

## **India Meteorological Department** FDP STORM Bulletin No. 42 (17-04-2018)

#### **1. CURRENT SYNOPTIC SITUATION:**

#### **NWFC INFERENCE (0300UTC of the Day):**

• The Western Disturbance as an upper air cyclonic circulation over north Pakistan & neighbourhood extending upto 3.1 km above mean sea level persists.

♦ A fresh Western Disturbance is likely to affect Western Himalayan region & adjoining plains from 19th onwards.

• The cyclonic circulation over northeast Rajasthan & adjoining Haryana extending upto 0.9 km above mean sea level now lies over south Haryana & neighbourhood. A trough at 0.9 km above mean sea level runs from this cyclonic circulation to East Vidarbha across central pars of Madhya Pradesh.

♦ A trough runs from northeast Uttar Pradesh to Manipur across Meghalaya at 0.9 km above mean sea level.

• The cyclonic circulation over Sub-Himalayan West Bengal & neighbourhood persists and now extends upto 0.9 km above mean sea level and lies embedded in the above trough.

♦ The trough of low at mean sea level over Equatorial Indian Ocean & adjoining southeast Arabian Sea with the cyclonic circulation aloft extending upto 1.5 km above mean sea level now lies over Equatorial Indian Ocean & adjoining Southwest Arabian Sea.

• The other trough of low at mean sea level over Equatorial Indian Ocean & adjoining central parts of south Bay of Bengal with the embedded cyclonic circulation extending upto 3.1 km above mean sea level now lies over Equatorial Indian Ocean & adjoining Southwest Bay of Bengal off south Sri Lanka coast.

• The north-south wind discontinuity from north Madhya Maharashtra to interior Tamilnadu across interior Karnataka at 0.9 km above mean sea level now runs from North Madhya Maharashtra to Rayalaseema across North Interior Karnataka.

♦ A cyclonic circulation extending up to at 0.9 km above mean sea level lies over north Kerala coast and neighbourhood.

#### SATELLITE OBSERVATIONS during past 24 hrs and current observation:

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

#### Western disturbance (WD):

Scattered multi-layered clouds over North Pakistan, adjoining North Afghanistan, Jammu & Kashmir, & over the area between lay 37.0°N to 43.0°N, long 62.0°E to 106.0°E and weak to moderate convection over Haryana, Delhi, West and adjoining Central Uttar Pradesh in association with another WD over the area.

#### Westerly Trough & Jet Stream:

Trough in westerlies runs roughly along long 65.0E & north of lat 28.0N.

#### **Convective Activity:**

Convective Clouds developed over North Coastal Kerala, South Coastal Karnataka, and Lakshadweep.

#### Precipitation Nowcast Based on WMO Scope Product:

Based on 0300 UTC satellite data indicate that precipitation is likely to take place during next three (03 hrs) over West Jammu & Kashmir, North Coastal Kerala, South Coastal Karnataka, Sub-Himalayan West Bengal, Meghalaya and Lakshadweep.

#### Clouds descriptions within India:

Broken low/medium clouds with embedded moderate to intense convection seen over Jammu & Kashmir. Scattered low/medium clouds with embedded moderate to intense convection seen over Coastal, Southwest Karnataka adjoining coastal, North Kerala and over Lakshadweep. Scattered low/medium clouds with embedded weak to moderate convection seen over Himachal Pradesh and Uttarakhand. Scattered low/medium clouds with embedded weak to moderate convection seen over Sub-Himalayan West Bengal, Meghalaya adjoining Assam, over Bangladesh and Tripura. Scattered low/medium clouds seen over South Haryana, Uttar Pradesh, Sikkim, Mizoram, Southeast Rajasthan, North Gujarat, Northwest Madhya Pradesh and Madhya Maharashtra.

#### Arabian Sea:-

Scattered low/medium clouds with embedded intense to very intense convection seen over area south of lat 11.5° N.

#### Bay of Bengal & Andaman Sea:

Broken low/medium clouds with embedded weak to moderate convection seen over South Bay and South Andaman Sea.

#### Past Weather:

#### Convection (during last 24 hrs):

Moderate to Intense convection was observed over J&K South Kerala adjoining Tamilnadu North Coastal Andhra Pradesh South Interior Karnataka South Coastal Karnataka adjoining Kerala and Weak to Moderate convection observed over Himachal Pradesh Uttarakhand Sikkim Sub Himalayan West Bengal Meghalaya.

#### OLR:-

Up-to 230wm<sup>-2</sup> observed over Jammu & Kashmir North Himachal Pradesh North Uttrakhand Sikkim Arunachal Pradesh and Up-to 250wm<sup>-2</sup> observed over South Costal Karnataka Kerala Tamilnadu Meghalaya Assam Nagaland North Manipur.

Synoptic Features (Westerly Trough & Jet Stream): Trough in Westerly's roughly along Longitude 65.0E & north of Latitude 28.0N

#### **Dynamic Features:**

Up to 30- 60 Knots wind shear is observed over North & Central India and 5-15 over south peninsula India.

A **positive Vorticity** field at 850 hPa is observed over J&K Himachal Pradesh Uttarakhand Punjab Haryana Uttar Pradesh Coastal Karnataka Tamilnadu & Kerala.

#### Precipitation:

IMR:

Rainfall upto 20-50 mm observed over some parts of North-West Jammu & Kashmir Kerala South Interior Karnataka West Tamilnadu North Coastal Andhra Pradesh (.)

Upto 01-10 mm observed over rest J&K South Himachal Pradesh North Uttarakhand Sub Himalayan West Bengal Meghalaya Nagaland.

#### **RADAR and RAPID RGB Observation:**

Isolated/multiple moderate to strong echoes (dBZ >50 and height >12km) are seen in domain of DWR Agartala and Kolkata at around 1245IST.

RAPID RGB Satellite imagery at 1130IST indicates significant convection over Jammu & Kashmir, North Himachal Pradesh, Southeast Uttarakhand, Meghalaya, South Assam adjoining Manipur & Mizoram and Lakshadweep 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 increase over north-western part of India for next few days.

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

Delhi – SAFAR analysis & Forecast	17.04.2018	18.04.2018
PM10 (micro-g/m <sup>3</sup> )	237	214
PM2.5 (micro-g/m <sup>3</sup> )	103	93

#### 2. NWP MODEL GUIDANCE:

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

#### 1. Weather Systems:

Low level CYCIRS, Troughs: 00 UTC of Day 2-5: A deep trough and associated strong winds over Bangladesh and adjoining NE region

**Confluence & wind Discontinuity regions: 12 UTC of Day 0-2**: 925hPa N-S discontinuity over Southern Peninsular India and in Day 1-2 SW-NE discontinuity over MP Chhattisgarh & Odisha

Synoptic Systems: 00 UTC of Day 3-4: WD as a deep trough at 500 hPa over J & K and adjoining Pakistan.

**00UTC of Day 2-5:** 925 hPa anticyclone over Bay of Bengal In Day 3-5 associated south easterly winds are stronger along the east coast and over Bangladesh

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

12UTC of Day 0-3: Nil Day 3: Over Gujarat & Rajasthan associated with approaching WD

#### 3. Convergence at 850 hPa:

#### Day/Index: Subdivisions with Lower Level Convergence > 15 x 10^-5 /s

Day0: NE NMMT, East MP, Vidarbha, NI Karnataka, SI Karnataka,

Day1: Assam Meghalaya, NE NMMT, Jharkhand, Madhya Maharashtra, SI Karnataka,

Day2: Uttarakhand, Madhya Maharashtra, Tamilnadu, Puducherry, NI Karnataka, SI Karnataka,

Day3: Assam Meghalaya, Gangetic WB, Jharkhand, West UP, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, East MP, Madhya Maharashtra, Chhattisgarh, Telangana, NI Karnataka,

Day4: Assam Meghalaya, Gangetic WB, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

#### 4. Low level Vorticity:-Positive Vorticity:

#### Day/Index: Subdivisions with Lower Level Vortex > 15 x 10^-5 /s

Day0: Jharkhand, Bihar, Uttarakhand,

Day1: Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Day2: Assam Meghalaya, Sub Himalayan WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Tamilnadu, Puducherry, Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Bihar, West UP, Punjab, Jammu Kashmir, West Rajasthan, Chhattisgarh, Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Odisha,

#### 5. Showalter Index: -3 to -4[Very unstable]: Day/Index: Subdivisions with Showalter Index < -4

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Chhattisgarh, Coastal AP, Tamilnadu, Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Odisha, Tamilnadu, 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, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, , Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Coastal Karnataka, NI Karnataka,

Day2: Arunachal Pradesh, Sub Himalayan WB, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalseema, Coastal Karnataka, NI Karnataka, SI Karnataka, Day3: Arunachal Pradesh, Sub Himalayan WB, Bihar, East UP, West UP, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, Chhattisgarh, SI Karnataka, SI

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

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

#### Day/Index: Subdivisions with K Index > 40

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Odisha, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Jammu Kashmir, Odisha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, Tamilnadu, Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Odisha, Chhattisgarh, Coastal AP, Telangana, Tamilnadu, Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

#### 8. Rainfall and thunder storm activity:

#### Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jammu Kashmir, Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Jammu Kashmir, Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Himachal Pradesh, Jammu Kashmir,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, 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 parts of South Haryana and adjoining areas. The forecast shows it will become less marked in next 24 hours. The analysis shows a trough extends from this cyclonic circulation southwards up to East Vidarbha across central parts of Madhya Pradesh. The forecast shows south-eastward shift of the trough till day 3. The analysis also shows a trough in the lower troposphere extending from northeast Uttar Pradesh to Manipur and adjoining areas. It will persist for next 72 hour forecast. The cyclonic circulation over SHWB and adjoining areas is embedded in the above trough. The analysis shows a north- south Trough runs from north Madhya Maharashtra to Rayalaseema across north interior Karnataka. The forecast shows it will persist till day3. A feeble cyclonic circulation is seen in the analysis over coastal Kerala and adjoining areas. The forecast shows it will become less marked in next 24 hours.

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

Although the presence of strong westerlies is found over northern parts of India, 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<sup>-1</sup>/s):.

Low level Positive Vorticity is seen mostly along the foothills of Himalaya, J&K, Himachal Pradesh and Uttarakhand; along the north- south trough for next 3 days. Low level Positive Vorticity is also seen along the cyclonic circulation over Haryana and adjoining areas on day1. It is inferred that GWB, NE states, Orissa and adjoining areas has Positive Vorticity from day 1 onwards.

# 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):** The threshold value of the index > 3 over coastal areas of Gangetic West Bengal and Kolkata, parts of Orissa, Bihar, Jharkhand, East Uttar Pradesh, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Karnataka, Tamil Nadu, parts of Gujarat, coastal Maharashtra including Mumbai, Konkan & Goa, Madhya Maharashtra, Marathwada, Vidarbha adjoining Chhattisgarh, coastal areas along the east coast and west coast, extreme south peninsular India, Assam, Meghalaya, Tripura and adjoining area, SHWB on all 3 days; over parts of South west Rajasthan on day 3; Maximum value of the index is seen over parts of GWB, Orissa, Jharkhand, Andhra Pradesh, coastal Maharashtra, Konkan and Goa, Chhattisgarh and Telangana during next 3 days; over parts of Karnataka and Rayalaseema on day 2 and 3; over parts of Bihar and adjoining areas on day 3.

**Lifted Index (< -2):** The threshold value of the index is below -2 over parts of Gujarat, coastal Andhra Pradesh, Karnataka, Telangana, Rayalaseema, Konkan and Goa, Kerala, Tamil Nadu, southern part of west coast, coastal areas along the east coast, Chhattisgarh, Bihar, Jharkhand, Vidarbha, Orissa, GWB, SHWB, Sikkim and NE states on all 3 days; over parts of J&K, Rajasthan, Punjab, Haryana, Delhi, Uttarakhand, Himachal Pradesh, Uttar Pradesh and adjoining Madhya Pradesh on day1; over parts of east Uttar Pradesh and south west Rajasthan on day 3; maximum negative value of the index less than -10 is seen over parts of GWB on day 1; over parts of GWB, Orissa and coastal Andhra Pradesh on day 2.

**Total Total Index (> 50):** The threshold value of the index is **> 50** over parts of Uttarakhand, Rajasthan, Gujarat, southern parts of Uttar Pradesh, Madhya Pradesh, Vidarbha, northern parts of Marathwada and Chhattisgarh on day 1; over most of the parts of the country on day 2 and 3 except J&K, NE states and Extreme south Peninsular India; maximum value of the index >60 is seen over parts of Rajasthan, west Uttar Pradesh, Madhya Pradesh, Chhattisgarh and Vidarbha during next 3 days; over parts of Gujarat, Bihar, Jharkhand, Orissa, Telangana and Marathwada on day 2; over parts of Punjab, Haryana, Himachal Pradesh, Uttarakhand, Bihar, Jharkhand, GWB, Orissa, Telangana, Madhya Maharashtra, Marathwada, Andhra Pradesh on day 3.

Sweat Index (> 300): Although the threshold value of the Index >300 is seen in most parts of the country during next 3 days but the maximum value of the index greater than 800 is seen over parts of GWB, Tripura and adjoining areas on day 1; over parts of GWB, Orissa, Tripura and adjoining areas on day 2.

**CAPE (> 1000):** Mostly in areas of southern peninsular India, along west coast and east coast and parts of GWB, Orissa, Andhra Pradesh, Telangana, Kerala, Tamil Nadu, Karnataka, Gujarat, coastal Maharashtra, Konkan and Goa, Jharkhand, GWB, SHWB, Assam, Tripura and adjoining areas during all 3 days; over parts of Bihar adjoining areas on day2 and 3; over some parts of East Uttar Pradesh and Chhattisgarh on day 3; Maximum value of the index greater than 2500 is seen mostly over parts of GWB, coastal Orissa, Coastal Andhra Pradesh, Coastal Tamil

Nadu and coastal Maharashtra during next 3 days; over parts of Karnataka, Konkan and Goa, coastal Kerala on day 2; over parts of Karnataka, coastal Kerala and parts of Jharkhand and adjoining areas 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 except south east Rajasthan and West Madhya Pradesh on day 1 and J&K, Punjab, Himachal Pradesh, Uttarakhand, Haryana, Delhi, Northern parts of Rajasthan, west Uttar Pradesh, Madhya Pradesh, northern parts of Chhattisgarh, Madhya Maharashtra and Marathwada during day 2 and 3, the maximum value of the index > 400 is seen over parts of SHWB, Bihar and Jharkhand on day 1.

#### 5. Rainfall Activity:

40-70 mm Rainfall: over parts of Tripura and adjoining areas on day2.

10-40 mm Rainfall: over parts Jammu and Kashmir, Karnataka, Kerala, Sikkim and NE states during next 3 days.

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

#### 3. IOP ADVISORY FOR 24 and 48Hrs:

#### Summary and Conclusions:

- Synoptic analysis indicates that a trough runs from northeast Uttar Pradesh to Manipur across Meghalaya and the cyclonic circulation over SubHimalayan West Bengal & neighbourhood persists and lies embedded in the above trough. This will give thunderstorm with gusty winds activity over Bihar, Jharkhand, SHWB and Assam, Meghalaya on Day-1.
- The north south wind discontinuity from North Madhya Maharashtra to Rayalaseema across North Interior Karnataka and a cyclonic circulation lies over north Kerala coast and neighbourhood. This will trigger the thunderstorm with gusty winds activity over North and South Interior Karnataka, Tamilnadu, Kerala on Day-1. This activity may continue to Day-2 over the same region.
- A fresh Western Disturbance is likely to affect Western Himalayan region & adjoining plains from 19th onwards

#### Day-1 & Day-2:

Significant Rainfall:	Significant Rainfall:
Nil	Nil
Thunderstorm with Squall/Gusty winds: Jammu & Kashmir Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura Sub-Himalayan West Bengal & Sikkim, Gangetic West Bengal, Jharkhand, Bihar, Odisha, Chhattisgarh, South Madhya Maharashtra Interior Tamilnadu, Kerala, Interior Karnataka, North Coastal Andhra Pradesh	Thunderstorm with Squall/Gusty winds: Jammu & Kashmir Nagaland, Manipur, Mizoram & Tripura Gangetic West Bengal, Odisha Marathawada Interior Tamilnadu, Kerala, Interior Karnataka, North Coastal Andhra Pradesh, Telangana
Thunderstorm with squall & Hailstorm: Nil	<b>Thunderstorm with Squall &amp; Hailstorm:</b> Assam & Meghalaya Sub-Himalayan West Bengal & Sikkim

#### **Graphical Presentation of Potential Areas for Severe Weather:**











![](_page_12_Figure_0.jpeg)

## Past 24 hours DWR Report:

DWR Station	Date	Time interval of observation	Organization of the cells ( isolated single cell/multiple cells convective regions/squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station & direction of movement	Remarks	Associate d severe weather, if any	Districts affected
Patna	17-04-18	160300- 161530	NIL	NIL	NIL	NIL	NIL
		161530- 172030	MULTI CELL E-TOP-10 KM Lat- 26.11 E Long-86.84 N LOCATION- ENE MAXIMUM dBZ-52.0	Range-185.2 MOVEMENT –S.E.	NIL	Thundersq uall Lightning	Madhubani, Darbhanga, Sahars a, Supaul, Madhepura, Araria, P urnia, Khagadia, Katihar, Bhagal pur, Kishanganj, Banka.
		172030- 170300	NIL	NIL	NIL	NIL	NIL
Visakhapatnam		1650900	Isolated single cells with Max. reflectivity of 49dBz and height of 9 KMS	NE(160 KMS) SEly	CB cells are forming at 0641UTC and developing.		Srikakulam Dist. (AP) Gajapati Dist. (Orissa)
		161200	Multiple cells with Max. reflectivity of 65dBz and height of 18 KMS	NE(68-200 KMS) W(66-125 KMS) and SW(95-208 KMS) moving SEly	During the period CB cells developing to matured level, dissipating and again developing.		Srikakulam, Vizianagaram, Visakhapatnam, East and West Godavari Dist. (AP) Khammam Dist(Telangana) Gajapati Dist. (Orissa) Bastar dist(Chhatisgarh)
		161500	Multiple cb cells with Max. reflectivity of 60dBz and height of 15 kms	WSW(55 kms) moving SEly	Since last observation and cb cells started dissipating.		Visakhapatnam, East Godavari Dist
		161800	Isolated cb cell with Max. reflectivity of 55dBz and height of 7 KMS	NW(152 KMS) moving Sly	Isolated cb cell developed at 1511 UTC , dissipated at 1531 UTC		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	Date	Time of	Time of end	
	_		(TS/Hail/Squall)		Commencement (IST)	(IST)	
Tehri	Northwest India	Uttarakhand	Thunderstorm	16-04-18	1150	1340	
Dehradun	Northwest India	Uttarakhand	Thunderstorm	17-04-18	0435	0535	
Alwar	Northwest India	East Rajasthan	Thunderstorm	16-04-18	1830	1900	
Ambala	Northwest India	Haryana	Thunderstorm	17-04-18	0240	0330	
					0420	0540	
Karnal	Northwest India	Haryana	Thunderstorm	16-04-18	0930	1015	
Chandigarh	Northwest India	Chandigarh	Thunderstorm	17-04-18	0245	0350	
Amritsar AP	Northwest India	Punjab	Thunderstorm	16-04-18	1757	2020	
Patiala	Northwest India	Punjab	Thunderstorm	17-04-18	0145	0315	
Banihal	Northwest India	Jammu & Kashmir	Thunderstorm	17-04-18	0210	0250	
Quazigund	Northwest India	Jammu & Kashmir	Thunderstorm	17-04-18	0130	0330	
Batote	Northwest India	Jammu & Kashmir	Thunderstorm	16-04-18	1545	1820	
Katra	Northwest India	Jammu & Kashmir	Thunderstorm	16/17-04-18	161630	161805	
					170550	170700	
Kalingapatnam	South India	Andhra Pradesh (CAP)	Thunderstorm	16-04-18	1400	1545	
Tuni	South India	Andhra Pradesh (CAP)	Thunderstorm	16-04-18	1515	1620	
Visakhapatnam	South India	Andhra Pradesh (CAP)	Thunderstorm	16-04-18	1840	1940	
Kakinada	South India	Andhra Pradesh (CAP)	Thunderstorm	16-04-18	1600	1745	
Dhubri	Northeast India	Assam	Thunderstorm	17-04-18	0645	0750	
Barapani	Northeast India	Meghalaya	Thunderstorm	16-04-18	1415	1720	
Cherrapunjee	Northeast India	Meghalaya	Thunderstorm	16-04-18	1442	1610	
Shillong	Northeast India	Meghalaya	Thunderstorm	16-04-18	1300	1630	
Agartala	Northeast India	Tripura	Thunderstorm	16-04-18	1540	1710	

#### **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:

![](_page_15_Figure_3.jpeg)

![](_page_15_Picture_4.jpeg)