



India Meteorological Department

FDP STORM Bulletin No. 85 (30-05-2018)

1. CURRENT SYNOPTIC SITUATION:

- ◆ The Southwest Monsoon has further advanced into some parts of central Arabian Sea, remaining parts of Kerala, most parts of Coastal Karnataka and some parts of South Interior Karnataka and some more parts of interior Tamilnadu today, the 30th May, 2018. The Northern Limit of Monsoon (NLM) passes through Lat. 14°N/ Long 60°E, Lat 14°N/ Long. 70°E, Shirali, Hassan, Mysuru, Kodaikanal, Tuticorin, Lat. 09°N/ Long 80°E, Lat 13°N/ Long. 85°E, Lat. 18°N/ Long 90°E and Lat.21°N/ Long 93°E. Conditions are favourable for further advance of Southwest Monsoon into some parts of northeastern states during next 48 hours. Conditions are likely to become favourable for further advance of southwest monsoon into some more parts of south Peninsula from around 3rd June, with the likely development of favourable circulation features leading to increase of rainfall over interior Tamilnadu, Andhra Pradesh and Telangana.
- ◆ The Depression over Myanmar moved further northeastwards and lay centred at 0830 hours IST of today, the 30th May 2018 over Myanmar near Lat. 21.8°N and Long. 95.8°E, about 30 km southwest of Mandalay(Myanmar). It is very likely to continue to move northeastwards and weaken into a Well Marked Low pressure area during next 12 hours.
- ◆ The east west shear zone along Lat. 12 °N between 3.1 km and 5.8 km above mean sea level over Indian Region persists.
- ◆ The cyclonic circulation over Punjab & neighbourhood persists and now seen at 1.5 km above mean sea level.
- ◆ The cyclonic circulation over central Pakistan & adjoining West Rajasthan now lies over northeast Rajasthan & neighbourhood and extends upto 0.9 km above mean sea level.
- ◆ A trough runs from above cyclonic circulation to Telangana across Madhya Pradesh and east Vidarbha at 0.9 km above mean sea level.
- ◆ A cyclonic circulation lies over Sub Himalayan West Bengal & neighbourhood and extends upto 0.9 km above mean sea level.
- ◆ The trough at 0.9 km above mean level from the cyclonic circulation over central Pakistan and adjoining West Rajasthan to Jharkhand across northern parts of Madhya Pradesh and Chhattisgarh has become less marked.
- ◆ The trough in westerlies roughly at 5.8 km above mean sea level now runs roughly along Long 93°E to the north of Lat 22°N.

SATELLITE OBSERVATIONS during past 24 hrs and current observation:

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

Vortex over Southeast Arabian Sea adjoining Lakshadweep:

Vortex over SE Arabian Sea adjoining Lakshadweep off Karnataka, Kerala centered within half degree of lat 12.8N/72.6. Centre is not well defined. Intensity T 1.0, Associated broken low/medium clouds with embedded moderate to intense convection over Southeast Arabian Sea adjoining Lakshadweep and between Lat 10.5N to 15.0N East of Long 69.0E.

Vortex over East Central Bay and Neighbourhood:-

Vortex over Myanmar now lay centered within a half degree of Lat 22.0N/96.0E over land. Associated broken low/medium clouds with embedded moderate to intense convection over Myanmar between Lat 18.0N to 25.0N o 91.0E to 99.0E & Arakan Coast.

CLOUDS DESCRIPTIONS WITHIN INDIA:-

NORTH:-

Scatted low/medium clouds over Jammu & Kashmir, South Haryana and Southwest Uttar Pradesh.

EAST:-

Scatted low/medium clouds with embedded weak convection seen over Sikkim, Arunachal Pradesh, Northeast Assam and Nagaland. Scatted low/medium clouds over rest parts of the region except Chhattisgarh, Northwest Jharkhand and Bihar.

WEST:-

Scatted low/medium clouds with embedded isolated weak convection seen over South Madhya Maharashtra, Konkan & Goa. Scatted low/medium clouds over Northeast Rajasthan & isolated over Northwest Madhya Pradesh.

SOUTH:-

Broken low/medium clouds with embedded intense convection seen over Lakshadweep Bay Islands. Broken low/medium clouds with embedded isolated moderate to intense convection seen over North Kerala and South Interior Karnataka. Scatted low/medium clouds weak convection seen over rest parts of the region except Scatted low/medium clouds over South Kerala, North Telangana and North Coastal Andhra Pradesh.

ARABIAN SEA:-

Broken low/medium clouds with embedded moderate to intense convection rest East Central & Southeast Arabian Sea.

BAY OF BENGAL & ANDAMAN SEA:-

Broken low/medium clouds with embedded moderate to intense convection seen over East Central Bay, North Andaman Sea Gulf of Martaban, Arakan Coast and Tenasserim Coast.

Past Weather:

Convection (during last 24 hrs):

Moderate to Intense convection was observed over Kerala Coastal Karnataka South Konkan and GOA South Madhya Maharashtra North Orissa Jharkhand Bihar West Bengal Meghalaya Tamilnadu North-East Chhattisgarh Orissa Lakshadweep and Andaman & Nicobar IDS

OLR:-

Upto **230** wm^{-2} was observed over Rayalaseema South Kerala Tamilnadu NMMT.

Upto **200** wm^{-2} was observed over North Kerala South Interior Karnataka North-West Tamilnadu.

Upto **150** wm^{-2} was observed over Lakshadweep and Andaman IDS

Synoptic features: Jet-Stream - Not observed

Dynamic Features: Wind Shear, Vorticity & Convergence –

Wind shear up to 30Knots is observed over Northern India and ext south peninsula up to 15 Knots over Central parts of the country.

Positive shear tendency upto 20 knots is observed over N coastal Karnataka Goa Andhra Pradesh. No tendency is observed over rest of the country.

Vorticity up to 250 is observed over N coastal Karnataka Goa Upto 80 is observed over Bihar Jharkhand Kerala ext south Tamilnadu

Positive low level convergence observed over N coastal Karnataka Goa Telangana Andhra Pradesh Madhya Pradesh Chhattisgarh Orissa Jharkhand

Precipitation:

IMR:

Rainfall more than **150** mm was observed over Lakshadweep Coastal Karnataka GOA NW parts of North Interior Karnataka Bay islands North Orissa.

Rainfall Up to 70 mm was observed over Rest Karnataka North-east Chhattisgarh Jharkhand South-East Bihar (.)

Rainfall Up to 10 mm was observed over J & K HP UP and North eastern states.

DWR and RAPID Observations:

Isolated/multiple light to moderate echoes were also seen on DWR Agartala, Delhi, Bhopal, Jaipur, Nagpur and Patna domains and light echoes Hyderabad, Kolkata Kochi, Lucknow and Thiruvananthapuram at around 1620 IST.

RAPID RGB Satellite imagery at 1500 IST indicated significant convection over Himachal Pradesh, North Uttarakhand, Northeast Rajasthan, Central Jharkhand, Kerala, 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 increase 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	30.05.2018	31.05.2018
PM10 (micro-g/m ³)	269	243
PM2.5 (micro-g/m ³)	99	89

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

1. Weather Systems:

Low level Cycirs, Troughs: 12UTC on Day1: At 850 hPa CYCIR Bihar & Jharkhand region

00UTC of Day1-3: At 850 a weak CYCIR over Punjab and adjoining Pakistan

Confluence & wind Discontinuity regions: 00UTC of Day 2-5: At 850hPa a trough from Delhi to Hyderabad

Synoptic systems: 00&12UTC of Day1-2: Feeble trough over J & K and adjoining Pakistan region

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: NE NMMT, East RJ, East MP, Chhattisgarh,

Day1: Assam Meghalaya, East RJ, East MP, TN Puducherry,

Day2: Haryana, Chandigarh, Delhi, Punjab, East RJ, East MP,

Day3: West MP,

Day4: Vidarbha, Chhattisgarh, TN Puducherry,

4. Low level Vorticity:-Positive Vorticity:

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

Day0: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Haryana, Chandigarh, Delhi, Jammu Kashmir, West MP, East MP, TN Puducherry,

Day1: Assam Meghalaya, TN Puducherry,

Day2: West UP, Himachal Pradesh, TN Puducherry,

Day3: Haryana, Chandigarh, Delhi, Jammu Kashmir, TN Puducherry,

Day4: TN Puducherry,

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

Day/Index: Subdivisions with Showalter Index < -4

Day0: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, East MP, Gujarat Region, Saurashtra Kutch, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day2: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Gujarat Region, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day3: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, West MP, East MP, Gujarat Region, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Himachal Pradesh, Jammu Kashmir, Odisha, West MP, East MP, Gujarat Region, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, 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, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Chhattisgarh, Telangana,

Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, East MP, Chhattisgarh,

Day2: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Madhya Maharashtra, Vidarbha, Chhattisgarh, Telangana, NI Karnataka,

Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, East MP, Gujarat Region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, NI Karnataka,

Day4: Arunachal Pradesh, Sub Himalayan WB, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East RJ, West MP, East MP, Gujarat Region, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana, NI Karnataka,

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

Day/Index: Subdivisions with K Index > 40

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, West UP, Uttarakhand, Haryana, Chandigarh, 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, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

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

Day2: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Himachal Pradesh, Jammu Kashmir, Odisha, West MP, East MP, Gujarat Region, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day3: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, East MP, Gujarat Region, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, West MP, East MP, Gujarat Region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Uttarakhand, Odisha, Andaman Nicobar, Coastal Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Odisha, Chhattisgarh, Andaman Nicobar, Kerala,

Day3: Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, West UP, Uttarakhand, Vidarbha, Andaman Nicobar, Telangana, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Odisha, Andaman Nicobar, Coastal AP, Telangana, Rayalaseema, Kerala,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, East UP, West UP, Madhya Maharashtra, Marathwada, Andaman Nicobar, Coastal AP, Coastal Karnataka, NI Karnataka, Kerala,

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

1. Synoptic Systems:

The analysis based on 00 UTC indicates a cyclonic circulation over Punjab and adjoining area. The forecast shows it will persist till day3 with Eastward shift. The analysis shows another cyclonic circulation over Northeast Rajasthan and adjoining area in lower Troposphere (850Hpa). The forecast shows it will persist till day 2. The analysis shows a North-South Trough extends from this circulation to Telangana across Madhya Pradesh and East Vidarbha. The forecast shows the trough persist till day1. Another cyclonic circulation is seen in the analysis over SHWB and adjoining area in lower troposphere (850hPa). The forecast shows it will persist till day2.

2. Location of Jet and Jet Core (>60kt) at 500hPa: Although the presence of strong westerlies is found over Eastern parts of the India, North and North western parts and NE states 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 along the North- South Trough, around the cyclonic circulations, central parts of India, NE states, extreme south peninsular India coastal and Interior Kerala and Tamil Nadu during next 3 days; Low level Positive Vorticity is also seen over parts North west Rajasthan and adjoining Punjab, Haryana, Delhi, west Uttar Pradesh and adjoining areas from day 1 onwards..

4. Spatial distribution of T-storm Initiation Index, Lifted Index, Total Total Index, CAPE, CIN and Sweat Index [High potential for thunderstorm]:

T-Storm Initiation Index (> 3): Over parts of Gujarat, Rajasthan, East Uttar Pradesh, West Uttar Pradesh, Uttarakhand, Himachal Pradesh, Haryana, Punjab, Delhi, 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; Significant zone lies over Gujarat, South Rajasthan, Punjab, Haryana and adjoining areas coastal areas along the east coast and west coast, GWB, SHWB, Bihar, Jharkhand, East Uttar Pradesh, parts of West Uttar Pradesh, Orissa, Andhra Pradesh, coastal Tamil Nadu and Kerala, Telangana, coastal Maharashtra, Madhya Maharashtra, Vidarbha, Chhattisgarh, Interior Karnataka and West Madhya Pradesh.

Lifted Index (< -2): Similar to T-storm Index lies over Gujarat, Rajasthan, Punjab, Haryana, Delhi, Himachal Pradesh, Uttarakhand, Gangetic plains and along east and west coast of India with an extension over Interior Karnataka and Telangana, East Uttar Pradesh, West Uttar Pradesh, Uttarakhand, 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; Significant zone with maximum negative value is found over West Uttar Pradesh, Orissa, Andhra Pradesh, Punjab, Haryana and adjoining areas.

Total Total Index (> 50): Higher than Threshold value of the Index is seen over parts of J&K, Himachal Pradesh, Uttarakhand, North Rajasthan, Punjab, Haryana, Delhi, Uttar Pradesh, Chhattisgarh, Bihar, Jharkhand, GWB, Vidarbha, Telangana, East Madhya Pradesh, Orissa, Sikkim and Arunachal Pradesh and mainly over most of the parts of the country except extreme South Peninsular India Assam, Tripura, Meghalaya, Mizoram, Nagaland, Manipur and adjoining areas, during next 3 days; Significant zone with Maximum value of the index lies over Punjab, North Rajasthan, Haryana, Delhi, Uttarakhand, Uttar Pradesh, west and East Madhya Pradesh, Chhattisgarh, 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 during next 3 days; significant zone lies over parts of Gujarat, Rajasthan, Punjab, Haryana, Delhi, North west Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, GWB, SHWB, Orissa and Chhattisgarh

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

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 J&K during next 3 days; significant zone with highest value of the index lies over parts of Gujarat, West Rajasthan, Uttar Pradesh and Uttarakhand.

5. Rainfall Activity:

70- 130 mm Rainfall: over parts of GWB, Jharkhand, Orissa and North Interior Karnataka on day 2.

40-70 mm Rainfall: over parts of Orissa during next 3 days; over parts of Arunachal Pradesh on day 1; over parts of GWB, Jharkhand, Telangana, North Interior Karnataka and Andhra Pradesh on day 2; over parts of Bihar, Marathwada, Madhya Maharashtra and North Interior Karnataka.

10-40 mm Rainfall: over parts of Uttarakhand, NE states, Kerala, Tamil Nadu and Karnataka during next 3 days; over parts of East Uttar Pradesh, Bihar, Jharkhand, Sikkim, GWB, Andhra Pradesh, South Madhya Maharashtra, Marathwada and Telangana on day 2 and 3; over parts of Vidarbha on day 2.

Up to 10 mm rainfall: Over parts of J&K, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Punjab, Haryana, 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, Andhra Pradesh and Gujarat during next 3 days; over parts of Haryana, Delhi and adjoining area on day 1 and 2.

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, Punjab, Himachal Pradesh, Haryana, Delhi, Uttarakhand, Rajasthan, Kerala adjoining Tamil Nadu, NE states, Orissa, Bihar, Jharkhand, GWB, SHWB, Sikkim, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Vidarbha, Konkan and Goa; On day 2 over parts of J&K, Kerala, Tamil Nadu, Karnataka, GWB, SHWB, Jharkhand, Bihar, Orissa, Vidarbha, some parts of Chhattisgarh, Andhra Pradesh and NE states; On day 3 mostly over parts of J&K, Himachal Pradesh, Uttarakhand, Kerala, Tamil Nadu, GWB, SHWB, Bihar adjoining East Uttar Pradesh, Jharkhand, Vidarbha, East Madhya Pradesh, Orissa, Madhya Maharashtra, Marathwada, Karnataka, Telangana, south Chhattisgarh 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 Gujarat, extreme south peninsular India, southern parts of west coast and the east coast, parts of Kerala, Karnataka, Tamil Nadu, south coastal Maharashtra, Madhya Maharashtra, Marathwada, Konkan and Goa, Andhra Pradesh, Telangana, GWB, SHWB, Bihar, Jharkhand, South Chhattisgarh, Telangana, Orissa, East Uttar Pradesh, Sikkim and NE states during next 3 days; over some parts of Southeast Rajasthan and West Madhya Pradesh on day 1; over parts of East Madhya Pradesh on day 2 and 3; over parts of West Uttar Pradesh and Uttarakhand 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 Himachal Pradesh, Gujarat, Madhya Pradesh, Vidarbha, East Rajasthan, Interior Karnataka, Telangana, Chhattisgarh, Kerala, Tamil Nadu, Andhra Pradesh, Orissa, Bihar, Jharkhand, Uttar Pradesh, Uttarakhand, 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 Gujarat, Southeast and West 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, coastal Maharashtra, Chhattisgarh, West Madhya Pradesh, Vidarbha and NE states during next 3 days; over parts of Punjab, Himachal Pradesh, Uttarakhand, Haryana, Delhi and adjoining areas on day 1; over parts of Punjab, Haryana, and some parts of Himachal Pradesh on day 3; Maximum value of the index is seen over the parts of Orissa, GWB, coastal and Interior Andhra Pradesh, coastal Karnataka, coastal Tamil Nadu, Jharkhand, coastal Maharashtra, Telangana, Chhattisgarh, Gujarat and Southwest Rajasthan.

CIN (50-150): the value of the index lies in above range over most of the parts of the country on day 1; and over most of the parts of the country except North west Rajasthan on day 2 and 3; it has significant larger values over North, North-western and Central parts of country including J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Gujarat, Rajasthan, coastal Maharashtra, Madhya Maharashtra, Marathwada, East and West Uttar Pradesh, Vidarbha, Madhya Pradesh, Chhattisgarh, Telangana, Orissa and GWB during next 3 days.

3. Rainfall and thunderstorm activity:

70- 130 mm Rainfall: over parts of Orissa on day 1; over parts of Jharkhand, GWB adjoining SHWB on day 3.

40- 70 mm Rainfall: over parts of Arunachal Pradesh, Assam, Meghalaya, Nagaland on day 1; over parts of Bihar, Jharkhand, GWB and Orissa on day 1 and 2; over parts of Bihar, Jharkhand and GWB on day 3.

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

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

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 entire Indian region, excluding Northwest Himalayan region, with maxima over Gujarat region on the west coast and Odisha and Gangetic West Bengal on day 1 and 2. SWEAT index, which accounts for the wind shear between 850 and 500 hPa levels in addition to thermodynamic parameters, indicates highest thunderstorm probability over the plains of northwest India on day 1. The region of maximum probability shifts eastwards on day 2 and is highest over Bihar, Jharkhand and Bengal. The 850-200 hPa wind shear is very high over North and northwest India on day 1 and decreases on day 2.

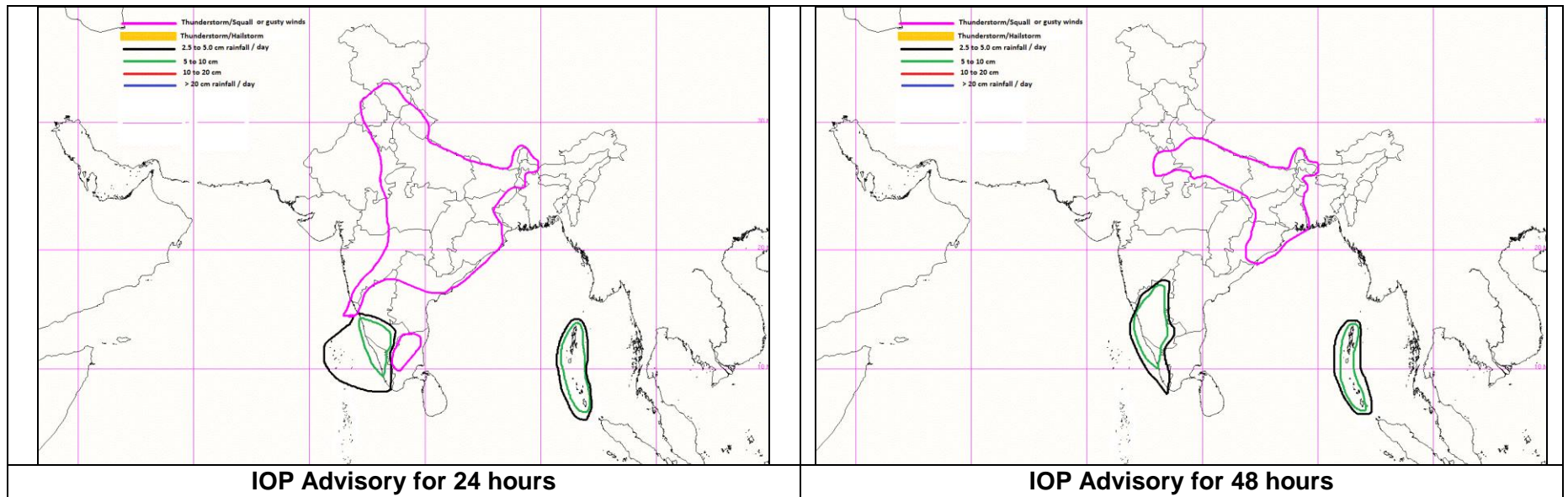
o Synoptic analysis indicates that the cyclonic circulation over Punjab & neighbourhood persists. There is also a cyclonic circulation over northeast Rajasthan & neighbourhood. A trough runs from this cyclonic circulation to Telangana. There is also a cyclonic circulation Sub Himalayan West Bengal & neighbourhood. The ECMWF and IMD GFS deterministic models indicates that the north-south trough is likely to shift eastwards towards afternoon, and there is likelihood of thunderstorm activity all along the east and central parts of India on day 1. On day 2, an east-west trough over the North Indian plains is likely to become more active and thunderstorm activity is expected over the North Indian plains on day 2.

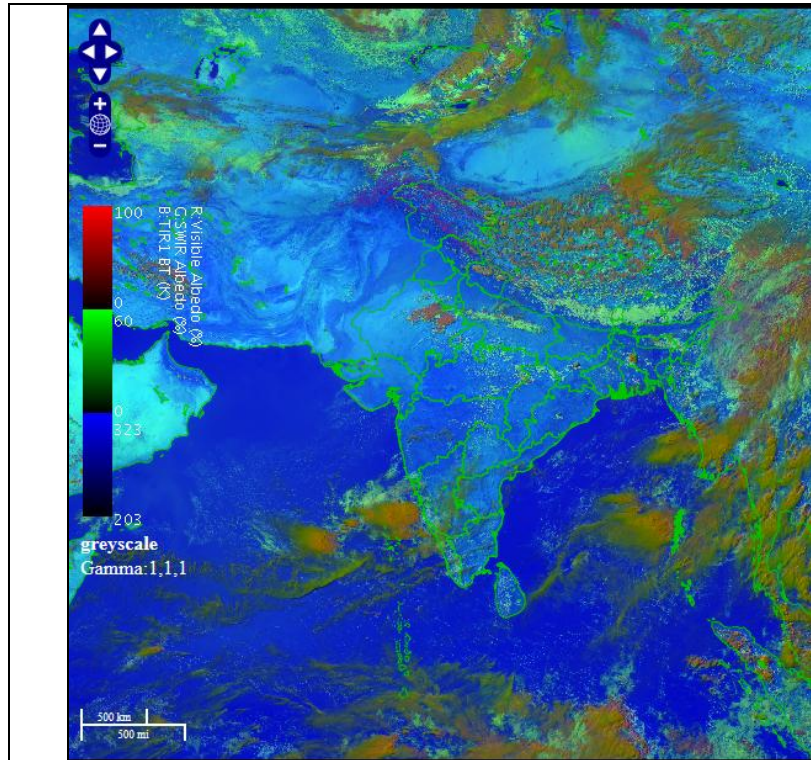
o The low pressure area over east Arabian sea has become less marked. However, the east west shear zone along Lat. 12 °N between 3.1 km and 5.8 km above mean sea level over Indian Region persists. Hence compared to yesterday, the rainfall is likely to decrease along the west peninsular coast; However heavy rainfall is still expected over the southwest peninsular region on day 1 and 2.

IOP Area for Day-1 & Day-2:

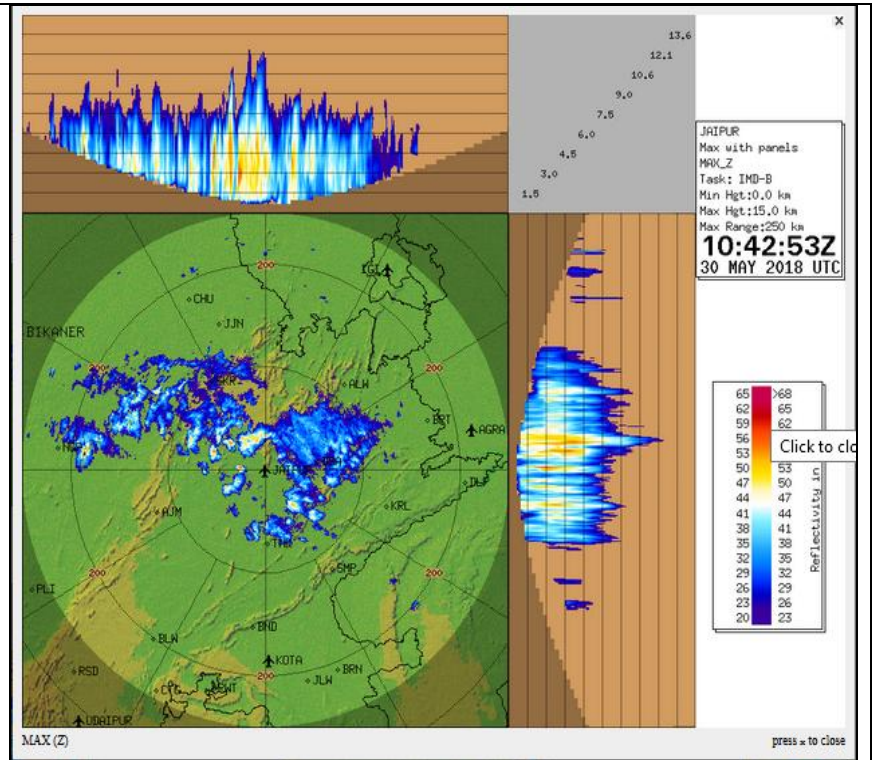
24 hour Advisory for IOP:	48 hour Advisory for IOP:
<p>Significant Rainfall: Andaman and Nicobar Islands Coastal and South Interior Karnataka, Kerala, Lakshadweep</p> <p>Thunderstorm with squall or gusty winds: Interior Tamil Nadu, Telangana, North Coastal Andhra Pradesh, South Konkan and Goa, south Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Madhya Pradesh, East Rajasthan, Punjab, Haryana, Chandigarh, Delhi, Uttar Pradesh, Himachal Pradesh, Uttarakhand, Sub Himalayan West Bengal and Sikkim, Jharkhand, Bihar, Odisha,</p> <p>Thunderstorm with squall and hail Nil</p> <p>Duststorm: West Rajasthan</p>	<p>Significant Rainfall: Andaman and Nicobar Islands Karnataka, Kerala,</p> <p>Thunderstorm with squall or gusty winds: East Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Odisha, West Bengal and Sikkim</p> <p>Thunderstorm with squall and hail Nil</p> <p>Duststorm: Nil</p>

Graphical Presentation of Potential Areas for Severe Weather:

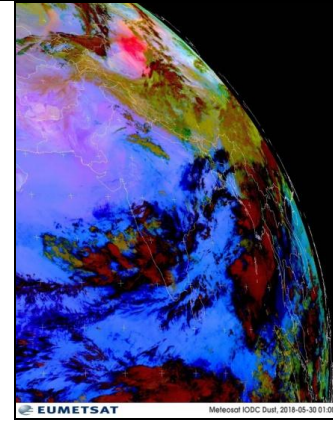
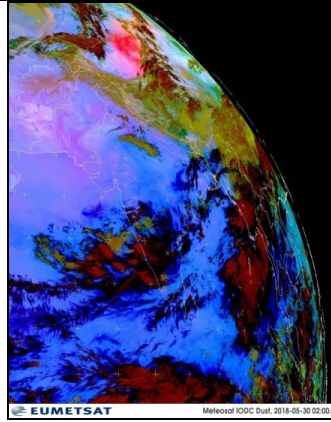
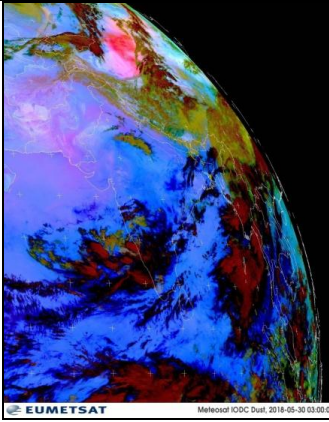
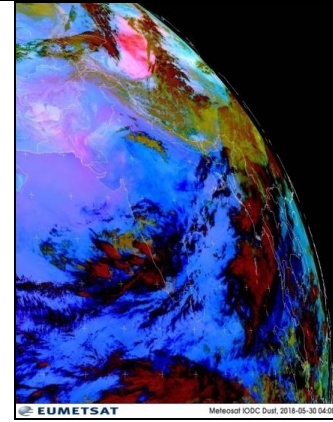
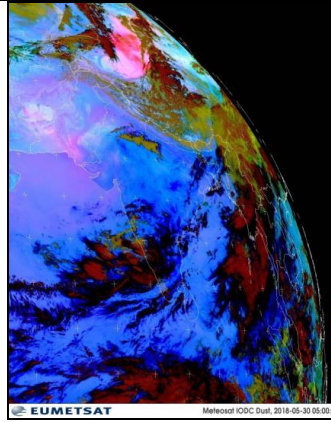
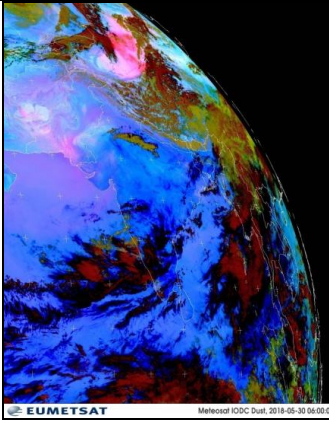




RAPID RGB Imagery at 1500 IST of the Day

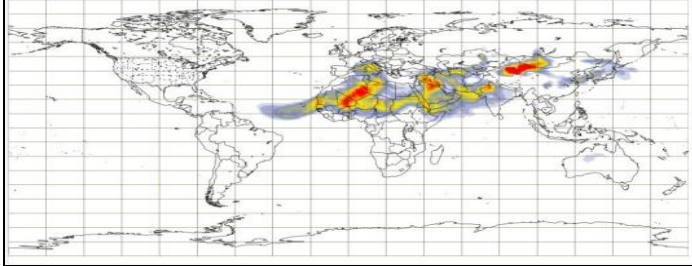


DWR Jaipur reflectivity image at 1612 IST

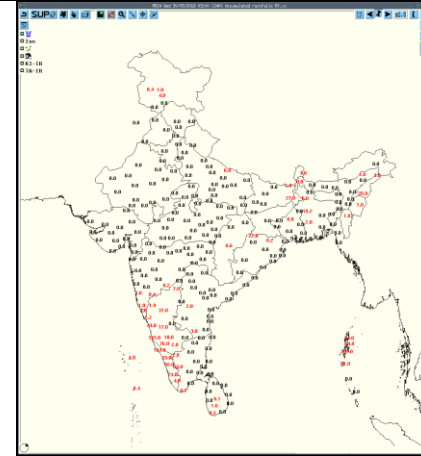


Observed Satellite Dust Images of today

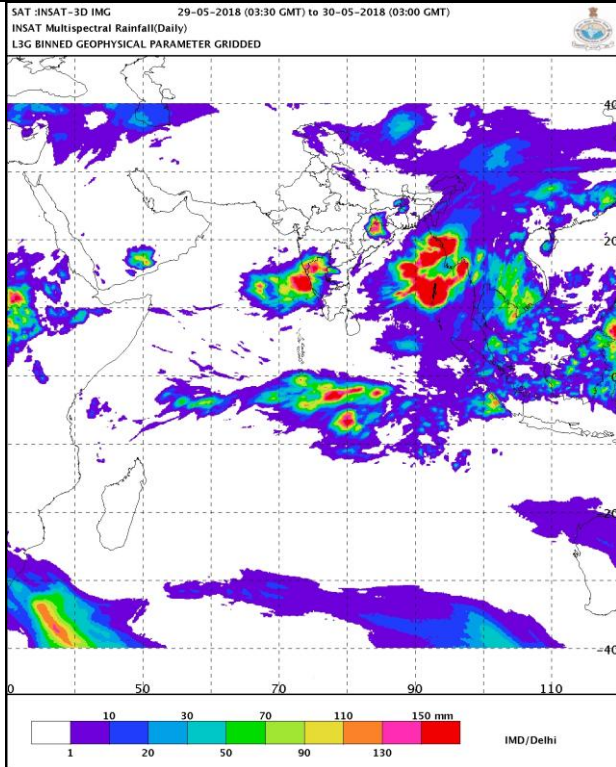
Dust aerosol optical depth at 550 nm (provided by CAMS, the Copernicus Atmosphere Monitoring Service)
 Tuesday 29 May, 00 UTC T+24 Valid: Wednesday 30 May, 00 UTC



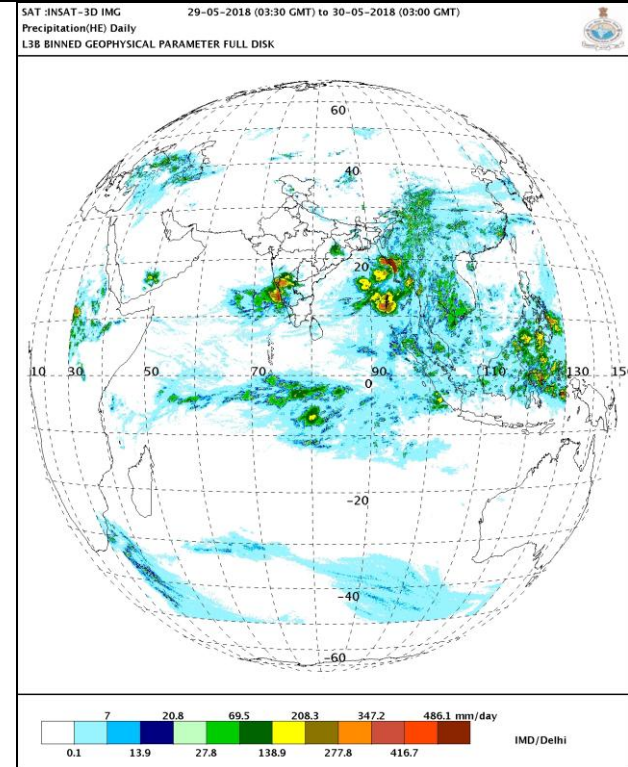
Dust Forecast



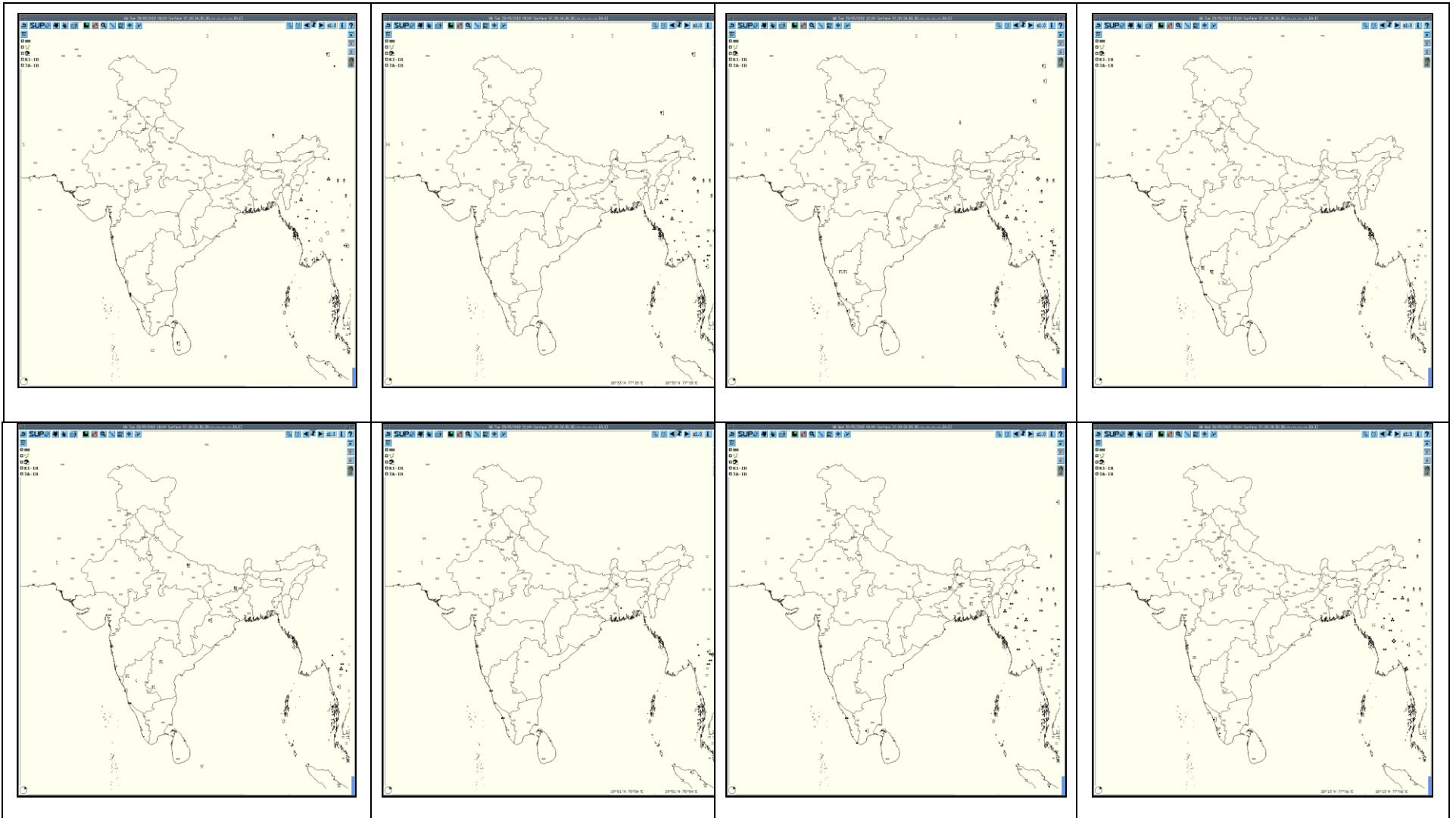
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



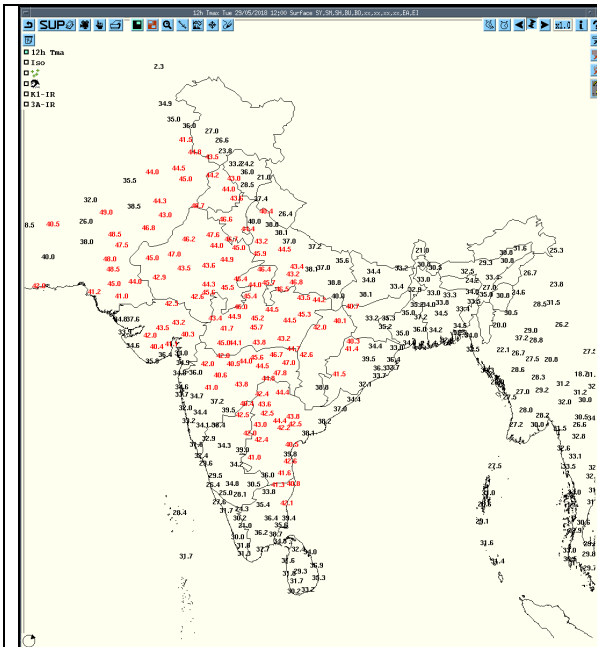
HEM



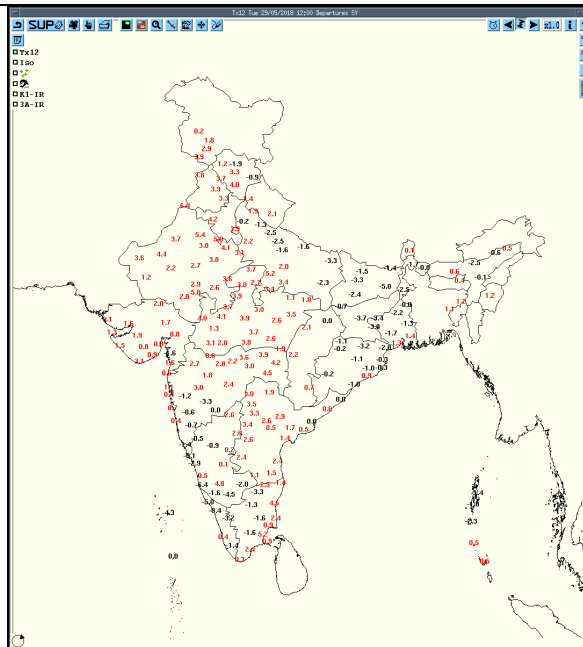
IMR



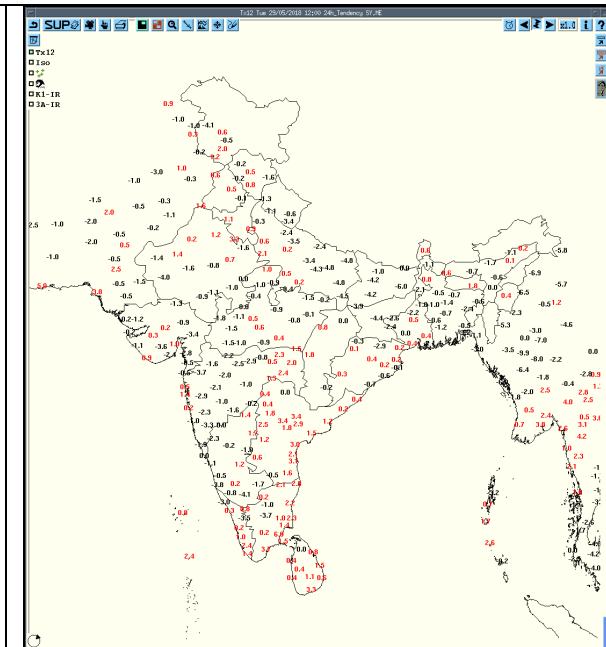
3hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



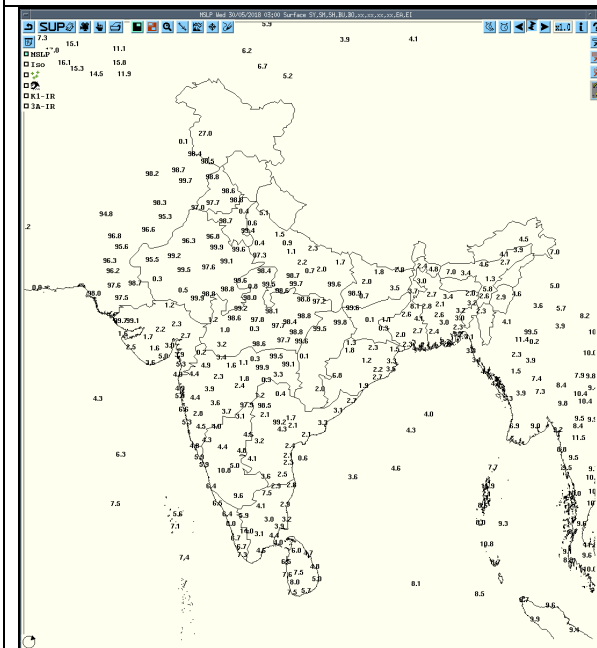
Tmax



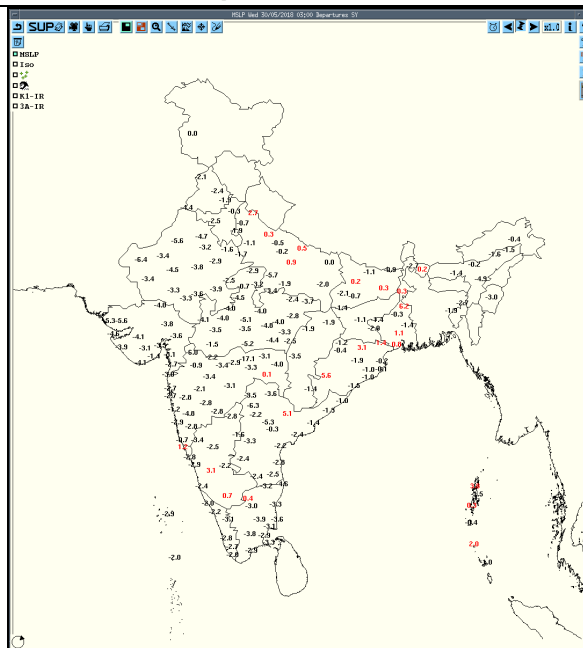
Departure Tmax



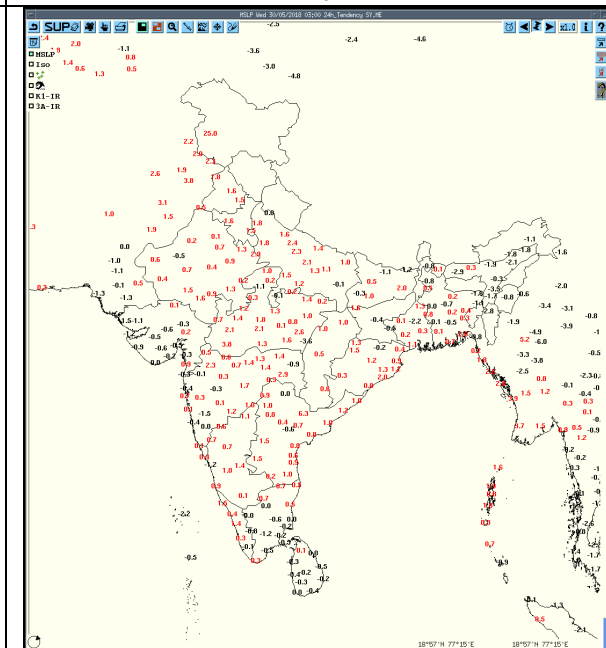
Tendency Tmax



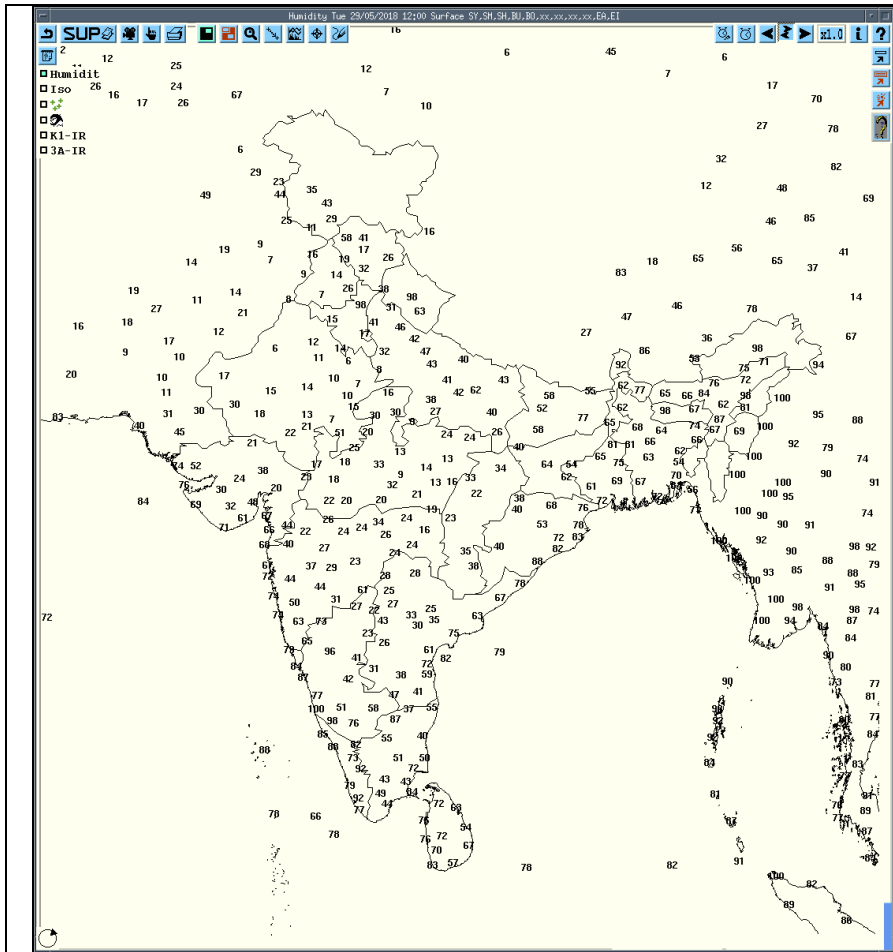
MSLP



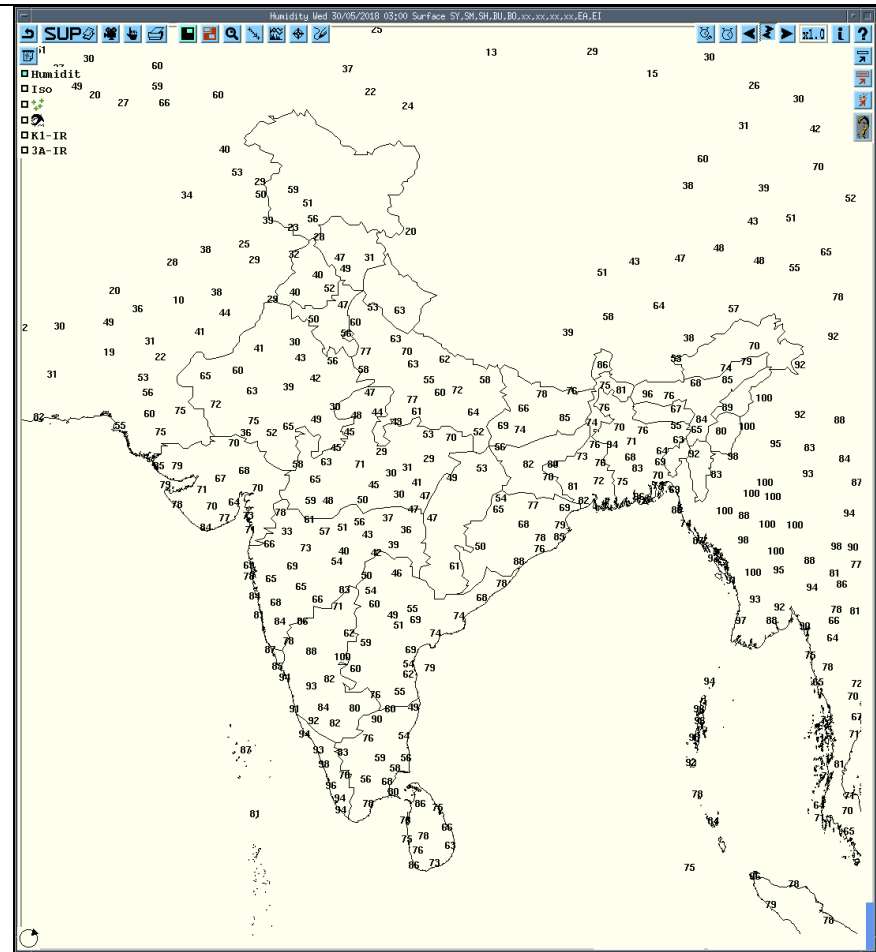
Departure MSLP



Tendency MSLP



RH at 1200UTC yesterday



RH at 0300UTC today

Past 24 hours DWR Report:

Radars 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
Agartala	30-05-18	290300-300300*	No Significant Echo during the period (*DWR operational from 0600 to 2000IST)				
Jaipur	30-05-18	290300-300252	Multiple cell with average height of 6.0 km & maximum reflectivity 59.00 dBZ	Multiple cell develop from 0812 UTC of 29/05/2018 towards SW,S,W,NW,NE,SE,N,E of Jaipur and moved to E, NE Wards at speed 18-23 km/hr	Multiple cell develop from 0812 UTC on 29/05/2018 towards SW,S,W,NW,NE,SE,N, E of Jaipur and reaches maximum reflectivity during 0212 TO 0252 UTC OF 30/05/2018 and continue.	Duststorm /Thunders torm/Hails torm with Light rain at Isolated places Tonk, Ajmer	Tonk, Ajmer, Nagaur, Jhunjhunu, Sikar, Dausa, Jaipur, Alwar, Bharatpur Districts.
Visakhapatnam	30-05-18	291500	Convective region of maximum reflectivity of 57 dBZ with height of 6 kms	SSE (80 kms) moving Sly	Convective region formed at 1331 UTC with maximum of 57 dBZ at 1441 UTC	NIL	NIL
		291800	Convective region with maximum reflectivity of 54 dBZ with height of 4 kms	S (87 kms) moving SWly	Since last observation maximum at 1501 UTC	NIL	NIL
Kolkata	30-05-18	290301-291041	NIL	NIL	NOSIG ECHO	NIL	NIL
		291051-291231	Single cell developed into multi cell system with maximum reflectivity of 61.0 dBz at 1211 UTC and maximum height of 17.11 Km at 1141 UTC	WNW (171.4 km) Moving in ENE-ward direction.	Single cell formed WNW at 1051 UTC at a distance 171.4 Km from radar. Matured, and Observed up to 1231 UTC. After that Radar becomes U/S.	Thunderstorm /Rain/Hail /Squall line	N/A
		291231-300300	Radar U/S	Radar U/S	Radar U/S	Radar U/S	Radar U/S

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	30-05-18	29/05/2018 0300 - 0900	NO ECHO	-----			-----
		29/05/2018 0900- 1200	Multiple Cells, dBZ 59.0 Ht. 10 To 12 Km	N, NE Sectors. .Movement Towards Se- Wards.		TS/RA	Hamirpur, Una, Dehradun, Mussorie, Kalsi, Rishikash And Adj. Areas.
		29/05/2018 1200 - 1500	Multiple Cells, dBZ 54.5 Ht. 09 To 11 Km	E Sectors. .Movement Towards Se- Wards.		RA/TS	Mussoorie, Kalsi, Dehradun And Adj. Areas.
		29/05/2018 1500 -1800	Multiple Cells, dBZ=40.5 Ht. 05-07 Km	SW Sector Movement E Wards		RA/TS	Sirsa, Fatehabad, Bhiwani , And Adj. Areas
		29/05/2018 1800 - 2100	Multiple Cells, dBZ=51.0 Ht. 07 - 08 Km	SW,SE,NW Sector Movement E Wards		RA/TS	Zira, Ferozpur, Moga, Rohtak, Panipat, Sonapat, Kapurthala, And Adj. Areas
		29/05/2018 2100- 0000	Multiple Cells dBZ 46.0 Ht. 06 To 07 Km	SW, SE, NW Sectors. .Movement Towards E- Wards.		TS/RA	Sonapat, Meerut, Jalandhar, Pilani, Churu And Adj. Areas.
		30/05/2018 0000-0252	Multiple Cells, dBZ 52.5, Ht. 06 To 08 Km	SE, NW Sectors. movement Towards E- Wards.		TS/RA	Patiala, Ambala, Rewari And Adj. Areas.
Lucknow	30-05-18	290302-290642	Previously observed isolated single cell and stronger with movement maximum reflectivity 58 DBZ & height reached 15 Km of 20 DBZ echo top.	Previously formed system 0142 UTC at 200 KM NNW Direction, Moved with avg. velocity 50 Km/h SEly w.r.t. the station.	Dissipated at around 0642 UTC over 75 Km NE direction w.r.t. the station.	TS SQ HS	Bareilly, Pilibhit, Lakhimpur Kheri, Shahjahanpur, Hardoi, Sitapur, Furrakhabad
		291022-291602	Isolated single cell formed at 1022 UTC over 250 Km (Nepal) from radar station in NNW direction later fragmented in two small subsystem then again after combined in single system maximum reflectivity 60.0 DBZ with height 15 Km of 20 dBZ echo top.	Moved with avg. velocity 45 Km/h SE direction w.r.t. the station.	Dissipated at around 1602 UTC over 250 Km NNE (Nepal) direction w.r.t. the station.	TS SQ HS	Pilibhit, Lakhimpur Kheri, Bahraich,
		291322-292002	Two cell system, later stronger into multiple sub-systems. After 1412 UTC system become more stronger and acquired curved shape Maximum reflectivity observed 61 dBZ with height 15 Km of 20 dBZ echo top.	Formed over 210 to 220 Km. NNW. Multiple sub-systems moved with avg. speed 45 Km/h SEly direction later average speed increase 65km/h and SEly direction w.r.t. the station	Dissipated at 2002 UTC 250 Km ENE w.r.t. the station.	TS SQ HS	Bareilly, Pilibhit, Lakhimpur Kheri, Sitapur, Bahraich, Shrivastav, Lucknow, Shahjahanpur, Hardoi, Sitapur, Barabanki

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	30-05-18	290300 - 290512	Isolated Multiple Cells Maximum Reflectivity: 45.5 dBZ Echo Top: 7.5 KM	Range: 146 KM from DWR Patna in NW direction Movement: towards South-East	Warning issued	THUNDERS TORM, RAIN	Gopalganj, Siwan, Betiah, Motihari	
		291512 - 291842	Single Cell Maximum Reflectivity: 58 dBZ Echo Top: MORE THAN 15 KM Single Cell Maximum Reflectivity: 48 dBZ Echo Top: 11 KM	Range: 196 KM from DWR Patna in ESE direction Movement: towards South-East Range: 172 KM from DWR Patna in ESE direction Movement: towards South-East	Warning issued Warning issued	THUNDERS TORM, RAIN	Bhagalpur, Banka, Munger Munger, Khagaria	
		291842 - 291912	NIL	NIL	NIL	NIL	NIL	Nil
		291912 - 300152	Multiple Cell Maximum Reflectivity: 47 dBZ Echo Top: MORE THAN 10.5 KM	Range: 170 KM from DWR Patna in NE direction Movement: towards South-East		THUNDERS TORM, RAIN	Supaul, Darbhanga, Sitamadhi, Saharsa, Madhubani Madhepura, Muzaffarpur, Saharsa, Motihari, Samastpur	
		300152 - 300300	NIL	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)
Srinagar	Northwest India	Jammu & Kashmir	Thunderstorm	29-05-18	1740 2015	1748 2030
Qazigund	Northwest India	Jammu & Kashmir	Thunderstorm	29-05-18	1640 1715	1715 1835
Pahalgam	Northwest India	Jammu & Kashmir	Thunderstorm	29-05-18	1830	1940
Kukernag	Northwest India	Jammu & Kashmir	Thunderstorm	29-05-18	1850	1925
Banihal	Northwest India	Jammu & Kashmir	Thunderstorm	29-05-18	1530 1610	1540 1630
Batote	Northwest India	Jammu & Kashmir	Thunderstorm	29-05-18	1700	1800
Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm	29-05-18	1530	1800
Dehradun	Northwest India	Uttarakhand	Thunderstorm	29-05-18	1445	1533
Pantnagar	Northwest India	Uttarakhand	Thunderstorm	29-05-18	1830	1930
			Hailstorm, hail diameter n/a	29-05-18	1830	1845
Mukteshwar	Northwest India	Uttarakhand	Thunderstorm	29-05-18	1715	1850
Tehri	Northwest India	Uttarakhand	Thunderstorm	29-05-18	1454	1546
					1812	1940
Shimla	Northwest India	Himachal Pradesh	Thunderstorm	29-05-18	1745	1820
Sultanpur	Northwest India	East Uttar Pradesh	Thunderstorm	29-05-18	2340-2400	2400
Bahraich	Northwest India	East Uttar Pradesh	Thunderstorm	29-05-18	2145-2335	2335
Lakhimpur KHERI	Northwest India	East Uttar Pradesh	Thunderstorm	29-05-18	0940	1020
					2050	2110
Raipur	Central India	Chhattisgarh	Thunderstorm	29-05-18	1620	1650
Ambikapur	Central India	Chhattisgarh	Thunderstorm	29-05-18	1405	1535
Mana	Central India	Chhattisgarh	Thunderstorm	29-05-18	1620	1700
Asansol	East India	GWB	Thunderstorm	29-05-18	1710	1800
Bankura	East India	GWB	Thunderstorm	29-05-18	1720	1723
Bhagalpur	East India	Bihar	Thunderstorm	29-05-18	2100	2340
Purnia	East India	Bihar	Thunderstorm	30-05-18	0505	0540
Jharsuguda	East India	Odisha	Thunderstorm	29-05-18	1810	1900
					2100	2240
Port Blair	A and N Islands	A and N Islands	Thunderstorm	29-05-18	1220-	1310
					2320	2400
Panaji	West India	Goa	Thunderstorm	29-05-18	2150	2245
Hyderabad	South India	Telangana	Thunderstorm	29/30-05-18	292035	300105
Kurnool	South India	Rayalaseema	Thunderstorm	29-05-18	2140	2208
Anantapur	South India	Rayalaseema	Thunderstorm	29-05-18	2215	2400

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)
Bajpe	South India	Coastal Karnataka	South India	29-05-18	1120	1945
Kalaburgi	South India	North Interior Karnataka	South India	29-05-18	2000	2130
Belgaum AP	South India	North Interior Karnataka	South India	29-05-18	1945	2355
Gadag	South India	North Interior Karnataka	South India	29-05-18	1515	2310
Haveri	South India	North Interior Karnataka	South India	29-05-18	1640	1800
Koppal	South India	North Interior Karnataka	South India	29-05-18	1915	2030
Shirali	South India	North Interior Karnataka	South India	29-05-18	2315	0030

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:



+ thunderstorm



+ heavy thunderstorm



sandstorm or dust storm



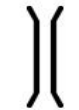
squall



hail shower



tropical storm



+ tornado



+ lightning



+ hurricane

www.visualdictionaryonline.com



haze



smoke



dust or sand storm



fog



drizzle



rain



snow



showers



hail



thunderstorm

Weather Symbols