India Meteorological Department

FDP STORM Bulletin No. 80 (25-05-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

♦ In view of the strengthening and deepening of cross equatorial flow and enhanced cloudiness and rainfall, Southwest Monsoon has advanced into some parts of Southeast Bay of Bengal, South Andaman Sea and Nicobar Islands. The Northern Limit of Monsoon (NLM) passes through lat. 50N/ Long 800E, lat.80N/ Long 870E, Car Nicobar and lat. 110N/ Long 990E. Conditions are favourable for further advance of Southwest Monsoon into some parts of South Arabian Sea, Comorin Maldives areas; some more parts of South Bay of Bengal, Andaman Sea and Andaman & Nicobar Islands during next 48 hours. Conditions are very likely to become favourable for further advance of Southwest Monsoon into some more parts of South Arabian Sea, Lakshadweep, Comorin area, South Kerala, South Tamilnadu, some more parts of south Bay of Bengal, remaining parts of Andaman Sea and some parts of east central Bay of Bengal during subsequent 48 hours.

♦ The Very Severe Cyclonic Storm **'Mekunu'** over West central Arabian Sea moved further north north-westwards with a speed of 07 Kmph during past 06 hours, intensified further into an Extremely Severe Cyclonic Storm and lay centered at 0830 hrs IST of today, 25th May 2018 over West central Arabian Sea near latitude 15.40N and longitude 54.50E, about 310 km north northeast of Socotra Islands and 180 km south southeast of Salalah (Oman). It is very likely to move nearly north north-westwards and cross south Oman - southeast Yemen coasts between 530E and 540E close to southwest of Salalah, between 2330 hours IST of today and 0230 hours IST of tomorrow, as an Extremely Severe Cyclonic Storm with wind speed of 160-170 kmph gusting to 190 kmph.

♦ A cyclonic circulation at 5.8 km above mean sea level lies over Andaman Sea & neighbourhood.

♦ A low pressure area is likely to develop over East central Bay of Bengal around 28th May.

♦ A cyclonic circulation extending upto 0.9 km above mean sea level lies over Interior Tamilnadu & neighbourhood.

♦ The cyclonic circulation over southwest Bay of Bengal off south Tamilnadu coast now lies over South coastal Tamilnadu & neighbourhood between 1.5 & 5.8 km above mean sea level.

♦ The cyclonic circulation between 5.8 km & 7.6 km above mean sea level over Maldives - Comorin area has merged with the above system.

♦ A cyclonic circulation extending upto 0.9 km above mean sea level lies over northeast Madhya Pradesh and adjoining south east Uttar Pradesh.

♦ A trough runs from the above cyclonic circulation to Telangana across east Vidarbha at 0.9 km above mean sea level.

♦ The cyclonic circulation over Bihar & neighbourhood persists and now extends upto 0.9 km above mean sea level.

♦ The north south trough now runs roughly along Long. 90°E to the north Lat 20°N at 2.1 km above mean sea level.

♦ A feeble Western Disturbance as an upper air cyclonic circulation lies over eastern parts of Afghanistan & neighbourhood between 3.1 and 5.8 km above mean sea level.

SATELLITE OBSERVATIONS during past 24 hrs and current observation:

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

Vortex over south-west Arabian Sea:

Vortex (MEKUNU) over West Central adjoining Southwest Arabian Sea has further intensified and now lay centered near 15.8N/54.5E.Intensity T5.0 RPT T5.0.Associated broken low/medium clouds with embedded intense to very intense convection over area between lat 10.5N TO 18.5N long 51.0E to 58.0.0E (MINIMUM CTT MINUS 93 DEG C.

Clouds Descriptions within India:

NORTH:

Scatted low/medium clouds with embedded weak convection over Jammu & Kashmir, North Himachal Pradesh and North Uttarakhand**.**

EAST:-

Scatted low/medium clouds with embedded intense to very intense convection seen over North Bangladesh adjoining Meghalaya. Scatted low/ medium clouds with embedded weak to moderate convection seen over Assam, West Arunachal Pradesh, Sikkim, Sub Himalayan West Bengal, Nagaland. Isolated low/medium clouds with embedded isolated weak to moderate convection seen over rest Manipur. Scatted low/medium clouds over rest parts of the region except North West Bihar, South Gangetic West Bengal, North Odisha, South Tripura, South Mizoram and West Chhattisgarh.

WEST:

Scatted low/medium clouds with embedded moderate to intense convection seen over Madhya Maharashtra, Konkan & Goa.

SOUTH:

Broken low/medium clouds with embedded intense to very intense convection seen over Lakshadweep. Scatted low/medium clouds with embedded weak to moderate convection seen over Karnataka, Tamilnadu and Bay Islands. Scatted low/medium clouds with embedded isolated weak to moderate convection seen over the region except North Coastal Andhra Pradesh and North Telangana.

ARABIAN SEA:

Scatted low/medium clouds with embedded intense to very intense convection seen over Southeast Arabian Sea.

BAY OF BENGAL & ANDAMAN SEA:

Scatted low/medium clouds with embedded moderate to intense convection seen over South Bay and East Central Bay.

Past Weather:

Convection (during last 24 hrs):

Moderate to Intense convection was observed over Assam, Meghalaya, Arunachal Pradesh, Tamilnadu, Kerala, Lakshadweep, Bay Islands, Uttar Pradesh, Jharkhand, Orissa, North Chhattisgarh, Nagaland, Manipur, Tripura, Telangana, North Interior Karnataka, South Sub Himalayan West Bengal, Interior Karnataka, Andaman & Nicobar Islands.

OLR:

Upto **230** wm^{-2} was observed over J&K Himachal Pradesh Uttar Pradesh Madhya Maharashtra Karnataka, Vidarbha, Sub Himalayan West Bengal north east states

Upto 200 wm^{-2} was observed Kerala & Tamilnadu Sikkim Orissa Chhattisgarh north interior Karnataka.

Synoptic features

Westerly Trough & Jet-Stream: Trough in Westerlies runs roughly along Longitude 78.0E & north of Latitude 32.0N. No Jet Stream is observed over India.

Dynamic Features: Wind Shear

Wind shear up to 30- 60 Knots is observed over Northern India
Wind shear upto 10-20 knots is observed over central and eastern parts of India
Wind shear upto 5-20 knots is observed over south peninsula
Positive Shear tendency upto 20 knots observed over extreme south India
A Positive Vorticity Up to 100 is observed over south Uttar Pradesh Madhya Pradesh north interior Karnataka south east Rajasthan east Assam and Arunachal Pradesh Kerala south Tamilnadu.
Positive low level convergence observed over west Uttar Pradesh Haryana Uttrakhand north east Madhya Pradesh Chhattisgarh Andhra Pradesh north east Maharashtra Mizoram Tripura and Meghalaya.

Precipitation:

Rainfall Up to 1**50** mm was observed over north Kerala south interior Karnataka west & Costal Tamilnadu north Karnataka west Assam.
Rainfall Up to 11**0** mm was observed over Uttar Pradesh north Chhattisgarh Karnataka Kerala South Himalayan west Bengal
Rainfall Up to 9**0** mm was observed over Telangana Andhra Pradesh
Rainfall Up to 3**0** mm was observed over Central Parts of Arunachal Pradesh Assam Orissa isolated Chhattisgarh Maharashtra Lakshadweep Andaman & Nicobar Islands
Rainfall Up to 2**0** mm was observed over North J&K rest north east rest Karnataka

DWR and RAPID Observations:

Moderate to Strong multiple echoes (dBZ around 50- 55 and height >12km) were seen on DWR Chennai, Kolkata, Nagpur, Vishakhapatnam and Machilipatnam domain at around 1640IST. Isolated/multiple Light to moderate echoes were also seen on DWR Agartala, Kochi Patna and Thiruvananthapuram (dBZ around 40-45 and height >10km) at around 1630IST.

RAPID RGB Satellite imagery at 1530 IST indicated significant convection over South Central Assam, East Meghalaya, Southeast Bihar, Northeast Jharkhand, Southeast Madhya Pradesh, North Chhattisgarh, Odisha, South Interior Karnataka, Kerala, Tamilnadu, Lakshadweep and Nicobar Islands.

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

Higher Dust concentration was observed over northern Africa, Arab countries and western part of India. Dust concentration is expected to decrease for next few days over IGP and north India.
Particulate matter concentration is expected to remain in moderate to poor category for next 2 days in Delhi.

Delhi – SAFAR analysis & Forecast	25.05.2018	26.05.2018
PM10 (micro-g/m^3)	249	224
PM2.5 (micro-g/m^3)	95	86

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

Low level Cycirs, Troughs:

00 &12UTC of Day 1-5: A CYCIR at 850 hPa over BOB off Tamil Nadu/AP coast. System gradually intensifies and moving north northeast towards West Bengal via Odisha in Day 3-5

00UTC of Day 1-3: 850hPa N-S trough from west MP to Tamilnadu across MH and Karnataka region

00UTC of Day 1-5: VSCS ***Mekunu*** moving towards north-northwest AS getting further intensified. The system will cross the Oman at 12UTC and lay centred over Oman in Day-4..

Confluence & Wind Discontinuity Regions: 12 UTC of Day 0-3:

12 UTC of Day 0-3: 850/925hPa SW-NE line of discontinuity extending from east UP to Karnataka.

Synoptic Systems: 00 UTC of Day 1-4:

00 UTC of Day 1-4: Western disturbance as a trough moving though J&K to Bihar via Uttrakhand

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

3. Convergence at 850 hPa:

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

Day0: Assam Meghalaya, Uttarakhand, Himachal Pradesh, East RJ, East MP, Vidarbha, NI Karnataka, SI Karnataka,

Day1: Jharkhand, Uttarakhand, West MP, East MP, Vidarbha, Chhattisgarh, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day2: Sub Himalayan WB, Jharkhand, Bihar, Jammu Kashmir, West MP, East MP, Madhya Maharashtra, Vidarbha, Chhattisgarh, NI Karnataka, SI Karnataka,

Day3: Jammu Kashmir, West MP, East MP, Coastal AP, Telangana, TN Puducherry, NI Karnataka,

Day4: Assam Meghalaya, West UP, Haryana, Chandigarh, Delhi, Punjab, East RJ, Odisha, West MP, Chhattisgarh, Coastal AP, TN Puducherry

4. Low level Vorticity:-Positive Vorticity:

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

Day0: Arunachal Pradesh, Assam Meghalaya, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day1: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Saurashtra Kutch, TN Puducherry, Coastal Karnataka, NI Karnataka,

Day2: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Bihar, Punjab, Konkan Goa, TN Puducherry, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, West UP, Coastal AP, Telangana, Rayalseema, TN Puducherry, NI Karnataka, Kerala

Day4: Arunachal Pradesh, Assam Meghalaya, East UP, West UP, Haryana, Chandigarh, Delhi, Punjab, East RJ, Odisha, Coastal AP, TN Puducherry, Kerala

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

Day/Index: Subdivisions with Showalter Index < -4

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day2: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Konkan Goa, Madhya Maharashtra, Vidarbha, Coastal AP, Telangana, Rayalseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, Rayalseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,
Day4: Arunachal Pradesh, Sub Himalayan WB, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Himachal Pradesh, Jammu Kashmir, West MP, Coastal AP, TN Puducherry, 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, Sub Himalayan WB, Jharkhand, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, West MP, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Telangana, Rayalseema, NI Karnataka, SI Karnataka,
Day1: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,
Day2: Arunachal Pradesh, Sub Himalayan WB, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East MP, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Telangana, Coastal Karnataka, NI Karnataka, SI Karnataka,
Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Himachal Pradesh, Jammu Kashmir, Vidarbha, Chhattisgarh, Telangana, Rayalseema, NI Karnataka,
Day4: Arunachal Pradesh, Sub Himalayan WB, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, East RJ, West MP, East MP, Chhattisgarh, Coastal AP

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

Day/Index: Subdivisions with K Index > 40

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Uttarakhand, Jammu Kashmir, Odisha, West MP, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day1: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day2: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, East UP, Himachal Pradesh, Jammu Kashmir, 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, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East MP, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, TN Puducherry, NI Karnataka, SI Karnataka,
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, NI Karnataka, SI Karnataka

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Andaman Nicobar, TN Puducherry, SI Karnataka, Kerala,
Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Andaman Nicobar, TN Puducherry, SI Karnataka, Kerala,
Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Jammu Kashmir, Coastal AP, Rayalseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Jammu Kashmir, Odisha, Coastal AP, Rayalseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,
Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Odisha, Coastal AP, Coastal Karnataka, Kerala

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

1. Synoptic Systems:

The analysis based on 00 UTC indicates a cyclonic circulation over Interior Tamil Nadu and adjoining area in lower Troposphere (925hPa). The forecast shows it will persist till day2. Another cyclonic circulation is seen in the analysis over North East Madhya Pradesh and adjoining South East Uttar Pradesh. The forecast shows it will persist till day3. The analysis shows a North- South Trough extends from this cyclonic circulation up to Telangana across East Vidarbha. The forecast shows the trough will persist for next 24 hours. A cyclonic circulation is seen over Bihar and adjoining area in lower Troposphere (850hPa). The forecast shows it will persist till day1. Another cyclonic circulation is seen in the analysis over south coastal Tamil Nadu and adjoining area. The forecast shows it will persist till day 1.

2. Location of Jet and Jet Core (>60kt) at 500hPa: Although the presence of strong westerlies is found over Eastern parts of the India and North western parts of 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)}: Low level Positive Vorticity is seen mostly from J&K up to Foothills of Himalaya, along the North- South Trough, around the cyclonic circulations, central parts of India, NE states, extreme south peninsular India and coastal areas along southern parts of East coast during next 3 days; Low level Positive Vorticity is also seen over parts North west Rajasthan and adjoining Punjab region from day 2 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): over parts of Gujarat, Southern parts of East and west Rajasthan, East and adjoining West Uttar Pradesh, Gangetic Plains, Bihar, Jharkhand, Gangetic West Bengal, SHWB, Orissa, coastal Maharashtra, Konkan & Goa, coastal and Interior Karnataka, Kerala, Tamil Nadu, Telangana, Rayalaseema, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, East and west Madhya Pradesh, Andhra Pradesh, along east and west coast of India, Sikkim, Assam, Tripura and adjoining areas during next 3 days; over parts of Uttarakhand on day 1 and 2; Significant zone lies over Gujarat, South East Rajasthan, coastal areas along the east coast and west coast, GWB, SHWB, Bihar, Jharkhand, East Uttar Pradesh, Orissa, Andhra Pradesh, Telangana, coastal Maharashtra, Vidarbha, Chhattisgarh, Interior Karnataka and East Madhya Maharashtra.
Lifted Index (< -2): Similar to T-storm Index lies over Gujarat, South Rajasthan, Gangetic plains and along east and west coast of India with an extension over Interior Karnataka and Telangana, East and adjoining West Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh, Orissa, GWB, SHWB, Assam, Arunachal Pradesh, Meghalaya, Mizoram, Tripura and adjoining areas, Telangana, Vidarbha, Chhattisgarh, Andhra Pradesh, coastal Maharashtra, Konkan & Goa, coastal and Interior Karnataka, Kerala, Tamil Nadu, Madhya Maharashtra and Marathwada during next 3 days, it also appears over Uttarakhand on day 3; Significant zone with maximum negative value is found over East Uttar Pradesh and Bihar.

Total Total Index (> 50): Higher than Threshold value of the Index is seen over parts of J&K, Himachal Pradesh, Chhattisgarh, Telangana, Vidarbha, Madhya Pradesh, Andhra Pradesh, Orissa, Interior Karnataka, Madhya Maharashtra, Marathwada, Sikkim and Arunachal Pradesh on day 1; over most of the parts of the country except west and North west India including Gujarat, West Madhya Pradesh, Punjab, Assam, Tripura, Meghalaya, Mizoram and adjoining areas, Rajasthan on day 2 and 3; Significant zone with Maximum value of the index lies over Telangana, Madhya Pradesh, East Rajasthan, Chhattisgarh, Vidarbha, East and adjoining West Uttar Pradesh, Uttarakhand, Bihar, Jharkhand and Orissa.

Sweat Index (> 300): Is seen over the sub-divisions along east and west coast, areas along foothills of Himalayas, NE states, and most parts of the country except North West Rajasthan, central parts of Madhya Pradesh, Punjab, Haryana, Himachal Pradesh and adjoining Uttarakhand on day 1; and over most of the parts of the country except Central parts of West Madhya Pradesh and North West India; significant zone lies over parts of East Uttar Pradesh adjoining West Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, GWB, North coastal Maharashtra, Konkan and Goa, South Madhya Maharashtra adjoining North Interior Karnataka and East Madhya Pradesh.

CAPE (> 1000): Mostly seen over parts of Gujarat, southern peninsular India, along west coast and east coast, GWB, Orissa, Bihar, Jharkhand, East and adjoining West Uttar Pradesh, Andhra Pradesh, Rayalaseema, Tamil Nadu, Kerala, Karnataka, Konkan and Goa, Telangana, coastal Maharashtra including Mumbai, south Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, east Madhya Pradesh, Sikkim, Assam, Arunachal Pradesh, Meghalaya, Tripura and adjoining areas during next 3 days; over parts of North west Madhya Pradesh and adjoining East Rajasthan and South Haryana on day 1; over parts of Uttarakhand on day 3; maximum value of the index is seen over parts of GWB, SHWB, Bihar, Jharkhand, Orissa, coastal and Interior Andhra Pradesh, coastal Tamil Nadu, coastal Maharashtra, South Madhya Maharashtra, coastal Karnataka, Telangana, South Chhattisgarh and East Uttar Pradesh.

CIN (50-150): Over sub-divisions along east and west coast of India, extreme south over Kerala and Tamil Nadu and whole south Peninsular India; the value of the index lies in the above range over most of the parts of the country except central parts of West Madhya Pradesh, J&K, North West Rajasthan, Himachal Pradesh, Uttarakhand, Punjab, Haryana, North and North west India on day during next 3 days; significant zone with highest value of the index lies over parts of Gujarat adjoining west Madhya Pradesh, South East and South West Rajasthan, Madhya Maharashtra, North coastal Maharashtra, South Chhattisgarh adjoining Telangana, East Uttar Pradesh and adjoining Bihar.

5. Rainfall Activity:

70- 130 mm Rainfall: over parts of GWB, Jharkhand and Orissa on day 1.

40-70 mm Rainfall: over parts of Kerala, Arunachal Pradesh and adjoining areas during next 3 days; over parts of Sikkim, Assam, GWB, Jharkhand, Orissa and South Interior Karnataka on day 1; over parts Tamil Nadu on day 3.

10-40 mm Rainfall: over parts of Kerala, Karnataka, Tamil Nadu, East Bihar, Orissa, Sikkim and NE states during next 3 days; over parts of GWB, Jharkhand and Chhattisgarh on day 1; over parts of Chhattisgarh and East Vidarbha on day 3.

Up to 10 mm rainfall: Over parts of J&K, Himachal Pradesh, Foothills of Himalaya, GWB, SHWB, Sikkim, NE states, Bihar, Jharkhand, Orissa, Chhattisgarh, Kerala, Interior Karnataka, Konkan & Goa, coastal Maharashtra, South Madhya Maharashtra, Marathwada, Vidarbha, Tamil Nadu, Telangana, Rayalaseema and Andhra Pradesh during next 3 days; over parts of Madhya Pradesh on day 1.

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

1. Model Reflectivity (Max. dBz): >25 dBZ Model Reflectivity:. On day 1, over parts of J&K, Kerala, Karnataka, Tamil Nadu, NE states, Telangana, Orissa, GWB, SHWB, Sikkim, Bihar, Jharkhand, Andhra Pradesh, south coastal Maharashtra, South Madhya Maharashtra, Marathwada, Rayalaseema and Vidarbha; On day 2 over parts of J&K, Punjab, Himachal Pradesh, Kerala, Tamil Nadu, GWB, SHWB, NE states, Orissa, Andhra Pradesh and Sikkim; On day 3 mostly over parts of J&K, Himachal Pradesh, Uttarakhand, Kerala, Tamil Nadu adjoining Karnataka, GWB, SHWB, adjoining East Bihar, Jharkhand, Orissa, Sikkim and NE states.

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

Total Index (> 50): Above threshold value is observed over most parts of the country except extreme south peninsular India, southern parts of west coast and the east coast, parts of Kerala, Karnataka, south coastal Maharashtra, South Madhya Maharashtra, Konkan and Goa, Kerala, Andhra Pradesh, Telangana, Tamil Nadu, GWB, SHWB, Bihar, Jharkhand, Chhattisgarh, East Uttar Pradesh, Orissa, Sikkim and NE states during next 3 days; over some parts of East Vidarbha on day 3.

K-Index (> 35): Less than threshold value is observed over most of the part of the country during the next 3 days. Prominent values are found over parts of Interior Karnataka, Telangana, Chhattisgarh, Kerala, Tamil Nadu, Andhra Pradesh, Orissa, Bihar, Jharkhand, GWB, SHWB, South Madhya Maharashtra, Marathwada, Vidarbha, Konkan and Goa, South coastal Maharashtra, Foothills of Himalaya, Sikkim and NE states.

CAPE (> 1500): Greater than threshold value over parts of Gujarat, East Uttar Pradesh, coastal areas of west coast, coastal Maharashtra, Konkan & Goa, coastal areas along the east coast, SHWB, GWB, Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Bihar, Jharkhand, Telangana, Rayalaseema, Madhya Maharashtra, coastal Maharashtra, Chhattisgarh, Vidarbha and NE states during next 3 days; over parts of North West Madhya Pradesh and adjoining East Rajasthan on day 1; over some parts of West Uttar Pradesh and adjoining Uttarakhand on day 2 and 3; Maximum value of the index is seen over the parts of Orissa, GWB, SHWB, coastal and Interior Andhra Pradesh, Karnataka, coastal Tamil Nadu, Kerala, Bihar, Jharkhand, East Uttar Pradesh, coastal Maharashtra including Mumbai, South Madhya Maharashtra, Konkan and Goa, Telangana, Chhattisgarh and Gujarat.

CIN (50-150): It covers most of the parts of the country except J&K, North west Rajasthan, Punjab, Haryana, Himachal Pradesh and Uttarakhand on day 1; on day 2 and 3 it remains over the same region but also appear over J&K, Punjab, Haryana, Himachal Pradesh and Uttarakhand; it has significant larger values over parts of Eastern and Western parts of the country including Gujarat, coastal Maharashtra, Madhya Maharashtra, Marathwada, East and West Uttar Pradesh, Uttarakhand, Vidarbha, Madhya Pradesh, Bihar, Jharkhand, Chhattisgarh, Orissa, GWB, Telangana, North Interior Karnataka and Andhra Pradesh during next 3 days.

3. Rainfall and thunderstorm activity:

Above 200 mm Rainfall: over parts of Meghalaya and adjoining area on day 1; over parts of Kerala and South Tamil Nadu on day 3.

130- 200 mm Rainfall: over parts of Assam and adjoining areas during next 3 days; over some parts of Arunachal Pradesh on day 1; over parts of Meghalaya on day 1 and 2; over parts of Kerala and Tamil Nadu on day 3.

70- 130 mm Rainfall: over parts of Assam, Meghalaya and Arunachal Pradesh during next 3 days; over parts of East Bihar and SHWB on day 1; over parts of Kerala and adjoining Tamil Nadu on day 2 and 3.

40- 70 mm Rainfall: over parts of Sikkim, Kerala and NE states during next 3 days; over parts of South Interior Karnataka, East Bihar, SHWB and Orissa on day 1; over parts of Tamil Nadu on day 2 and 3.

10- 40 mm Rainfall: Over parts of Kerala, Tamil Nadu, Karnataka, Sikkim, GWB, SHWB, Foothills of Himalaya, Bihar, Jharkhand, Orissa, Andhra Pradesh and NE states during next 3 days; over parts of J&K on day 1 and 3; over parts of Himachal Pradesh and Uttarakhand on day 3.

Up to 10 mm Rainfall: Over parts of J&K, Himachal Pradesh, Foothills of Himalaya, Kerala, Tamil Nadu, Karnataka, Konkan and Goa, Chhattisgarh, Vidarbha, Sikkim, GWB, SHWB, Bihar, Jharkhand, Orissa, Telangana, Andhra Pradesh and NE states during next 3 days; over parts of East Madhya Pradesh and South Madhya Maharashtra on day 1 and 3; over parts of Uttarakhand on day 3.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

- Synoptic analysis indicates that there is a cyclonic circulation over Interior Tamilnadu & neighbourhood and a trough runs from the above cyclonic circulation to Telangana across east Vidarbha. These systems may give rise to heavy to very heavy rainfall activity over isolated places of Kerala, Lakshadweep and South Interior Karnataka on Day-1. The thunderstorm with gusty wind activity will be there over southern parts of country for Day-1.

- The cyclonic circulation over Bihar & neighbourhood persists which will give rise to the thunderstorm with gusty wind activity over Jharkhand, GWB and SHWB on Day-1. The SHWB may get heavy rainfall spell on Day-1.

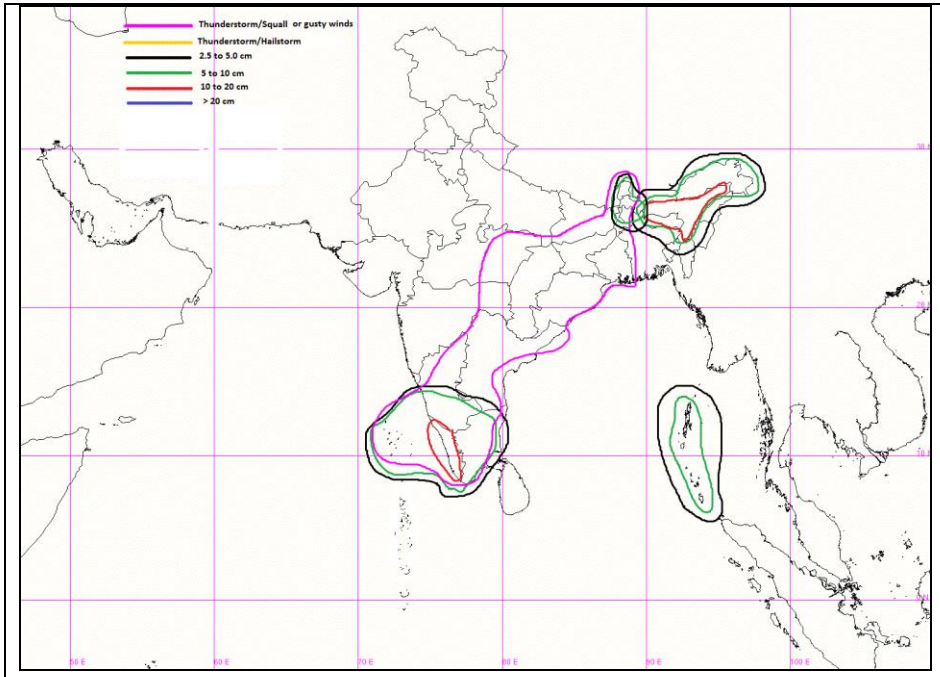
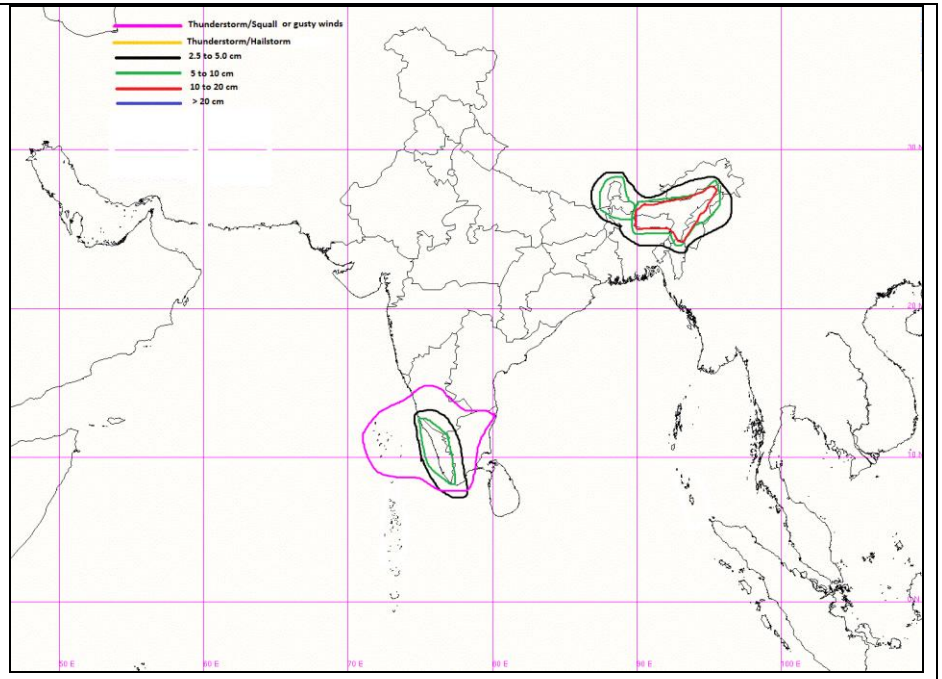
- A cyclonic circulation lies over Andaman Sea & neighbourhood. This system may give rise to heavy rainfall activity over Andaman and Nicobar Islands on Day-1.

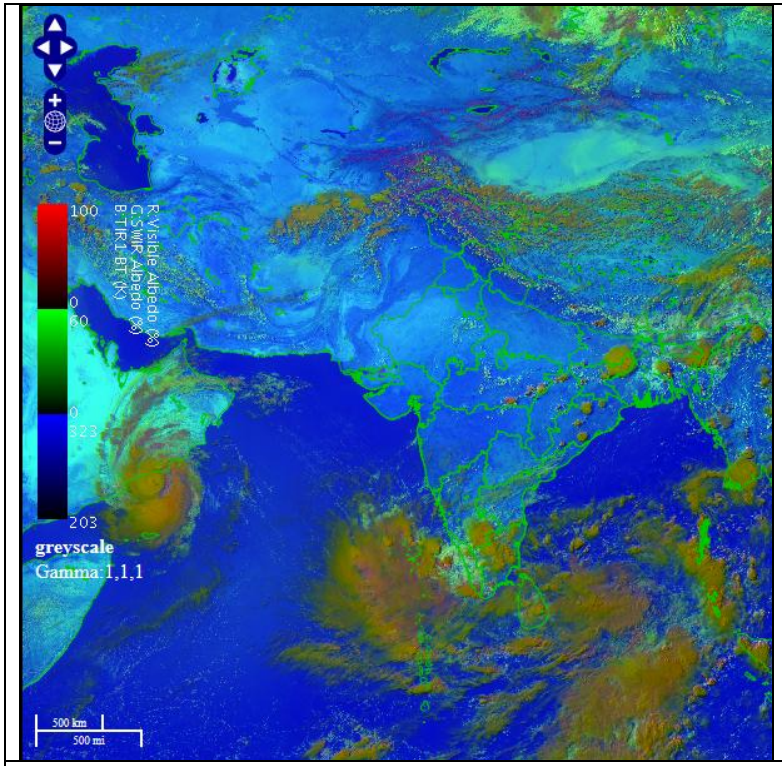
- Most thermodynamic indices (K-Index, Lifted Index) from IMD GFS deterministic model indicate high probability of thunderstorm occurrence over Northeast, peninsular India and Kerala on Day 1.

IOP Area for Day-1 & Day-2:

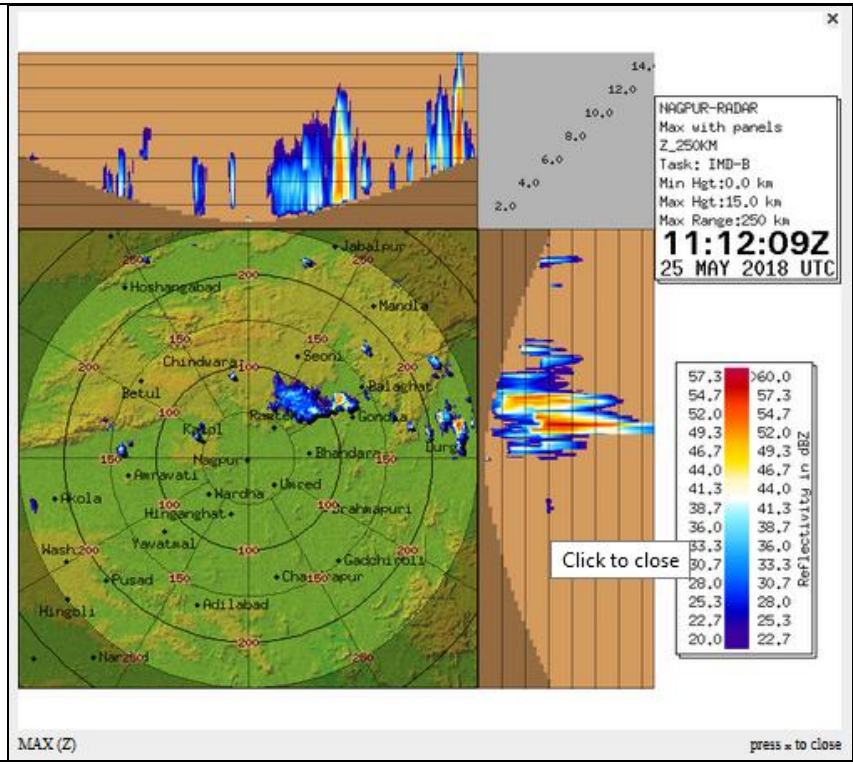
24 hour Advisory for IOP:	48 hour Advisory for IOP:
Significant Rainfall: Assam and Meghalaya, Arunachal Pradesh, Sub Himalayan West Bengal and Sikkim Kerala, Tamil Nadu, South Interior Karnataka, Coastal Karnataka, Lakshadweep Andaman & Nicobar **Thunderstorm with squall or gusty winds:** Tamil Nadu, Kerala, Karnataka, Lakshadweep, Rayalaseema, Telangana, Coastal Andhra Pradesh, West Bengal, Sikkim, Jharkhand, Odisha East Madhya Pradesh, Chhattisgarh, Vidarbha **Thunderstorm with squall and hail** Nil **Thunderstorm/Duststorm:** Nil	**Significant Rainfall:** Assam and Meghalaya, Arunachal Pradesh, Sub Himalayan West Bengal and Sikkim Kerala **Thunderstorm with squall or gusty winds**: Tamil Nadu, Kerala, South Interior and Coastal Karnataka, Lakshadweep, **Thunderstorm with squall and hail** Nil **Duststorm:** Nil

Graphical Presentation of Potential Areas for Severe Weather:

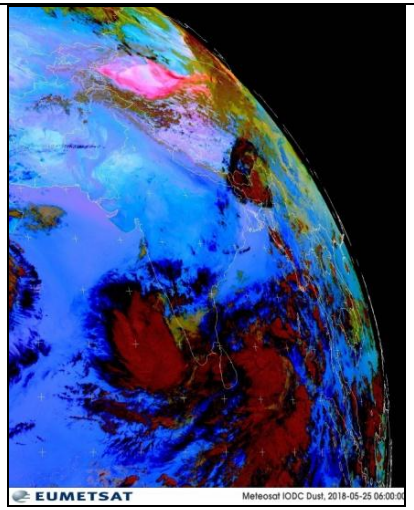
	
IOP Advisory for 24 hours	**IOP Advisory for 48 hours**

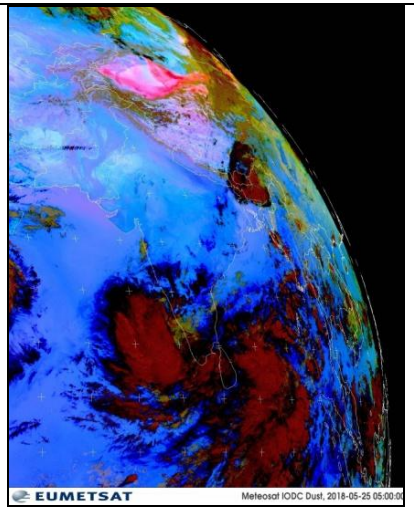


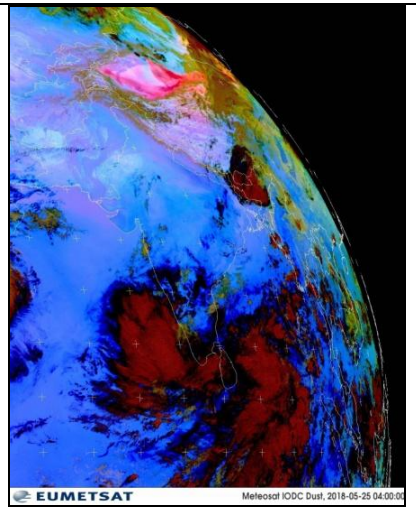
RAPID RGB Imagery at 1530 IST of the Day

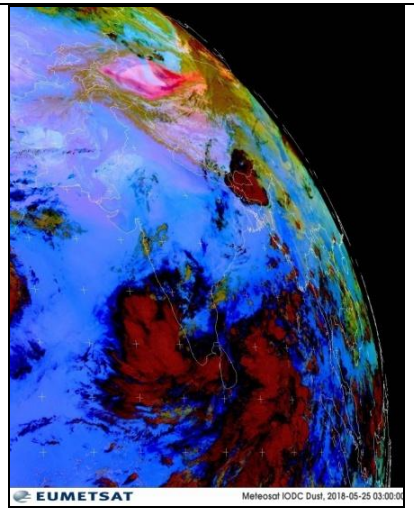


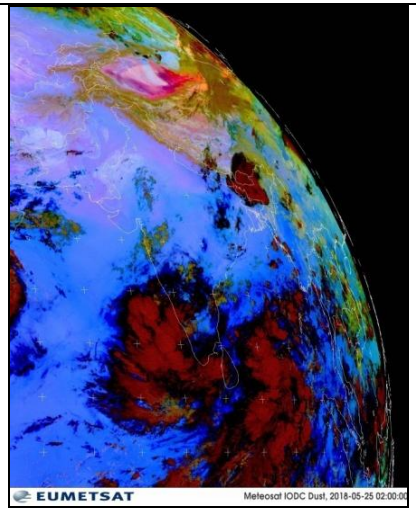
DWR Nagpur reflectivity image at 1642 IST

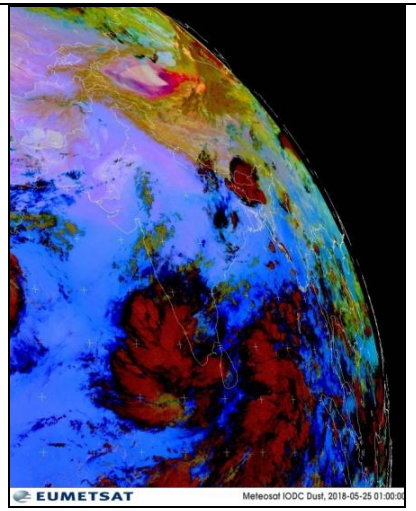




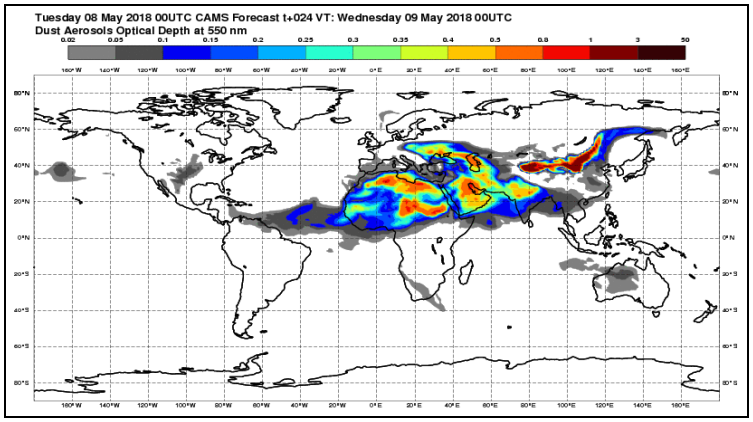




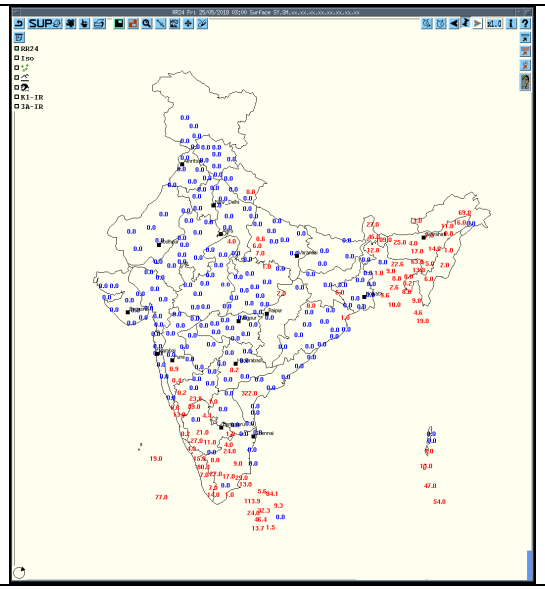




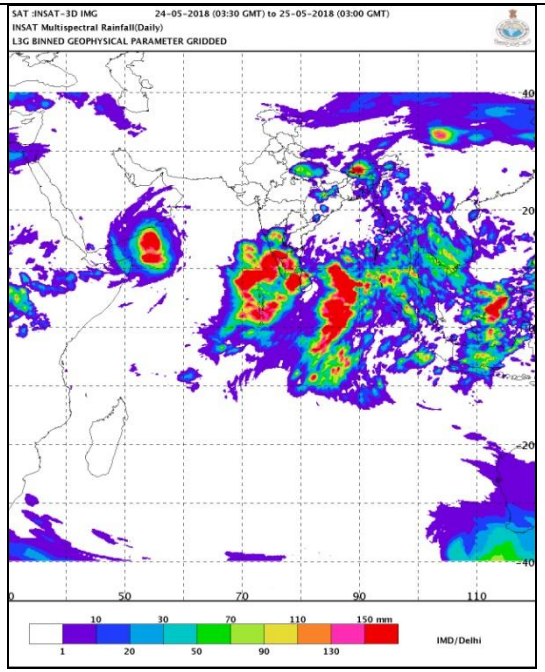
Observed Satellite Dust Images of today



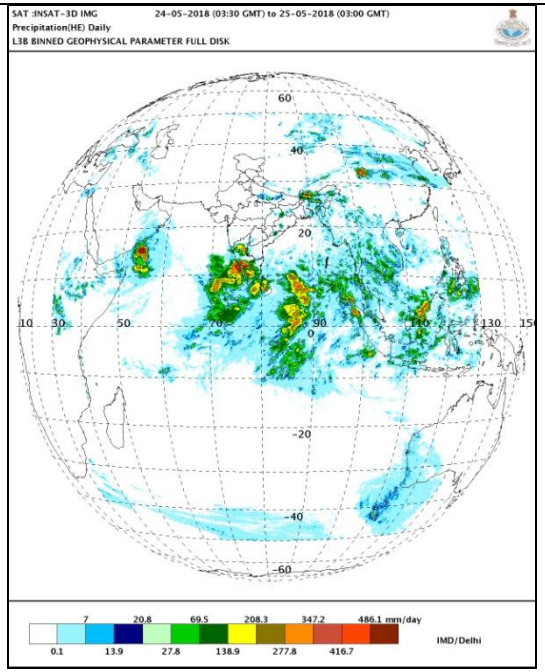
Dust Forecast



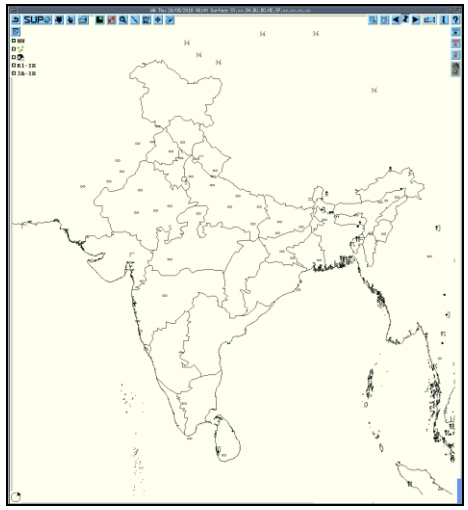
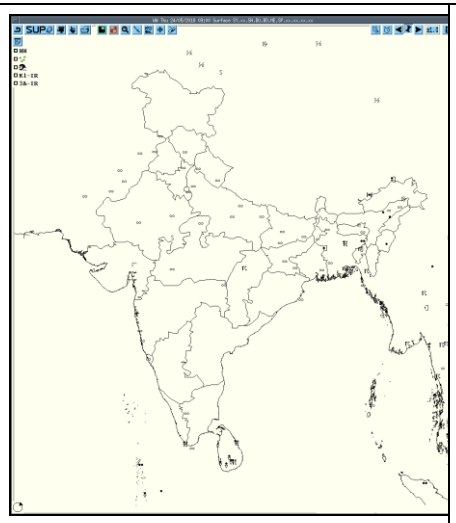
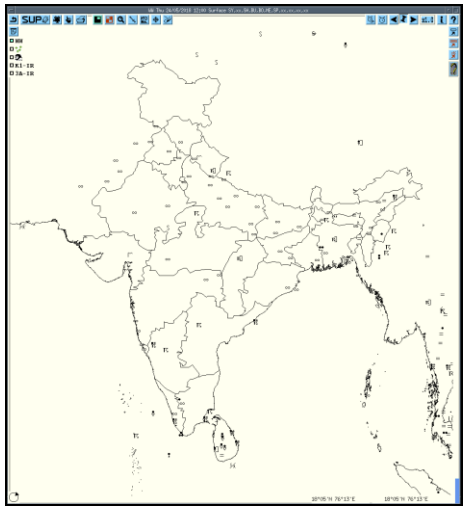
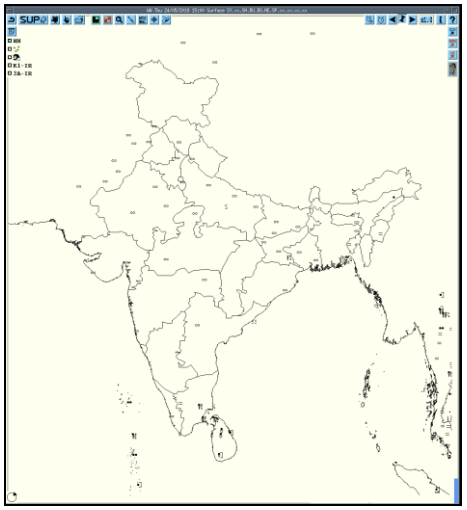
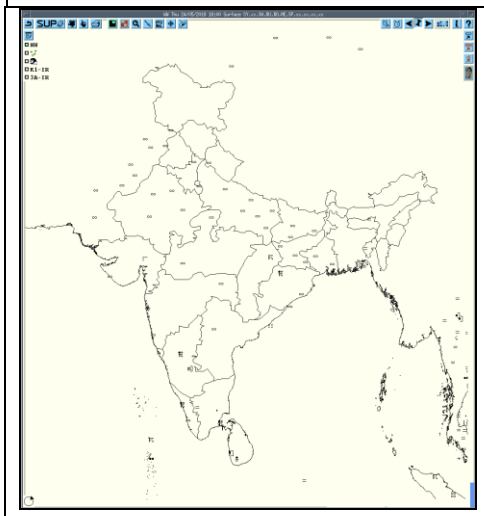
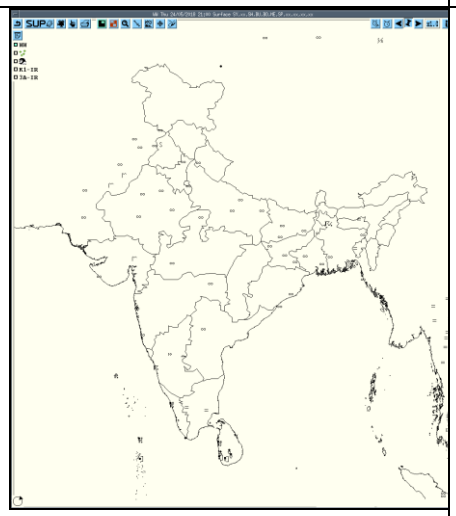
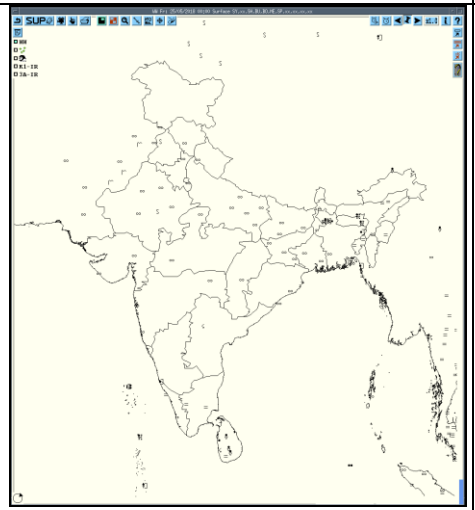
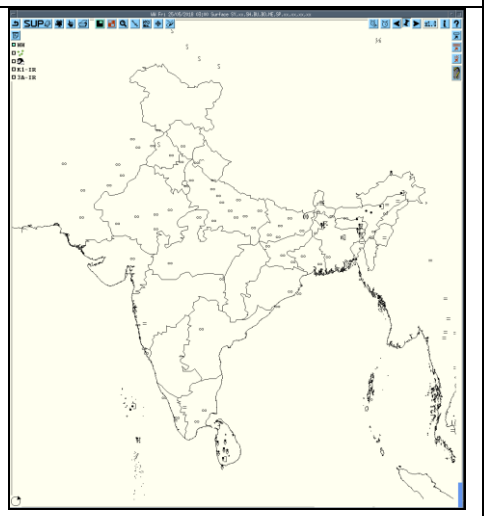
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



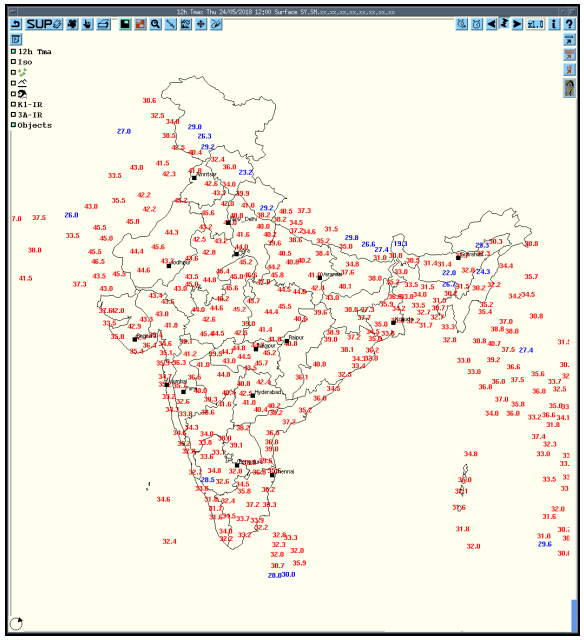
HEM



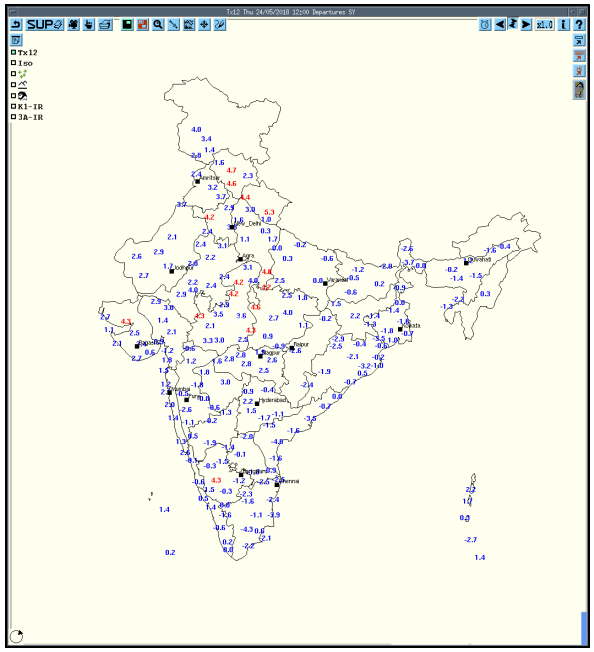
IMR

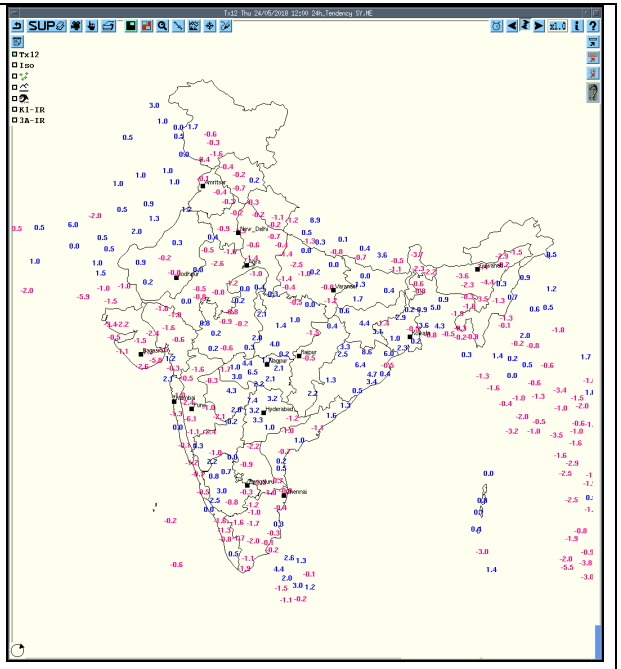
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



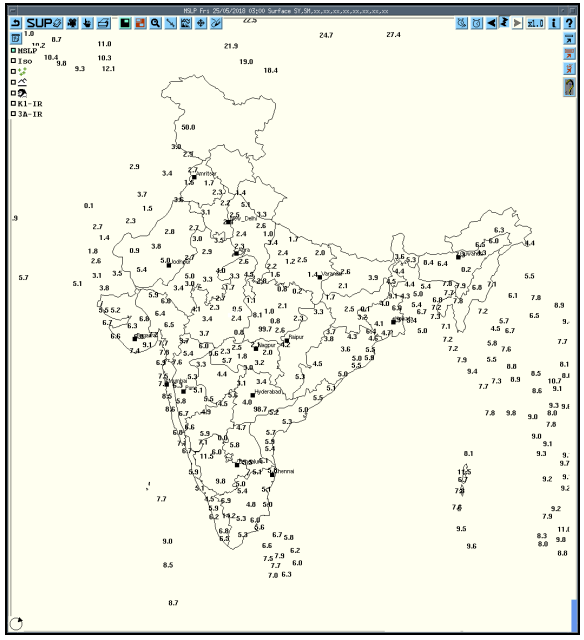
Tmax



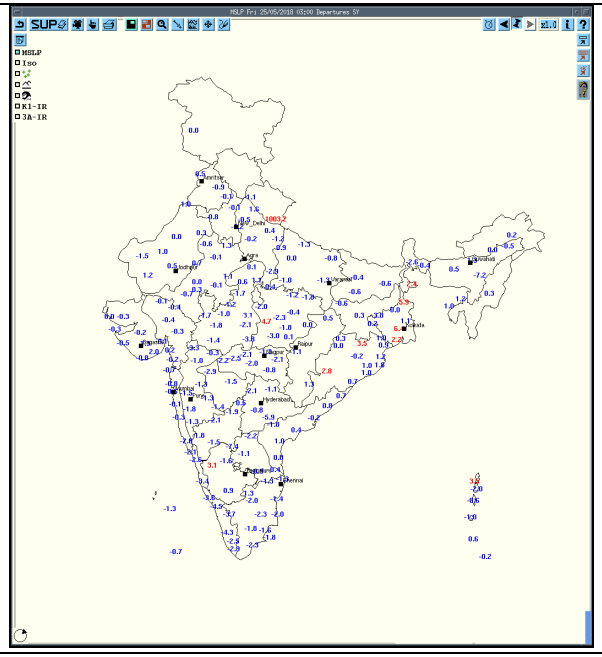
Departure Tmax



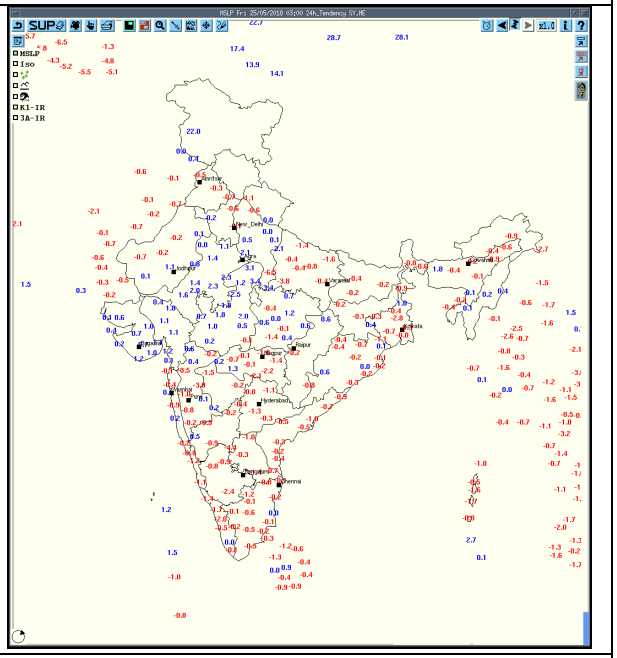
Tendency Tmax



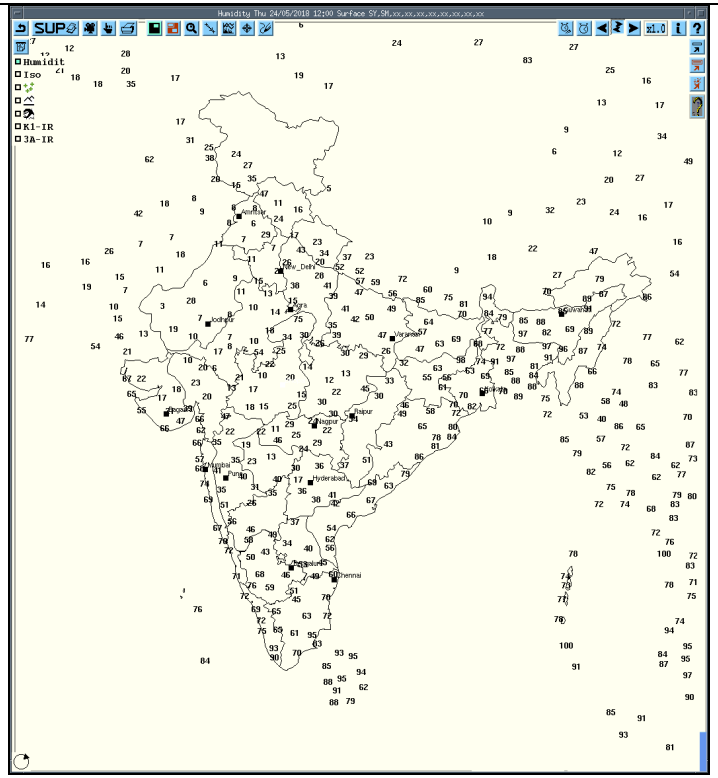
MSLP



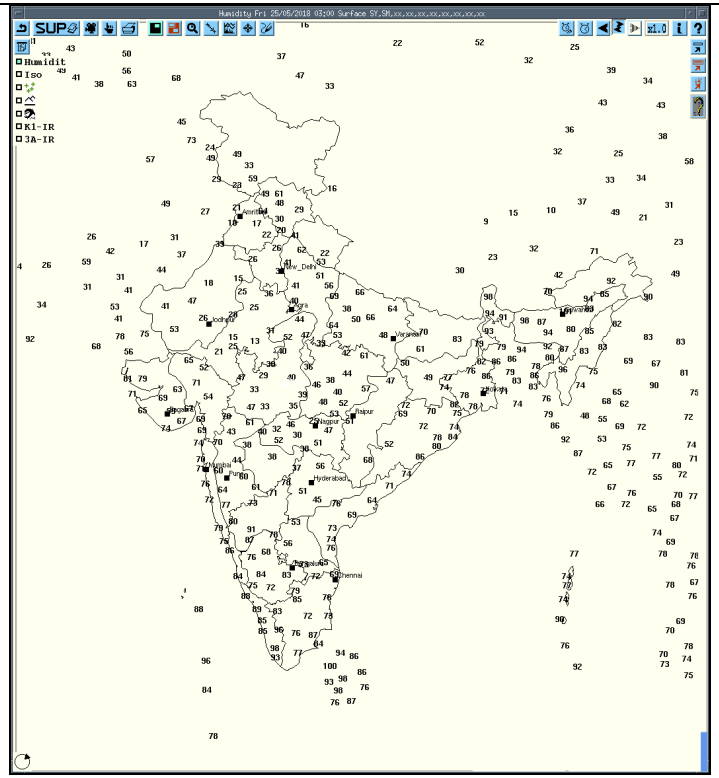
Departure MSLP



Tendency MSLP



RH at 1200UTC yesterday



RH at 0300UTC 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
Jaipur	25-05-18	240300-250300* (*Radar shut-down from 241618-241725, 241830-241900 & 250620-250645 due to power cut)	Nil	Nil	Nil	Nil	Nil
Kolkata	25-05-18	240301-241321	NIL	NIL	NOSIG ECHO	NIL	NIL
		241331-241511	Few isolated cells with maximum reflectivity of 58.0 dBz at 1411 UTC and maximum height 17.11 km at 1411 UTC	Coming from W (246.6 km), moving SSE-wards	Few isolated cells coming from W at a distance of 246.6 km from radar at 1331 UTC, Matured and dissipated at 1511 UTC in W (230.0 km) from radar	Thunderstorm /Rain /Hail	N/A
		241521-250301	NIL	NIL	NOSIG ECHO	NIL	NIL

Radar Station Name	Date	Time Interval Of Observation (UTC)	Organisation 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	25-05-18	240300 - 242102	NIL	N/A	N/A	N/A	N/A
		242102 - 242152	**Single Cell** Maximum Reflectivity: **46 dBZ** Echo Top: **12.1 KM**	Range: **100 KM** from DWR Patna in **WEST** direction Movement: towards **Easterly**	Warning issued	N/A	BUXAR, BHOJPUR
		242152 - 242242	NIL	N/A	N/A	N/A	N/A
		242242 - 242312	**Single Cell** Maximum Reflectivity: **42 dBZ** Echo Top: **10.6 KM**	Range: **57 KM** from DWR Patna in **EAST** direction Movement: towards **South-Easterly**	N/A	N/A	PATNA, NALANDA, BEGUSARAI
		242322 - 250132	**Multiple Isolated Cell** Maximum Reflectivity: **43 dBZ** Echo Top: **13.6 KM**	Range: **200 KM** from DWR Patna in **NORTH-EAST** direction Movement: towards **South-Easterly**	Warning issued	N/A	SUPAUL, ARARIA, MADHEPURA, PURNEA, SAHARSA
		250132 - 250300	NIL	N/A	N/A	N/A	N/A

Radar Station Name	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
Visakhapatnam	25-05-18	240900	Multiple cells of maximum reflectivity of 61 dBz with height of 17 kms	NW(68 KMS) moving Sly	CB cells are formed and developing to Max. reflectivity of 61dBz at 0851 UTC	Thunderstorm with rain	Visakhapatnam Dist. (AP) Koraput Dist.(Orissa)
		241200	Multiple cells of maximum reflectivity of 61 dBz with height of 18 kms	NW(45 KMS) NE(215) W(83) moving Sly	Since last observation CB cells are developing and matured well(61dBz, 18kms) and start dissipating at 1001 UTC	Thunderstorm with rain	Visakhapatnam Dist. (AP) Koraput , Gajapati Dist.(Orissa)
		241500	Multiple cells of maximum reflectivity of 56 dBz with height of 18 kms	NW(58 KMS) N(246) SW(53) moving Sly	CB cells in NW & SW are dissipated at 1341utc and N CB cells are matured well at 1351 UTC and start dissipating.	Thunderstorm with rain	Visakhapatnam Dist. (AP) Koraput , Rayagada, Kandamal Dist.(Orissa)
		241800	Convective region of maximum reflectivity of 33 dBz with height of 9 kms	N(200 kms)	Dissipated at 1601UTC		Kandamal Dist.(Orissa)

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
Lucknow	25-05-18	240922-241612	Multiple cell system formed over 250 Km WSW. Max. reflectivity was 62 dBZ and height was more than 16 Km on 20 dBZ echo top scale.	At around 1252 UTC system intensified as squall line like system extending from 150 Km W to 170 Km SW. The system moved with avg. velocity 50 Km/h Easterly w.r.t. the station.	Dissipated at around 1612 UTC over 50 Km SW.	TS Squall HS	Etawah, Auraiya, Jalaun, Firozabad Mainpuri, Kanpur Dehat Kanpur Nagar, Hamirpur Mahoba, Fatehpur
		241432-2421932	Multiple cell system formed which later formed a single large cell. Max. reflectivity was 60 dBZ and height reached over 16 Km.	The system moved with average speed 60 Km/h Easterly w.r.t. the station.	System was persisting at around 1932 UTC over 250 Km SE, afterwards moved beyond Radar range.	TS Squall HS	Banda, Allahabad Varanasi, Amethi Jaunpur, Sant Ravidas Nagar, Mirzapur
		242112 - 242252	Single cell system formed over 180 Km SSE. Max. reflectivity was 56 dBZ and height reached 12 Km (20 dBZ echo top scale.)	Moved with avg. velocity 45 Km/h SEly w.r.t. the station.	Dissipated at around 2252 UTC over 250 Km SSE.	TS Squall	Mirzapur, Varanasi, Sant Ravidas Nagar
		242252-250300	NIL	NIL	NIL	NIL	NIL

Realised past 24hrs TS/SQ/HS Data:

Realised TS/HS/SQ during past 24hours ending at 0300UTC of today (received from RMCs/MCs)						
Name of Station Reporting	**Region**	**State/Sub Division**	**Weather Event (TS/Hail/Squall)**	**Date**	**Time of Commencement (IST)**	**Time of end (IST)**
Dehradun	Northwest India	Uttarakhand	Thunderstorm	24-05-18	1510	1650
Kanpur City	Northwest India	East Uttar Pradesh	Thunderstorm	24-05-18	2000	2100
Kanpur IAF	Northwest India	East Uttar Pradesh	Thunderstorm	24-05-18	1910	2300
Etawah	Northwest India	East Uttar Pradesh	Thunderstorm	24-05-18	1800	1900
Varanasi A.P.	Northwest India	East Uttar Pradesh	Thunderstorm	25-05-18	0015	0205
Hamirpur	Northwest India	West Uttar Pradesh	Thunderstorm	24-05-18	1830	1900
Orai	Northwest India	West Uttar Pradesh	Thunderstorm	24-05-18	1800	1900
Gwalior	Central India	Madhya Pradesh	Thunderstorm	24-05-18	1545	1750
Pendra Road	Central India	Chhattisgarh	Thunderstorm	24-05-18	1345	1900
Bilaspur	Central India	Chhattisgarh	Thunderstorm	24-05-18	1845	2045
Itanagar	Northeast India	Arunachal Pradesh	Thunderstorm	24-05-18	1440	1505
Silchar	Northeast India	Assam	Thunderstorm	24-05-18	1200	1500
N/Lakhimpur	Northeast India	Assam	Thunderstorm	24-05-18	1450	1540
Dhubri	Northeast India	Assam	Thunderstorm	24/25-05-18	24/2000	25/0500
Guwahati	Northeast India	Assam	Thunderstorm	24/25-05-18	241215 250255	241400, 2550615
Cherrapunjee	Northeast India	Meghalaya	Thunderstorm	25-05-18	0500	0830
Lengpui	Northeast India	Mizoram	Thunderstorm	24-05-18	1421	1720
Kailasahar	Northeast India	Tripura	Thunderstorm	24-05-18	1135	1420
Agartala	Northeast India	Tripura	Thunderstorm	24-05-18	1010	1325
Hyderabad	South India	Telangana	Thunderstorm	24-05-18	241700 250400	241800 250500
Karipur A P	South India	Kerala	Thunderstorm	25-05-18	0040	0310
Kozhikode	South India	Kerala	Thunderstorm	24/25-05-18	2305	0305
Thiruvananthapuram AP	South India	Kerala	Thunderstorm	24-05-18	1944	2050
Thiruvananthapuram C	South India	Kerala	Thunderstorm	24-05-18	1410 1500	1435 1630
Salem	South India	North interior Tamil Nadu	Thunderstorm	24-05-18	1955	2225
Coonoor	South India	North interior Tamil Nadu	Thunderstorm	24-05-18	1930 2300	2100 2400
Dharmapuri	South India	North interior Tamil Nadu	Thunderstorm	24-05-18	1930	2100
Yercaud	South India	North interior Tamil Nadu	Thunderstorm	24-05-18	2130	2230
Honavar	South India	Coastal Karnataka		24/25-05-18	1930 0100	2100 0400
Belgaum AP	South India	North Interior Karnataka	Thunderstorm	24-05-18	1700	1800
Gadag	South India	North Interior Karnataka	Thunderstorm	24-05-18	2230	0010
Shirali	South India	Coastal Karnataka	Thunderstorm	24-05-18	2300	2345
Madikeri	South India	South Interior Karnataka	Thunderstorm	25-05-18	0210	0340
Chamarajanagar	South India	South Interior Karnataka	Thunderstorm	24-05-18	2100	2230

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: