC of Day 3-4: A ridge over NW India.

00 UTC of Day 3-5: Fresh Western Disturbance over J & K. Remnant feeble WD persists.

00 UTC of Day 1-3: Strong easterlies over Indo Gangetic Plains, South easterlies from Bay of Bengal & leads to moisture incursion over Indian land.

2. Location of jet and jet core (>60Kt) at 500 hPa:

12UTC Day-0 to 5: ----

3. Convergence at 850 hPa:

Day/Index: Subdivisions with Lower Level Convergence > 15 x 10⁻⁵ /s

Day0: West UP, Jammu Kashmir, Odisha, West MP, Madhya Maharashtra, Marathwada, Chhattisgarh, TN Puducherry, SI Karnataka, Kerala,

Day1: Jharkhand, East MP, Madhya Maharashtra, Chhattisgarh, Coastal AP, TN Puducherry, NI Karnataka, SI Karnataka, Kerala,

Day2: Jharkhand, Odisha, West MP, East MP, Madhya Maharashtra, Vidarbha, SI Karnataka,

Day3: West UP, East RJ, Chhattisgarh, TN Puducherry, SI Karnataka, Kerala,

Day4: Jharkhand, TN Puducherry, SI Karnataka.

4. Low level Vorticity:-Positive Vorticity:

Day/Index: Subdivisions with Lower Level Vorticity > 15 x 10⁻⁵ /s

Day0: Jharkhand, West UP, West RJ, Odisha, West MP, Chhattisgarh,

Day1: Assam Meghalaya, East MP,

Day2: Saurashtra Kutch,

Day3: Arunachal Pradesh, Assam Meghalaya, West UP, Uttarakhand, Himachal Pradesh,

Day4: Arunachal Pradesh, Assam Meghalaya, Uttarakhand, Himachal Pradesh

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

Day/Index: Subdivisions with Showalter Index < -4

- Day0: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Himachal Pradesh, Jammu Kashmir, Odisha, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day2: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day3: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day4: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala

6. Spatial distribution of TTI:

Day/Index Subdivision with Total Totals Index > 52

- Day0: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat Region, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana, Rayalaseema, Coastal Karnataka, NI Karnataka, SI Karnataka,
- Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat Region, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day2: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day3: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day4: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, East MP, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

Day/Index: Subdivisions with K Index > 40

- Day0: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, West UP, Uttarakhand, Jammu Kashmir, Odisha, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chhattisgarh, Delhi, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day2: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Jammu Kashmir, Odisha, East MP, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
- Day4: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Uttarakhand, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

- Day1: Jammu Kashmir, Odisha, Andaman Nicobar,
- Day2: Arunachal Pradesh, Jharkhand, Bihar, West UP, Odisha, Chhattisgarh, Coastal AP, Telangana,
- Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Jharkhand, Bihar, Jammu Kashmir, Odisha, Andaman Nicobar,
- Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, East UP, Jammu Kashmir,

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

1. Synoptic Systems:

The analysis based on 00 UTC indicates a cyclonic circulation in lower troposphere (925 hPa) over West Madhya Pradesh and adjoining area. The forecast shows it will move south eastward and lies over Vidarbha and adjoining area on day 2 and becomes less marked on day3. The Analysis also indicates a trough from this cyclonic circulation runs to North interior Karnataka across Madhya Maharashtra. The forecast shows it persist till day 2 with slight eastward shift. The forecast also shows a cyclonic circulation over North Pakistan and adjoining area on day 1 and moves southward till day5 and lies over South Pakistan and adjoining west Rajasthan on day 5.

2. Location of Jet and Jet Core (>60kt) at 500hPa:

Although the presence of strong westerlies is found over east and northeast India but no jet core over the Indian region for the next 3 days.

3. Low Level Vorticity {850hPa Positive Vorticity (>12 x 10⁻¹/s)}:

Positive Vorticity is seen mostly over the cyclonic circulation and along the trough for next 3 days.

4. Spatial distribution of T-storm Initiation Index, Lifted Index, Total Total Index, CAPE, CIN and Sweat Index [High potential for thunderstorm]:

T-Storm Initiation Index (> 3): Higher than a value 3 over coastal areas of Gangetic West Bengal and Kolkata, parts of Orissa, Bihar, Jharkhand, Uttar Pradesh, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Karnataka, Tamil Nadu, parts of Gujarat, coastal Maharashtra including Mumbai, Konkan & Goa, Vidarbha adjoining Chhattisgarh, coastal areas along the east coast and west coast, extreme south peninsular India, Tripura and adjoining area, Rajasthan, GWB and SHWB during all 3 days; over parts of Haryana, Delhi and adjoining areas on day 1 and 3; over most parts of Punjab, Haryana, Delhi and West Uttar Pradesh on day 3; Maximum value of the index is seen over parts of Gujarat, Rajasthan, northern parts of coastal areas along the west coast, Konkan and Goa, coastal Maharashtra, Orissa, Chhattisgarh, Jharkhand, coastal Andhra Pradesh, GWB, Telangana and adjoining area on all 3 days; over parts of Bihar and East Uttar Pradesh on day 1 and 2; over parts of East Vidarbha and Telangana on day 3.

Lifted Index (< -2): The threshold value of the index is below -2 over parts of Haryana, Punjab, Delhi, Uttarakhand, Gujarat, Saurashtra region, Rajasthan, coastal Andhra Pradesh, coastal Karnataka, Telangana, Rayalaseema, Konkan and Goa, Kerala, Tamil Nadu, southern part of west coast, coastal areas along the east coast, Orissa, East Madhya Pradesh, Chhattisgarh, Vidarbha, GWB, Konkan and Goa, Bihar, Jharkhand, Assam, Tripura and adjoining areas on all 3 days; over parts of North West Rajasthan on day 1 and 3; over parts of Himachal Pradesh on day 1 and 2; maximum negative value of the index less than -8 is seen over parts of Bihar, Jharkhand and coastal Maharashtra on day 1; over parts of GWB, Orissa, and coastal Maharashtra on day 2; over parts of GWB, Orissa, Coastal Andhra Pradesh, coastal Gujarat and Coastal Karnataka on day 3.

Total Index (> 50): Above threshold value is seen over most of the parts of India except J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, NE states, extreme southern peninsular India and coastal areas along the east coast and southern part of west coast, Orissa, Andhra Pradesh, Telangana, GWB and SHWB, Telangana during all 3 days.

Sweat Index (> 300): Although the threshold value of the Index >300 is seen in most parts of the country but the; Maximum value of the index greater than 800 is seen over parts of Jharkhand and adjoining areas on day 1 and 3.

CAPE (> 1000): Mostly in areas of southern peninsular India, along west coast and east coast and coastal areas of GWB, Orissa, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Tamilnadu, Karnataka, Konkan and Goa, Gujarat and coastal Maharashtra, Bihar, Jharkhand, Uttar Pradesh, Rajasthan and Chhattisgarh during all 3 days; over parts of Tripura and adjoining areas on day 2 and 3; over Parts of Haryana, Delhi and adjoining areas on day 1 and 3; Maximum value of the index greater than 2500 is seen mostly over parts of coastal Orissa, GWB, Jharkhand and coastal Karnataka on all 3 days; over parts of Gujarat on day 2 and 3; over parts of south west Rajasthan on day 3; over parts of Bihar and coastal Andhra Pradesh from day 1 onwards.

CIN (50-150): Although the threshold value of the Index lies in the range of (50–150) over most part of the country except J&K, Himachal Pradesh and Uttarakhand during all 3 days but the maximum value of the index > 400 is seen over parts of Bihar, East Uttar Pradesh, Chhattisgarh, south west Rajasthan and some parts of Gujarat on day 1; over some parts of Punjab, Haryana and adjoining area, Chhattisgarh on day 3.

5. Rainfall Activity:

70- 130 mm Rainfall: over parts of Jharkhand and GWB on day 2.

40- 70 mm Rainfall: over some parts of Jharkhand and GWB on day 2 and 3; over some parts of Bihar, Orissa and coastal Andhra Pradesh on day 2; over parts of Uttarakhand on day 3.

10-40 mm Rainfall: over parts of Kerala, Karnataka, Uttarakhand, Sikkim, SHWB, GWB, NE states on all 3 days; over parts of Bihar, Jharkhand, Orissa and Andhra Pradesh and isolated parts of Uttar Pradesh on day 2 and 3; over parts of Chhattisgarh on day 2; over parts of J&K on day 1 and 3; over parts of Himachal Pradesh on day 3.

Up to 10 mm rainfall: Over parts of Sikkim, NE states, Foothills of Himalaya, J&K, Uttarakhand, Punjab, Haryana, Delhi, Himachal Pradesh, Rajasthan, Uttar Pradesh, Orissa, Chhattisgarh, Madhya Pradesh, Vidarbha, Marathwada, Madhya Maharashtra, GWB, SHWB, Andhra Pradesh, Kerala, Karnataka, Tamil Nadu, Telangana and Rayalaseema on all 3 days; over parts of Gujarat on day 2 and 3.

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

1. Model Reflectivity (Max.dBz):

> 25 dBZ Model Reflectivity: Over parts of J&K, Himachal Pradesh, Uttarakhand, Uttar Pradesh, West Madhya Pradesh, Orissa, GWB, NE states, Bihar and Jharkhand during all 3 days; over parts of Punjab, Haryana Delhi and adjoining areas, Rajasthan on day 1 and 3; over parts of Vidarbha, Madhya Maharashtra and Marathwada on day 2; over parts of Karnataka and adjoining Kerala on day 1; maximum value of the Model reflectivity is seen over parts of Jharkhand, GWB and adjoining areas on day 1 and 3; over parts of NE states West Uttar Pradesh and adjoining area on day 1; over parts of J&K on day 3.

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

Total Index (> 50): Above threshold value is observed over most parts of the country except extreme south peninsular India, southern parts of west coast, and coastal areas along the east coast, NE states, Bihar, Jharkhand, Orissa, GWB and SHWB during all 3 days; below threshold value is seen over parts of Uttar Pradesh, East Madhya Pradesh, Chhattisgarh and Vidarbha from day 2 onwards; over parts of J & K, East Rajasthan Haryana and Delhi on day 3; maximum value of the index is seen over parts of J & K, Himachal Pradesh, Punjab, Haryana, Delhi and adjoining areas, Uttar Pradesh, Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Gujarat, Madhya Maharashtra and Marathwada region on day 1 and 2; over parts of west Rajasthan, Gujarat, West Madhya Pradesh, Vidarbha, Madhya Maharashtra, Marathwada, North Interior Karnataka and some parts of Telangana on day 3.

K-Index (> 35): Less than threshold value is observed over most of the part of the country during the next 3 days.

CAPE (> 1500): Greater than threshold value over parts of Punjab, Haryana Gujarat, coastal areas of west coast, coastal Maharashtra, Konkan and Goa, coastal areas along the east coast, coastal Orissa, GWB, SHWB, Bihar, Jharkhand, parts of Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Chhattisgarh, Telangana, Rayalaseema, Extreme south peninsular India during all 3 days; over parts of J&K, Himachal Pradesh and Uttarakhand from day 1 onwards; over most of the parts of Punjab, Haryana, Delhi Himachal Pradesh, Uttarakhand, Uttar Pradesh on day 2 and 3; Maximum value of the index is seen over the parts of coastal Kerala, Karnataka adjoining Konkan and Goa, Jharkhand, Orissa, GWB, Andhra Pradesh on day 1; over parts of East Uttar Pradesh, Bihar, Jharkhand, Orissa, Coastal Karnataka, Konkan and Goa on day 2; over parts of coastal Karnataka, coastal Kerala, Konkan and Goa on day 3.

CIN (50-150): Although the threshold value of the Index lies in the range of (50–150) over most part of the country during all 3 days, the maximum value of the index > 400 is seen over Punjab, south west Rajasthan, east and west Uttar Pradesh, Bihar, Jharkhand, Orissa, Telangana, Vidarbha, Gujarat, coastal Maharashtra, and Madhya Pradesh region on day 1 and 2; on day 3 mostly over south west Rajasthan, Gujarat, west Madhya Pradesh, Orissa, Madhya Maharashtra, Vidarbha and Marathwada region.

3. Rainfall and thunderstorm activity:

70- 130 mm rainfall: over parts of GWB and Orissa on day 1 and 2; over some parts of J&K on day 3.

40-70 mm Rainfall: over parts of Orissa, GWB and adjoining areas on all 3 days; over parts of J&K, SHWB, Chhattisgarh and Bihar on day 3; over some parts of East Uttar Pradesh and Bihar region on day 2.

10- 40 mm Rainfall: over parts of J&K, Uttar Pradesh, Kerala, Karnataka, Tamil Nadu, SHWB, GWB, Bihar, Jharkhand, Orissa, Foothills of Himalaya, Sikkim and NE states on all 3 days; over parts of Himachal Pradesh, Uttarakhand, East Madhya Pradesh and adjoining Chhattisgarh on day 2 and 3; over parts of East Vidarbha and West Uttar Pradesh on day 2.

Up to 10 mm Rainfall: Over parts of J&K, Punjab, Haryana, Delhi, Rajasthan, East, West Uttar Pradesh, Himachal Pradesh, Uttarakhand, foothills of Himalaya, Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Telangana, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Orissa, GWB, SHWB and NE states on all 3 days.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

Most thermodynamic indices (SWEAT, T-STORM Initiation Index and Lifted Index) indicate high the probability of thunderstorm occurrence along east, northeast and south peninsular coast of India. CAPE values are high all along the coast of peninsular India on day 1.

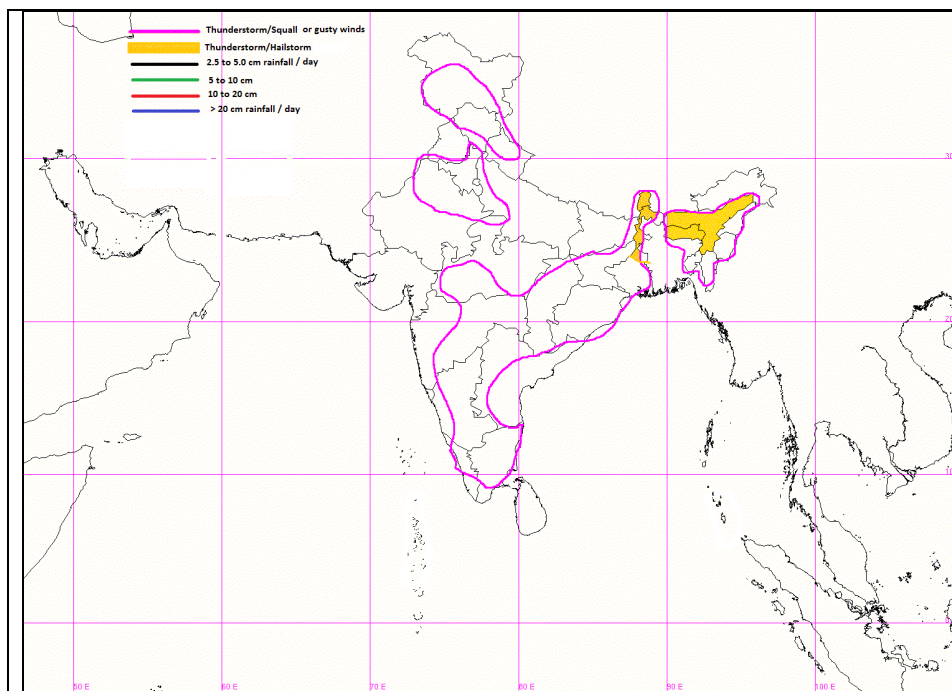
Synoptic analysis indicates that there is a cyclonic circulation over central parts of west Bengal and extends between 1.5 km & 3.1 km above mean sea level. The trough at 0.9 km above mean sea level runs to south Konkan across Madhya Maharashtra. This will give the thunderstorm activity with gusty winds over North Kerala, Interior Tamil Nadu, South and North Interior Karnataka, Telangana, Madhya Maharashtra, Marathwada, Vidarbha on Day-1. This activity may continue to Day-2 over the same region.

The cyclonic circulation over northwest Madhya Pradesh & neighbourhood and extends upto 1.5 km above mean sea level. Duststorm / thunderstorm activity may be experienced over Rajasthan on Day-1.

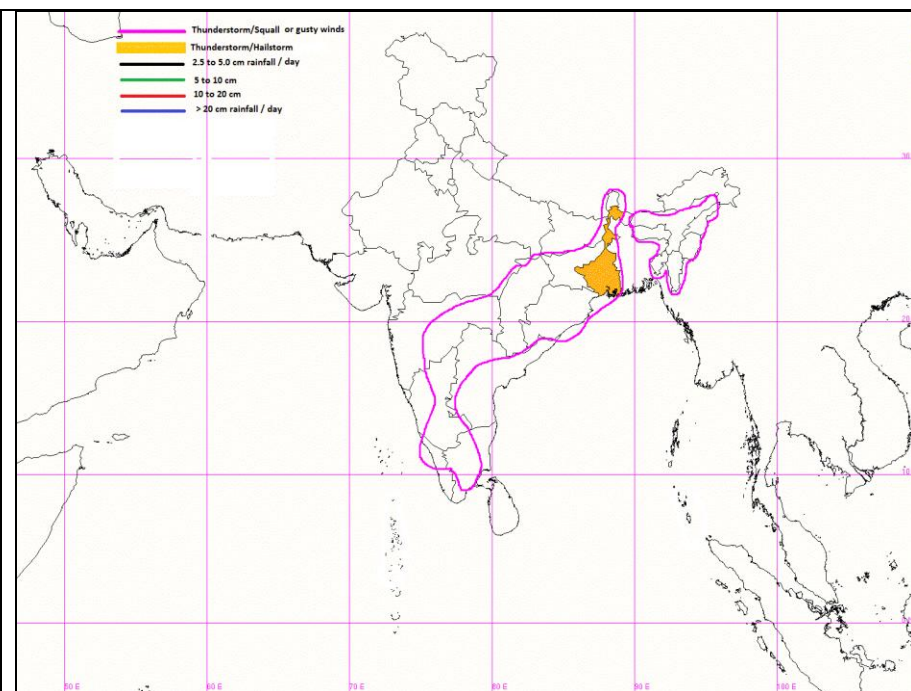
Day-1 & Day-2:

24 hour Advisory for IOP:	48 hour Advisory for IOP:
<p>Rainfall: Nil</p> <p>Thunderstorm with squall or gusty winds:</p> <p>North Kerala, Interior Tamil Nadu, South and North Interior Karnataka, Telangana, Vidarbha, Chhattisgarh, Odisha, Gangetic West Bengal, Jharkhand Nagaland, Manipur, Mizoram and Tripura South West MP, Madhya Maharashtra, Marathwada, Vidarbha Jammu & Kashmir, Himachal Pradesh, Uttarakhand Haryana, Delhi, West Uttar Pradesh,</p> <p>Thunderstorm with squall and hail Sub Himalayan West Bengal, Assam, Meghalaya</p> <p>Thunderstorm/Duststrom: Rajasthan</p>	<p>Rainfall: Nil</p> <p>Thunderstorm with squall or gusty winds:</p> <p>Interior Karnataka, Telangana, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh,</p> <p>Thunderstorm with squall and hail</p> <p>Sub Himalayan West Bengal, Assam, Gangetic West Bengal, Jharkhand</p>

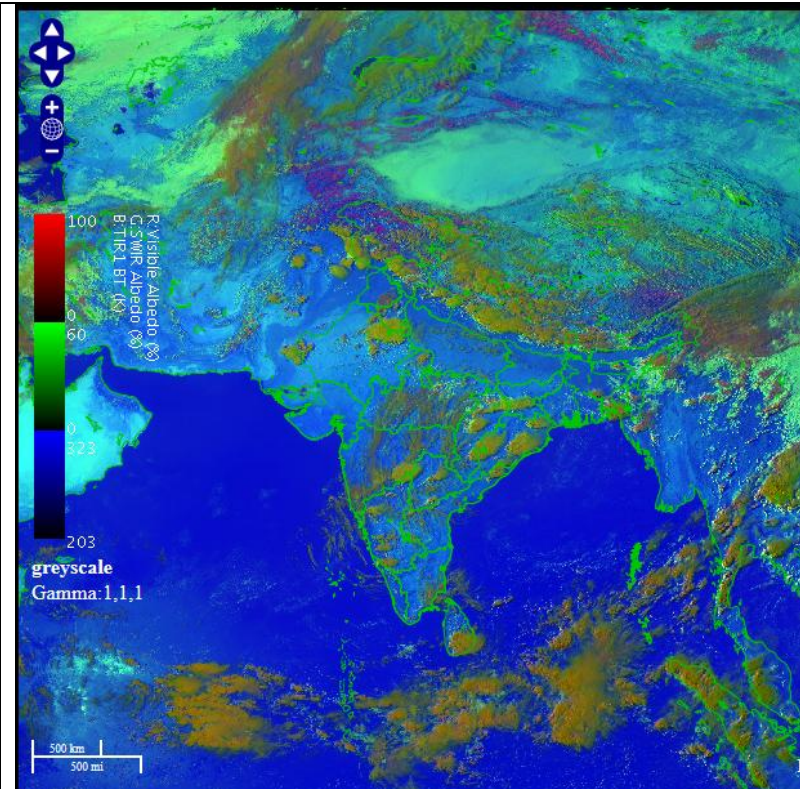
Graphical Presentation of Potential Areas for Severe Weather:



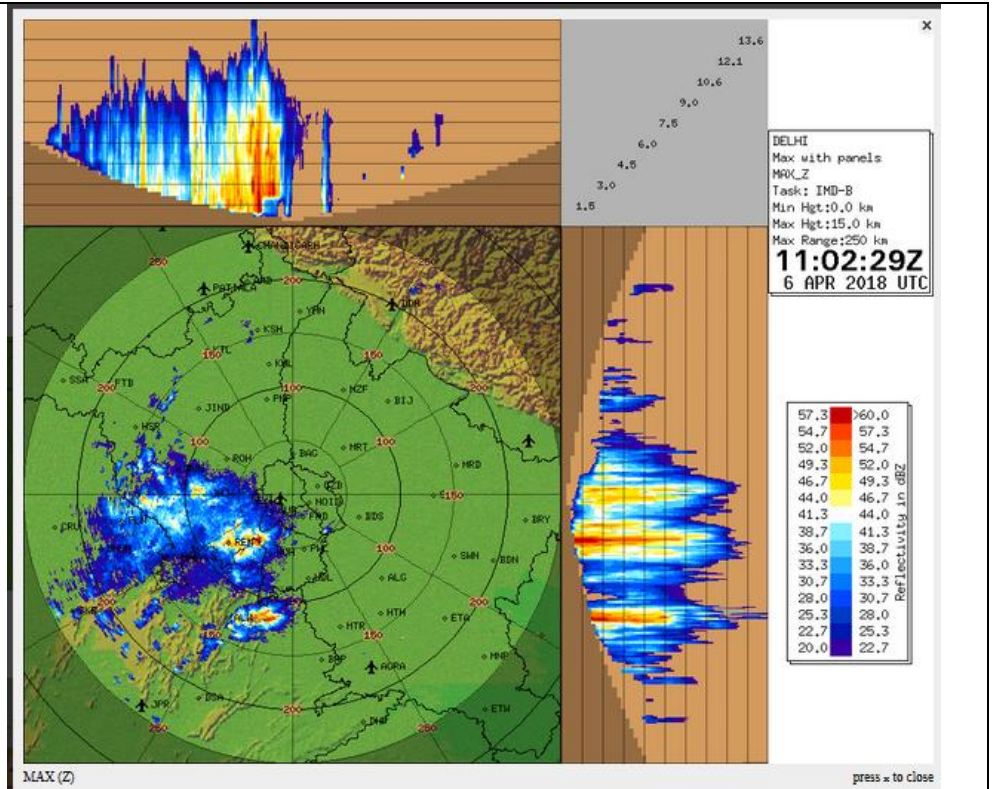
IOP Advisory for 24 hours



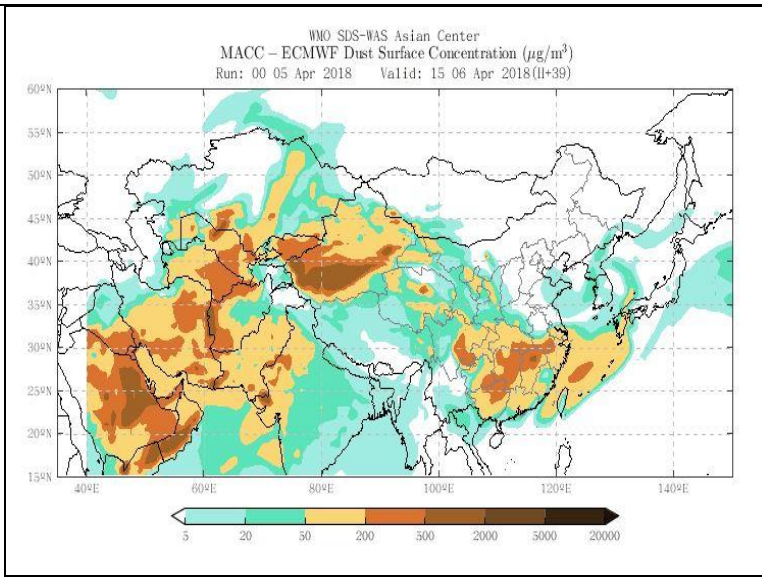
IOP Advisory for 48 hours



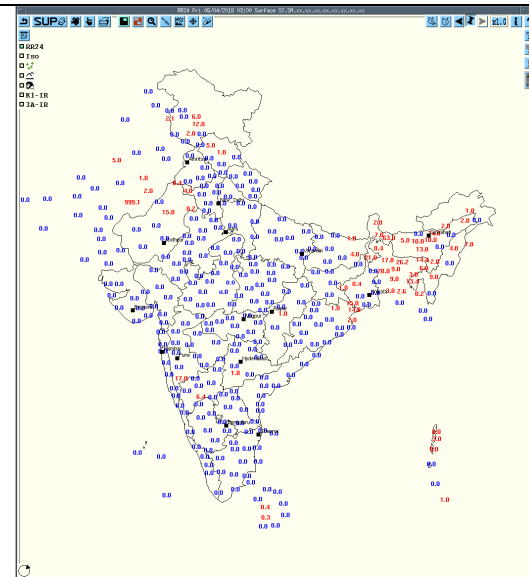
RAPID RGB Imagery at 1530 IST of the Day



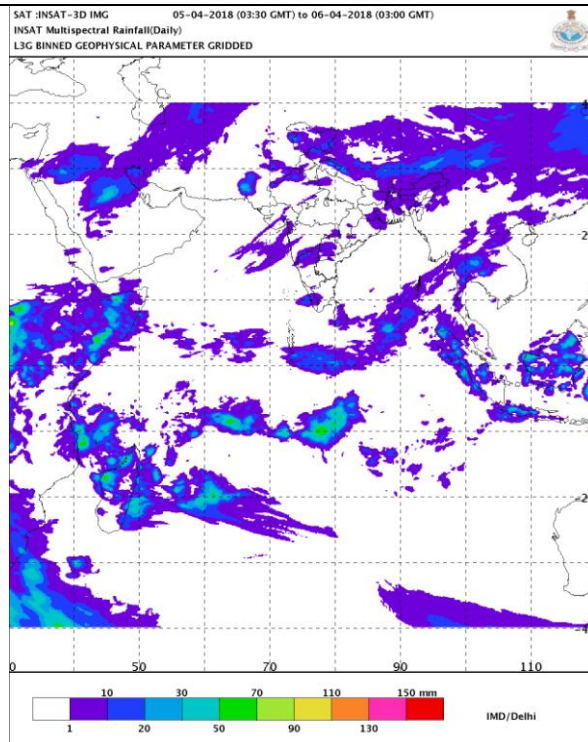
DWR Agartala at 1632 IST of the Day



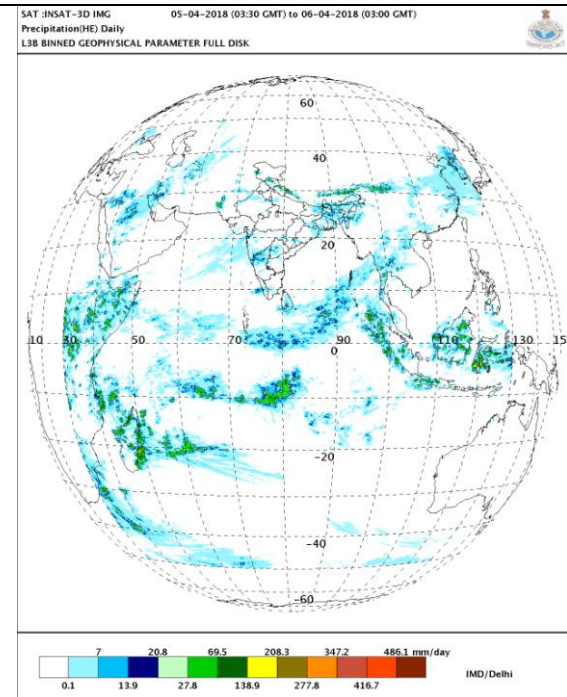
Dust Forecast



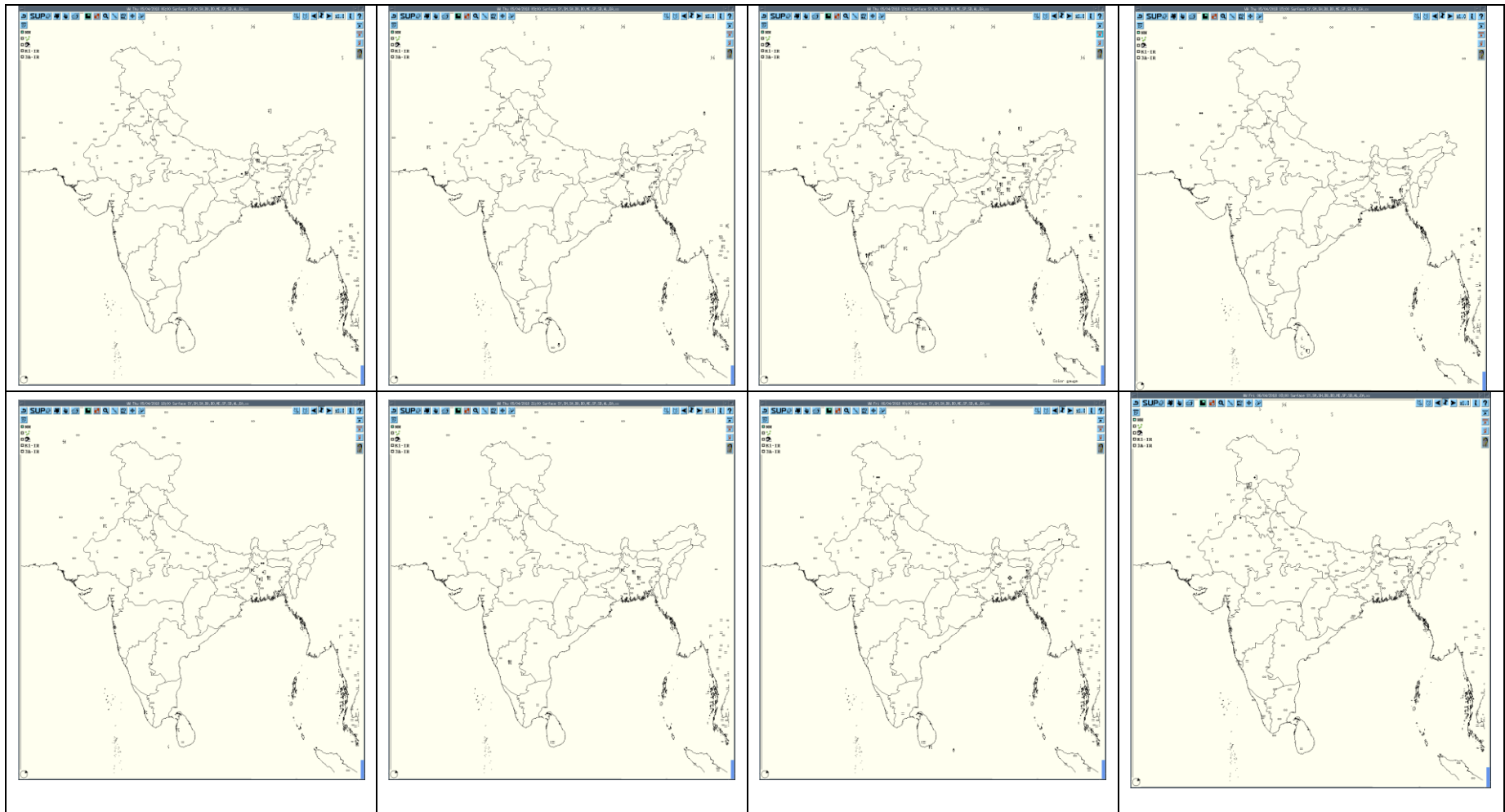
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



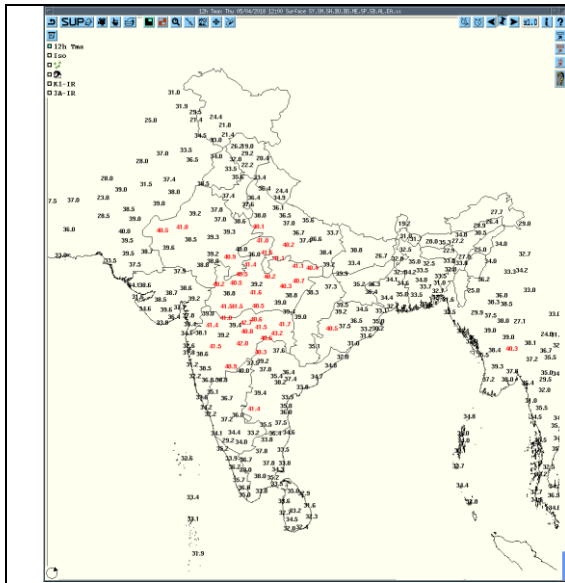
IMR



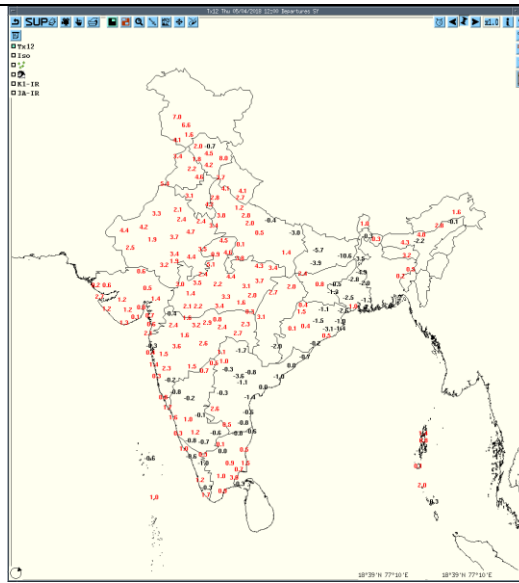
HEM



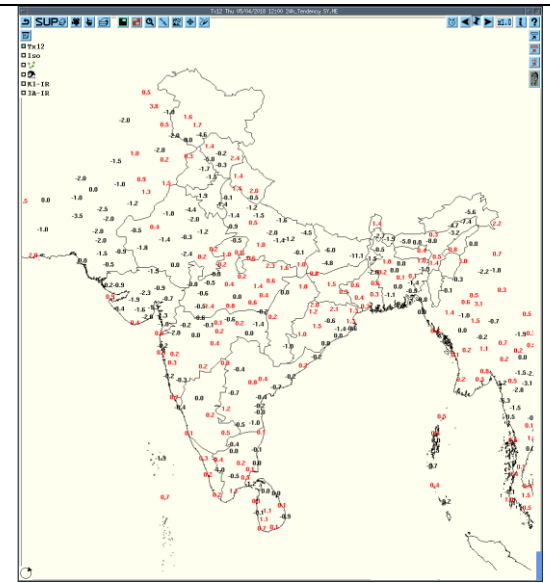
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



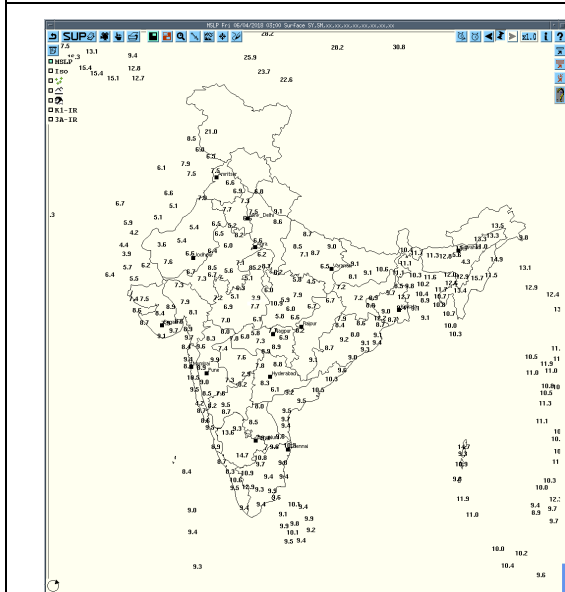
Tmax



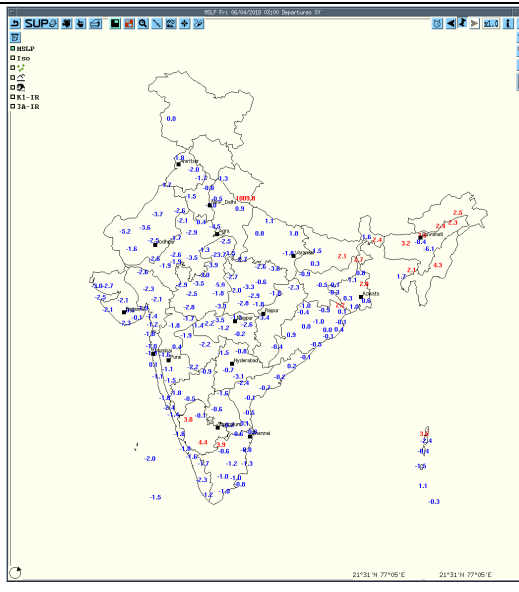
Departure Tmax



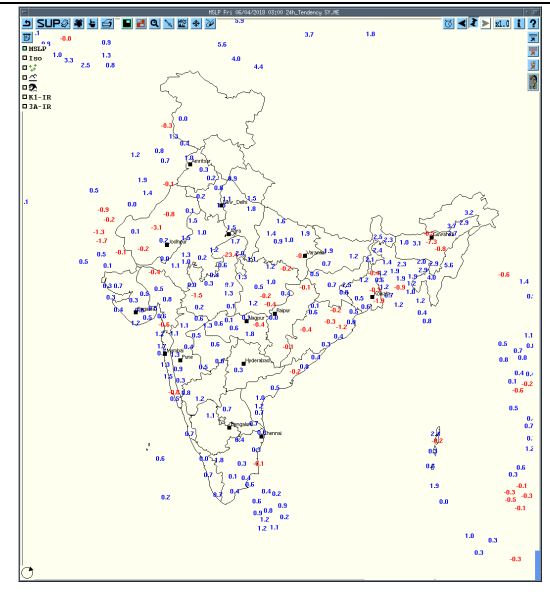
Tendency Tmax



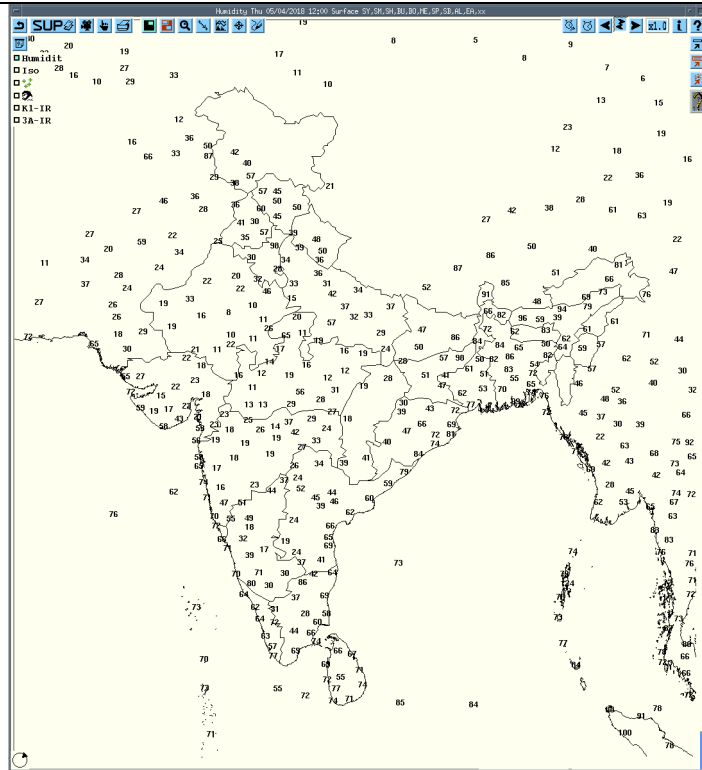
MSLP



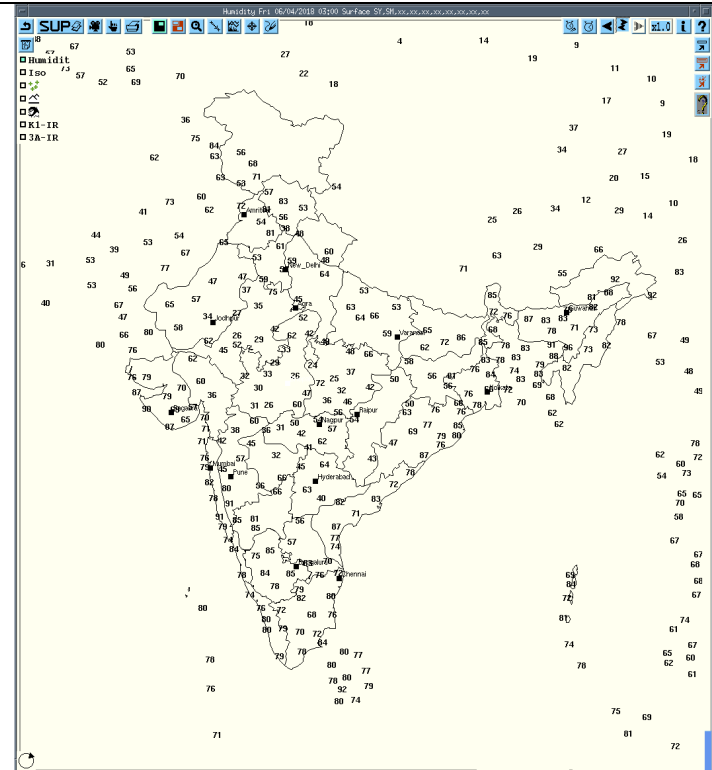
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Past 24 hours DWR Report:

DWR Station Name	Date of Report	Time Interval of Observation	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
Jaipur	06-04-18	050842-051822	Multiple cell with average height of 5.0 km & maximum reflectivity 59.50 dBZ	Multiple cell develop from 0842 UTC of 05/04/2018 towards W, NW, N, NE, E of Jaipur and moved to E,NE Wards at speed 20-25 km/hr	Multiple cell develop from 0842 UTC 05/04/2018 towards W, NW, N, NE, E of Jaipur and reaches maximum reflectivity during 0852 to 1722 UTC of 05/04/2018 and died down at 1822 UTC.	Hailstorm/ Thunder storm with Light rain at Isolated places	Alwar, Sikar, Jaipur, Bikaner, Bharatpur, Churu, Jhunjhunu Districts.
Visakhapatnam		050900	Isolated single cell of maximum reflectivity of 48dBz with height of 10KM	NE(222 KM) moving SEly	Isolated single cell formed at 0841UTC and developing	NIL	Ganjam Dist. Of Orissa.
		050200	Isolated single cells of maximum reflectivity of 62dBz with height of 15KM	NE(200 KM) N(168 KM) NW(71, 210 to	Isolated single cells formed in NE, N and NW	NIL	Ganjam, Gajapati, Rayagada
		051500	Cb cell at NNW with max reflectivity 47dbz and height 8kms	215kms (NNW),Since last observation and moving SE ly.	CB CELL at 12:11UTC.	-	-
		060000	CB CELLS SE 94KMS with max reflectivity49dbz with height 3kms.	20:11UTC and moving NE ly.	Formed in the SEA.	-	-

DWR Station Name	Date of Report	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
Patiala	06-04-18	050300-050600	ISOLATED ECHOS DBZ =48.5 HT .5-8 KM	In NW SECTOR, MOVEMENET IN NE DIRECTION	--	--	AMRITSAR, KAPURHALA
		050600-050900	NO ECHO	---	--	--	
		050900-051200	MULTIPLE ECHOS DBZ =52.0 HT 12- 13 KM	NE, SEC TO disha. MOVEMNET TOWARDS E, NE DIRECTION	--	--	SIMLA, RHORU, UTTER KASHA, DALHOUSIE, NARWANA
		051200-051500	MULTIPLE ECHOS DBZ =46.0 HT 10-12 KM	NE, SEC TO disha. MOVEMNET TOWARDS E, NE DIRECTION	--	--	UTTER KASHI, GANGOTRI, HOSHIARPUR
		051500-051800	MULTIPLE ECHOS DBZ =41.0 HT 9-10 KM	SW SECTOR. MOVEMENT TOWARDS E DIRECTION	--	--	MAHAM, BHIWANI, SIWANI
		051800-052100	MULTIPLE ECHOS DBZ =37.0 HT 8-9 KM	SW SECTOR. MOVEMENT TOWARDS E DIRECTION	--	--	ABOHAR, MANDI DABWALI
		052100-060000	MULTIPLE ECHOS DBZ =40.5 HT 8-9 KM	W SECTOR. MOVEMENT TOWARDS E	--	--	BATHINDA, BARNALA, ABOHAR, TALWANDI SAHIB
		060000-060252	MULTIPLE ECHOS DBZ =47.0 HT 7-8 KM	W SECTOR. MOVEMENT TOWARDS NE	--	--	FEROJPUR, FARIDKOT, ELANBAD, PANIPAT, MANDIDABWALI

DWR Station Name	Date of Report	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
Patna	06-04-18	050300-050802	Multiple Cells Lat-25.69N Long-85.91E Maximum Reflectivity: 50 dBZ Echo Top: 9 KM Lat-25.62N Long-86.05E Maximum Reflectivity: 45 dBZ Echo Top: 10 KM Lat-25.37N Long-86.37E Maximum Reflectivity: 46 dBZ	Range: 83.8 KM from DWR Patna in ENE direction Movement: Easterly Range: 97.4 KM from DWR Patna in E direction Movement: Easterly Range: 131.2 KM from DWR Patna in	N/A	Thunderstorm	East Champaran, Sheohar, Sitamadhi, Darbhanga, Supaul, Muzzafarpur, Shamastipur, Sharsha, Patna, Begusarai, Khagaria, Lakhisarai, Mung
		050802-060300	NIL	N/A	N/A	N/A	N/A
Kolkata	05-04-18	050301-050632	NIL	NIL	NOSIG ECHO	NIL	NIL
		050642-051451	1. Multicelled system with maximum height of 16.57 km 1011 UTC and maximum reflectivity of 69.0 dBz at 0832 UTC. 2. Multicelled system with maximum height of 14.15 km 1151 UTC and maximum reflectivity of 62.0 dBz at 1201 UTC	Coming from NW to N moving in SE-ward direction with a speed of 6.0 m/s Coming from W to WNW moving in SE-ward direction with a speed of 10.0 m/s	Multi-celled system Coming from NW to N from 0642 UTC Matured, Spitted at 1051 UTC, part of it crossed Bangladesh border. Other part dissipated at 1111 UTC, in NW at a distance of 125.0 km from Radar. Multi-celled system Coming from W to WNW from 0912 UTC. Matured, dissipated at 1451 UTC, in SW at a distance of 155.0	Thunderstorm/Rain / Hail Thunderstorm/Rain / Hail	N/A N/A
		051452-060000	NIL	NIL	NOSIG ECHO	NIL	NIL
		060001-060301	NIL	NIL	NOSIG ECHO	NIL	NIL

Realised past 24hrs TS/SQ/HS Data:

Realised TS/HS/SQ during past 24 hours 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)
Tehri	Northwest India	Uttarakhand	Thunderstorm	05-04-18	1820	2050
Kukernag	Northwest India	Jammu & Kashmir	Thunderstorm	05-04-18	1810	1925
Jammu	Northwest India	Jammu & Kashmir	Thunderstorm	05-04-18	0750	0830
Banihal	Northwest India	Jammu & Kashmir	Thunderstorm	05-04-18	2010	2030
Batote	Northwest India	Jammu & Kashmir	Thunderstorm	05-04-18	NIL	NIL
Katra	Northwest India	Jammu & Kashmir	Thunderstorm	05-04-18	0720	0800
Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm	05-04-18	1500	1630
Ganganagar	Northwest India	West Rajasthan	Thunderstorm	06-04-18	060010	060100
Bikaner	Northwest India	West Rajasthan	Thunderstorm	05-04-18	1755	1945
Churu	Northwest India	West Rajasthan	Thunderstorm	05-04-18	2100	2200
Agartala	Northeast India	Tripura(NMMT)	Thunderstorm	05-04-18	1920	2220
Kailashahar	Northeast India	Tripura(NMMT)	Thunderstorm	05/06-04-18	051200 060430	051500 060650
Chandrapur	Central India	Maharashtra (Vidarbha)	Thunderstorm	05-04-18	1800	1815
Ramagundam	South India	Telangana	Thunderstorm	05-04-18	0830	0915
Hyderabad	South India	Telangana	Thunderstorm	05-04-18	1550	1800
Mahabubnagar	South India	Telangana	Thunderstorm	05-04-18	1655	1705
Passighat	Northeast India	Arunachal Pradesh	Thunderstorm	06-04-18	0230	0400
Itanagar	Northeast India	Arunachal Pradesh	Thunderstorm	05-04-18	1915	1930
Silchar	Northeast India	Assam	Thunderstorm	05-04-18	2000	2350
Dibrugarh	Northeast India	Assam	Thunderstorm	05-04-18	0830	0910
Tezpur	Northeast India	Assam	Thunderstorm	05-04-18	1600	2000
Dhubri	Northeast India	Assam	Thunderstorm	05-04-18	1420	1510
Guwahati	Northeast India	Assam	Thunderstorm	05-04-18	1715	1950
			Squall from West with max. wind speed 32Kt	05-04-18	1735	1736
Barapani	Northeast India	Meghalaya (NMMT)	Thunderstorm	05-04-18	1240	1610
Cherrapunjee	Northeast India	Meghalaya (NMMT)	Thunderstorm	05-04-18	1806	/2040
Shillong	Northeast India	Meghalaya (NMMT)	Thunderstorm	05-04-18	1230	1400
Lengpui	Northeast India	Mizoram (NMMT)	Thunderstorm	05-04-18	1327	1715

Realised TS/HS/SQ during past 24 hours 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)
Coochbehar	East India	Sub-Himalayan West Bengal	Thunderstorm	05-04-18	1155	1345
		Sub-Himalayan West Bengal	Hailstorm(diameter 1.0cm)	05-04-18	1230	1233
		Sub-Himalayan West Bengal	Squall from SE with maximum wind speed 45kmph	05-04-18	1210	1212
Jalpaiguri	East India	Sub-Himalayan West Bengal	Thunderstorm	05-04-18	1115	1200
Malda	East India	Sub-Himalayan West Bengal	Thunderstorm	05-04-18	1200 2200	1400 0340
			Hailstorm (diameter: 1.0cm)	05-04-18	2225	2226
Digha	East India	Gangetic West Bengal	Thunderstorm	05-04-18	1910	2000
Bankura	East India	Gangetic West Bengal	Thunderstorm	05-04-18	1630	1735
Sriniketan	East India	Gangetic West Bengal	Thunderstorm	05-04-18	1525	1640
Bhagalpur	East India	Bihar	Thunderstorm	05-04-18	1145	1320
Purnia	East India	Bihar	Thunderstorm	05-04-18	1110	1220
Balasore	East India	Odisha	Thunderstorm	05-04-18	1810	2010
Chandbali	East India	Odisha	Thunderstorm	05-04-18	2000	2030
Paradeep	East India	Odisha	Thunderstorm	05-04-18	2050	2130
Keonjhar	East India	Odisha	Thunderstorm	05-04-18	1800	2000
Port Blair	East India	Andaman & Nicobar Islands	Thunderstorm	05-04-18	0830	0910
					1150	1215

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

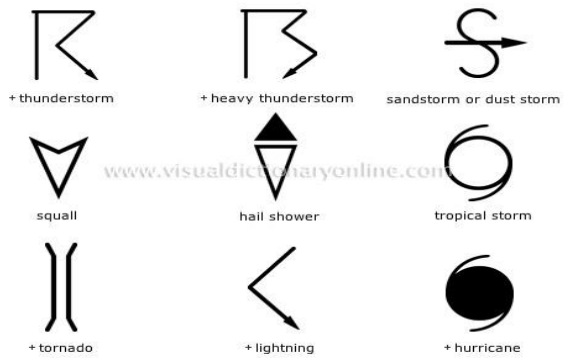
ForRadarimagesofthepast24hoursincludingmosaicofimages:

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	