



India Meteorological Department

FDP STORM Bulletin No. 39 (14-04-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

- ♦ The remnant Western Disturbance as a trough with its axis at 5.8 km above mean sea level now runs roughly along Long 90°E to the north of Lat 30°N.
- ♦ A fresh Western Disturbance as an upper air cyclonic circulation lies over northeast Afghanistan and neighbourhood with a trough in mid and upper tropospheric westerlies with its axis at 7.6 km above mean sea level running roughly along Long 50°E to the north of Lat 30°N.
- ♦ A cyclonic circulation lies over south Pakistan & adjoining southwest Rajasthan and extends upto 1.5 km above mean sea level.
- ♦ The cyclonic circulation over west Madhya Pradesh and adjoining southeast Rajasthan and Gujarat region now lies over southwest Madhya Pradesh and neighbourhood and extends upto 1.5 km above mean sea level.
- ♦ The cyclonic circulation at 1.5 km above mean sea level over central parts of south Madhya Pradesh and neighbourhood has merged with the above system.
- ♦ The trough from east Bihar to Gangetic West Bengal now runs from Sikkim to north interior Odisha across east Bihar and Jharkhand and extends upto 0.9 km above mean sea level.
- ♦ The trough of low at mean sea level over Comorin-Maldives area now lies over Maldives area and neighbourhood with the cyclonic circulation aloft extending upto 1.5 km above mean sea level.
- ♦ A north-south wind discontinuity at 0.9 km above mean sea level runs from South Interior Karnataka to south Kerala.
- ♦ The trough of low at mean sea level over Equatorial Indian Ocean and adjoining southeast Bay of Bengal & neighbourhood persists with an embedded cyclonic circulation extending upto 3.1 km above mean sea level.
- ♦ A trough at 1.5 km above mean sea level runs from the cyclonic circulation over southwest Madhya Pradesh and neighbourhood to North Interior Karnataka across Madhya Maharashtra and Marathawada.

SATELLITE OBSERVATIONS during past 24 hrs and current observation:

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

Low Level Circulation:

Scattered low/medium clouds with embedded intense to very intense convection over Southeast Arabian Sea adjoining Indian Ocean between equator to latitude 7.5N, long 71.0E to 80.0E in association with low level circulation over the area.

Western disturbance (WD):

Scattered multi-layered clouds seen over South Caspian Sea, East Iran and Afghanistan & neighbourhood in association with another WD over the area.

Convective Activity:

Convective cell that are developed over South Tamilnadu (Minimum CTT Minus 62 Deg C) are almost stationary. Convective cells that are developed over central Assam adjoining Meghalaya (minimum CTT minus 47deg C) & East Arunachal Pradesh, Northeast Assam (minimum CTT minus 57deg C) are moving in southeast direction.

Precipitation Nowcast Based on WMO Scope Product:

Based on 0300 UTC satellite data indicate precipitation is likely to take place during next three (03 hrs) over South Kerala, Central Tamilnadu extreme Southeast Assam & Arunachal Pradesh.

Clouds descriptions within India:

Scattered low/medium clouds with embedded moderate to intense convection seen over Arunachal Pradesh, Meghalaya, Nagaland, Manipur and over South Tamilnadu (minimum CTT minus 61deg C), Central Kerala (minimum CTT 51deg C) & Lakshadweep (minimum CTT 61deg C). Scattered low/medium clouds with embedded isolated weak to moderate convection seen over Southwest Jammu & Kashmir, Punjab, East Uttar Pradesh, Central Chhattisgarh, West-central Odisha, North-central Madhya Pradesh, Vidarbha, rest Kerala, North Tamilnadu, and Nicobar Islands. Scattered low/medium clouds seen over rest Jammu & Kashmir, over Himachal Pradesh, Uttarakhand, North Haryana, extreme Northwest Uttar Pradesh, Rajasthan, South Maharashtra, North Goa, Central Jharkhand, Southwest Bihar, Sikkim, Telangana, South Andhra Pradesh, Karnataka, rest Madhya Pradesh, rest Chhattisgarh, rest Odisha and rest Northeastern States,

Arabian Sea:-

Broken low/medium clouds with embedded moderate to intense convection seen over Southeast Arabian Sea off Kerala coast and with weak convection over Comorin & neighbourhood.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded isolated weak convection seen over South and East-central Bay.

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

Intense to very intense convection was observed over south Kerala south Tamilnadu.

Moderate to Intense convection was observed over rest Kerala central & south Karnataka north-west Madhya Pradesh central Chhattisgarh north GWB SHWB Sikkim Assam Meghalaya Nagaland Manipur and north Mizoram.

OLR:-

Up-to 230 Wm^{-2} observed over Jammu & Kashmir Himachal Pradesh North Uttarakhand north Punjab north-east Uttar Pradesh north-central Madhya Pradesh south-east Vidarbha west Odisha Sikkim North-East States Kerala and Tamilnadu.

Synoptic Features (Westerly Trough & Jet Stream):

Trough in westerlies runs roughly along long 85.0E & north of lat 28.0N

Dynamic Features:-

Up to 40- 60 Kts wind shear is observed over North India and 20-30 over south peninsula India.

A positive Vorticity field at 850 hPa is observed over Rajasthan Uttarakhand adjoining Uttar Pradesh west Madhya Pradesh.

Negative Low Level Convergence observed over Gujarat west Madhya Pradesh Andhra Pradesh and Tamilnadu.

Precipitation:

IMR:

Rainfall upto 110-150 mm observed over South Kerala.

Upto 70-110 mm observed over some parts of south Tamilnadu central & south Karnataka.

Upto 10-30 mm observed over some parts of west Assam east Arunachal Pradesh adjoining Assam.

Upto 01-10 mm observed over North Kerala central Tamilnadu rest Karnataka central Chhattisgarh some parts of J&K Himachal Pradesh north Uttarakhand north Punjab north-west Madhya Pradesh adjoining Uttar Pradesh south Jharkhand north GWB SHWB adjoining Bihar Sikkim rest Assam rest Arunachal Pradesh Nagaland Manipur.

RADAR and RAPID RGB Observation:

Isolated/multiple significant convection is seen over Central parts of Chhattisgarh, Southeast Madhya Pradesh, Odisha, North Coastal Andhra Pradesh and Bangladesh in DWR composite at 1310 IST.

RAPID RGB Satellite imagery at 1230IST indicates isolated significant convection over North Chhattisgarh, Southeast Madhya Pradesh, North Coastal Andhra Pradesh, Odisha, South Assam and Meghalaya.

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

Low level CYCIRS, Troughs:

12 UTC of Day 1-5: 925 & 850 hPa trough over Bangladesh and adjoining NE India. Strong winds in Day 4

Confluence & wind Discontinuity regions:

12 UTC of Day 0-4: 925hPa N-S discontinuity over Southern Peninsular India and SW-NE over MP Chhattisgarh Odisha

Synoptic Systems:

12 UTC of Day 0-1: WD as a weak trough at 500 hPa over J & K. A fresh WD over J & K in 00 UTC of Day 4

00UTC of Day 1-3: 925 hPa anticyclone over BoB & Arabian Sea. In Day 4-5 associated winds are stronger

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

12UTC - Nil (>50kts) Day 0: NE states and >40 kts in Day 0

3. Convergence at 850 hPa:

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

Day0: Arunachal_Pradesh, Madhya_Maharashtra, TN_Puducherry, NI_Karnataka, SI_Karnataka,

Day1: Jharkhand, West_MP, East_MP, Madhya_Maharashtra, Chhattisgarh, NI_Karnataka, SI_Karnataka,

Day2: Jharkhand, Hry_Chhd_Delhi, Jammu_Kashmir, West_MP, East_MP, Madhya_Maharashtra, Chhattisgarh, SI_Karnataka, Kerala,

Day3: NE_NMMT, West_MP, East_MP, Madhya_Maharashtra, TN_Puducherry, SI_Karnataka,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Madhya_Maharashtra, TN_Puducherry, NI_Karnataka, SI_Karnataka

4. Low level Vorticity:-Positive Vorticity:

Day/Index: Subdivisions with Lower Level Vortex > 15×10^{-5} /s

Day0: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh,

Day1: Assam_Meghalaya, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, West_MP,

Day2: Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Hry_Chhd_Delhi, West_RJ,

Day3: Assam_Meghalaya, Jharkhand, Bihar, Uttarakhand, Hry_Chhd_Delhi,

Day4: Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Himachal_Pradesh,

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, Uttarakhand, Odisha, East_MP, Chhattisgarh, Coastal_AP,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Odisha, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, SI_Karnataka, Kerala,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Konkan_Goa, Chhattisgarh, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

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

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Himachal_Pradesh, Jammu_Kashmir, Odisha, Konkan_Goa, Madhya_Maharashtra, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, NI_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, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, East_MP, Chhattisgarh,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, West_UP, Uttarakhand, Hry_Chdelhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, West_MP, East_MP, Chhattisgarh,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Vidarbha, Chhattisgarh,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, Konkan_Goa, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Coastal_Karnataka, NI_Karnataka

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

Day/Index: Subdivisions with K Index > 40

Day0: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Uttarakhand, Odisha, East_MP, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Odisha, West_MP, East_MP, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day2: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Odisha, East_MP, Konkan_Goa, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Bihar, Uttarakhand, Odisha, Konkan_Goa, Madhya_Maharashtra, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Odisha, Konkan_Goa, Madhya_Maharashtra, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Arunachal_Pradesh, Assam_Meghalaya, Odisha, Chhattisgarh, Kerala,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT,

Day3: Assam_Meghalaya, Himachal_Pradesh, Jammu_Kashmir,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Himachal_Pradesh, Jammu_Kashmir,

Day5: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, 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) lies over south Pakistan & adjoining southwest Rajasthan. The forecast show it will move eastward till day 2 and become less marked thereafter. The analysis shows another cyclonic circulation over southwest Madhya Pradesh and adjoining areas in lower troposphere. The forecast shows it will become less marked in next 48 hours. The analysis shows a trough extends from Sikkim to north Orissa across east Bihar and Jharkhand. The forecast shows it will persist till day 2 with slight eastward shift. The forecast shows a cyclonic circulation over East Bihar and adjoining Jharkhand and GWB on day1. The analysis shows a north- south Trough runs from south interior Karnataka to south Kerala. The forecast shows it will persist till day2. Another trough is seen in the analysis extending from south west Madhya Pradesh and adjoining areas to North Interior Karnataka across Madhya Maharashtra and Marathawada region.

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 ($>12 \times 10^{-1}/s$):

Low level Positive Vorticity is seen mostly along the foothills of Himalaya from J&K, Himachal Pradesh, Uttarakhand up to NE states also seen along the cyclonic circulation over southwest Madhya Pradesh and along the north- south trough for next 3 days. It is inferred that some parts of West Rajasthan and adjoining areas has Positive Vorticity on day 1 and 2..

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, Andhra Pradesh, Telangana, Rayalaseema, Kerala, Karnataka, Tamil Nadu, parts of Gujarat, Rajasthan, coastal Maharashtra including Mumbai, Konkan & Goa, Madhya Maharashtra, Marathawada, 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 East Madhya Pradesh on day 1 and 2; over some parts of East Uttar Pradesh on day 3; Maximum value of the index is seen over parts of Gujarat, GWB, Orissa,

Andhra Pradesh, coastal Maharashtra, Tripura and adjoining areas on day 1 and 2; over parts of coastal Maharashtra, including Mumbai, Konkan and Goa, Karnataka, northern parts of Kerala, GWB, Orissa, Chhattisgarh, Telangana, Andhra Pradesh, Bihar, Jharkhand and SHWB on day 3.

Lifted Index (< -2): The threshold value of the index is below -2 over parts of Gujarat, coastal Andhra Pradesh, coastal Karnataka, Telangana, Rayalaseema, Konkan and Goa, Kerala, Tamil Nadu, southern part of west coast, coastal areas along the east coast, Chhattisgarh, East Madhya Pradesh, East Vidarbha, Orissa, GWB, SHWB, Sikkim and NE states on all 3 days; over parts of Bihar and Jharkhand on day 2 and 3; maximum negative value of the index less than -8 is seen over parts of GWB and coastal Orissa on day 1; over parts GWB, coastal Orissa, coastal Andhra Pradesh, Tripura and adjoining areas on day 2 and 3; the value of the index less than -10 is seen over parts of GWB on day 3

Total Total Index (> 50): The threshold value of the index is > 50 over some parts of Rajasthan, Gujarat, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, northern parts of Madhya Maharashtra, Bihar and Jharkhand on day 1; over parts of Gujarat, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Foothills of Himalaya, Uttar Pradesh, Rajasthan, Madhya Pradesh, Bihar, Jharkhand, Madhya Maharashtra, GWB and SHWB on day 2 ; over parts of Gujarat, Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, Madhya Pradesh, Bihar, Jharkhand and Vidarbha on day 3; maximum value of the index >60 is seen over parts of East Uttar Pradesh and Bihar On day 1; over parts of Rajasthan, Uttarakhand, Uttar Pradesh and north west Madhya Pradesh on day 3.

Sweat Index (> 300): Although the threshold value of the Index >300 is seen in most parts of the country except Northern parts of Rajasthan, Punjab, Haryana Delhi and west Uttar Pradesh during next 3 days but the maximum value of the index greater than 800 is seen over parts of GWB and adjoining areas on day 2; over parts of GWB adjoining Orissa, SHWB, Jharkhand, Tripura and adjoining areas on day 3.

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, coastal Karnataka, Gujarat, coastal Maharashtra, Konkan and Goa, Jharkhand, GWB, SHWB, Sikkim, Assam, Meghalaya, Tripura and adjoining areas during all 3 days; over parts of Bihar and adjoining areas on day 2 and 3; Maximum value of the index greater than 2500 is seen mostly over parts of GWB, coastal Orissa and Coastal Andhra Pradesh on day1 and 2; over parts of GWB, coastal Orissa and coastal Andhra Pradesh, coastal Tamil Nadu and costal Karnataka 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 J&K, Punjab, Himachal Pradesh, Uttarakhand, Haryana, Delhi and extreme Northern parts of Rajasthan during all 3 days, the maximum value of the index > 200 is seen over parts of Gujarat, costal Maharashtra, Madhya Pradesh, Chhattisgarh, GWB, Orissa, Karnataka and NE states on day1; over parts of Bihar, Jharkhand, Sikkim, NE states, SHWB, GWB, Andhra Pradesh, Karnataka, Gujarat, coastal Maharashtra, Konkan and Goa, Vidarbha, Madhya Pradesh, Chhattisgarh, Telangana. Bihar, Jharkhand, Uttar Pradesh, Rajasthan on day 2 and 3; the maximum value of the index > 400 is seen over parts of Bihar, Jharkhand, SHWB, Sikkim, Assam and adjoining areas on day 2; over parts of Bihar, Jharkhand, SHWB, Tripura and adjoining areas on day 3..

5. Rainfall Activity:

40-70 mm Rainfall: over parts of Arunachal Pradesh, Kerala and Tamil Nadu areas on day 1.

10-40 mm Rainfall: over parts Kerala, Tamil Nadu, Karnataka, and NE states during next 3 days; over parts of Orissa and adjoining Andhra Pradesh on day 1; over parts of east Madhya Pradesh, adjoining Chhattisgarh and Vidarbha on day 2; over parts of J&K on day 3.

Up to 10 mm rainfall: Over parts of J&K, Foothills of Himalaya, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Sikkim, NE states, Orissa, Jharkhand, GWB, SHWB, Chhattisgarh, Madhya Pradesh, Andhra Pradesh, Rajasthan, Vidarbha, Marathawada, Madhya Maharashtra, Kerala,

Karnataka, Tamil Nadu, Telangana, Rayalaseema coastal Maharashtra, Konkan and Goa, NE states on all 3 days; over parts of Punjab, Gujarat and Bihar on day 2 and 3; over parts of Haryana and adjoining areas on day 3.

3. IOP ADVISORY FOR 24 and 48Hrs:

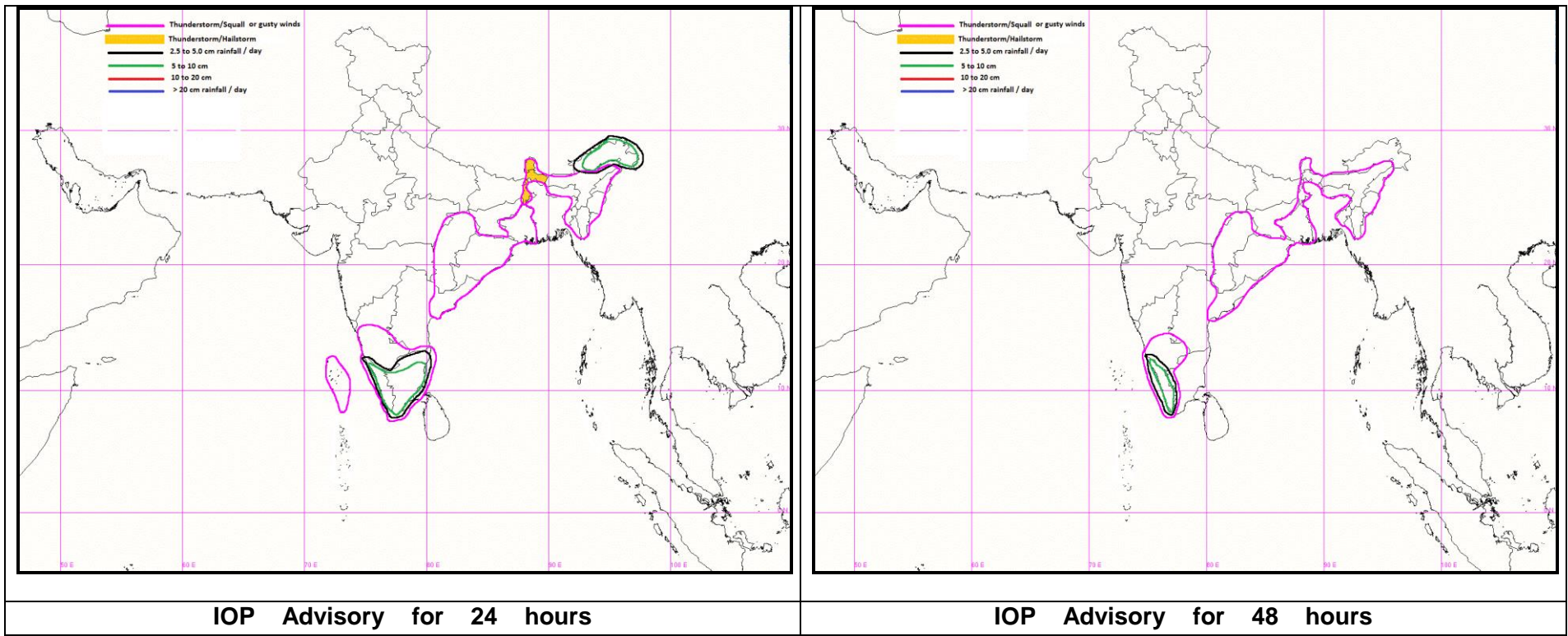
Summary and Conclusions:

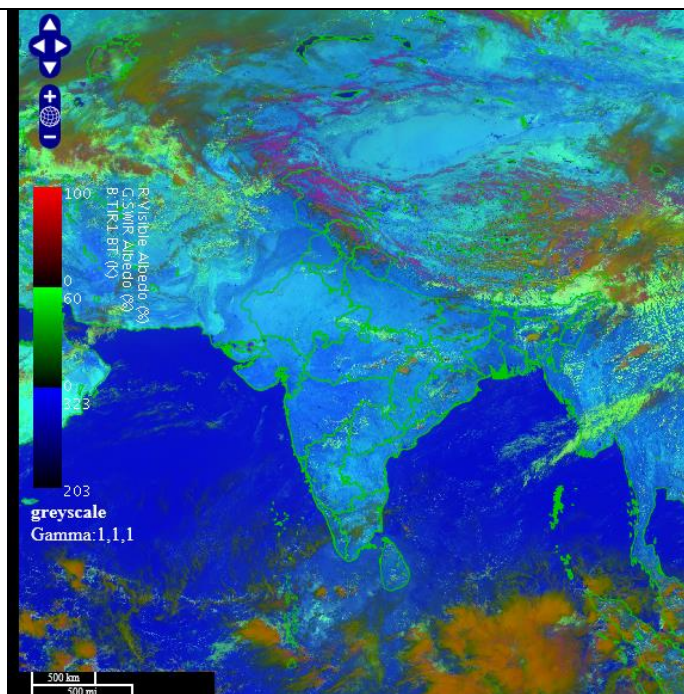
Day-1 & Day-2:

- **South Peninsula** – Though the area of ITCZ with its embedded trough of low in easterlies have shifted further south-westwards as compared to yesterday, the regions covering extreme south peninsula and Lakshadweep is likely to be under the zone of active convection during Day-1 & Day-2, as indicated by the pressure field. Kerala and parts of Ghats in south Tamil Nadu could experience Heavy rainfall and Thunderstorms with gusty winds.
- **Central India** - The Cyclonic circulation and a north-south trough from this to north Interior Karnataka at 1.5 km .a.s.l, aided by moisture incursion from an anti-cyclone over the Bay of Bengal is likely to cause thunderstorms with gusty winds over southern Districts of Chhattisgarh during next 48 hours. Singular Thunderstorm cells are also likely to develop over Vidarbha and east Madhya Pradesh which needs to be monitored for severity, if any.
- **Northeastern States** and Sub-Himalayan west Bengal need monitoring for Thunder squall / heavy rains and hailstorm development, on Day-1 and for moderate Thunderstorms with gusty winds on Day-2, owing to the presence of a trough in mid-tropospheric westerlies providing upper level divergence and southerlies providing moisture influx in the lower levels.
- Over **East India** the prone areas for thunderstorm / gusty wind development are coastal belt of Gangetic west Bengal and Odisha for Days 1 & 2, apart from Sub-Himalayan west Bengal & Sikkim.

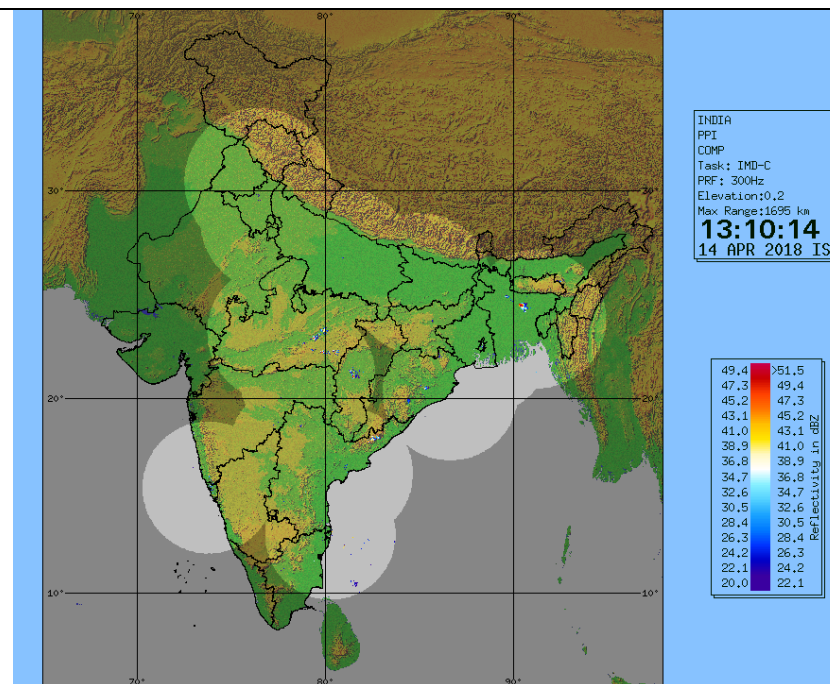
24 hour Advisory for IOP:	48 hour Advisory for IOP:
Significant Rainfall: Arunachal Pradesh Kerala, Tamilnadu	Significant Rainfall: Kerala
Thunderstorm with Squall/Gusty winds: Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura Gangetic West Bengal, Odisha, Chhattisgarh Kerala, Tamil Nadu, Coastal & South Interior Karnataka, North Coastal Andhra Pradesh, Lakshadweep & Minicoy Islands	Thunderstorm with Squall/Gusty winds: Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura Sub-Himalayan West Bengal & Sikkim, Gangetic West Bengal, Odisha, Chhattisgarh Kerala, South Interior Karnataka, North Coastal Andhra Pradesh
Thunderstorm with Hailstorm: Sub-Himalayan West Bengal & Sikkim	Thunderstorm with Hailstorm: Nil

Graphical Presentation of Potential Areas for Severe Weather:



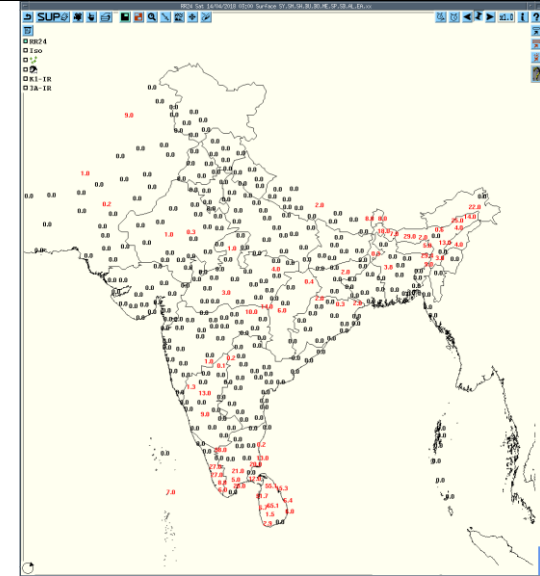


RAPID RGB Imagery at 1230 IST of the Day

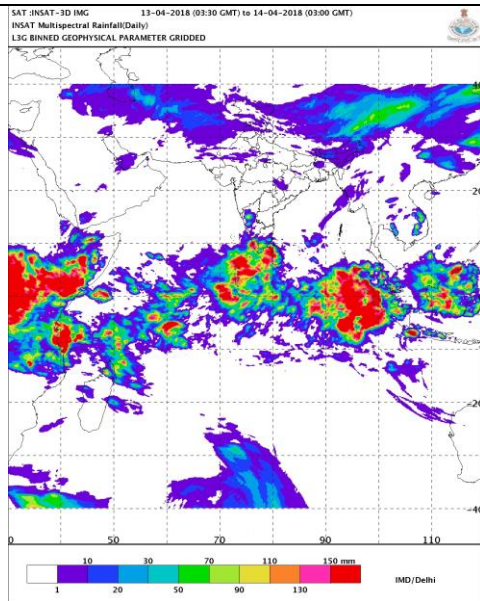


Radar Composite at 1310 IST of the Day

Not Received

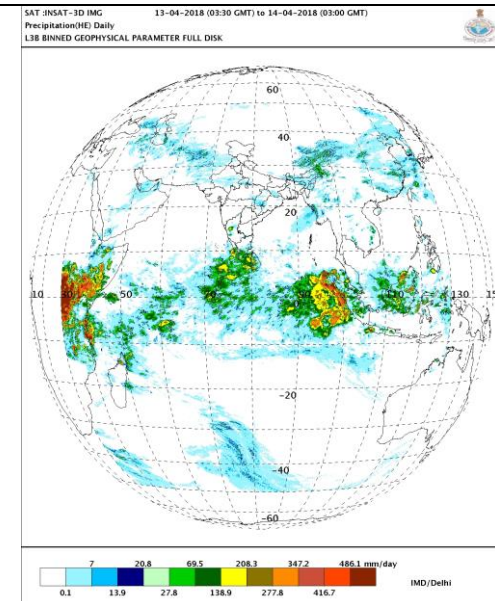


Dust Forecast

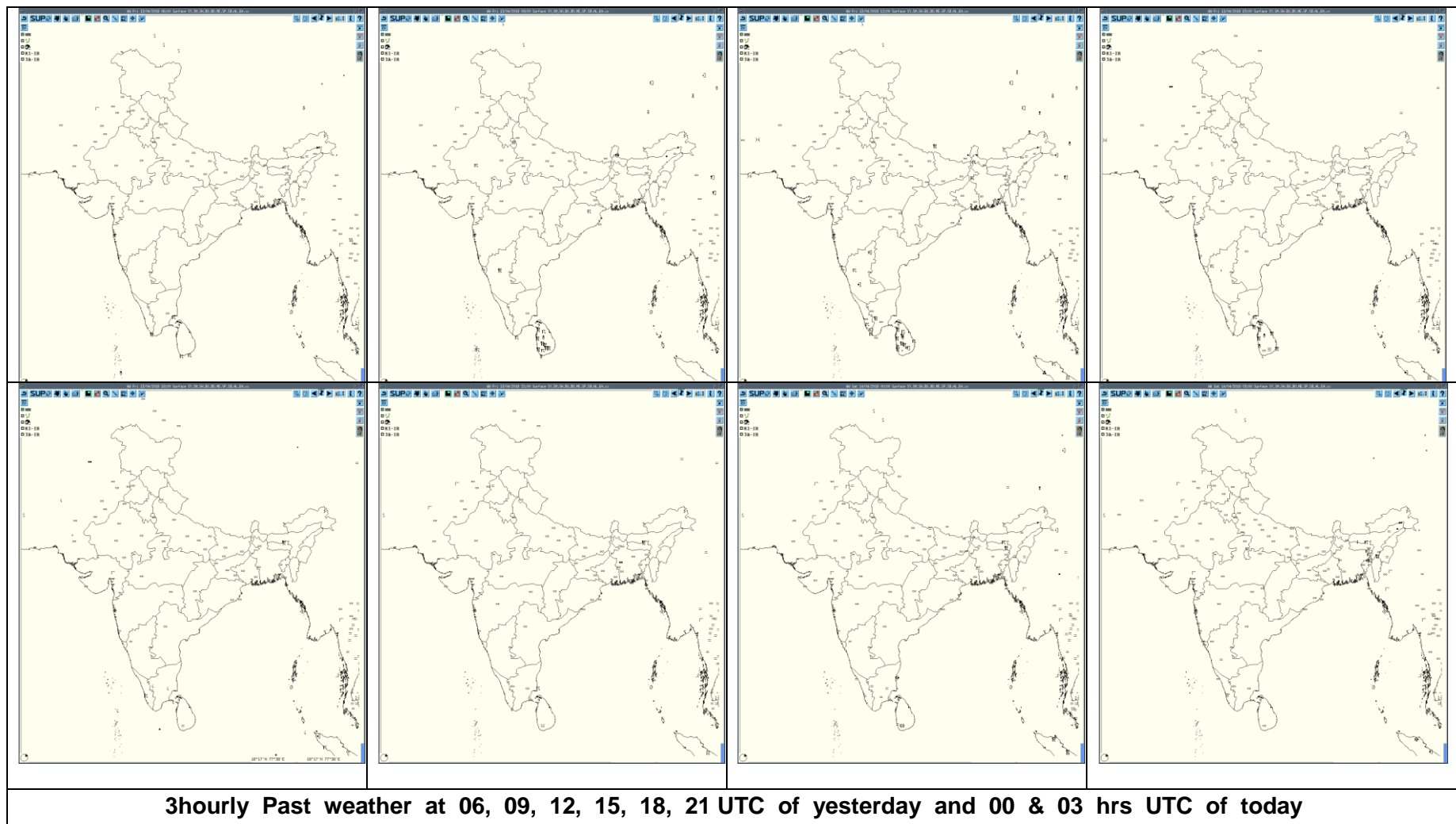


IMR

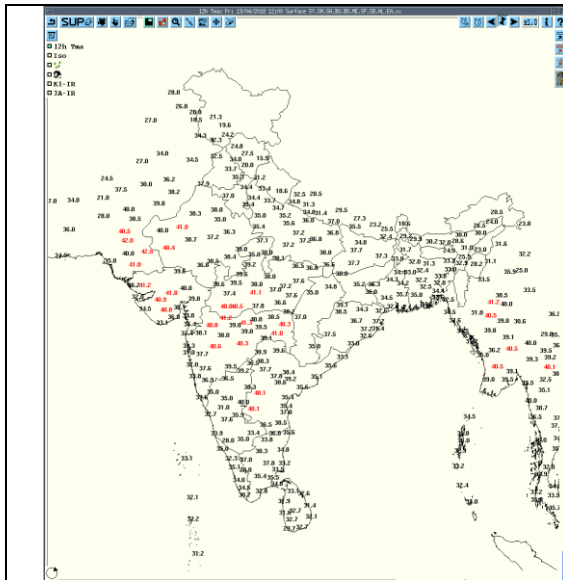
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



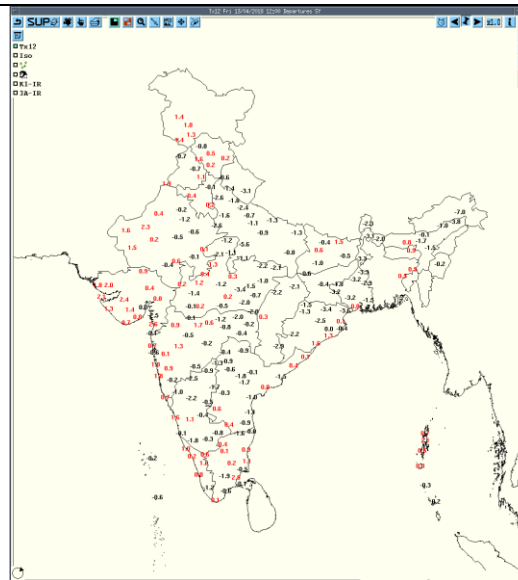
HEM



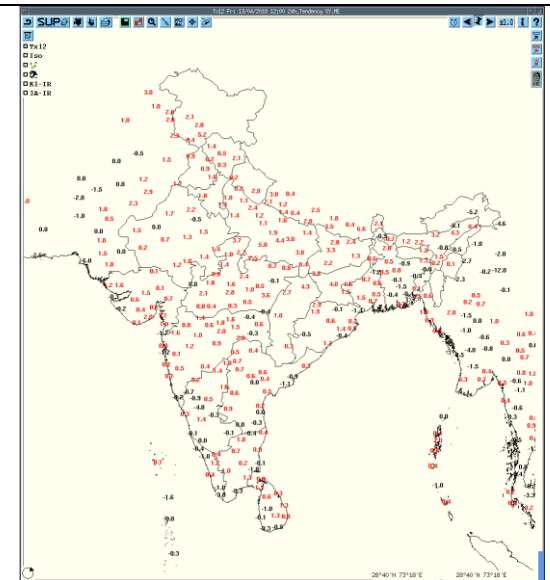
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



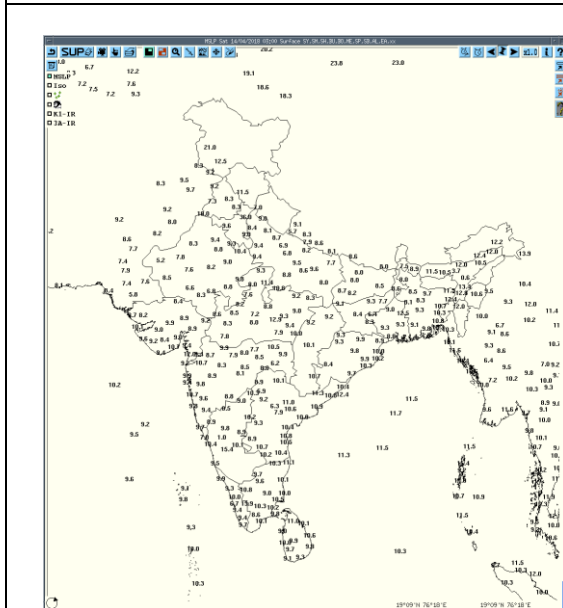
T_{max}



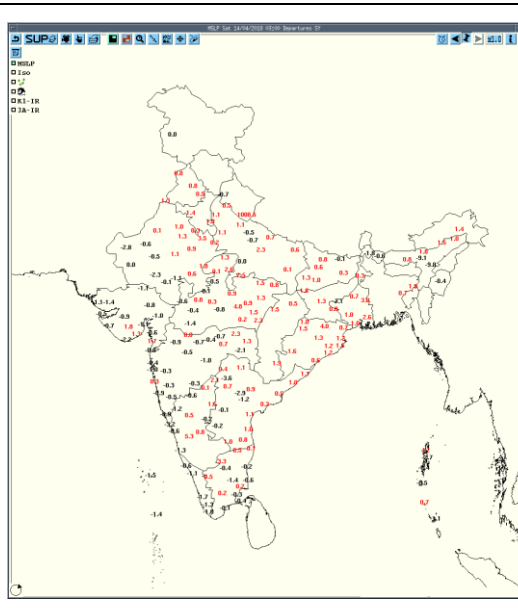
Departure T_{max}



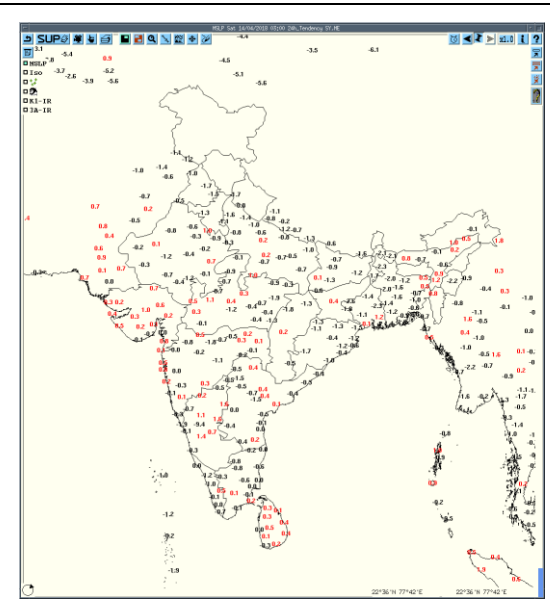
Tendency T_{max}



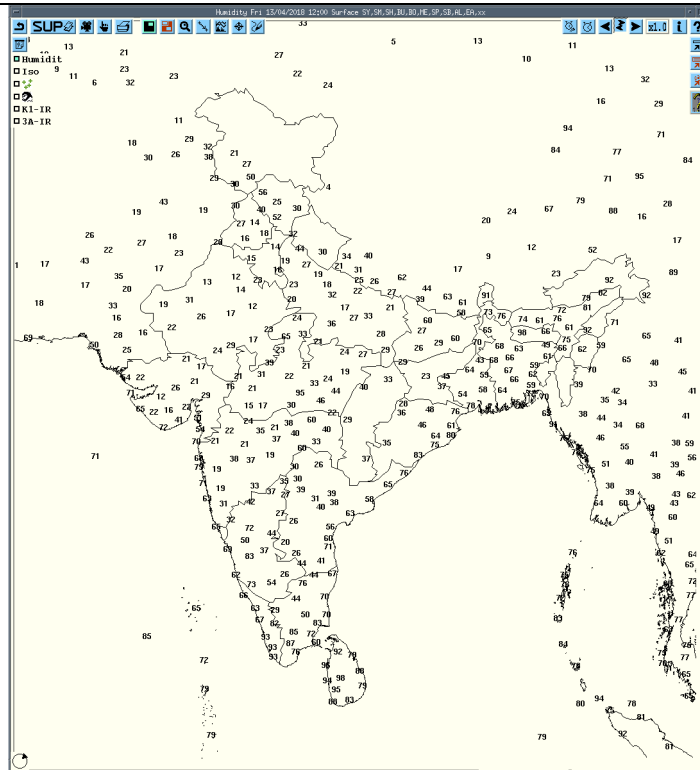
MSLP



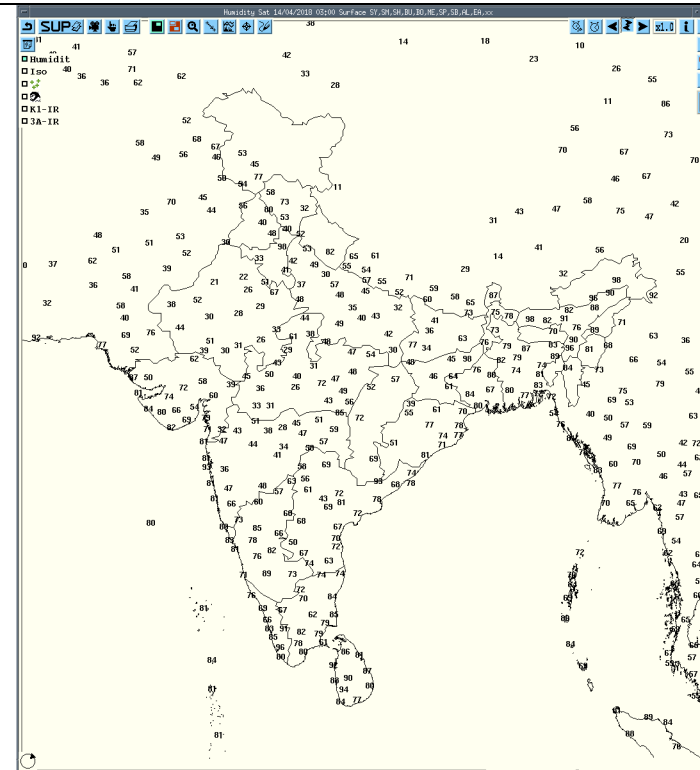
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Past 24 hours DWR Report:

Radar Station name	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
Patna	14-04-18	130300-130842	NIL	N/A	N/A	N/A	N/A
		130842-130932	Single Cell Lat-25.23N Long-86.26E Maximum Reflectivity: 44.5 dBZ Echo Top: 8 KM	Range: 124.4 KM from DWR Patna in SE direction Movement: Easterly	WARNING ISSUED	THUNDERSTORM	LAKHISARAI, BEGUSARAI
		130932-131002	NIL	N/A	N/A	N/A	N/A
		131002-131122	Single Cell Lat-24.97N Long-87.26E Maximum Reflectivity: 40.0 dBZ Echo Top: 9 KM	Range: 228.8 KM from DWR Patna in SE direction Movement: Easterly	WARNING ISSUED	THUNDERSTORM	BHAGALPUR, BANKA
		131122-140300	NIL	N/A	N/A	N/A	N/A

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	Associated severe weather, if any	Districts affected
Visakhapatnam	14-04-18	130900	Isolated CB cells formed at 0811 UTC with Maximum	W(74 KM)	CB cells formed at 06801 UTC and start dissipating from 0831 UTC	-	-
		131200	Isolated CB cells form since last observation with Maximum reflectivity of	NW(84 KM), NE(204KM and moving Ely	CB cells well developed and start dissipating from 1151 UTC	-	Visakhapatnam(AP) , Rayagada and Malkangiri (Odisha)
		131500	CB CELL Westerly with max reflectivity 57 dbz and height 8kms.	113kms(W) moving SE ly	Intensified from last observation(WEST). Conviction region NW ly (93kms) and NE(200KMS)	-	KORAPUT (ODISSA)
Jaipur	14-04-18	130712-140300	Multiple cell with average height of 5.5 km & maximum reflectivity 45.5 dBZ	Multiple cell develop from 0712 UTC of 13/04/2018 towards NW, W, SW, S, SE of Jaipur and moved to E, SE, Wards at speed 15-20 km/hr.	Multiple cell develop from 0712 UTC of 13/04/2018 towards NW,W, SW,S,SE of Jaipur and reaches maximum relectivity during 1012 UTC to 1822 UTC of 13/04/18 and continue.	Thunderstorm, Hailstorm, Duststorm with Light rain at a Isolated places	Bikaner, Nagaur, Pali, Ajmer, Tonk, Jaipur, Dausa Bundi, Kota, Baran, Jhalawar, Karauli, Sawai Madhopur Districts

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	Associated severe weather, if any	Districts affected
Patiala	14-04-18	130300 - 130900	NO ECHO				
		130900- 131200	MULTIPLE CELLS DBZ 48.5 HT. 5-6 KM	NE, SECTORS. MOVEMENT TOWARDS SE- WARDS.	--	-	CHAMABA,DALHOUSIE,B ATHINDA,MANSA,FATHEB AD,HANSI
		131200 - 131500	MULTIPLE CELLS DBZ 38.0 HT. 10TO 11 KM	NW, NE, SECTORS. MOVEMENT TOWARDS SE- WARDS.	--	--	BHUBNTER,MANDI,FAT HEBAD
		131500 - 131800	MULTIPLE CELLS DBZ 41.0 HT. 8-9 KM	SW SECTOR. MOVEMENT TOWARDS E- WARDS.	--	--	FATHEBAD,TOHANA, NARWANA,SIRSA
		131800 - 132100	MULTIPLE CELLS DBZ 47.5 HT. 9 TO 11 KM	SW, NW SECTORS. .MOVEMENT TOWARDS E- WARDS.	--	--	ELANABAD,SIRSA KAITHALSUNDERNAGAR, MANDI
		132100- 140000	MULTIPLE CELLS DBZ 47.5 HT. 9 TO 10 KM	NW, SW SECTORS. .MOVEMENT TOWARDS E- WARDS.	--	--	BHIWANI,ELLANABD, HISSAR,FATHEBAD,U NA ,JIND SUNDERNAGAR
		140000- 140252	MULTIPLE CELLS DBZ 39.5 HT. 8-9 KM	SW, SE , SECTORS. MOVEMENT TOWARDS E- WARDS.	--	--	FATHEBAD,HISSAR,SAHA RNPUR,RORKEE NARWANA
Lucknow	14-04-18	130300- 140300	Nil	--	--	--	--

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	Associated severe weather, if any	Districts affected
Agartala* (*DWR operational from 0100UTC to 1400UTC)	14-04-18	130300-140300	MULTIPLE CELLS ARE FOUND OVER NE TRIPURA, SILCHAR AT 140126, 55DBZ, ABOUT 14 KMS. AND SUBSEQUENTLY FORMING SQUALL LINE	ABOUT 80 TO 200 KMS, NORTH-EAST, 30 KMPH, W-LY.	PERSISTS OVER HILLS OF MIZORAM AT 140302Z	Not Known	
			MULTIPLE CELLS ARE FOUND OVER MEGHALAYAN HILLS AT	ABOUT 150 TO 180 KMS NORTH, 30 KMPH W-LY.	PERSISTS OVER MEGHALAYAN HILLS AT 140302Z.	Not Known	
Kolkata	14-04-18	130300-131051	NIL	NIL	NO SIG ECHO	NIL	
		131051-131421	Isolated cell developed at a position 24.746 N/ 87.793 E/ 346.7 Degree/ 248.5 km away from radar transformed into big cell with maximum reflectivity of 58.0 dBz at 1211 UTC and maximum height of 15.6 Km at 1201 UTC	North (248.5 km) Moving in ESE-ward direction.	A cell formed at 1051 UTC in North at a distance of 248.5 km from radar. Matured and dissipated at 1251 UTC in N at a distance of 214.2 Km from Radar.	Thunderstorm / Rain	
			Isolated cell developed at a position 24.636 N/ 87.466 E/ 338.6 Degree/ 246.8 km away from radar transformed into big cell with maximum reflectivity of 62.0 dBz at 1351 UTC and maximum height of 17.46 Km at 1221 UTC	NNW (246.8 km) Moving in ESE-ward direction.	A cell formed at 1151 UTC in NNW at a distance of 246.8 km from radar. Matured and dissipated at 1421 UTC in NNW at a distance of 186.9 Km from Radar.	Thunderstorm Hail/ Rain	
		131431-140302	NIL	NIL	NO SIG ECHO	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)
Ajmer	Northwest India	East Rajasthan	Thunderstorm	13-04-18	2300	2340
Jodhpur	Northwest India	West Rajasthan	Thunderstorm	13-04-18	1330	1355
Nagpur	Central India	Maharashtra (Vidarbha)	Thunderstorm	13-04-18	1450	1650
Gondia	Central India	Maharashtra (Vidarbha)	Thunderstorm	13-04-18	1825	12300
Raipur	Central India	Chhattisgarh	Thunderstorm	13-04-18	2205	2230
Ambikapur	Central India	Chhattisgarh	Thunderstorm	13-04-18	1900	1925
Mana	Central India	Maharashtra (Vidarbha)	Thunderstorm	13-04-18	1645	1740
Passighat	Northeast India	Arunachal Pradesh	Thunderstorm	13-04-18	1830	1950
Jorhat	Northeast India	Assam	Thunderstorm	14-04-18	0310	0530
Silchar	Northeast India	Assam	Thunderstorm	14-04-18	0610	0830
Dibrugarh	Northeast India	Assam	Thunderstorm	13/14-04-18	131810, 140605	132330, 140630
N/Lakhimpur	Northeast India	Assam	Thunderstorm	13/14-04-18	131810, 131940, 132235, 140240	131850, 132010, 132310, 140355
Tezpur	Northeast India	Assam	Thunderstorm	13-04-18	2315	2330
Dhubri	Northeast India	Assam	Thunderstorm	13-04-18	2020	2315
Guwahati	Northeast India	Assam	Thunderstorm	14-04-18	0226, 0825	0405, 0830
Cherrapunjee	Northeast India	Meghalaya	Thunderstorm	14-04-18	0630	0830
Shillong	Northeast India	Meghalaya	Thunderstorm	14-04-18	0200	0600
Kailasahar	Northeast India	Tripura(NMMT)	Thunderstorm	14-04-18	0720	0750
Gangtok	East India	Sikkim	Thunderstorm	13-04-18	1340	1440
			Hailstorm (hail diameter:0.4cm)	13-04-18	1545	1547
Tadong	East India	Sikkim	Thunderstorm	13-04-18	1340	1610
Jalpaiguri	East India	West Bengal (SHWB)	Thunderstorm	13-04-18	1735	1815
			Hailstorm (hail diameter:1.0cm)	13-04-18	1735	1745
Malda	East India	West Bengal (SHWB)	Thunderstorm	13-04-18	1600	1840

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

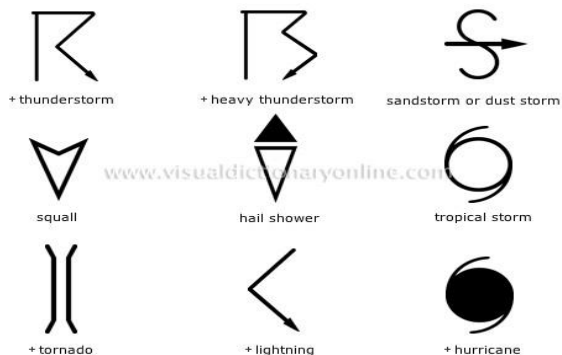
For Radar images of the past 24 hours including mosaic of images:

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	