



India Meteorological Department

FDP STORM Bulletin No. 95 (09-06-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC Inference (0300UTC of the day):

- ♦ Southwest Monsoon has further advanced into most parts of Central Arabian Sea, most parts of Konkan, some more parts Madhya Maharashtra, Marathawada, Vidarbha, Chhattisgarh, Odisha and Northwest Bay of Bengal. The Northern Limit of Monsoon (NLM) passes through Lat. 19°N/ Long. 60°E, Lat. 19°N/ Long. 70°E, Thane (including Mumbai), Ahmednagar, Parbhani, Yeotmal, Brahmapuri, Rajnandgaon, Bhavanipatna, Puri, Lat. 21°N/ Long. 90°E, Agartala, Lumding, North Lakhimpur and Lat. 29°N/ Long. 95°E. Conditions are becoming favorable for further advance of Southwest Monsoon into some more parts of Chhattisgarh, Odisha, some parts of West Bengal & Sikkim, remaining parts of northwest Bay of Bengal and Northeastern States during next 48 hours. Conditions are likely to become favorable for further advance of Southwest Monsoon into some more parts of West Bengal, Odisha and some parts of Jharkhand and Bihar during the subsequent 48 hours.
- ♦ The low pressure area over north Bay of Bengal & neighbourhood now lies over northeast Bay of Bengal and adjoining Bangladesh Coast. Associated cyclonic circulation extends up to mid tropospheric levels. It is likely to become well marked during next 24 hours and concentrate into a depression during the subsequent 24 hours.
- ♦ The EastWest trough now runs from Punjab to centre of the low pressure area across south Haryana, northeast Rajasthan, south Uttar Pradesh, Jharkhand and Gangetic West Bengal and extends upto 1.5 km above mean sea level.
- ♦ The cyclonic circulation over north Madhya Pradesh and adjoining south Uttar Pradesh has merged with the above trough.
- ♦ The cyclonic circulation over Haryana & neighbourhood at 1.5 km above mean sea level persists.
- ♦ The cyclonic circulation at 3.1 km above mean sea level over Jammu & Kashmir and adjoining Himachal Pradesh now lies over Himachal Pradesh & neighbourhood.
- ♦ The off shore trough at mean sea level from south Maharashtra coast to Kerala coast now runs from north Maharashtra coast to Kerala coast.

Satellite Observations during past 24 hrs and current observation:

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

Clouds descriptions within India:

North

Broken low/medium clouds with embedded intense to very intense convection seen over East Himachal Pradesh, west Uttarakhand, West Punjab, extreme North Haryana, and Northwest Uttar Pradesh. Scattered low/medium clouds with embedded moderate to intense convection seen over Southwest Jammu & Kashmir, rest Himachal Pradesh, rest Uttarakhand, West Nepal, and isolated weak convection over rest Jammu & Kashmir, South Haryana and Delhi. Scattered low/medium clouds over rest Haryana and East Uttar Pradesh.

East:

Scattered low/medium clouds with embedded intense to very intense convection seen over East Jharkhand, North Odisha and West & South Gangetic West Bengal. Broken low/medium clouds with embedded moderate to intense convection seen over rest Jharkhand, rest Odisha, rest Gangetic west Bengal, East Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura and isolated weak to moderate convection over Chhattisgarh. Scattered low/medium clouds seen over rest parts of the region.

West:

Isolated low/medium clouds with embedded intense to very intense convection seen over extreme North Rajasthan. Scattered low/medium clouds with embedded moderate to intense convection seen over extreme East Vidarbha, South Marathwada and weak to moderate convection seen over East Rajasthan, Madhya Pradesh, rest Maharashtra and Konkan & Goa. Scattered low/medium clouds seen over Southeast Gujarat.

South:

Broken low/medium clouds with embedded intense to very intense convection seen over Central Kerala and moderate to intense convection seen over Coastal Andhra Pradesh, Telangana, Rayalaseema, Karnataka, rest Kerala, Lakshadweep, and Bay Islands. Scattered low/medium clouds with embedded weak to moderate convection seen over West Tamilnadu. Scattered low/medium clouds over rest Tamilnadu.

Arabian Sea:

Scattered low/medium clouds with embedded intense to very intense convection seen over East-central Arabian Sea of Maharashtra and moderate to intense convection seen over southeast adjoining East-central Arabian Sea and Comorin.

Bay of Bengal & Andaman Sea:

Broken low/medium clouds with embedded intense to very intense convection seen over Bay north of lat 13.0N, Arakan Coast and moderate to intense convection seen over North Andaman Sea, Gulf of Martaban and Tenasserim Coast.

Past Weather:

Convection (during last 24 hrs):

Moderate to Intense convection was observed over SW J&K Himachal Pradesh Uttarakhand Punjab east Rajasthan Haryana Delhi Madhya Pradesh Uttar Pradesh Bihar Jharkhand Odisha Chhattisgarh West Bengal Sikkim north-east states Andhra Pradesh Telangana Vidarbha Maharashtra konkan Goa Karnataka Kerala Tamilnadu Lakshadweep Andaman & Nicobar Islands.

OLR:-

Up to **230** wm^{-2} was observed over SW J&K Himachal Pradesh Uttarakhand east Rajasthan south Haryana Delhi Madhya Pradesh Uttar Pradesh Bihar Jharkhand Odisha Chhattisgarh West Bengal Sikkim north-east states Andhra Pradesh Telangana Vidarbha Maharashtra konkan Goa Karnataka Kerala Tamilnadu Lakshadweep Andaman & Nicobar Islands

Synoptic Features:

Westerly Trough & Jet-Stream - Westerly Trough & Jet Stream are not observed over Indian region.

Dynamic Features:

Wind Shear, Vorticity & Convergence- Wind shear up to 30-40 Kts is observed over Jammu & Kashmir, Arunachal Pradesh, Assam, Peninsula India and 5-20 Kts observed over rest India.

Positive Shear tendency is observed over the country.

Vorticity (850 hPa) up to 250 is observed over Punjab Haryana central Uttar Pradesh Gangetic West Bengal Tripura north Karnataka adjoining Maharashtra North Coastal Andhra Pradesh Extreme South Tamilnadu.

Positive low level convergence (5 Kts) observed over most parts of India.

Precipitation:**IMR:**

Rainfall > 150 mm was observed over SE Madhya Pradesh west Marathwada North Chhattisgarh SW Bihar SE Jharkhand Odisha south-east Gangetic west Bengal extreme south Mizoram North Coastal Andhra Pradesh(.)

Rainfall between 50-150 mm was observed over south J&K Himachal Pradesh east-central Rajasthan east Uttar Pradesh rest east Madhya Pradesh south Chhattisgarh north Madhya Maharashtra Andaman islands.

Rainfall Up to 50 mm was observed over north SE Assam rest Tripura rest Mizoram extreme south Manipur.

DWR and RAPID Observations:

Multiple tall echoes are seen on DWR Delhi, Patiala, Jaipur (dBZ ≥ 50 , height 13-14km). A short squall line like structure is seen in DWR Patiala, and likely to affect Haryana in the next two to three hours. Multiple Cells are also seen in DWR Agartala, Hyderabad, Gopalpur, Machilipatnam, Visakhapatnam radar domains at around 1020 UTC (1550 IST). However, the cells are shorter in height and likely to be long lived with possibility of associated heavy rainfall.

RAPID RGB Satellite imagery at 1500 IST indicates significant convection over West Jammu & Kashmir, Punjab, Haryana, East Rajasthan, Central parts of Madhya Pradesh, North Chhattisgarh, Jharkhand adjoining southeast Bihar, Gangetic West Bengal, Meghalaya, Nagaland, Mizoram, Konkan & Goa, South Madhya Maharashtra, North Coastal Andhra Pradesh, Telangana, Rayalaseema, Karnataka and Kerala.

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 for next few days over IGP and north India.

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

Delhi – SAFAR analysis & Forecast	08.06.2018	09.06.2018
PM10 (micro-g/m ³)	152	137
PM2.5 (micro-g/m ³)	61	55

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

Low level Cycirs, Troughs:

00 UTC Day1-4: Weak CYCIR at 850/925hPa over north BoB and intensifying in day 2-4 forecasts and moving towards Meghalaya via Bangladesh.

00UTC Day 1-4: E-W trough at 850/925 hPa from Punjab to Bihar across Haryana, UP.

00UTC Day1-3: Trough as weak CYCIR over Gujarat and south Pakistan.

00UTC of Day 1-4: at 500 hPa CYCIR along and off coast of Goa to south Gujarat via Mumbai

Synoptic systems:

00UTC Day 1-3: WD as a weak trough over Pakistan and J & K

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

3. Convergence at 850 hPa:

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

Day0: Arunachal_Pradesh, TN_Puducherry, Kerala,

Day1: Arunachal_Pradesh, NE_NMMT, Punjab, TN_Puducherry, Kerala,

Day2: Arunachal_Pradesh, Assam_Meghalaya, TN_Puducherry,

Day3: TN_Puducherry,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Jharkhand, TN_Puducherry

4. Low level Vorticity:-Positive Vorticity:

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

Day0: Assam_Meghalaya, Coastal_AP, TN_Puducherry, Kerala,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Punjab, TN_Puducherry, Kerala,

Day2: Assam_Meghalaya, NE_NMMT, Gangetic_WB, Jharkhand, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, TN_Puducherry, Kerala,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Bihar, Himachal_Pradesh, Odisha, TN_Puducherry, Kerala,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, Odisha, TN_Puducherry, Kerala

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, Jharkhand, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Saurashtra_Kutch, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana,

Day1: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Saurashtra_Kutch, Konkan_Goa, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, NI_Karnataka,

Day2: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Saurashtra_Kutch, Konkan_Goa, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, NI_Karnataka,

Day3: Arunachal_Pradesh, Sub_Himalayan_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Saurashtra_Kutch, Konkan_Goa, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, Coastal_Karnataka, NI_Karnataka, SI_Karnataka,

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

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, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Saurashtra_Kutch,

Day1: Arunachal_Pradesh, Sub_Himalayan_WB, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Guj_Reg, Saurashtra_Kutch,

Day2: Arunachal_Pradesh, Sub_Himalayan_WB, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Guj_Reg, Saurashtra_Kutch,

Day3: Arunachal_Pradesh, Sub_Himalayan_WB, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Saurashtra_Kutch, Chhattisgarh,

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

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, Jharkhand, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Saurashtra_Kutch, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, NI_Karnataka,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Saurashtra_Kutch, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, West_MP, East_MP, Guj_Reg, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, NI_Karnataka,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, Odisha, East_MP, Guj_Reg, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

- Day1: Assam_Meghalaya, NE_NMMT, Gangetic_WB, East_UP, West_UP, Uttarakhand, Punjab, Odisha, West_MP, East_MP, Guj_Reg, Konkan_Goa, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman_Nicobar, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,
- Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, West_UP, Hry_Chhd_Delhi, Punjab, Jammu_Kashmir, West_RJ, Odisha, West_MP, East_MP, Konkan_Goa, Madhya_Maharashtra, Vidarbha, Chhattisgarh, Andaman_Nicobar, Coastal_AP, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,
- Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, East_UP, Uttarakhand, Jammu_Kashmir, Odisha, East_MP, Konkan_Goa, Madhya_Maharashtra, Vidarbha, Chhattisgarh, Andaman_Nicobar, Coastal_AP, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,
- Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Odisha, Konkan_Goa, Madhya_Maharashtra, Coastal_AP, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,
- Day5: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Jammu_Kashmir, Odisha, Konkan_Goa, Madhya_Maharashtra, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

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

1. Synoptic Systems:

The analysis based on 00 UTC indicates an East- West Oriented Trough extends from Punjab to GWB across South Haryana, Northeast Rajasthan, South Uttar Pradesh and Jharkhand in lower Troposphere (850hPa). The forecast shows the Trough persist till day2. Analysis shows cyclonic circulation over North Madhya Pradesh and adjoining South Uttar Pradesh has merged with the above Trough. The analysis shows another cyclonic circulation over Haryana and adjoining areas. The forecast shows it will persist till day 2 and become less marked on day3. The analysis shows an off shore Trough extends from North Maharashtra coast to Kerala coast. The forecast shows it will persist till day3.

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

Although the presence of strong westerlies is found over extreme South Peninsular and Southwest 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 along the East-West Trough, around the cyclonic circulations, Northwest Rajasthan, Madhya Pradesh, Vidharbha adjoining areas, over South Peninsular India, Kerala, Tamil Nadu during next 3 days; Low level Positive Vorticity is also seen over parts J&K, Himachal Pradesh, Punjab, Haryana, Delhi, Madhya Pradesh, Vidharbha and adjoining areas from day 1 onwards and over parts of Karnataka, Konkan and Goa on day 1.

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 J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Gujarat, Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, SHWB, Orissa, coastal Maharashtra, North Interior Karnataka, Telangana, Madhya Maharashtra, Marathwada, Vidharbha, Chhattisgarh, East and west Madhya Pradesh, along Northern parts of east and west coast of India, coastal Andhra Pradesh, Sikkim, NE states on day 1; on day 2 and 3 it remains over same region but disappear over parts of Punjab, Haryana, Delhi, Himachal Pradesh, Uttarakhand, J&K, North Interior Karnataka, Telangana, Madhya Maharashtra, Marathwada, Andhra Pradesh and NE states; Significant zone lies over Gujarat and West Rajasthan.

Lifted Index (< -2): Similar to T-storm Index lies over parts of J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Gujarat, Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, SHWB, Orissa, coastal Maharashtra, Konkan & Goa, coastal and North Interior Karnataka, Tamil Nadu, Telangana, Madhya Maharashtra, Marathwada, Vidharbha, Chhattisgarh, East and west Madhya Pradesh, coastal Andhra Pradesh, along east and west coast of India, Sikkim, NE states and extreme south coastal parts of the country during next 2 days; on day 3 it remains over same region but disappear over parts of Punjab, Haryana, Delhi and Adjoining areas.

Total Total Index (> 50): Higher than Threshold value of the Index is seen over parts of J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Rajasthan, Madhya Pradesh, Vidharbha, Gujarat, Sikkim, Foothills of Himalaya and Arunachal Pradesh during next 3 days; over parts of Haryana, Delhi, West Uttar Pradesh on day 2 and 3..

Sweat Index (> 300): Is seen over the sub-divisions along east and west coast, areas along foothills of Himalayas, Central India, South Peninsular India, NE states and most parts of the country during next 3 days; significant zone lies over parts of J&K, Himachal Pradesh, Uttarakhand, Foothills of Himalaya, Sikkim, Arunachal Pradesh, Gujarat and west Rajasthan during next 3 days.

CAPE (> 1000): Mostly seen over parts of Gujarat, Rajasthan, J&K, Himachal Pradesh, Uttarakhand, Haryana, Punjab, Delhi and adjoining area, Uttar Pradesh along west coast and east coast, GWB, SHWB, Orissa, Bihar, Jharkhand, coastal Andhra Pradesh, Telangana, North coastal Maharashtra including Mumbai, North Madhya Maharashtra, Marathwada, Vidharbha, Chhattisgarh, coastal Tamil Nadu, East and West Madhya Pradesh, Sikkim, NE states and adjoining areas on day 1; it remain over same region on day 2 but disappear over parts of J&K, Delhi and adjoining areas, NE states; on day 3 it remain over same region but disappear over parts of J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi and NE states; maximum value of the index is seen over parts of Gujarat, Rajasthan, coastal Maharashtra including Mumbai, Haryana, Punjab, Himachal Pradesh, Uttarakhand, Madhya Pradesh, Vidharbha, Chhattisgarh, coastal Orissa and North-eastern states.

CIN (50-150): Over sub-divisions along east and west coast of India, extreme south over Kerala, Tamil Nadu and south Peninsular India, central, North and Northwest India mainly the value of index lies in above range over most of the parts of the country during next 3 days; significant zone with highest value of the index lies over parts of Gujarat and West Rajasthan.

5. Rainfall Activity:

Above 130 mm Rainfall: over parts of Vidharbha on day 2.

70-130 mm Rainfall: over parts of coastal and Interior Karnataka, coastal Maharashtra Including Mumbai Konkan and Goa, Vidharbha and NE states during next 3 days; over parts of East Madhya Pradesh on day 1; over parts of Madhya Pradesh and North Bihar on day 2; over foothills of Himalaya on day 2 and 3.

40-70 mm Rainfall: over coastal areas along the west coast including coastal Maharashtra adjoining Madhya Maharashtra, coastal and Interior Karnataka, Kerala, Konkan and Goa, Vidharbha, Madhya Pradesh and NE states during next 3 days; over parts of Telangana on day 1; over parts of GWB and North Bihar on day 2; over parts of Chhattisgarh, Foothills of Himalaya, Orissa, Sikkim and Telangana on day 3.

10-40 mm Rainfall: over parts of J&K, Himachal Pradesh, Uttarakhand, Gujarat, East Uttar Pradesh, Foothills of Himalaya, Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh, Sikkim, NE states, GWB, SHWB, Orissa, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Telangana, Rayalaseema, Madhya Maharashtra, Marathwada, Vidharbha, coastal Maharashtra including Mumbai, Konkan and Goa during next 3 days; over parts of Rajasthan adjoining Haryana on day 1 and 2.

Up to 10 mm rainfall: Over parts of J&K, Himachal Pradesh, Uttarakhand, Punjab, Rajasthan, Haryana, Delhi, Uttar Pradesh, Madhya Pradesh, Foothills of Himalaya, GWB, SHWB, Sikkim, NE states, Bihar, Jharkhand, Orissa, Chhattisgarh, Kerala, Interior Karnataka, Konkan & Goa, coastal Maharashtra, South Madhya Maharashtra, Marathwada, Vidharbha, Gujarat, Tamil Nadu, Telangana, Rayalaseema, Andhra Pradesh and Gujarat during next 3 days..

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, Himachal Pradesh, Uttarakhand, Kerala, Tamil Nadu, Karnataka, NE states, Orissa, Bihar, Jharkhand, GWB, SHWB, Sikkim, Telangana, Rayalaseema, Andhra Pradesh, Madhya Maharashtra, Marathwada, Vidharbha, coastal Maharashtra including Mumbai, Konkan and Goa, Madhya Pradesh, Chhattisgarh, Uttar Pradesh, South Gujarat and East Rajasthan; On day 2 and 3 over parts of J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Kerala, Tamil Nadu, Karnataka, Orissa, Andhra Pradesh, Chhattisgarh, Telangana, Vidharbha, Madhya Pradesh, Assam, Arunachal Pradesh Tripura, Mizoram, Meghalaya and adjoining area, Rayalaseema, Madhya Maharashtra, Marathwada, coastal Maharashtra, Konkan and Goa, GWB, North Bihar and some parts of North Haryana; On day 3 over parts of Haryana, Delhi, Rajasthan, West Uttar Pradesh and adjoining areas.

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

Total Index (> 50): Below threshold value is observed over parts of Gujarat, Rajasthan, East and West Uttar Pradesh, Uttarakhand, 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, Marathwada, Chhattisgarh, Telangana, Madhya Pradesh, Vidharbha and NE states during next 3 days; below threshold value is also seen over parts of J&K, Himachal Pradesh, Punjab, Haryana, Delhi and adjoining area from day1.

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 Gujarat, Madhya Pradesh, Vidharbha, Interior Karnataka, Telangana, Chhattisgarh, Kerala, Tamil Nadu, Andhra Pradesh, Orissa,

Bihar, Jharkhand, Uttar Pradesh, Himachal Pradesh, Uttarakhand, J&K, Punjab, Haryana, Delhi, Rajasthan, GWB, SHWB, South Madhya Maharashtra, Marathwada, Konkan and Goa, South coastal Maharashtra, Foothills of Himalaya, Sikkim and NE states.

CAPE (> 1500): Greater than threshold value over parts of J&K, Himachal Pradesh, Uttarakhand Punjab, Haryana, Rajasthan, Delhi, Rajasthan, Gujarat, Uttar Pradesh, coastal areas of west coast, coastal Maharashtra, including Mumbai, Konkan & Goa, coastal areas along the east coast, SHWB, GWB, Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Bihar, Jharkhand, Telangana, Rayalaseema, Madhya Maharashtra, Marathwada, East and West Madhya Pradesh, Chhattisgarh, Vidharbha and NE states during next 3 days; Maximum value of the index is seen over the parts of Gujarat, Rajasthan, coastal Maharashtra including Mumbai, coastal Orissa and NE states.

CIN (50-150): The value of the index lies in above range over most of the parts of the country except extreme southern Peninsular India on day 1; over most of the parts of the country except South Peninsular India Eastern parts of the country Bihar, Jharkhand, GWB, SHWB and coastal areas along the east coast on day 2; on day 3 value of the index lies in the above range over North and North-western parts of the country including J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Gujarat, Rajasthan, West Madhya Pradesh, Uttar Pradesh and adjoining areas; it has significant larger values over North-western parts of country including Punjab, Haryana, Gujarat and Rajasthan..

3. Rainfall and thunderstorm activity:

Above 200 mm Rainfall: over parts of coastal Karnataka, South Coastal Maharashtra, Konkan and Goa on day 2 and 3; over parts of East Uttar Pradesh and adjoining Chhattisgarh on day 3.

130- 200 mm Rainfall: over parts of coastal Maharashtra, coastal Karnataka, Konkan and Goa during next 3 days; over some parts of East Vidharbha and adjoining Chhattisgarh on day 2 and 3; over parts of Assam and Arunachal Pradesh on day 2.

70- 130 mm Rainfall: over parts of coastal and Interior Karnataka, Kerala adjoining Tamil Nadu, Coastal Maharashtra Including Mumbai, Konkan and Goa during next 3 days; over parts of Assam, Meghalaya, Manipur, Tripura, Mizoram, Arunachal Pradesh Vidharbha, Chhattisgarh and Jharkhand on day 2 and 3; over parts of J&K, Madhya Pradesh and South Chhattisgarh on day 1; over parts of GWB and Orissa on day 3.

40- 70 mm Rainfall: over parts of Kerala, coastal and Interior Karnataka, coastal Maharashtra including Mumbai, Madhya Maharashtra, Marathwada, Tamil Nadu, Telangana, Madhya Pradesh, Vidharbha, Orissa, Chhattisgarh, NE states, Andhra Pradesh, Konkan and Goa during next 3 days; over parts of J&K and Himachal Pradesh on day 1; over parts of Jharkhand and GWB on day 2 and 3; over parts of Uttar Pradesh and Bihar on day 3.

10- 40 mm Rainfall: Over parts of J&K, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidharbha, Kerala, Tamil Nadu, Karnataka, Konkan and Goa, south Gujarat, Andhra Pradesh, Sikkim, GWB, SHWB, Foothills of Himalaya, Bihar, Jharkhand, Orissa, coastal Maharashtra including Mumbai, Madhya Maharashtra, Telangana, Rayalaseema, Chhattisgarh and NE states during next 3 days; over parts Punjab, Haryana, Delhi and Rajasthan on day 2 and 3.

Up to 10 mm Rainfall: Over parts of J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Rajasthan Foothills of Himalaya, Kerala, Tamil Nadu, Karnataka, Konkan and Goa, Sikkim, GWB, SHWB, Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, Orissa, Telangana, Rayalaseema, Madhya Maharashtra, coastal Maharashtra, Vidharbha, Marathwada, Madhya Pradesh, Andhra Pradesh, Gujarat and NE states during next 3 days

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

o Most thermodynamic indices (T-STORM Initiation Index, K-Index, Lifted Index, CAPE) from IMD GFS deterministic model indicate high probability of thunderstorm occurrence over central and North Indian region, with highest values over Gujarat and adjoining Rajasthan on day 1. On day 2, the probability of convection decreases over North and central India, and especially decreases over South peninsular India. SWEAT index, which accounts for the wind shear between 850 and 500 hPa levels in addition to thermodynamic parameters, has high values over the entire Indian region, especially over Gujarat and adjoining Rajasthan on day 1. On day 2, the probability of convection decreases over Rajasthan while the rest of the pattern remains unchanged. The 850-200 hPa wind shear is weak over the Indian region excluding the extreme northern parts of Jammu and Kashmir region and extreme south peninsular India region on day1, increasing over peninsular India on day 2.

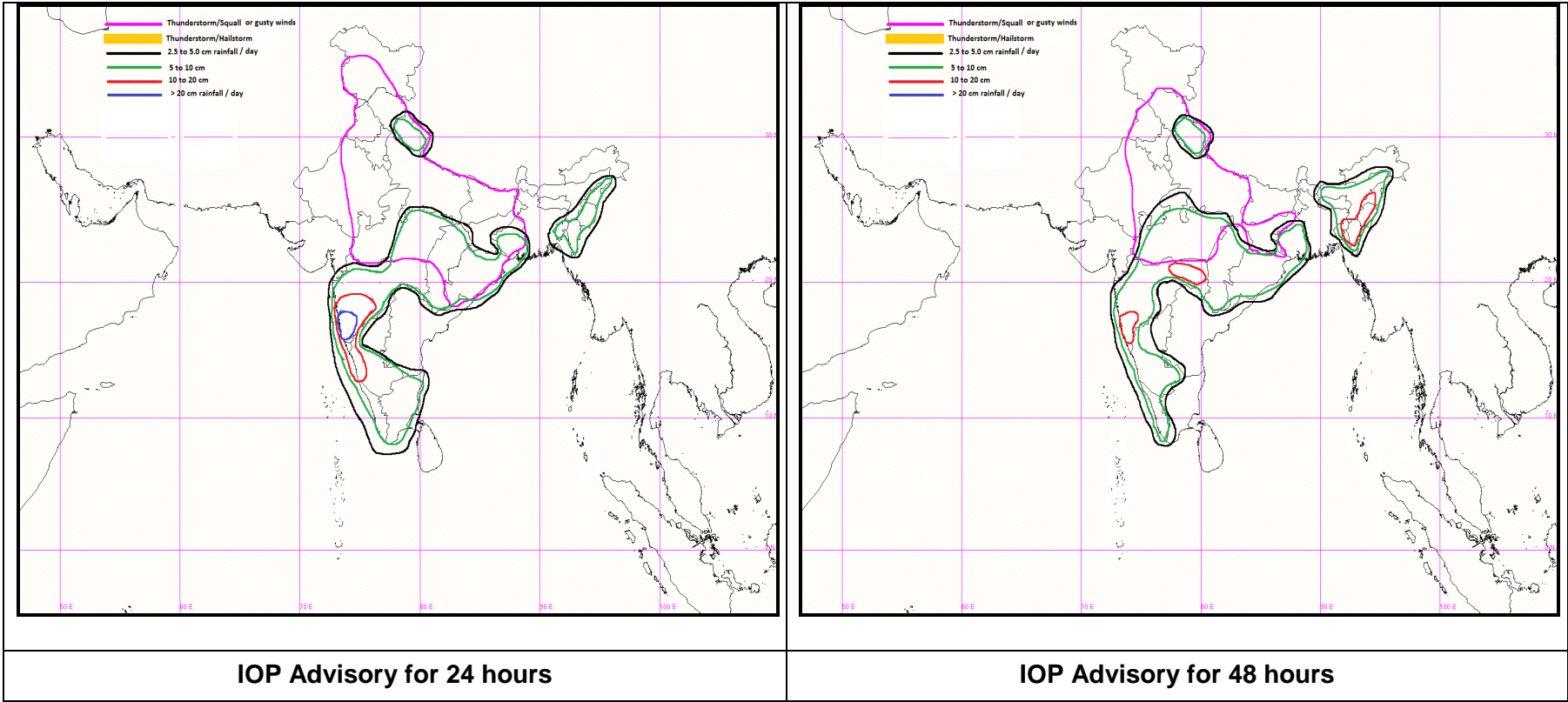
o Synoptic analysis indicates that there is a low pressure area over northeast Bay of Bengal and adjoining Bangladesh Coast. An eastwest oriented trough in the lower levels, runs from Punjab to centre of the low pressure area over the Bay. The cyclonic circulation over Haryana & neighbourhood persists, while the cyclonic circulation in the mid-levels over Jammu & Kashmir has moved eastwards and now lies over Himachal Pradesh. IMDGFS as well as ECMWF deterministic models indicate that the circulation over the Bay of Bengal is likely to intensify during the next 24 hours. Associated moisture inflow into north India is likely to result in thunderstorm activity over the entire north Indian region on day 1 and 2. To the north of the shear zone at 15 deg. N, along the Northern Limit of Monsoon, the moisture feeding from the Bay of Bengal is likely to result in heavy rainfall spells throughout central India on day 1 and 2.

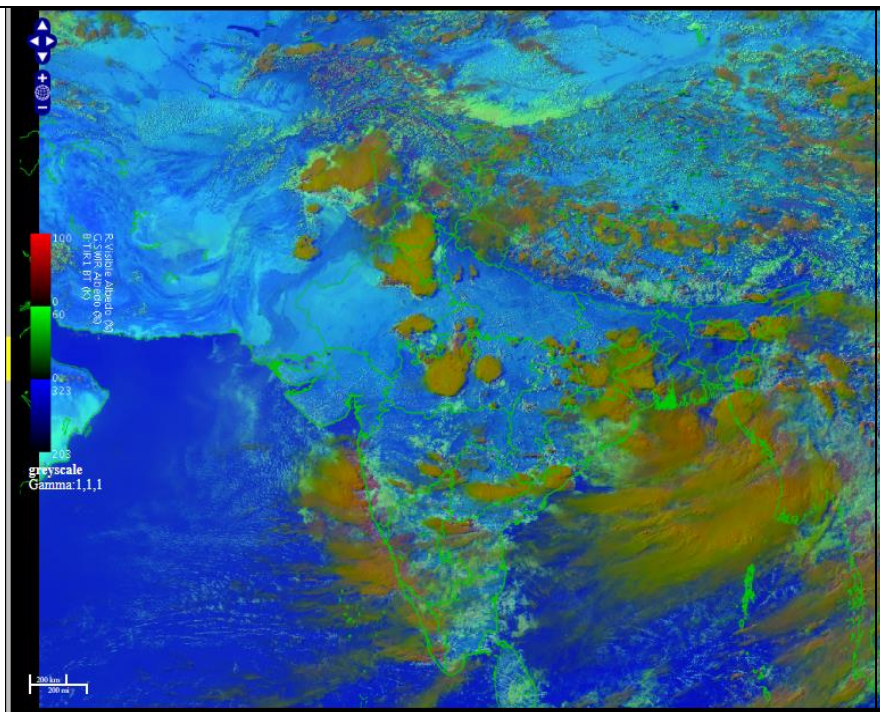
o Synoptic analysis also indicates that the off shore trough at mean sea level seen yesterday from south Maharashtra coast to Kerala coast, now extends further northward upto the north Maharashtra coast. West coast rainfall is likely to be heavy, especially along the South Konkan and Karnataka coast on day 1, and decrease on day 2 as the shear zone decreases in intensity.

IOP Area for Day-1 & Day-2:

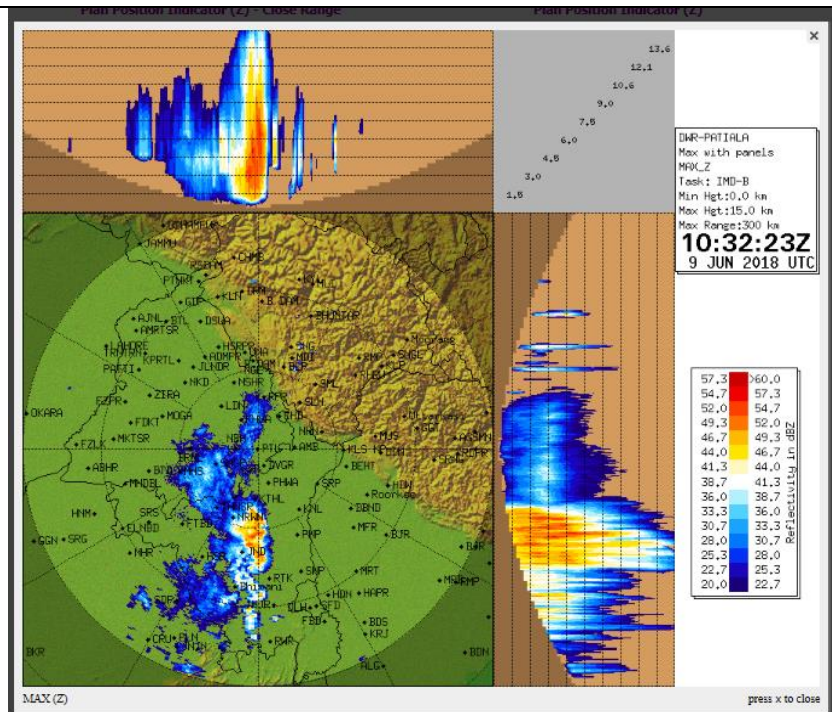
24 hour Advisory for IOP:	48 hour Advisory for IOP:
<p>Significant Rainfall: Konkan & Goa, Madhya Maharashtra, Marathawada Coastal Karnataka, South Interior Karnataka, Kerala, Tamilnadu Chhattisgarh, Vidarbha, East Madhya Pradesh Gangetic West Bengal, Odisha Nagaland, Manipur, Mizoram, Tripura Uttarakhand</p> <p>Thunderstorm with squall or gusty winds: Madhya Pradesh, Chhattisgarh Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Chandigarh, Uttar Pradesh, East Rajasthan Gangetic West Bengal, Bihar, Jharkhand, Odisha</p> <p>Thunderstorm with squall and hail Nil</p> <p>Duststorm: Nil</p>	<p>Significant Rainfall: Konkan & Goa, Madhya Maharashtra Coastal Karnataka, South Interior Karnataka, Kerala Chhattisgarh, Vidarbha, Madhya Pradesh Gangetic West Bengal, Odisha Nagaland, Manipur, Mizoram, Tripura, Assam & Meghalaya Uttarakhand</p> <p>Thunderstorm with squall or gusty winds: Madhya Pradesh Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Chandigarh, Uttar Pradesh, East Rajasthan Jharkhand</p> <p>Thunderstorm with squall and hail Nil</p> <p>Duststorm: Nil</p>

Graphical Presentation of Potential Areas for Severe Weather:

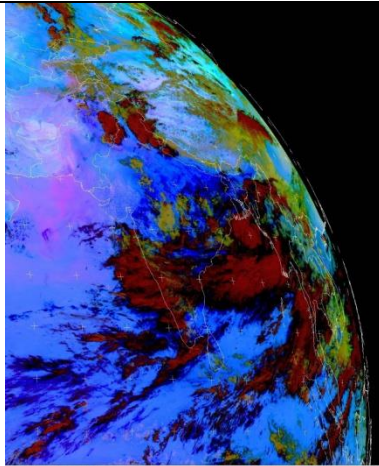




RAPID RGB Imagery at 1500 IST of the Day

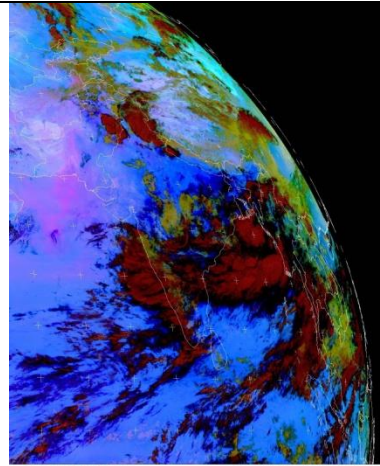


DWR Patiala reflectivity at 1602 IST



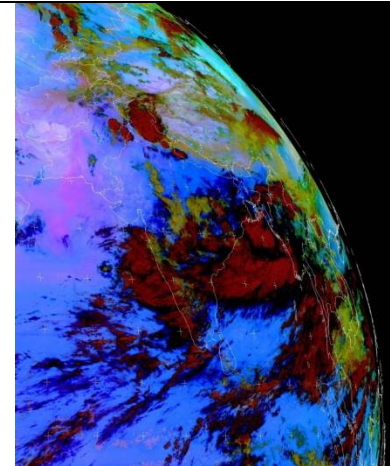
EUMETSAT

Meteosat IODC Dust, 2018-06-09 04:00:00



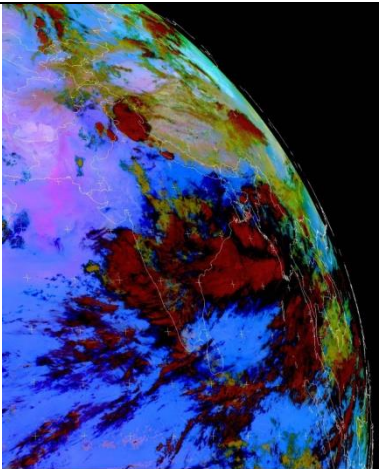
EUMETSAT

Meteosat IODC Dust, 2018-06-09 03:00:00



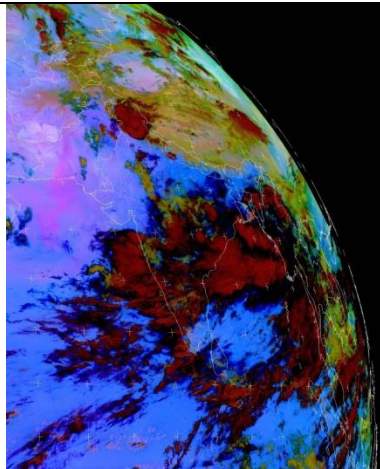
EUMETSAT

Meteosat IODC Dust, 2018-06-09 02:00:00



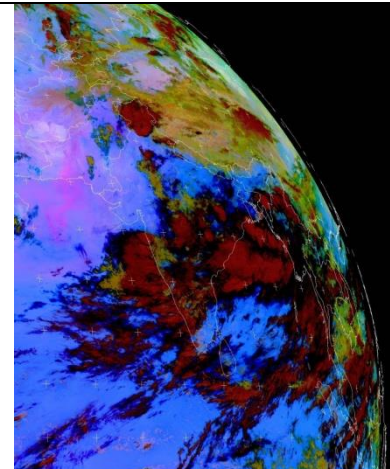
EUMETSAT

Meteosat IODC Dust, 2018-06-09 01:00:00



EUMETSAT

Meteosat IODC Dust, 2018-06-09 00:00:00

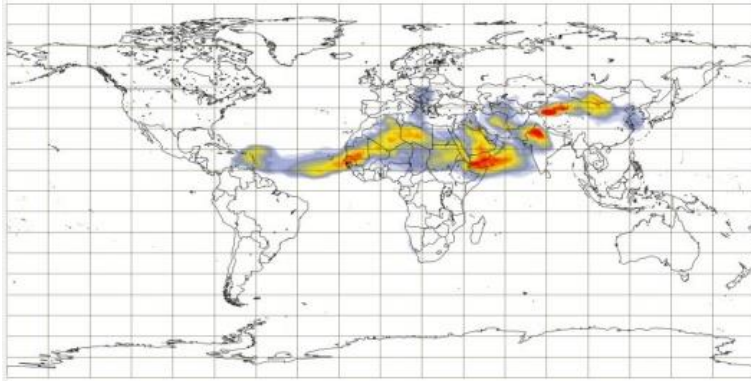


EUMETSAT

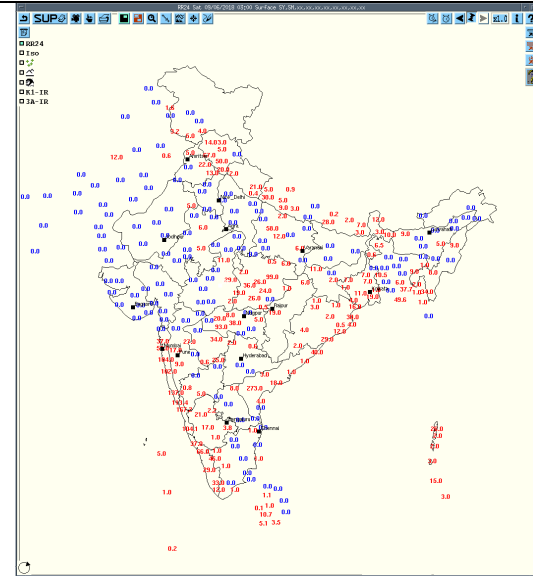
Meteosat IODC Dust, 2018-06-08 23:00:00

Observed Satellite Dust Images of today

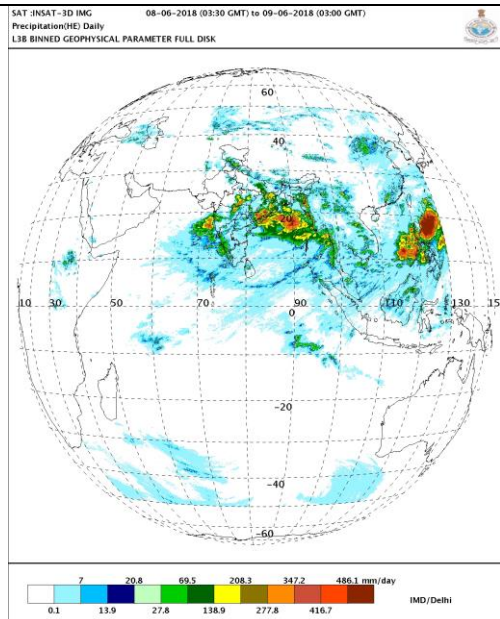
Dust aerosol optical depth at 550 nm (provided by CAMS, the Copernicus Atmosphere Monitoring Service)
Friday 8 Jun, 00 UTC T+120 Valid: Wednesday 13 Jun, 00 UTC



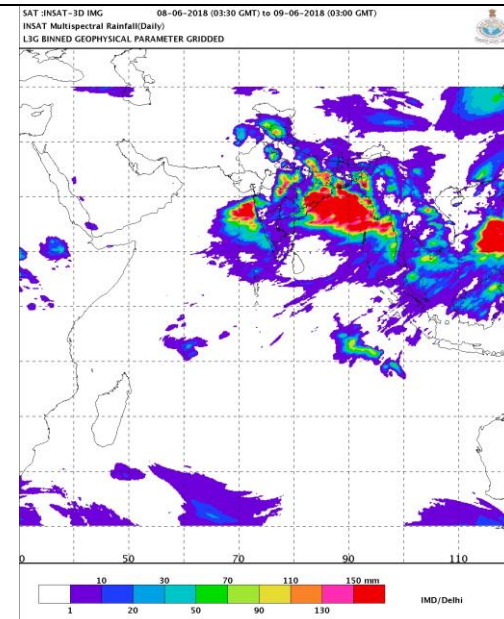
Dust Foreast



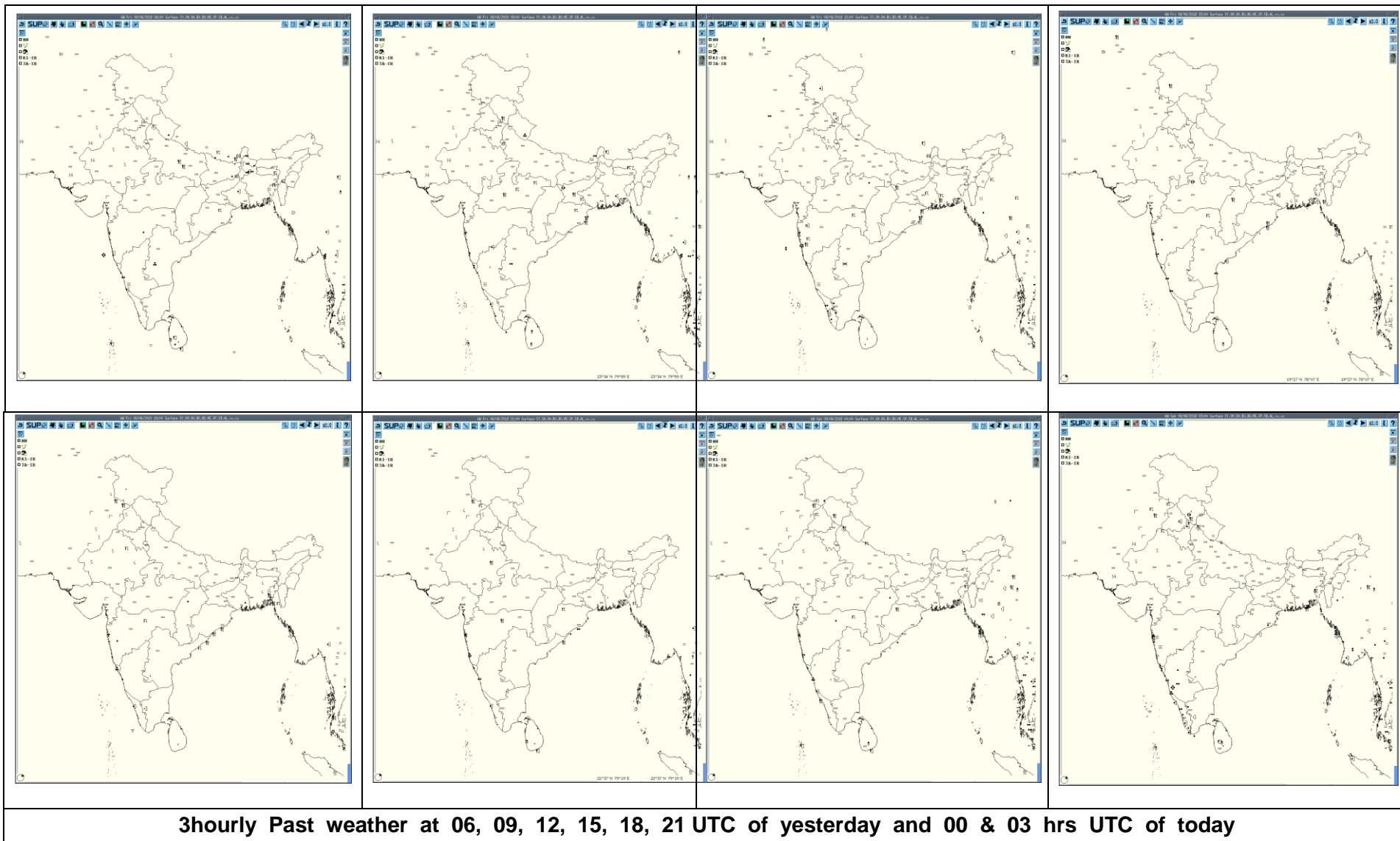
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



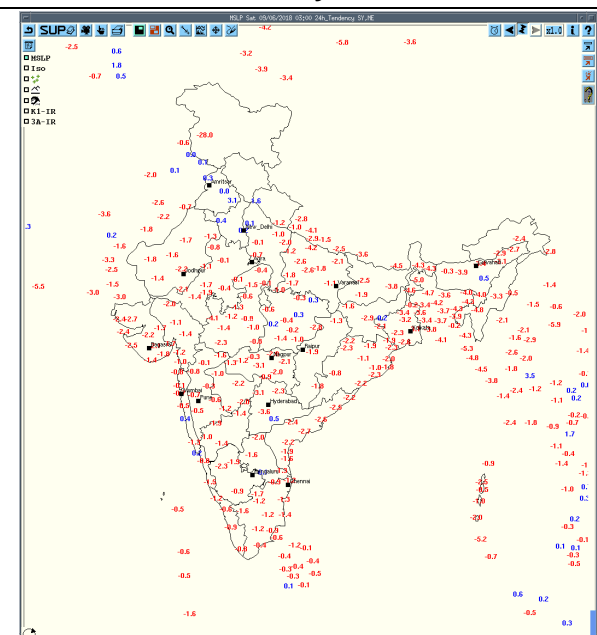
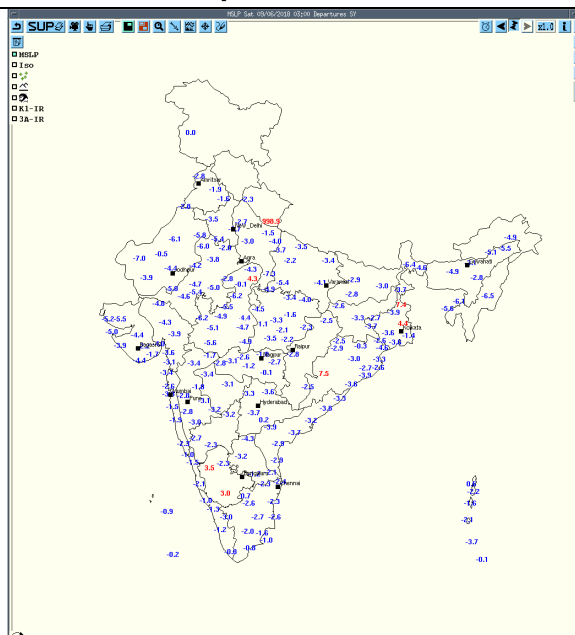
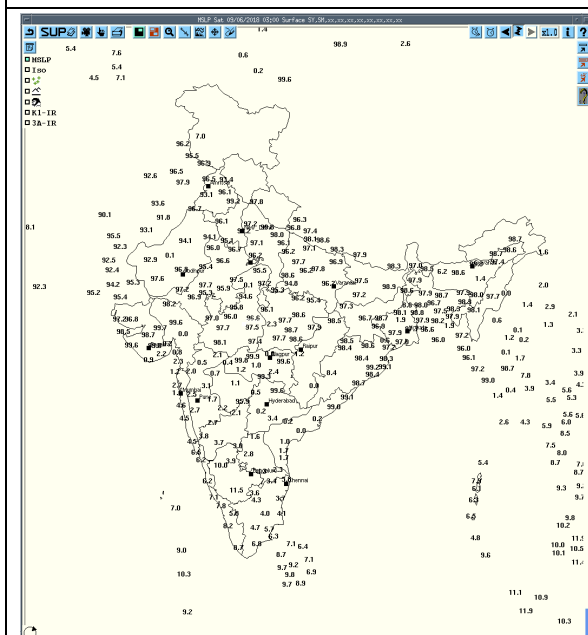
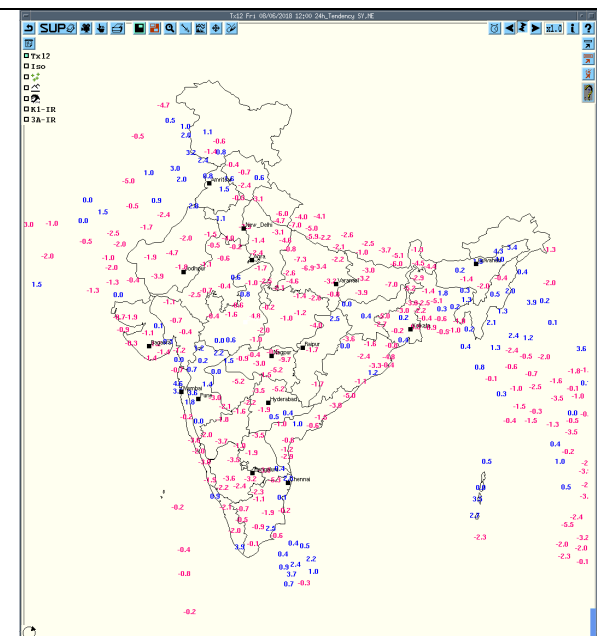
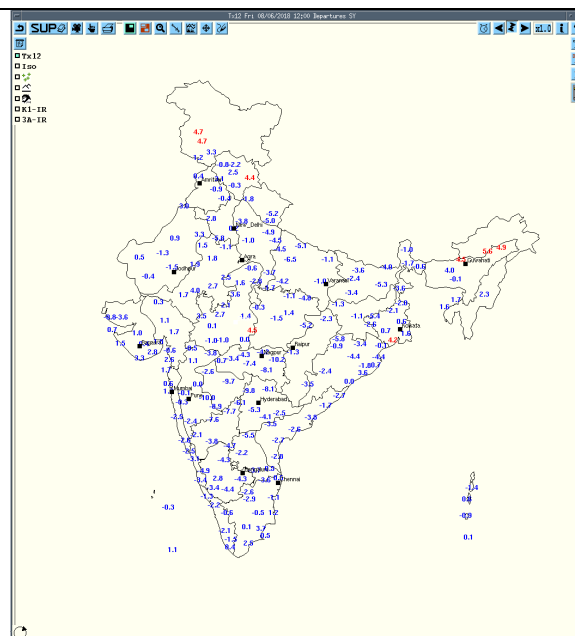
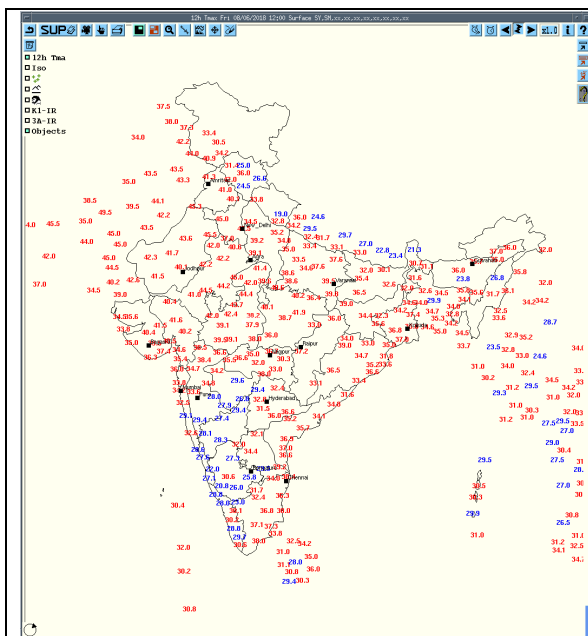
HEM

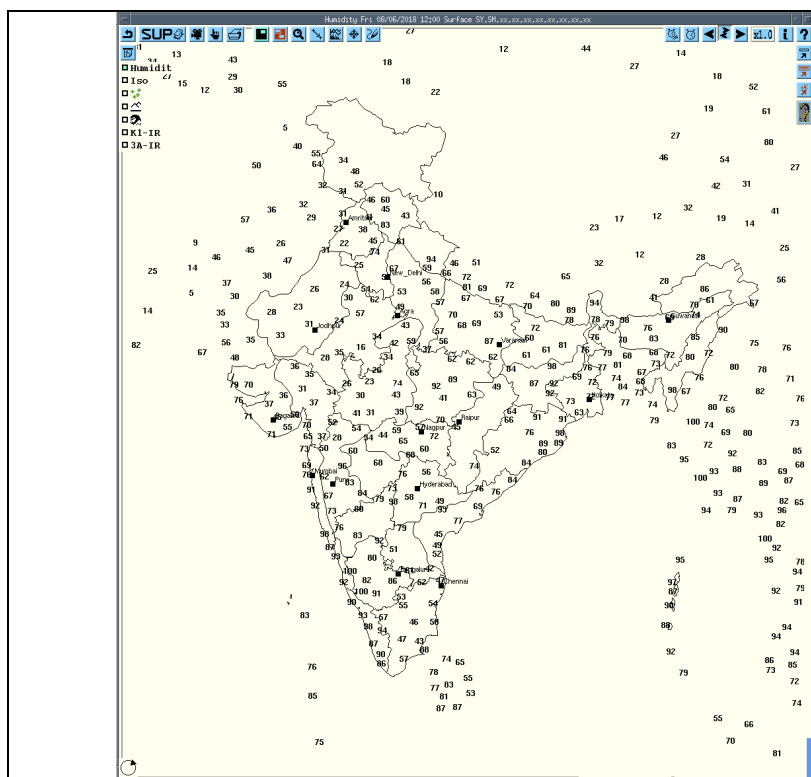


IMR

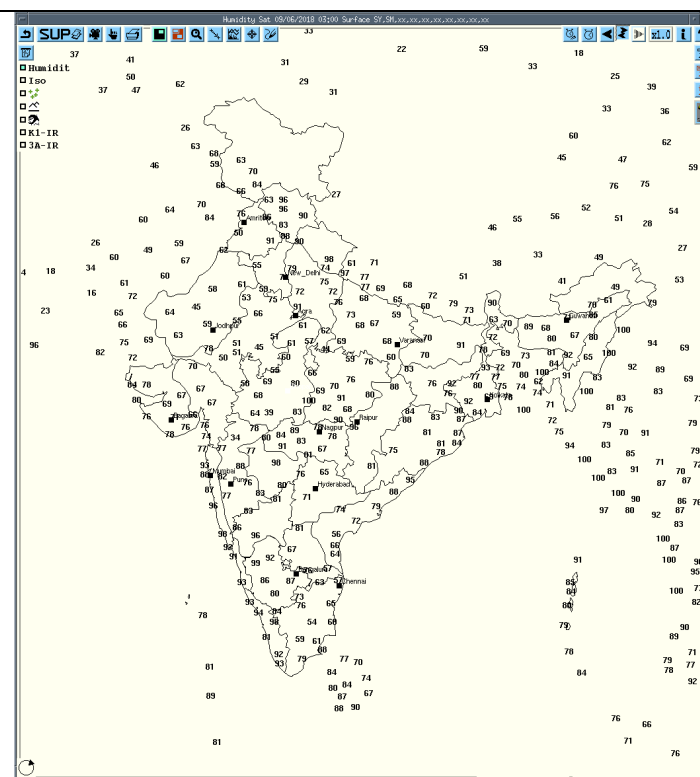


3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today





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
Visakhapatnam	09-06-18	080600	Cb cell in NE and Multiple cb cells in sea with max reflectivity 54 dbz and height 8kms	NE (242 kms) SE (217 kms) at 0301UTC and	Forming continuous cb cells over the sea.	-	Over the sea.
		080900	CB CELL with reflectivity 54dbz and height 8KMS.	192kms(Nw) 08:41UTC And moving NE ly.	1) Forming multiple cells in the NW and moving NE ly. 2) cb cell in the convection region over the sea with	-	-
		081200	Multiple cb cells with max reflectivity 54dbz and height 10kms.	218kms(NE) 11:51UTC and moving SE ly.	Forming squally line of cb cells.	-	Koraput (Odissa) Ganjam, Gajapati (Odissa).
		081500	SQUALLY line of cb cell from NNW to NE with max reflectivity 57dbz and height 10kms.	130kms(NORTH) 12:51UTC and moving SE ly.	Severe thunderstorm and heavy rain fall may occur.	-	Rayagada, Gajapati, Ganjam, Gopalpur (Odissa)
		081800	Convection region with cb cells with max reflectivity 57dbz and height 10kms .	75kms(NE) 16:51 UTC. And moving SE ly.	Convection completely in the NE.	-	Srikakulam(AP) Ganjam, Gajapati, Kandharmal (Odissa)
		090000	Squally line cb cells over the sea with max reflectivity 52dbz and height 10kms.	65kms(SE) 19:01UTC and moving Easterly.	Huge convection with squally line are continued to be prevailed over the sea.	Thunderstorm and rain.	Visakhapatnam, Srikakulam, (AP) Ganjam, Gajapati (Odissa)
		090300	Convection region with cb cell with max reflectivity 49dbz and height 7kms.	173kms(SE) 00:01UTC and moving Easterly.	-	-	Srikakulam, (AP).

Radar Station Name	Date	Time Interval of Observation (UTC)	Organisation of cells (Isolated single cells /multiple cells/ convective regions /squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station and Direction of movement	Remarks	Associated Severe Weather if any	Districts affected
Patna	09-06-18	080300 - 080602	Isolated Multiple Cell Maximum Reflectivity: 42 dBZ Echo Top: 12.1 KM	Range: E, NE & SE Parts OF BIHAR Movement: towards Easterly	Warning issued	THUNDERSTORM, RAIN	LAKHISARAI, MUNGER, BEGUSARAI, KHAGARIA, SAMASTIPUR, DARBHANGA, MUXAFFARPUR, BHAGALPUR, SAHARSA, SUPAUL MADHEPURA KATIHAR, PURNEA, JAMUI
		080602 - 080652	NIL	NIL	NIL	NIL	NIL
		080652 - 081232	Isolated Multiple Cell Maximum Reflectivity: 47 dBZ Echo Top: More than 14 KM	Range: 160 KM from DWR Patna in WSW direction Movement: SOUTH-EAST	Warning issued	N/A	BHABHUA, ROHTAS, BUXAR, AURANGABAD, JEHANABAD, ARWAL
		081232 - 090300	NIL	NIL	NIL	NIL	NIL

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
Patiala	09-06-2018	080300 - 080600	MULTIPLE CELLS DBZ 57.0 HT. 08-11 KM	NE,SE SECTORS,MOVEMENT TOWARDS SE DIRECTION		-----	BILASPUR,SHIMLA,KALSI ,BEHAT RISHIKESH ,HARIDWAR AND ADJ AREA
		080600 - 080900	MULTIPLE CELLS DBZ 56.0 HT. 10-14 KM	NE SECTORS,MOVEMENT TOWARDS E DIRECTION		-----	SHIMLA, SOLAN NAHAN, MUSSORIE, ROHRU,KALSI AND ADJ AREA
		080900- 081200	MULTIPLE CELLS DBZ 61.5 HT. 13-16 KM	NW,NE,SE SECTORS,MOVEMENT TOWARDS SE DIRECTION		----	BILASPUR,SOLAN,SHIMLADASUY A.UNA,NANGAL,ROOPNAGAR,UT TER KASHI MOHINDERGARH AND ADJ AREA
		081200 - 081500	MULTIPLE CELLS DBZ 63.0 HT. 15-16 KM	NW,NE,SE SECTORS,MOVEMENT TOWARDS SE DIRECTION		---	HOSHIARPUR,PHAGWARA ,SHIMLA,SOLAN BATALA,UNA,NANGAL AND ADJ AREA
		081500 - 081800	MULTIPLE CELLS DBZ 57.0 HT. 10-13 KM	N.NW,SW SECTORS,MOVEMENT TOWARDS SE DIRECTION			HAMIRPUR,PALAMPUR,NADUAN,[ATHANKOT,PIANI CHURU,SUNDERNAGAR AND ADJ AREA
		081800 - 082100	MULTIPLE CELLS DBZ 56.5 HT. 11-13 KM	NW,N SECTORS,MOVEMENT TOWARDS SE DIRECONTIO			AMRITSAR,GURDASPUR,PATNK OT,MUKERIAN,JALANDHAR,DAS UYA,HAMIRPUR,NADUAN,MUSSO RIE,BATALA HOSHIARPUR AND ADJ AREA
		082100- 090000	MULTIPLE CELLS DBZ 58.5 HT. 12-14 KM	NW,N SECTORS,MOVEMENT TOWARDS SE DIRECTION			AMRITSAR, LUDHIANA,JALANDHAR,KHANNA, NAWANSHAHAR,,CHANDIGARH,B ILASPUR.UNA,GARHSHANKER,,S HIMLA AND ADJ AREA
		090000- 090252	MULTIPLE CELLS DBZ 55.0 HT. 9-11 KM	NE,NE,E SECTORS,MOVEMENT TOWARDS SE DIRECTION			LUDHIANA,KHANNA,PATIALA,CH ANDIGARH,AMBALA,HALWARA,F AZIKLA,RAJPURA,PEHOWA KURUKHESHTRA,DDN,KALSI SHIMLA, SOLAN BILASPUR AND ADJ AREA

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	09-06-18	080732-090300	Multiple cell with average height of 10.6 km & maximum reflectivity 55.0 dBZ	Multiple cell develop from 0732 UTC of 08/06/2018 towards N,NE,E,SE,S,SW,W,NW of Jaipur and moved to E,SE,S Wards at speed 20-25 km/hr	Multiple cell develop from 0732 UTC on 08/06/2018 towards N,NE,E,SE,S,SW,W,NW of Jaipur and reaches maximum reflectivity from 0822 UTC to 1922 UTC of	Dust storm/Thunder storm/ Light rain at Isolated places	Ajmer,Jaipur,Baran, Tonk, Sawai Madhopur, Dausa, Jhalawar, Karauli, Sikar, Churu, Jhunjhunu, Alwar, Bharatpur, Dholpur,
Mohanbari	09-06-18	080612-080742	Cell type- Isolated Avg. ht.- 7.1 Km MAX_Z:- 47 dBZ	Distance- 137 Km Direction- Ely Movement- Stationary	Small cell & later Dissipated	-	-
		080632-080852	Cell type- Isolated Avg. ht.- 8.9 Km MAX_Z:- 41 dBZ	Distance- 123 Km Direction- SSW Movement- Stationary	-do-	-	-
		080902-080942	Cell type- Isolated Avg. ht.- 7.1 Km MAX_Z:- 47 dBZ	Distance- 70 Km Direction- SE Movement- Stationary	-do-		

Realised past 24hrs TS/SQ/HS Data:

Realised TS/HS/SQ during past 24hours ending at 0300UTC of today (received from RMCs/MCs)						
	Region	State/Sub Division	Weather Event (TS/Hail/Squall)	Date	Time of Commencement (IST)	Time of end (IST)
Srinagar	Northwest India	Jammu & Kashmir	Thunderstorm	08-06-18	1835	1840
Batote	Northwest India	Jammu & Kashmir	Thunderstorm	08-06-18	1505 2200	1515 2300
Katra	Northwest India	Jammu & Kashmir	Thunderstorm	08/09-06-18	082205 090410	082240 090545
Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm	09-06-18	0130	0200
Dehradun	Northwest India	Uttarakhand	Thunderstorm	08/09-06-18	081100 090400	081330 090745
Pantnagar	Northwest India	Uttarakhand	Thunderstorm	09-06-18	0600	0715
Shimla	Northwest India	Himachal Pradesh	Thunderstorm	08/09-06-18	081415 090535	081635 090830
Sundernagar	Northwest India	Himachal Pradesh	Thunderstorm	08/09-06-18	081628 081948 082308 090145	081800 082022 082340 090730
Ambala	Northwest India	Haryana	Thunderstorm	09-06-18	0630	0750
Patiala	Northwest India	Punjab	Thunderstorm	09-06-18	0615	0650
Amritsar	Northwest India	Punjab	Thunderstorm	09-06-18	0238	0615
			Squall from East(100deg) with max speed 76kmph		0348	0350
Ludhiana	Northwest India	Himachal Pradesh	Thunderstorm	09-06-18	0700	0800
Chandigarh	Northwest India	Himachal Pradesh	Thunderstorm	09-06-18	0550	0800

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(upto03UTCof today)

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

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

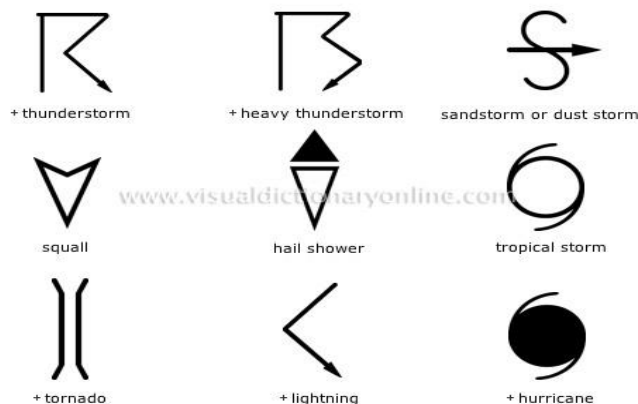
For Radar images of the past 24 hours including mosaic of images:

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	