



India Meteorological Department

FDP STORM Bulletin No. 27 (02-04-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

- ♦ A cyclonic circulation between 2.1 km & 4.5 km above mean sea level lies over northern parts of Odisha & neighbourhood.
- ♦ The remnant Western Disturbance as a trough in mid & upper tropospheric westerlies now runs aloft the above cyclonic circulation with its axis at 5.8 km above mean sea level from east Arunachal Pradesh to interior Odisha across west Assam and Gangetic West Bengal.
- ♦ The Western Disturbance as a trough in mid & upper tropospheric westerlies now runs roughly along Long 52°E to the north of Lat 28°N.
- ♦ The cyclonic circulation extending upto 1.5 km above mean sea level over north Chhattisgarh and neighbourhood persists.
- ♦ The trough extending upto 1.5 km above mean sea level from cyclonic circulation over north Chhattisgarh & neighbourhood now runs upto south Interior Karnataka across Vidarbha, Marathwada and North Interior Karnataka.
- ♦ The cyclonic circulation over Comorin area & neighbourhood now lies over Lakshadweep area & neighbourhood and extends upto 1.5 km above mean sea level.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

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

Convective Activity:

Cell No.	Date/Time (UTC)	Area/ Location	Minimum CTBT (Minus °C)	Movement/ Remarks
1	020300	North Kerala	57	--
	020600	-	-	DISSIPIATED
2	020700	Coastal Andhra Pradesh, adjoining Rayalaseema	61	
	020800	-Do-	63	
	020900	South Andhra Pradesh	63	

Western Disturbance (WD):

Scattered multi-layered clouds were seen over East Iran, North Afghanistan, Pakistan and over the area between Lat 37.0N to 44.0N Long 68.0°E to 90.0°E in association with WD over the area.

Clouds description within India:

Scattered low/medium clouds with embedded isolated weak convection seen over north Jammu & Kashmir. Scattered low/medium clouds seen over North Haryana, north Uttarakhand, East Odisha, Southeast Bihar, East Jharkhand, Assam, Arunachal Pradesh, Tripura, Nagaland, Manipur, Mizoram, Konkan and Goa. Broken low/medium clouds with embedded isolated weak to moderate convection seen over Gangetic west Bengal, Sub Himalayan West Bengal, Sikkim, Arunachal Pradesh and East Meghalaya. Isolated low/medium clouds with embedded isolated weak to moderate convection seen over West Gujarat, West Rajasthan, Karnataka, Rayalaseema, North Kerala and North Tamilnadu. Scattered low/medium clouds with embedded moderate to intense convection seen over South Andhra Pradesh and South Kerala.

Arabian Sea:

Scattered low/medium clouds with embedded isolated weak convection seen over Southeast Arabian Sea.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convection seen over Southeast Bay. Scattered low/medium clouds seen over Andaman Sea and Bay Islands south of Lat. 10.0°N.

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

Moderate to intense convection was observed over North-East States Jharkhand West Bengal Jharkhand Odisha Chhattisgarh Telangana Andhra Pradesh South Interior Karnataka Tamilnadu Kerala SHWB GWB and weak to moderate convection observed over Gujarat Rajasthan J&K and North Interior Karnataka.

OLR:

Upto 230 Wm^{-2} was observed over J&K North Himachal Pradesh North Uttarakhand Punjab Gangetic West Bengal SHWB North-East States Odisha East Jharkhand Telangana South Chhattisgarh north Andhra Pradesh South Interior Karnataka North Kerala central Gujarat west Rajasthan .

CONVECTIVE ACTIVITY (DURING LAST 24 HRS):

CELL NO.	DATE/ TIME (UTC)	AREA/ LOCATION	MINIMUM CTBT (MINUS DEG C)	MOVEMENT/ REMARKS
1	02/0300	N KER	57	
	02/0400			DISSIPIATED

Synoptic features:

Trough in Westerlies runs from west Maharashtra to Andhra Pradesh across Kerala, Tamilnadu.

Dynamic Features:-

Low to Medium wind shear is observed over India.

Negative shear tendency is observed over Uttarakhand Uttar Pradesh and adjoining areas north-east states SHWB GWB and positive shear tendency over rest India.

A positive Vorticity field is observed over North Gujarat North-west Rajasthan Punjab South Interior Karnataka.

Negative low level convergence observed over Vidarbha and Positive Low Level Convergence is observed over rest India.

Precipitation:**IMR:**

Rainfall upto 20-30 mm observed over east Odisha east Jharkhand west Bengal north Kerala West Tamilnadu South Gangetic West Bengal

Rainfall upto 10-20 mm observed over rest east Odisha east Jharkhand west Bengal north Sikkim rest north Kerala and rest west Tamilnadu.

Rainfall upto 1-10 mm observed over North east J & K rest Sikkim North-East States North Gangetic West Bengal east Bihar rest Odisha East Jharkhand North-East Andhra Pradesh Telangana rest Kerala rest Tamilnadu and south interior Karnataka..

HEM:

Rainfall upto 01-14 mm observed over Bihar Jharkhand Odisha north Chhattisgarh west Bengal GWB Telangana north Andhra Pradesh South Interior Karnataka North Kerala west Tamilnadu Assam and Nagaland

RADAR and RAPID RGB Observation:

Moderate isolated echoes (dBZ around 50 and height around 10km) were seen on DWR Hyderabad and Machilipatnam domain at around 1640 IST. Light to Moderate isolated echoes were also seen on DWR Patna and Thiruvananthapuram at around 1700 IST.

RAPID RGB RAPID RGB Satellite imagery at 1600IST indicates significant convection over East Gangetic west Bengal, Tripura, South Telangana, Rayalaseema and South Coastal Andhra Pradesh.

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 increase 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	02.04.2018	03.04.2018
PM10 (micro-g/m ³)	198	218
PM2.5 (micro-g/m ³)	77	84

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: Trough at 700 hPa over eastern UP in Day-0, shifting SE-wards to over Head Bay of Bengal in Day-1. In Day-2&3 it can be seen as a weak CYCIR over Head Bay of Bengal.

Confluence & Wind Discontinuity regions:

12 UTC of Day 0-4: at 925 hPa S-N wind discontinuity over interior peninsula extending SW-NE over Chhattisgarh, Jharkhand and WB region.

Synoptic Systems:

12 UTC of Day 0-2: At 500 hPa westerly trough over WB and Bangladesh

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

12 UTC of Day 0-5: -----

3. Convergence at 850 hPa:

Day/Index: Subdivisions with Lower Level Convergence $> 15 \times 10^{-5} /s$

Day0: East_RJ, Madhya_Maharashtra, Coastal_AP, NI_Karnataka, SI_Karnataka,

Day1: Jharkhand, West_UP, West_MP, East_MP, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, NI_Karnataka, SI_Karnataka,

Day2: Jharkhand, Jammu_Kashmir, Odisha, Madhya_Maharashtra, Marathwada, Chhattisgarh, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

Day3: Jharkhand, Odisha, West_MP, Madhya_Maharashtra, Vidarbha, Chhattisgarh, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

Day4: Jharkhand, Hry_Chhd_Delhi, Odisha, West_MP, East_MP, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, TN_Puducherry, SI_Karnataka, Kerala

4. Low level Vorticity:-Positive Vorticity:

Day/Index: Subdivisions with Lower Level Vorticity $> 15 \times 10^{-5} /s$

Day0: Coastal_AP,

Day1: Chhattisgarh,

Day2: Assam_Meghalaya, East_UP, Jammu_Kashmir, Odisha, Madhya_Maharashtra,

Day3: Assam_Meghalaya, NE_NMMT, Bihar, Uttarakhand, Himachal_Pradesh, Madhya_Maharashtra,

Day4: Arunachal_Pradesh, NE_NMMT, Jharkhand, Bihar, Hry_Chhd_Delhi, Himachal_Pradesh, Madhya_Maharashtra.

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

Day/Index: Subdivisions with Showalter Index < -4

Day0: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Coastal_AP, Rayalseema, TN_Puducherry, SI_Karnataka, Kerala,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Kerala,

Day2: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Uttarakhand, Jammu_Kashmir, Odisha, Madhya_Maharashtra, Vidarbha, Chhattisgarh, Coastal_AP, TN_Puducherry, SI_Karnataka, Kerala,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Konkan_Goa, Madhya_Maharashtra, Coastal_AP, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day4: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, Uttarakhand, Jammu_Kashmir, Odisha, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala

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

Day/Index: Subdivision with Total Totals Index > 52

Day0: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Chhattisgarh, Coastal_AP, Telangana,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Odisha, Vidarbha, Chhattisgarh, Coastal_AP, Telangana,

Day2: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, East_MP, Guj_Reg, Konkan_Goa, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana,

Day3: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Odisha, Konkan_Goa, Madhya_Maharashtra, Vidarbha, Chhattisgarh, Coastal_AP, NI_Karnataka,

Day4: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Saurashtra_Kutch, Konkan_Goa, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana, NI_Karnataka

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

Day/Index: Subdivisions with K Index > 40

Day0: Arunachal_Pradesh, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Rayalseema, TN_Puducherry, SI_Karnataka, Kerala,

Day1 :Arunachal_Pradesh, Sub_Himalayan_WB, West_UP, Uttarakhand, Hry_Chhd_Delhi, Himachal_Pradesh, Jammu_Kashmir, Odisha, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, SI_Karnataka,

Day2: Arunachal_Pradesh, Sub_Himalayan_WB, Uttarakhand, Jammu_Kashmir, Odisha, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka,

Day3: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Punjab, Jammu_Kashmir, Odisha, Chhattisgarh, Coastal_AP, Coastal_Karnataka, SI_Karnataka,

Day4: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Uttarakhand, Odisha, Vidarbha, Chhattisgarh, Coastal_AP, TN_Puducherry, Coastal_Karnataka, SI_Karnataka.

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1:Jammu_Kashmir,

Day2:Jammu_Kashmir,

Day3:Andaman_Nicobar,

Day4:Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Odisha, Andaman_Nicobar,

Day5:Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Jharkhand, Bihar, Marathwada, NI_Karnataka .

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

1. Synoptic Systems:

The analysis based on 00 UTC indicates a cyclonic circulation in lower troposphere over Northern Orissa and adjoining areas. The forecast shows it will persist for next 48 hour and become less marked thereafter. The analysis also shows a cyclonic circulation over Chhattisgarh and adjoining Madhya Pradesh region moving north eastward in next 48 hour forecast becoming less marked thereafter. A trough is extending from this cyclonic circulation up to south interior Karnataka across Vidarbha, Marathawada and north Karnataka. The analysis shows a feeble cyclonic circulation over North West Rajasthan and adjoining areas in lower troposphere. Forecast shows it will persist for next 48 hours.

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)}:

Mostly along the foothills of Himalaya from J&K to NE states, west and east Uttar Pradesh and adjoining area up to Bihar Jharkhand and adjoining GWB on all 3 days. Also found in the vicinity of the trough extending from Chhattisgarh and adjoining Madhya Pradesh up to South Interior Karnataka across Vidarbha and Marathawada.

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, Orissa, Bihar, Jharkhand, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Karnataka, Tamil Nadu, parts of Gujarat, coastal Maharashtra, Konkan & Goa, North and East Madhya Pradesh; East Vidarbha adjoining Chhattisgarh, coastal areas along the east coast and west coast, extreme south peninsular India, Tripura and adjoining area, parts of Uttar Pradesh, Rajasthan, J&K during all 3 days; over parts of Punjab and Himachal Pradesh on day 1; Maximum value of the index is seen over parts of Gujarat, coastal areas along the west coast, Konkan and Goa, coastal Maharashtra, Orissa, East Vidarbha, Chhattisgarh, coastal Andhra Pradesh, Telangana and adjoining area during all 3 days; over parts Orissa and Karnataka region on day 2 and 3.

Lifted Index (< -2): The threshold value of the index is below -2 over parts of Gujarat, Saurashtra region, 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, East Uttar Pradesh, NE states on all 3 days; over parts of J&K on day 1; over parts of Punjab Himachal Pradesh and Uttarakhand on day 1 and 2; over parts of East Uttar Pradesh on day 1; maximum negative value of the index less than -8 can be seen over parts of GWB, coastal Orissa and Andhra Pradesh during all 3 days.

Total Total Index (> 50): Above threshold value is seen over most of the parts of India except NE states, extreme southern peninsular India and coastal areas along the east coast and southern part of west coast during all 3 days.

Sweat Index (> 300): Higher than threshold value of index over Parts of J&K, NE states, GWB, coastal areas along the east coast and west coast, Gujarat, Himachal Pradesh, Uttarakhand, Foothills of Himalaya, Uttar Pradesh, Orissa, Andhra Pradesh, Kerala, Tamil Nadu, Konkan and Goa, Coastal Maharashtra, Karnataka, Bihar and Jharkhand, Chhattisgarh, Vidarbha, Rajasthan, East Madhya Pradesh during all three days; over parts of Punjab, Haryana and West Uttar Pradesh on day 1 and 2; Maximum value of the index greater than 700 is seen over parts of Orissa, Telangana and some parts of Gujarat on day 1.

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, Vidarbha, Jharkhand and Chhattisgarh during all 3 days; over parts of East Uttar Pradesh on day 1; over parts of Madhya Pradesh from day 2 onwards; Maximum value of the index greater than 2500 is seen mostly over parts of Andhra Pradesh, coastal Tamil Nadu and Telangana on day 1.

CIN (50-150): Mostly over parts of Gujarat, South West Rajasthan, along east coast along west coast from Saurashtra & Kutch to coastal Karnataka and Kerala, Konkan and Goa, coastal Orissa, Telangana, Rayalaseema, Vidarbha, Andhra Pradesh and GWB, NE states, Bihar, Jharkhand, J&K, Himachal Pradesh, Uttarakhand, East Uttar Pradesh and adjoining Madhya Pradesh region during all 3 days. Over parts of Punjab, Haryana, Delhi, Himachal Pradesh, North Madhya Pradesh, Uttarakhand West Uttar Pradesh on day 1 and 2..

5. Rainfall Activity:

10-40 mm Rainfall; over parts of Arunachal Pradesh, Andhra Pradesh and Foothills of Himalaya during all 3 days; over parts of J&K, Kerala, Tamil Nadu and Karnataka on day 1 and 2; over parts of Himachal Pradesh and Orissa on day 2 and 3; over parts of Sikkim on day 3.

Up to 10 mm rainfall: Over NE states, Sikkim, Foothills of Himalaya, J&K, Uttarakhand, Punjab, Himachal Pradesh, Orissa, Chhattisgarh, Madhya Pradesh, GWB, Andhra Pradesh, Kerala, Karnataka, Tamil Nadu, Telangana and Rayalaseema on all 3 days; over parts of Uttar Pradesh on day 2 and 3, over parts of Bihar, Jharkhand and SHWB on day 1 and 3; over some parts of Rajasthan on day 2.

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

1. Model Reflectivity (Max.dBz):

> 25 dBZ Model Reflectivity: Over parts of Andhra Pradesh, Telangana, Chhattisgarh, Orissa, Tamil Nadu, Kerala, Karnataka, J&K, Arunachal Pradesh, and Gujarat on day 1; over parts of J&K, Himachal Pradesh, Uttarakhand, Orissa, Andhra Pradesh, Chhattisgarh, Kerala, Karnataka on day 2; on day 3 over parts of Kerala, Tamil Nadu and adjoining areas; over Arunachal Pradesh, Assam, Tripura and adjoining areas on day 1 and 3; maximum value of the Model reflectivity is seen over parts of Orissa, Chhattisgarh, Andhra Pradesh, Karnataka and Tamil Nadu on day 1 and 2; over parts of Assam and Arunachal Pradesh on day 3.

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

Total 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 during all 3 days; below threshold value is seen over parts of Himachal Pradesh, Uttarakhand and adjoining Uttar Pradesh on day 1; over parts of Jharkhand, Orissa, Chhattisgarh, adjoining Madhya Pradesh, some parts of Vidarbha and Andhra Pradesh from day 1 onwards; maximum value of the index is seen over parts of Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Karnataka, Telangana, Madhya Maharashtra and Marathwada region on all 3 days; over parts of J&K, Punjab, Himachal Pradesh on day 2; some parts of Gujarat on day 3; some parts of Orissa and Jharkhand on day 1.

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

CAPE (> 1000): Greater than threshold value over parts of J&K, Gujarat, coastal areas of southern part of west coast, coastal Maharashtra, Konkan and Goa, coastal areas along the east coast, coastal Orissa, Gujarat, parts of Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Chhattisgarh, Madhya Maharashtra, Marathwada, Vidarbha, Telangana, Rayalaseema and Extreme south peninsular India during all 3 days; over parts of Uttar Pradesh, Bihar and Jharkhand on day 1; over NE states on day 1 and 2; some parts of Himachal Pradesh, Uttarakhand, East Madhya Pradesh on day 3; Maximum value of the index is seen over the parts of Andhra Pradesh, Telangana, coastal Tamil Nadu and Kerala on day 1.

CIN (50-150): Over coastal areas of east coast and west coast, Gujarat, parts of Orissa, Jharkhand, Madhya Pradesh, Vidarbha, Chhattisgarh and adjoining Bihar region, Uttar Pradesh, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Coastal Maharashtra, Konkan and Goa, Telangana, Rayalaseema and NE states on all 3 days; over parts of Rajasthan from day 1 onwards; over parts of North Madhya Pradesh, Punjab, Haryana, Delhi and adjoining areas on day 2 and 3.

3. Rainfall and thunderstorm activity:

40-70 mm Rainfall: over parts of Andhra Pradesh, adjoining Telangana, Orissa and Tamil Nadu on day 1; over some parts of south Kerala on day 3.

10- 40 mm Rainfall: Over parts of Arunachal Pradesh, Sikkim and adjoining areas, Tamil Nadu, Kerala, Karnataka, Andhra Pradesh during all 3 days; over parts of J&K, Telangana and Orissa on day 1 and 2; over Foothills of Himalaya on day 2 and 3.

Up to 10 mm Rainfall: Over parts of J&K, Himachal Pradesh, Uttarakhand, foothills of Himalaya, Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Telangana, Chhattisgarh, Orissa, Gujarat and NE states on all 3 days; over parts of Bihar, Jharkhand on day 1 and 3; over parts of Rajasthan on day 2 and 3, over parts of East Vidarbha on day 1; over parts of East Madhya Pradesh on day 2.

3. IOP ADVISORY FOR 24 and 48Hrs:

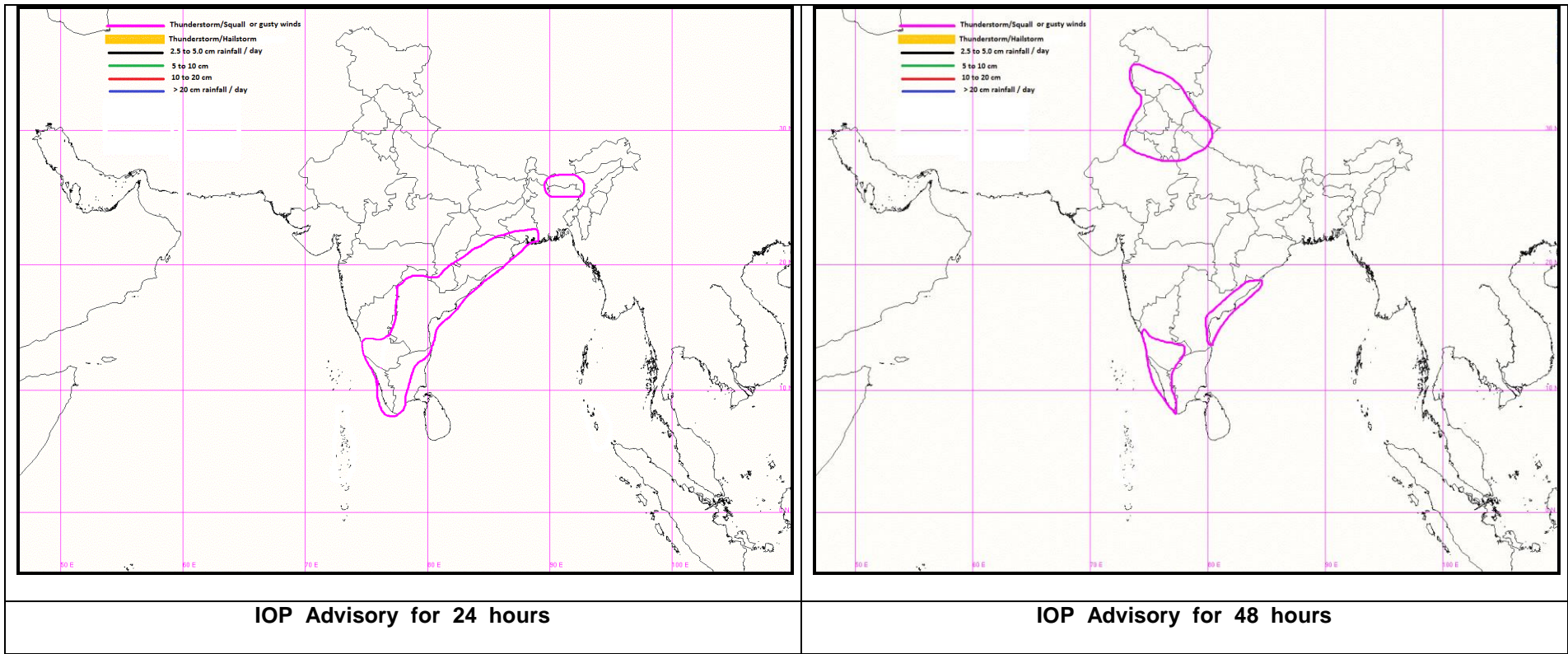
Summary and Conclusions:

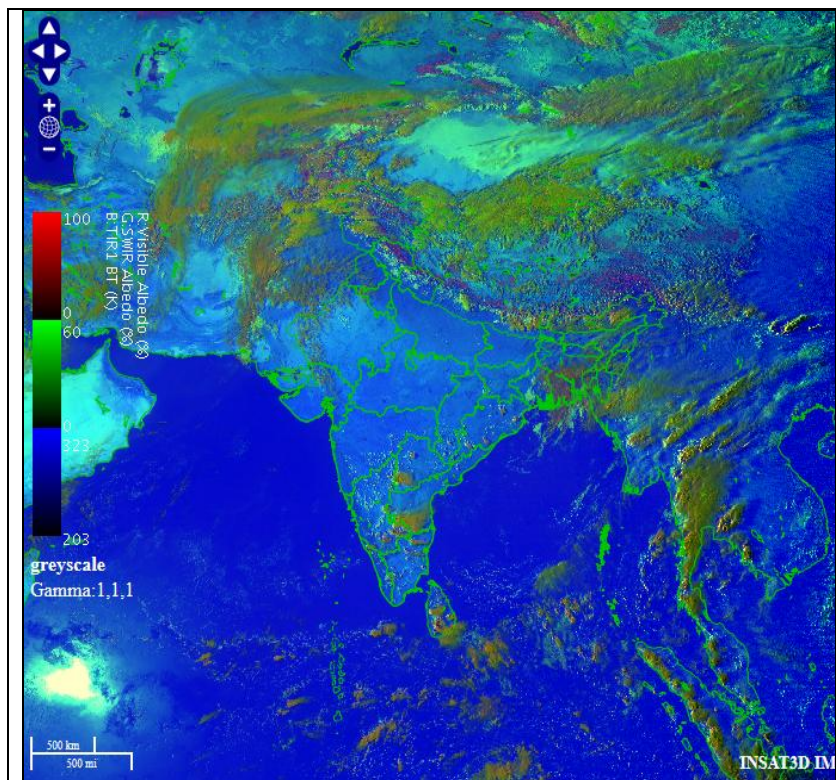
Day-1 & Day-2:

- Synoptic analysis indicates that the cyclonic circulation in the lower levels over north Chhattisgarh and neighbourhood persists from which a north-south trough in the lower levels, extends upto south Interior Karnataka. The anticyclone in the lower levels is pumping moisture to the east coast of India to the east of the trough. ECMWF and IMD GFS deterministic models indicate that in the middle levels, an anticyclone is situated over Madhya Maharashtra. The associated dry northerly flow into peninsular India will increase the probability of thunderstorms in the east and south peninsular India on day 1.
- On day 2, models, as well as synoptic analysis indicate that the Western disturbance, currently seen along Long. 52°E will start affecting Indian region. There is some moisture flow (mainly at 850 hPa and above) from the anticyclone over the Arabian Sea. Associated thunderstorm activity is likely to start over the Northwest Himalayan hill regions on day 2, and Thunderstorm/Duststorm will start over Northwest Indian plain regions. The northern end of the trough is also likely to move eastwards and thunderstorm activity will be confined to over extreme south peninsula and coastal Andhra Pradesh on day 2.

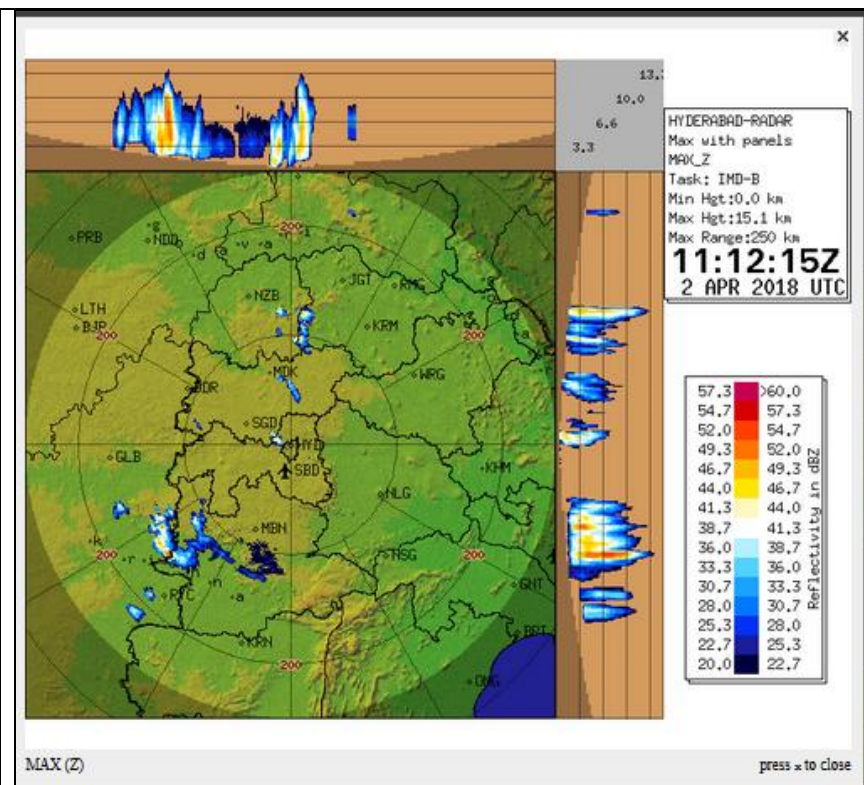
24 hour Advisory for IOP:	48 hour Advisory for IOP:
Rainfall: Nil	Rainfall: Nil
Thunderstorm with associated phenomenon: Kerala, Interior Tamil Nadu, Coastal Andhra Pradesh, Coastal Karnataka, South Interior Karnataka, Telengana, Rayalaseema, South Chhattisgarh, Odisha, Gangetic West Bengal West Assam and Meghalaya	Thunderstorm with associated phenomenon: Punjab, Haryana, Chandigarh, Delhi, West Uttar Pradesh, North Rajasthan Jammu and Kashmir, Himachal Pradesh, Uttarakhand Kerala, Coastal Andhra Pradesh, Coastal Karnataka, South Interior Karnataka

Graphical Presentation of Potential Areas for Severe Weather:

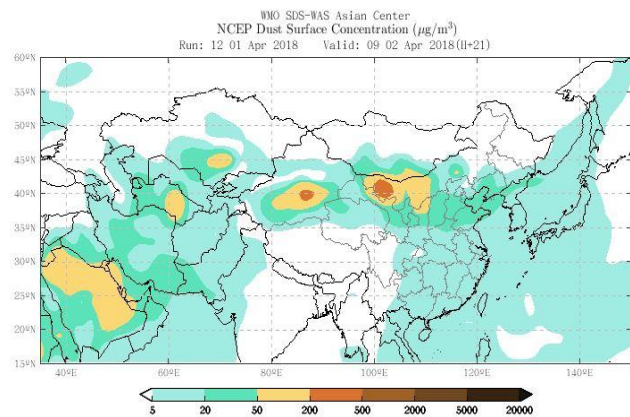




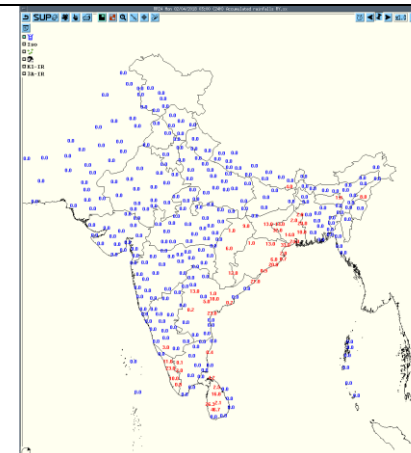
RAPID RGB Imagery at 1600 IST of the Day



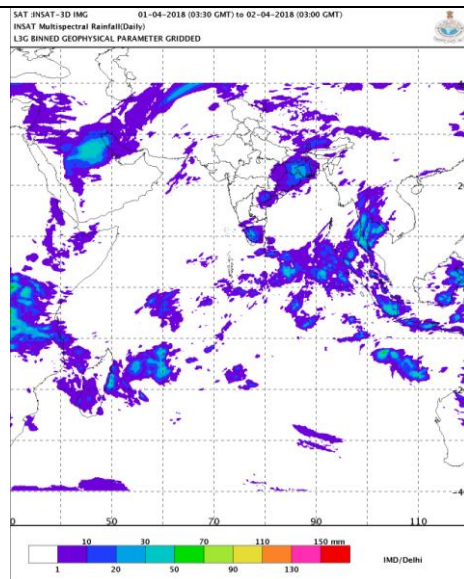
DWR Hyderabad at 1642 IST of the Day



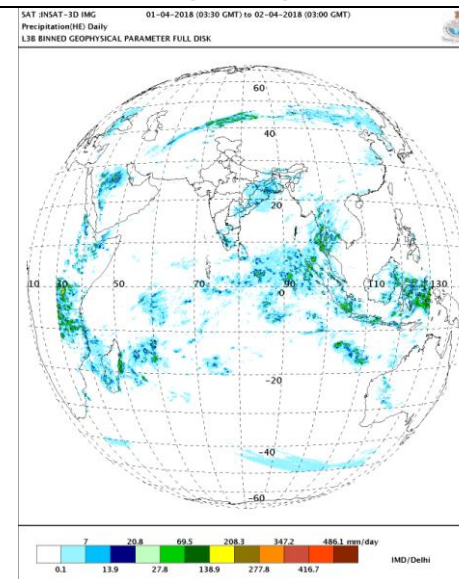
Dust AOD Forecast



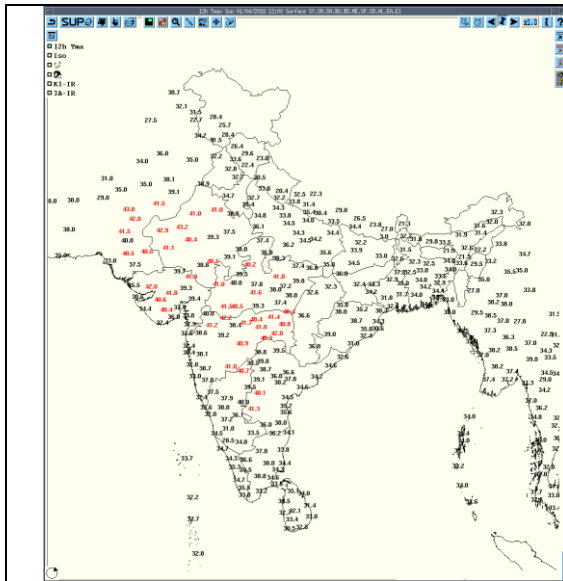
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



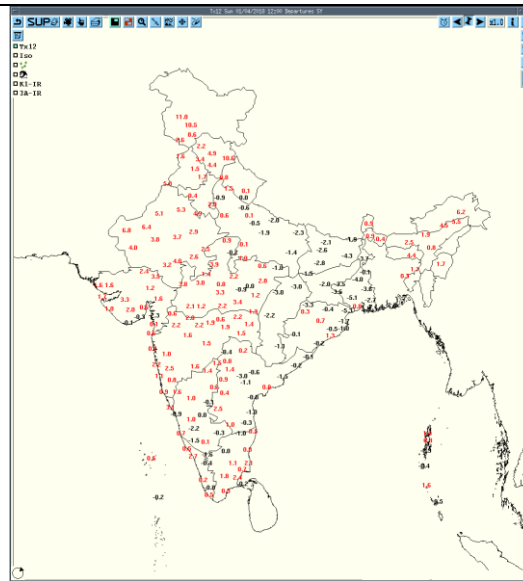
IMR



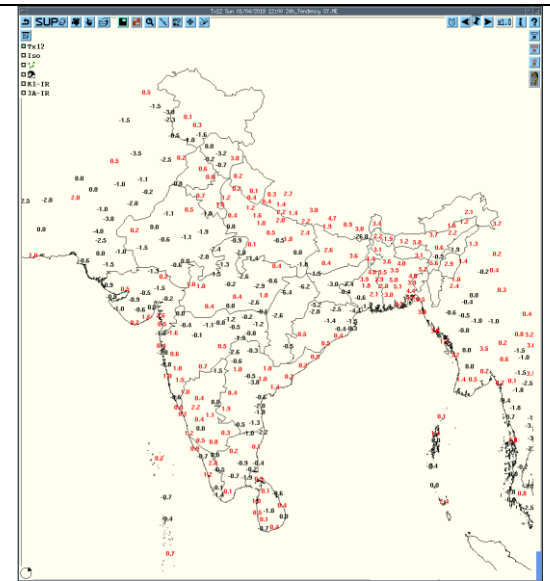
HEM



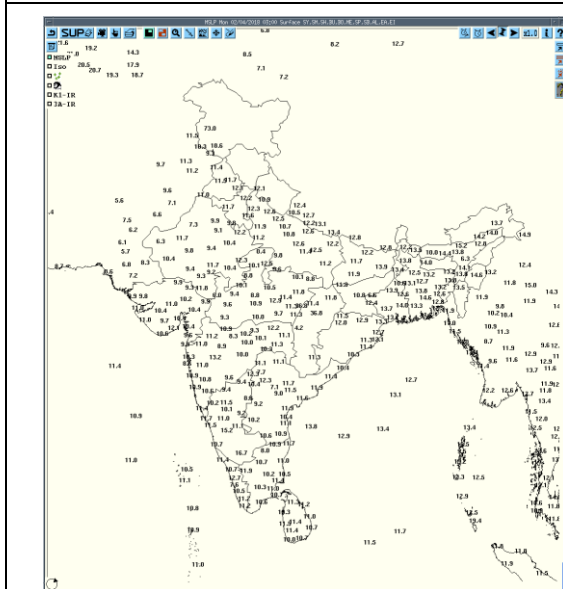
Tmax



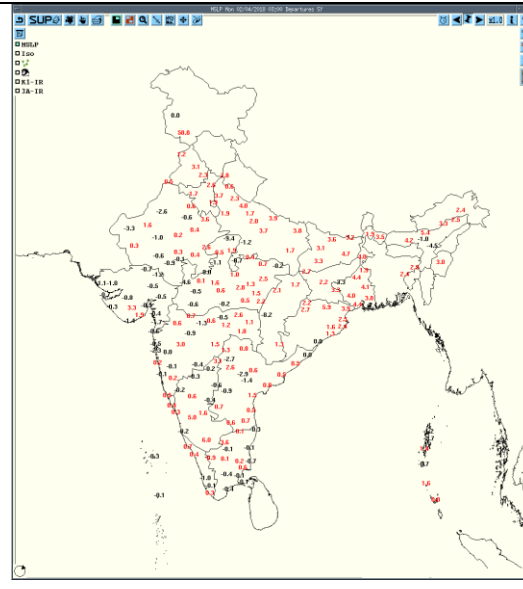
Departure Tmax



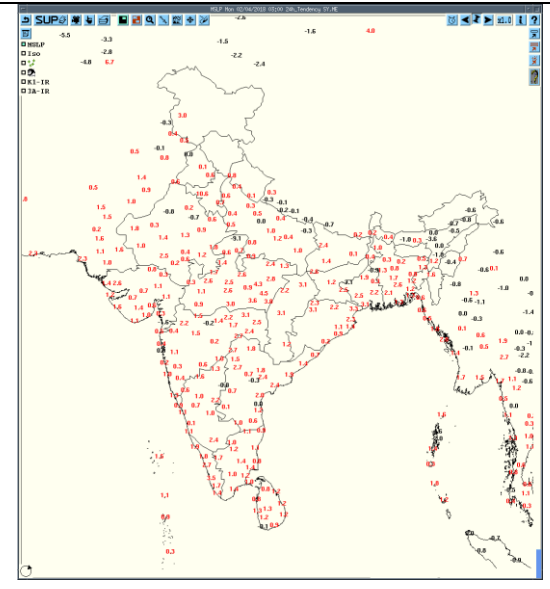
Tendency Tmax



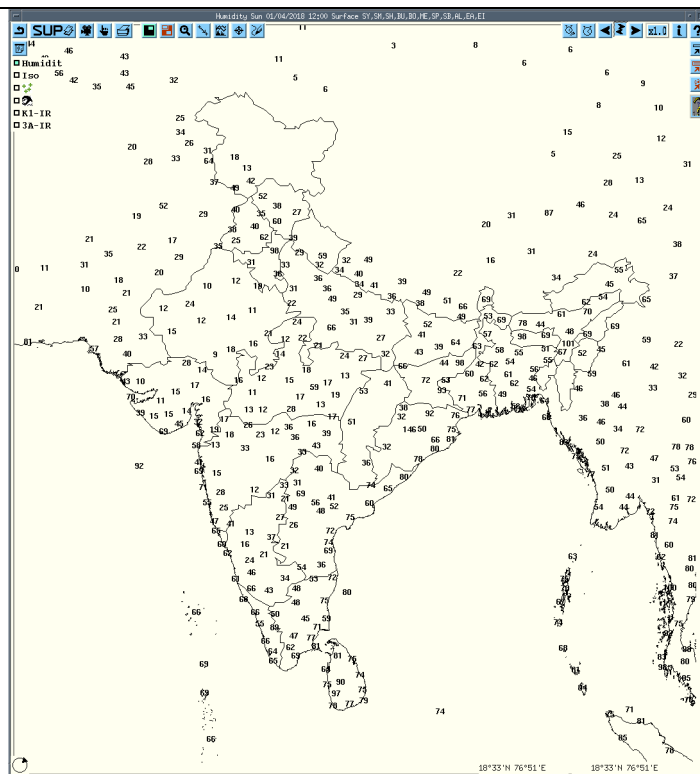
MSLP



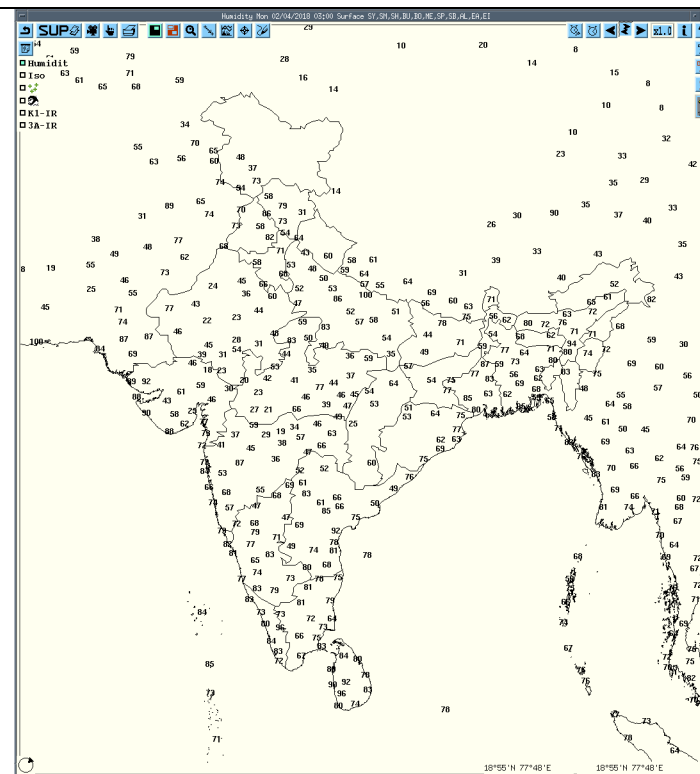
Departure MSLP



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 (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	Associate d Severe Weather if any	Districts affected
Lucknow	02-04-18	010300-020300	Nil	Nil	Nil	Nil	Nil
Jaipur	02-04-18	010300-020300	Nil	Nil	Nil	Nil	Nil
Patiala	02-04-18	010300-020252	No echo	Nil	Nil	Nil	Nil
Visakhapatnam		010900	Isolated single cells formed NW-ly with max. Reflectivity of 47dBz with height of 9kms.	NW and 89 KM	Isolated Single cell formed at 0801UTC and start dissipating from 0831 UTC.	NIL	NIL
		011200	Isolated single cells formed NW ly with max. Reflectivity of 60dBz with height of 13kms.	93 KM and moving Ely	Isolated Single cells formed at 0901UTC and start developing	NIL	Visakhapatnam (AP)
		011500	Isolated single cells formed NW ly/ NE ly with max. Reflectivity of 57dBz with height of 12kms.	233kms, Moving SEly	Isolated Single cells formed at 0901UTC and started developing	NIL	-
		011800	Multiple strong cb cells from NW to NE out of which has max reflectivity 62dbz and height 14kms .	170kms , moving SE ly.	Forming since last observation.	-	-
		020000	Multiple strong cb cells with MAX reflectivity 62 dbz at NW ly with height 14kms.	100kms, moving SE ly.	Formed since last observation	Gusty winds with thunderstorms amid slight rain.	Visakhapatnam .
		020300	Isolated cb cells with MAX reflectivity 52 dbz at SW and SE-ly with height 8kms.	240km	Formed since last observation	NIL	-

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
Agartala	02-04-18	010300-020300	Isld single cell at 010400Z over Meghalaya hills forming mltpl & squall line of 44 Dbz,11 KMS	190 Kms North, 30 Kmph, E'ly.	Dissipated over Meghalaya hills(n ear SLC) at 011002Z	Not Known.	
Kolkata	02-04-18	010300-011010	NIL	NIL	NOSIG ECHO	NIL	NIL
		011011-011641	Isolated single cell, transformed into multi cell system with maximum reflectivity of 59.0 dBz at 11:11UTC and maximum height of 16.3 km at 11:11UTC	WEST (239.1 km) moving in NE-ward direction.	Isolated single cell formed in WEST at a distance of 239.1 km from Radar at 1001 UTC, Matured and dissipated at 1641 UTC in E at a distance 46.4 km from radar.	Thunderstorm /Squall/ Rain / Hail	N/A
		011642-022400	NIL	NIL	NO SIG ECHO	NIL	NIL
		020000-020300	NIL	NIL	NO SIG ECHO	NIL	NIL
Patna	02-04-18	010300-011202	NIL	N/A	N/A	N/A	N/A
		011202-011422	Multiple Cell Lat-24.42N Long-85.34E Maximum Reflectivity: 50 dBZ Echo Top: 14 KM	Range: 131.5 KM from DWR Patna in SSE direction Movement: Easterly	N/A	Thundersquall	GAYA,NA WADA
			NIL	N/A	N/A	N/A	N/A
		012140-012222	Single Cell, Lat-26.8N,Long-85.69E Maximum Reflectivity: 49.5 dBZ Echo Top: 10 KM	Range: 148 KM from DWR Patna in NNE direction Movement: Westerly	N/A	Thunderstorm	SITAMADHI
			NIL	N/A	N/A	N/A	N/A

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)
Barapani	Northeast India	Meghalaya	Thunderstorm	01-04-18	1110	1325
Cherrapunjee	Northeast India	Meghalaya	Thunderstorm	01-04-18	1350	1440
Shillong	Northeast India	Meghalaya	Thunderstorm	01-04-18	1050	1115
Raipur	Central India	Chhattisgarh	Thunderstorm	01-04-18	1700	1920
Ambikapur	Central India	Chhattisgarh	Thunderstorm	01-04-18	1745	2100
			Hailstorm (Hail diameter: 0.10 to 0.15cm)	01-04-18	1820	1825
Bilaspur	Central India	Chhattisgarh	Thunderstorm	01-04-18	1535	1830
Gangtok	East India	Sikkim	Thunderstorm	01-04-18	1350	1430
Alipore	East India	West Bengal(GWB)	Thunderstorm	01-04-18	1935	2305
Alipore	East India	West Bengal(GWB)	Squall from NW with max speed 85kmph	01-04-18	1927	1928
Dum Dum	East India	West Bengal(GWB)	Thunderstorm	01-04-18	1950	2335
Diamond Harbour	East India	West Bengal(GWB)	Thunderstorm	01-04-18	1930	2230
Haldia	East India	West Bengal(GWB)	Thunderstorm	01-04-18	1940	2255
Digha	East India	West Bengal(GWB)	Thunderstorm	01-04-18	1850	2200
Digha	East India	West Bengal(GWB)	Squall from NW with max speed 44kmph	01-04-18	1940	1941
Asansol	East India	West Bengal(GWB)	Thunderstorm	01-04-18	1740	2200
Bankura	East India	West Bengal(GWB)	Thunderstorm	01-04-18	1711	2050
Sriniketan	East India	West Bengal(GWB)	Thunderstorm	01/02-04-18	At Night	
Gaya	East India	Bihar	Squall from SW with max speed 56kmph	01-04-18	1740	1742
Ranchi	East India	Jharkhand	Thunderstorm	01-04-18	1410	1810
Daltonganj	East India	Jharkhand	Thunderstorm	01-04-18	1530	1630
Jamshedpur	East India	Jharkhand	Thunderstorm	01-04-18	1530	1920
Jamshedpur	East India	Jharkhand	Squall from W with max. speed 100kmph	01-04-18	1615	1616
Bhubaneswar	East India	Odisha	Thunderstorm	01/02-04-18	011940	020050
Balasore	East India	Odisha	Thunderstorm	01-04-18	1830	2140
Jharsuguda	East India	Odisha	Thunderstorm	01-04-18	1340	1445
Jharsuguda	East India	Odisha	Squall from SW with max speed 55kmph	01-04-18	1442	1446
Chandbali	East India	Odisha	Thunderstorm	01-04-18	1945	2020
Paradeep	East India	Odisha	Thunderstorm	01-04-18	1955	2050
Paradeep	East India	Odisha	Squall from NW with max. wind speed 56kmph	01-04-18	1934	1938
Puri	East India	Odisha	Thunderstorm	2135-0010	012135	020010
Gopalpur	East India	Odisha	Thunderstorm	01-04-18	1400	2200
Keonjhar	East India	Odisha	Thunderstorm	01-04-18	1610	1945

Media / Other Reports of Occurrence / Damage Reports (through RMC Kolkata):

Date of Report	Event	Report
01.04.2018	Thundersquall	Thunder squall reported occurred on 01.04.2018 evening in many areas of Kolkata and some other districts of G.W.B. Many Trees and electric poles uprooted, electricity supply disrupted, flights diverted. 5 children injured at Eco Park, Kolkata Thunder squalls also reported occurred in some places of Odisha state, trees uprooted, structure collapsed at Jajpur. (Source: (i) The Telegraph, Kolkata, 02.04.2018, p.13, (ii) New Indian Express, Bhubaneswar, 02.04.2018, p.6)

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

Past24hourHEMandIMRainfall(upto03UTCof today)

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

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

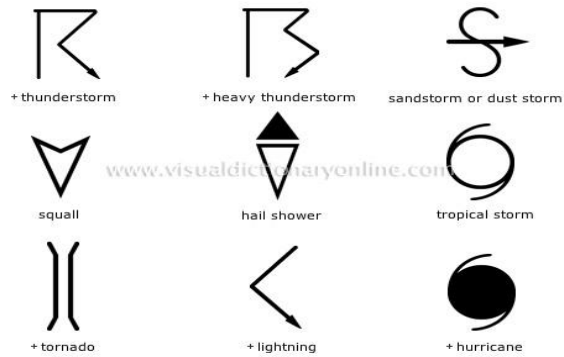
For Radar images of the past 24 hours including mosaic of images:

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

Satellite sounder based T- Phigram

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

WEATHER SYMBOLS:



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