



India Meteorological Department
FDP STORM Bulletin No.66(10-05-2017)

1. CURRENT SYNOPTIC SITUATION at 0300UTC of the Day:

Forecast synoptic conditions from dynamical models and present large scale features indicate that conditions are becoming favourable for the likely advance of the south-west monsoon over south Andaman sea and Nicobar Islands by around 15th May 2017.

The upper air cyclonic circulation over Haryana & neighbourhood extending upto 1.5 km above mean sea level persists.

The upper air cyclonic circulation over Sub-Himalayan West Bengal & Sikkim between 1.5 and 3.1 km above mean sea level persists.

An east-west trough runs from Haryana to west Assam across Uttar Pradesh, Bihar and SubHimalayan West Bengal and extends upto 0.9 km above mean sea level.

An upper air cyclonic circulation lies over Assam & Meghalaya and neighbourhood and extends 1.5 km above mean sea level.

The Western Disturbance as a trough in mid-tropospheric westerlies roughly along Longitude 75.0°E and north of Latitude 32.0°N has moved away northeastwards.

Another Western Disturbance as a trough in mid-tropospheric westerlies at 5.8 km mean sea level runs roughly along Longitude 62.0°E and north of Latitude 25.0°N.

The trough from north Coastal Andhra Pradesh to south Tamilnadu across Rayalaseema, now runs from North Interior Karnataka to south T amilnadu across South Interior Karnataka and extends upto 0.9 km above mean sea level.

An upper air cyclonic circulation lies over south Coastal Andhra Pradesh & neighbourhood between 1.5 & 3.6 km above mean sea level.

The upper air cyclonic circulation over Bihar and adjoining East Uttar Pradesh extending upto 0.9 km above mean sea level has become less marked. The north south trough from this system upto

south Chhattisgarh across Jharkhand extending upto 0.9 km above mean sea level also become less marked.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

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

Convective Activity and cloud description:

Cell No.	Date/Time	Area	CTT (- Deg C)	Movement	Remarks
1	10/0900	Uttarakhand	50	-	-
2	10/0900	Exterior North Rajasthan adjoining Haryana	59	-	-
3	10/0900	Central South Interior Karnataka Exterior East Karnataka adjoining Tamilnadu	69	-	-
4	10/0900	North Himachal Pradesh	56	-	-

Broken low/medium clouds with embedded moderate to intense convection were seen over Himachal Pradesh, Uttarakhand, Exterior Southeast Haryana, North central Andhra Pradesh, Central South Interior Karnataka, East Kerala adjoining Tamilnadu, and Nicobar Islands.

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Sikkim, Arunachal Pradesh, Nagaland, East Assam, Central Jharkhand, South Odisha,

Scattered low/medium clouds were seen over Punjab, North Haryana, South Uttar Pradesh, North Rajasthan, Madhya Pradesh, Vidarbha, Marathwada rest parts of the Northeast states.

Arabian Sea:

Scattered low/medium clouds with embedded isolated weak to moderate convection were Southeast Arabian Sea.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convection were seen over WC Bay off Andhra Pradesh coast, south Bay of latitude 10.0°N and Andaman Sea.

Past Weather:

Convection:-

Moderate to Intense convection was observed over J&K Himachal Pradesh Uttarakhand Punjab South Haryana Delhi North Rajasthan Madhya Pradesh Uttar Pradesh Bihar Jharkhand West Bengal Sikkim North-East States Odisha, Chhattisgarh, Andhra Pradesh, Telangana Karnataka, Kerala, Tamilnadu.

OLR:-

Upto 200 wm^{-2} was observed over west Sikkim Sub Himalayan West Bengal Arunachal Pradesh Assam Nagaland Meghalaya.

Upto 230 wm^{-2} was observed over J&K Himachal Pradesh Uttarakhand Bihar, Chhattisgarh, Odisha rest North-East States Coastal Andhra Pradesh South Interior Karnataka Tamilnadu.

Upto 250 wm^{-2} was observed over East Uttar Pradesh North-East Rajasthan Madhya Pradesh Gangetic West Bengal Telangana Kerala.

Westerly Trough & Jet-Stream: No Westerly Trough & Jet Stream.

Dynamic Features:- Low to Medium wind shear is observed over India.

Positive shear tendency is observed over India.

A positive Vorticity field is observed over Gujarat North Rajasthan Punjab Haryana Delhi West Uttar Pradesh East Madhya Pradesh Vidarbha Karnataka.

Negative low level convergence observed over J&K East Gujarat Konkan Andhra Pradesh Odisha North-East States and Positive Low Level Convergence observed over rest India.

Precipitation:

IMR:

Rainfall upto 30 mm was observed over North-East Assam Nagaland North-east Odisha North Tamilnadu.

Rainfall upto 20 mm was observed over Himachal Pradesh North Uttarakhand West Bengal rest North-East States coastal Andhra Pradesh South Interior Karnataka.

Rainfall upto 10 mm was observed over South J&K South Haryana North Rajasthan Uttar Pradesh North Madhya Pradesh Chhattisgarh Jharkhand Bihar Sikkim rest Odisha Telangana Rayalaseema North Interior Karnataka South Tamilnadu.

HEM:

Rainfall upto 70 mm was observed over North Uttarakhand North Tamilnadu.

Rainfall upto 28 mm was observed over South-West J&K Himachal Pradesh Sikkim Arunachal Pradesh Odisha South Interior Karnataka South Tamilnadu.

Rainfall upto 07 mm was observed over South-West Punjab South Haryana North-West Rajasthan Uttar Pradesh Madhya Pradesh Chhattisgarh Bihar Jharkhand West Bengal rest North-East States Telangana Andhra Pradesh North Interior Karnataka.

RADAR and RAPID observation:

Multiples significant convection was seen over North Rajasthan adjoining Delhi, Jharkhand, Andhra Pradesh and scattered significant convection over Uttarakhand, Northwest Madhya Pradesh, Southeast Madhya Pradesh, Vidarbha, Central Odisha, Extreme east Maharashtra adjoining Telangana and South Andhra Pradesh in Radar Composite of 1640hrs IST and in RAPID RGB Satellite imagery of 1600hrs IST.

Environmental condition (dust etc) and its forecast based on 00UTC of date:

Higher Dust concentration was observed over northern Africa and some parts of eastern Asia. Dust concentration is expected to remain high over western and northern India for next five days. High PM10 concentration was observed over north-western and northern India.

2. NWP MODEL GUIDANCE:

NCMRWF (NCUM Forecasts based on 00 UTC of the day):-

1. Weather Systems: 12UTC Charts of Day-1, feeble trough in MSLP is seen over J & K.

12UTC charts on days from Day0-4: show three zones of wind discontinuity at 925 hPa :(i) SW-NE extending from northern Karnataka-Telangana-Maharashtra region to Chhattisgarh, Jharkhand region. (ii) S-N extending from southern parts of TN to northern parts of Telangana-AP region.(iii) over northern parts of India from Himachal Pradesh, Uttarakhand to over plains of UP.

CYCIR at 850 hPa over GWB and Bihar in Day0-2 moving east wards in Day-3 and Day-4.

At 500hPa Day-2 to Day-4 strong anticyclone is evolving over west coast over Mumbai.

2. Location of jet and jet core at 500hPa:-500hPa Jet core (>60kt): Weaker core winds at 12 UTC on all days over India.

3. Convergence at 850 hPa: Day0: Madhya Maharashtra,

Day1: NE NMMT, East RJ, Odisha, Madhya Maharashtra, NI Karnataka,

Day2: Madhya Maharashtra, Marathwada, SI Karnataka,

Day3: Assam Meghalaya, NE NMMT, Gangetic WB, Jharkhand, Jammu Kashmir, Madhya Maharashtra, Vidarbha,

4. Low level Vorticity:-Positive Vorticity (>15 x 10⁻⁵/s): Day0: Assam Meghalaya, Hry , Chd Delhi, Jammu Kashmir, West RJ,

Day1: Himachal Pradesh,

Day2: Jharkhand, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day3: NE NMMT, Gangetic WB, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha,

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

Day/Index: Subdivisions with Showalter Index < -4

Day0: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, 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, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

Day/Index: Subdivisions with K Index > 40

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Jharkhand, West UP, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

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

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

7. Spatial distribution of TTI: TTI >50 [Scattered Thunderstorms few severe]:

Day/Index: Subdivision with Total Totals Index > 52

Day0: Arunachal Pradesh, Sub Himalayan WB, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Konkan Goa, Madhya Maharashtra, Coastal Karnataka, NI Karnataka,

Day1: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Konkan Goa, Madhya Maharashtra,

Day2: Arunachal Pradesh, Sub Himalayan WB, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Madhya Maharashtra,

Day4: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Madhya Maharashtra,

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Assam Meghalaya, Sub Himalayan WB, Bihar, Jammu Kashmir, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Bihar, Jammu Kashmir,

Day3: Assam Meghalaya, Sub Himalayan WB, Bihar, Uttarakhand,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Jammu Kashmir,

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

1. Weather Systems: 00 UTC analyses shows a low level CYCIR over west Rajasthan and adjoining regions along with a trough of low from this CYCIR to GWB plains and this circulation will persist for the next 2 days. Another low level CYCIR with north-south oriented trough starting from Jharkhand and adjoining GWB regions to central India region and this trough of low will persist for the next 2 -3 days. Analyses also shows a low level CYCIR over NE India and this CYCIR will persist for the next 2 days. Another CYCIR forms over south interior Karnataka and adjoining Tamilnadu on day 1 which persists and moves a little westward direction in next 2 days. The wind analysis at 500 hPa does not show any prominent trough in westerlies over India except over NE states on day 1 in northeast-southwest direction and during day 2-4 with north-south orientation.

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

No presence of jet core over the Indian region for the next 5 days.

3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10⁻¹/s): Analysis shows low level positive vorticity mainly over the foothills of Himalaya, along the west coast of India, east UP, Bihar, SHWB, Jharkhand, GWB and isolated pockets of NE states. Forecast shows vorticity core zones mainly along the foothills of Himalaya, west coast of India, and isolated pockets of GWB and NE states, Marathwada, interior parts of Karnataka and few pockets along the east coast bordering Odisha and SHWB along with few regions of the north eastern states for the next 3 days.

4. Spatial distribution of T-Storm Initiation Index, Lifted Index, Total Total Index, CAPE, CINE and Sweat Index (High potential for thunderstorm):

T-Storm Initiation Index (> 4): Significant threshold values are noticed over Jharkhand, GWB, along the east of India and few pockets in NE India and along the west coast of India. Forecast shows significantly high threshold values over west coast of India, GWB and eastern coast for the next 3 days.

Lifted Index (< -2): The areas with index less than -2 lies along east coast regions, GWB, Odisha, coastal AP, and along the west coast of India and Kerala coast with gradually the above threshold value mainly extended towards southern coastal regions.

Sweat Index (> 400): 00UTC shows significant values over major parts along with the east coast extending up to coastal TN and also over west coast of India and few isolated pockets in the NE states. The significant zones are confined along east coast of India over GWB, Odisha, Bangladesh and adjoining regions and high value of SI observed over GWB and south AP coastal regions and NE region for next 5 days and also over few pockets in the south west region.

Total Total Index (> 50): Analysis shows significant values over few pockets in Gujarat, MP and adjoining areas. Above threshold value in most regions of central and western India and adjoining northern parts of India along with areas bordering north west India for the next 2-3 days.

CAPE (> 1000): Mostly along east coast of India over GWB, Odisha and adjoining AP regions along with parts in south peninsular region and coastal Kerala and Karnataka during the next 5 days.

CINE (50-150): Maximum CIN values are found in some areas of GWB and along east coast over Odisha, coastal AP and Tamil Nadu and also along the west coast of India for the next 2-3 days.

5. Rainfall and Rainfall activity:

10-40 mm rainfall is forecasted tomorrow over Kerala, some parts of the NE states, J&K, HP, and also some parts of Orissa and adjoining north AP, Karnataka and Tamilnadu regions. Rainfall activity over Kerala and NE states will increase from day-1 onwards and light to moderate rainfall will continue over coastal Orissa, AP, Telangana, Karnataka and Tamilnadu for the next 2-3 day

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

1. Model Reflectivity (Max.dBz):

15-40 dBZ: over Kerala, Interior and coastal Karnataka and adjoining Konkan-Goa and Tamilnadu areas during 24 hours. Over parts of SHWB, GWB, Odisha and southern part of NE states during day 1.

15-35 dBZ: over parts of southeast Rajasthan and adjoining Delhi and west UP during day 1.

Scattered cells : over Uttarakhand on day 1.

15-40 dBZ: over GWB, Jharkhand, Bihar, and Odisha and over Tamilnadu during the next 2 days.

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

Total Total Index (> 50) : Above threshold value over most parts of the country except extreme south peninsula, J&K and northern parts of NE states during next 72 hour.

CAPE (> 1000): Mostly along east coast of India, over eastern parts of India, extending up to east UP along foothills and over parts of Andhra Pradesh and Rayalaseema, parts of NE states, west coast and coastal Gujarat during next 3 days.

CINE (50-150): Higher values near coastal regions of India except southern parts of peninsula, around the central India, parts of eastern India, UP and Bihar, Gujarat during morning hours of next three days.

3. Rainfall and thunderstorm activity:

10-40 mm: over SHWB and North-eastern states for next 1-2 days with a decreasing trend.

10-130 mm: over SHWB, GWB, adjoining Orissa, Jharkhand and Bihar and NE states during next 1-2 days.

10-40 mm: rainfall over Kerala and adjoining Konkan-Goa, interior Karnataka and Tamilnadu during day 1, over Kerala on day 2 and over Kerala, Tamilnadu and adjoining south interior Karnataka on day 3.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

Presently, the upper air cyclonic circulation over Sub Himalayan West Bengal & Sikkim between 1.5 and 3.1 km above mean sea level persists. This will give rise to rainfall activity over Sub Himalayan west Bengal, Sikkim and adjoining area of Bihar and GWB on Day-1. The thunderstorm activity with gusty winds will continue over eastern and north eastern states for Day-1 and Day2.

Another upper air cyclonic circulation over Haryana & neighborhood will give rise to thunderstorm with gusty winds over Punjab, Haryana, Himachal Pradesh and Uttarakhand on Day-1.

An east west trough runs from Haryana to west Assam across Uttar Pradesh, Bihar and Sub Himalayan West Bengal will give heavy rainfall over the Meghalaya and parts of Assam on Day-1.

An upper air cyclonic circulation over south Coastal Andhra Pradesh & neighbourhood along with a trough from North Interior Karnataka to south Tamilnadu across South Interior Karnataka will give rise to thunderstorm with hail possibilities over South and North Interior Karnataka, Telangana, Rayalaseema, Coastal Andhra Pradesh on Day-1.

24 hour Advisory for IOP:

Kerala, Interior Tamilnadu, South and North Interior Karnataka, Telangana, Rayalaseema, Coastal Andhra Pradesh
Assam, Meghalaya, Nagaland, Meghalaya, Mizoram and Tripura
Sub Himalayan West Bengal, Sikkim, Gangetic West Bengal, Orissa, Jharkhand, Bihar, East and West UP
Chhattisgarh, Vidarbha and West MP
Jammu and Kashmir, Uttrakhand, Punjab, Haryana, Northern parts of Rajasthan

48 hour Advisory for IOP:

Kerala, South Interior Karnataka and Coastal Andhra Pradesh
Assam, Meghalaya, Nagaland, Meghalaya, Mizoram and Tripura
Sub Himalayan West Bengal, Sikkim, Gangetic West Bengal, Bihar, East UP.
South Chhattisgarh,

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 RAPID tool:

<http://rapid.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

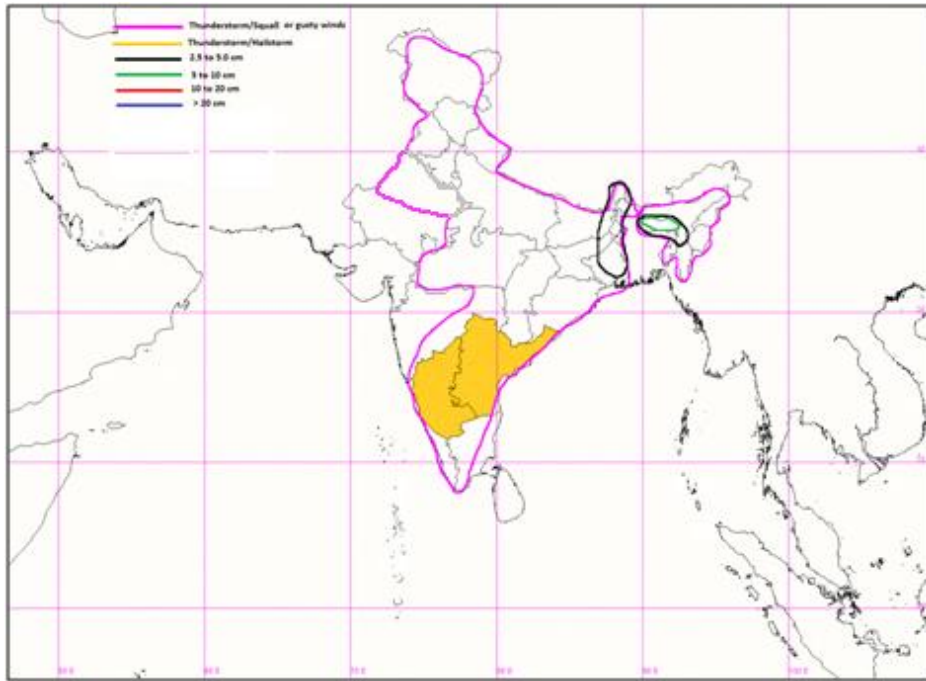
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ForRadarimagesofthepast24hoursincludingmosaicofimages:

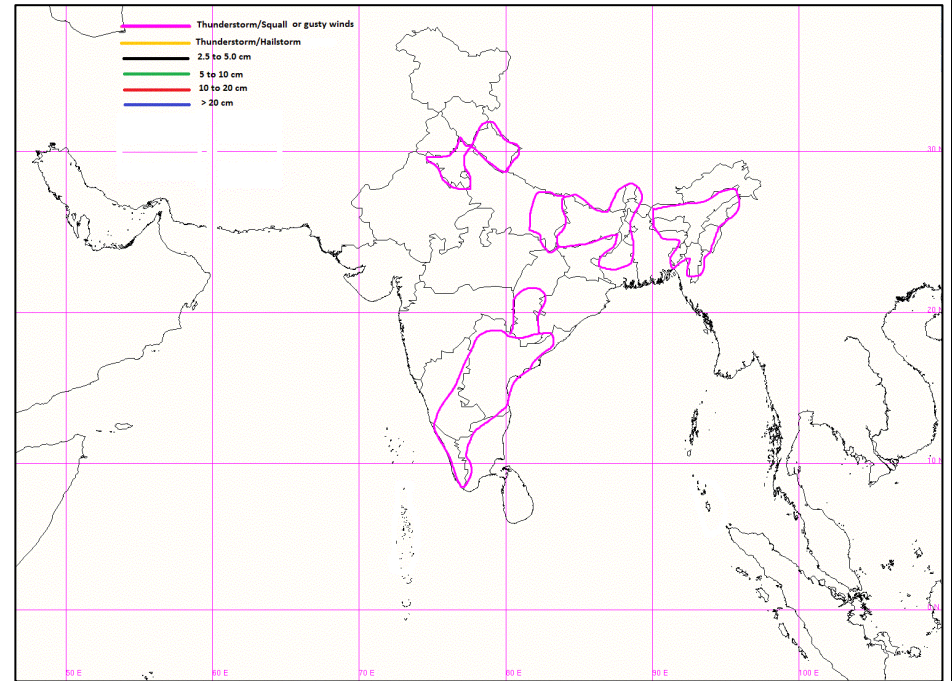
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Satellite sounder based T- Phigram

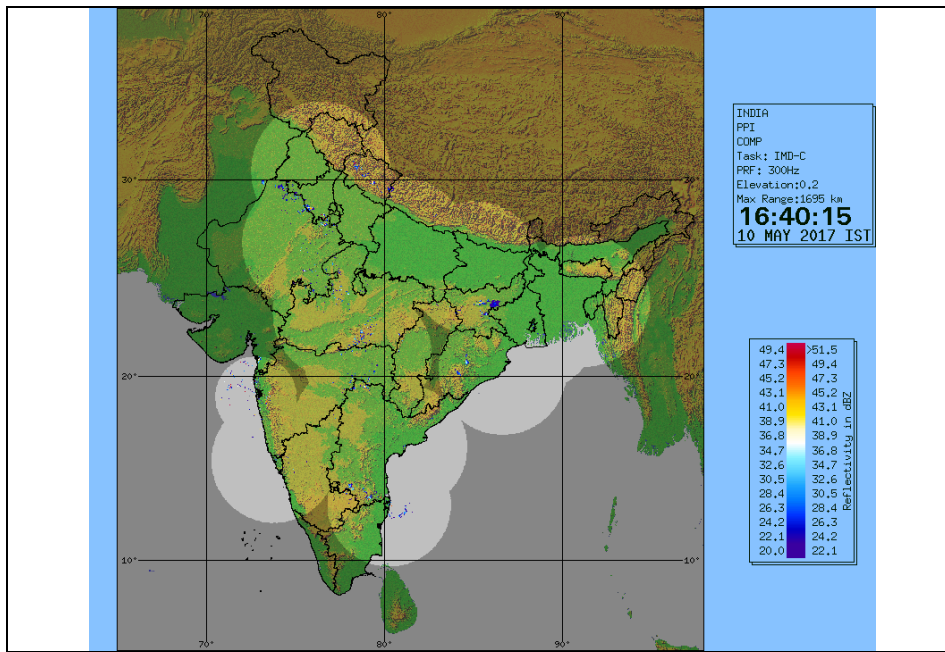
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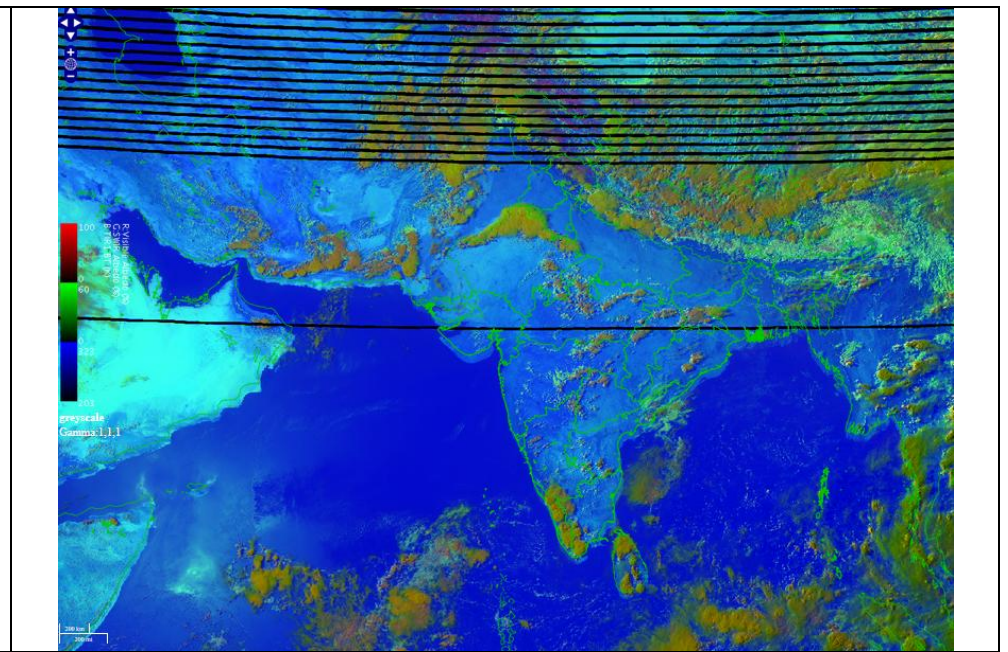
IOP Advisory for 24 hours



IOP Advisory for 48 hours

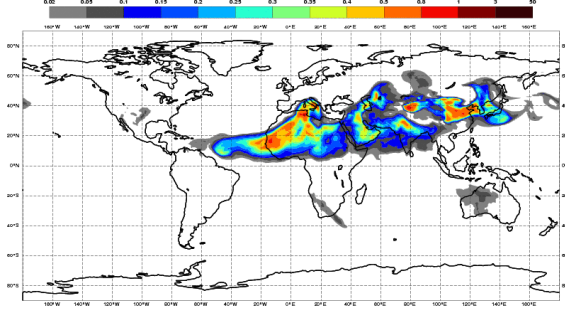


DWR Composite at 1640hrs IST of today

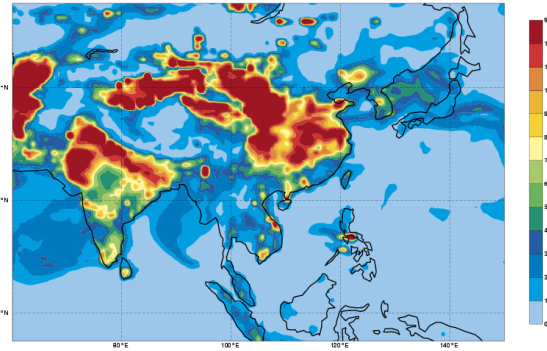


RAPID RGB Image of INSAT 3D at 1600 hrs IST of today

Tuesday 09 May 2017 00UTC CAMS Forecast (+060 VT: Thursday 11 May 2017 12UTC
Dust Aerosols Optical Depth at 550 nm

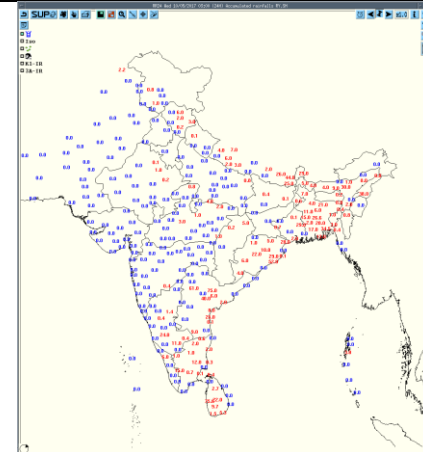


Tuesday 09 May 2017 00UTC CAMS Forecast (+120 VT: Sunday 14 May 2017 00UTC
Surface PM10 [$\mu\text{g}/\text{m}^3$]

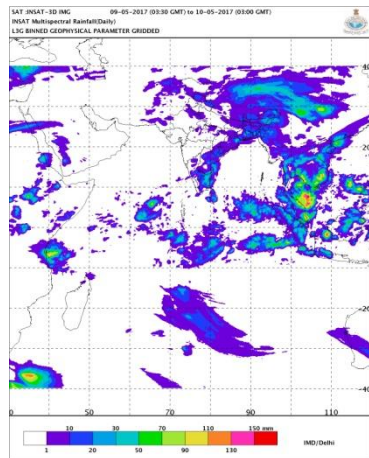


Forecast Dust Concentration for 00UTC of 14th May

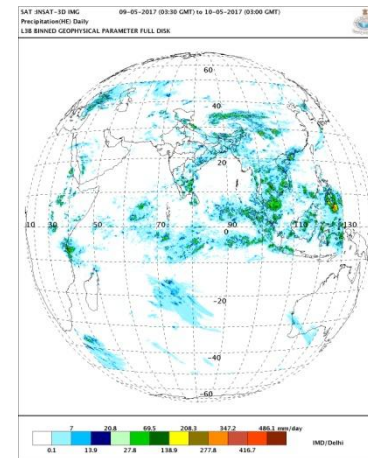
PM10 Forecast for 00UTC of 14th May



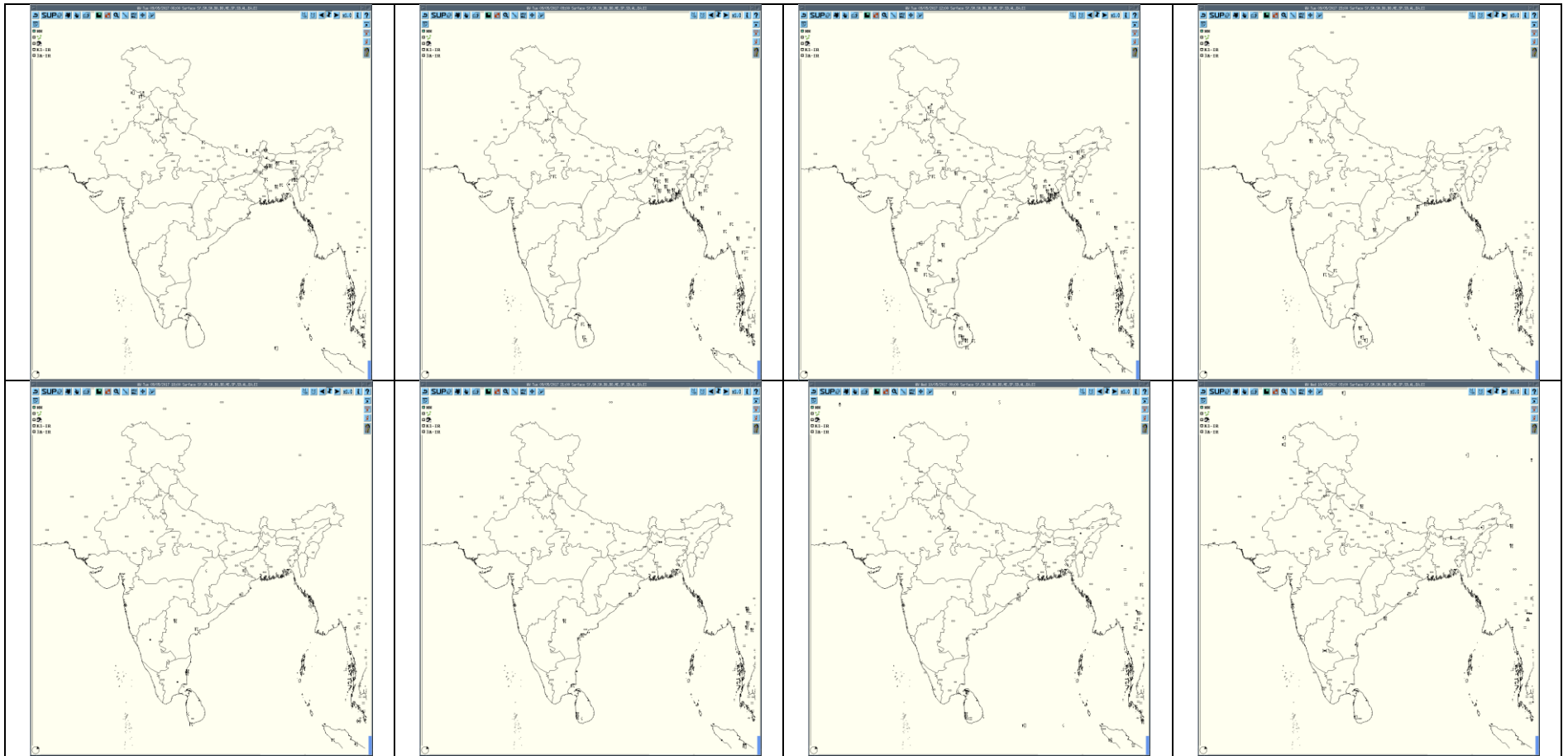
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



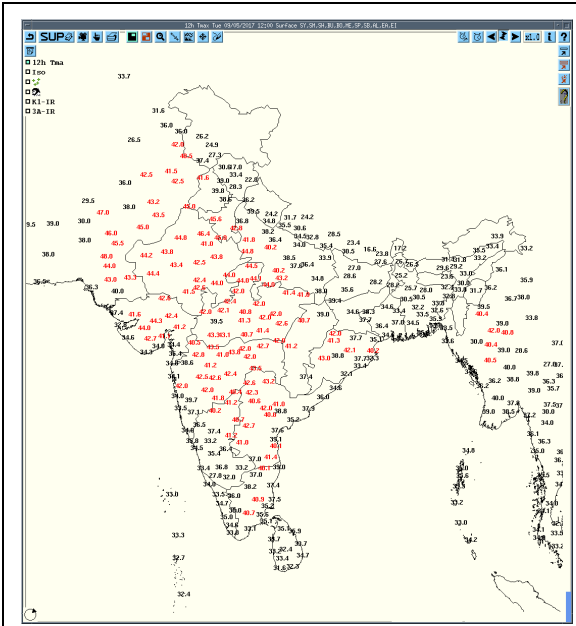
IMR Rainfall



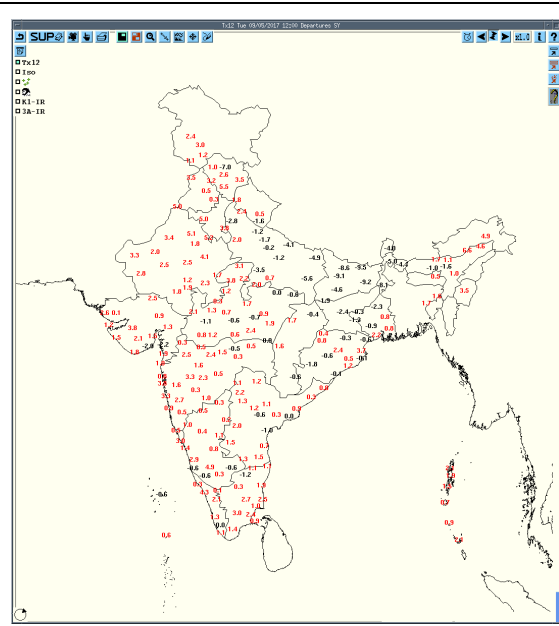
HEM Rainfall



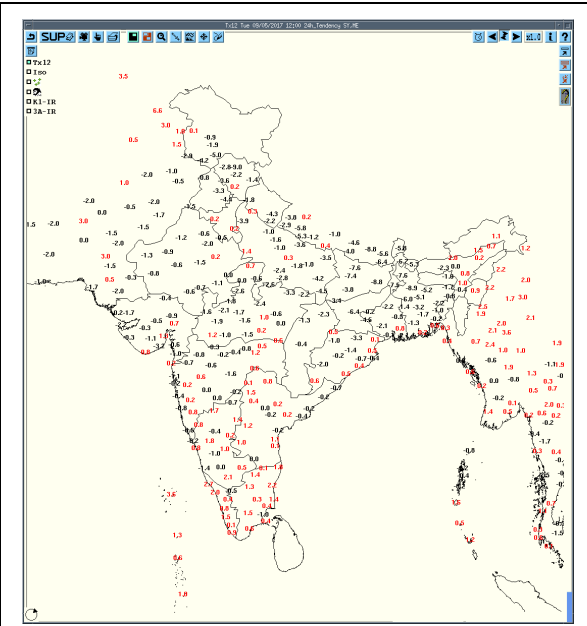
3hourly Past weather at 06, 09,12,15,18, 21UTC of yesterday and 00 & 03hrs UTC of today



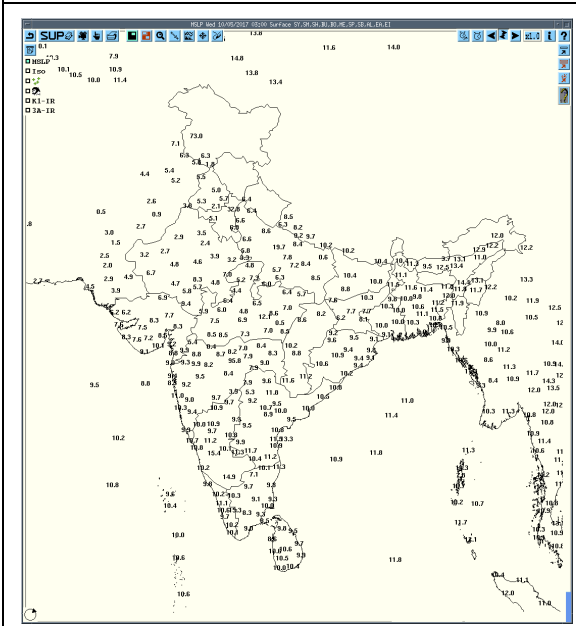
Tmax



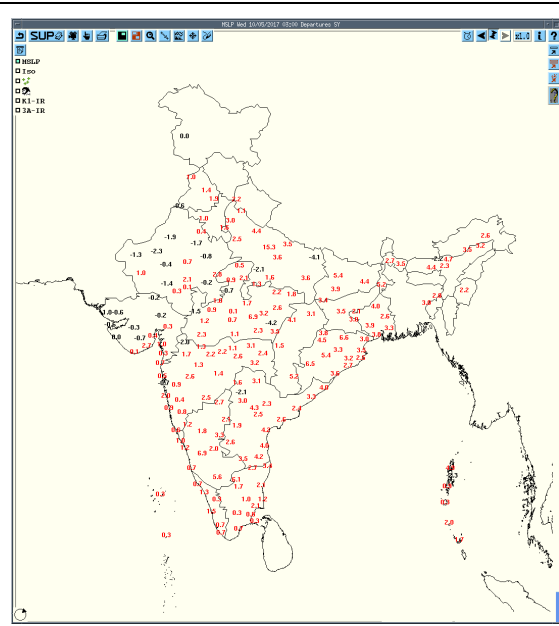
Departure Tmax



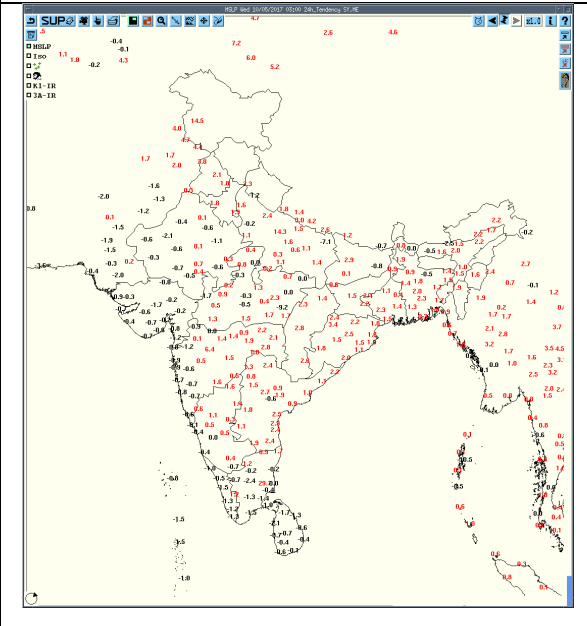
Tendency Tmax



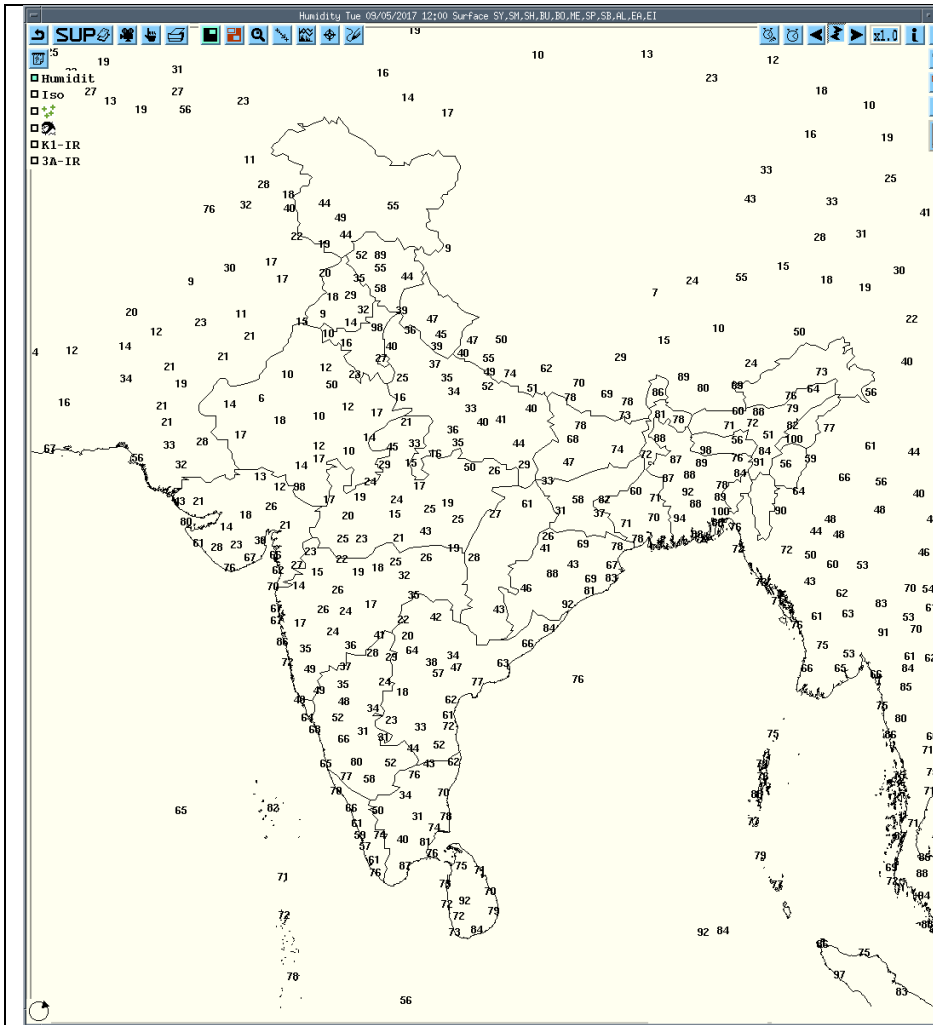
MSLP



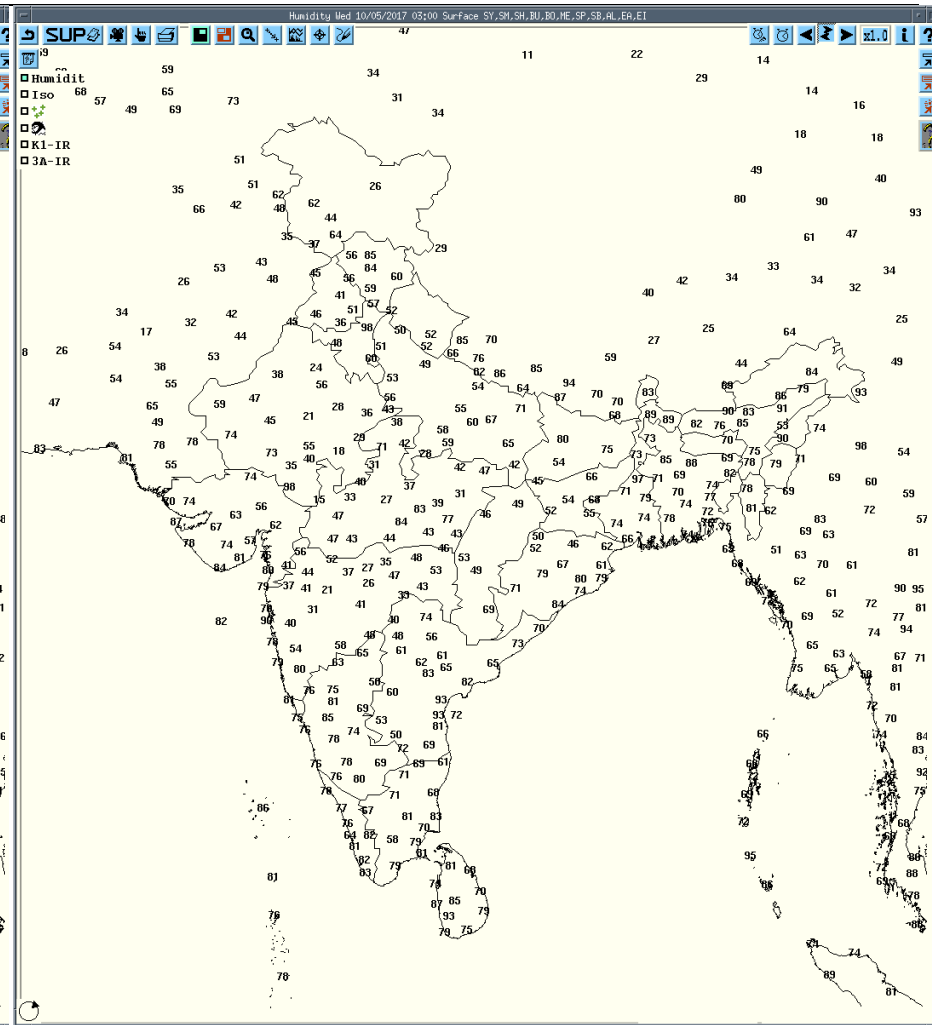
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Realized weather past 24hours (Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
09-05-17	0600 UTC	Jammu	Northwest India	Jammu & Kashmir	Thunderstorm
		Guwahati, Dhubri	Northeast India	Assam	Thunderstorm
		Kailashahar	Northeast India	Tripura	Thunderstorm
09-05-17	0900 UTC	Guna	Central India	Madhya Pradesh	Thunderstorm
		Bhagalpur	East India	Bihar	Thunderstorm
		Tezpur, Silchar	Northeast India	Assam	Thunderstorm
09-05-17	1200 UTC	Sundernagar, Shimla	Northwest India	Himachal Pradesh	Thunderstorm
		Agra	Northwest India	Uttar Pradesh	Thunderstorm
		Guna, Khajuraho, Satna	Central India	Madhya Pradesh	Thunderstorm
		Keonjhar	East India	Odisha	Thunderstorm
		Itanagar	Northeast India	Arunachal Pradesh	Thunderstorm
		North Lakhimpur	Northeast India	Assam	Thunderstorm
		Sholapur	Central India	Maharashtra	Thunderstorm
		Hyderabad, Tirupathi	South India	Andhra Pradesh	Thunderstorm
		Gadag, Haveri, Chitradurga, Mandya	South India	Karnataka	Thunderstorm
Kodaikanal	South India	Tamilnadu	Thunderstorm		
09-05-17	1500 UTC	Churu	Northwest India	Rajasthan	Thunderstorm
		Dibrugarh	Northeast India	Assam	Thunderstorm
		Bhopal	Central India	Madhya Pradesh	Thunderstorm
		Akola	Central India	Vidarbha	Thunderstorm
		Balasore, Puri, Chandbali	East India	Odisha	Thunderstorm
		Jagdalpur	Central India	Chhattisgarh	Thunderstorm
		Anantapur	South India	Andhra Pradesh	Thunderstorm
		Chitradurga	South India	Karnataka	Thunderstorm
		Chennai	South India	Tamilnadu	Thunderstorm
09-05-17	1800 UTC	Jamshedpur	East India	Jharkhand	Thunderstorm
		Hyderabad, Vijayawada	South India	Andhra Pradesh	Thunderstorm
		Cuddalore	South India	Tamilnadu	Thunderstorm
09-05-17	2100 UTC	Bhubaneswar	East India	Odisha	Thunderstorm
		Hyderabad, Bapatla, Ongole	South India	Andhra Pradesh	Thunderstorm
		Adiramapatnam	South India	Tamilnadu	Thunderstorm
10-05-17	0000 UTC	Gorakhpur	Northwest India	Uttar Pradesh	Thunderstorm
		Bhubaneswar, Puri	East India	Odisha	Thunderstorm
		Ongole	South India	Andhra Pradesh	Thunderstorm
10-05-17	0300 UTC	Vishakhapatnam	South India	Andhra Pradesh	Thunderstorm

Realised TS/HS/SQ during past 24 hours ending at 0300UTC of today(received from RMCs/MCs)						
Name of Station Reporting	Region	STATE	Weather Event (TS/Hail/Squall)	Date	Time of Commencement (IST)	Time of end (IST)
Katra	Northwest India	Jammu & Kashmir	Thunderstorm	09-05-17	1045	1100
Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm	09-05-17	1205	1400
Orai	Northwest India	Uttar Pradesh	Thunderstorm	09-05-17	2030	2230
Ballia	Northwest India	Uttar Pradesh	Thunderstorm	10-05-17	0630	0830
Aligarh	Northwest India	Uttar Pradesh	Thunderstorm	09-05-17	2300	2330
Jaipur	Northwest India	Rajasthan	Thunderstorm	09-05-17	1555	1605
Pilani	Northwest India	Rajasthan	Thunderstorm	09-05-17	2030	2330
Churu	Northwest India	Rajasthan	Thunderstorm	09-05-17	1730	2230
Ganganagar	Northwest India	Rajasthan	Thunderstorm	10-05-17	0540	0650
MO Pantnagar	Northwest India	Uttarakhand	Thunderstorm	09-05-17	2015	2130
MO Mukteshwar	Northwest India	Uttarakhand	Thunderstorm	10-05-17	0520	0550
MO Shimla	Northwest India	Himachal Pradesh	Thunderstorm	10-05-17	1645	1720
PBO Sundernagar	Northwest India	Himachal Pradesh	Thunderstorm	09-05-17	1450 2010	1815 2025
Akola	Central India	Vidarbha	Thunderstorm	09-05-17	1817	1935
Amravati	Central India	Vidarbha	Thunderstorm	09-05-17	2040	2115
Bramhapuri	Central India	Vidarbha	Thunderstorm	10-05-17	0200	0215
Gwalior	Central India	Madhya Pradesh	Thunderstorm	10-05-17	1850	1930
Khajuraho	Central India	Madhya Pradesh	Thunderstorm	09-05-17	1450	1800
Raipur	Central India	Chhattisgarh	Thunderstorm	10-05-17	0525	0535
Ambikapur	Central India	Chhattisgarh	Thunderstorm	10-05-17	1515	1715
Jagdapur	Central India	Chhattisgarh	Thunderstorm	09-05-17	1800	2215
Pendra Road	Central India	Chhattisgarh	Thunderstorm	09-05-17	1445	1615
Dhubri	Northeast India	Assam	Thunderstorm	10-05-17	0500	0800
Imphal	Northeast India	Manipur	Thunderstorm	09-05-17	0950	1050
Hyderabad	South India	Andhra Pradesh	Thunderstorm	09-05-17	1640 2230	1745, 2400
Hyderabad	South India	Andhra Pradesh	Thunderstorm	10-05-17	0000	0300
Vijayawada AP	South India	Andhra Pradesh	Thunderstorm	09-05-17	2140	2400
Vijayawada AP	South India	Andhra Pradesh	Thunderstorm	10-05-17	0000	0100
Masulipatnam	South India	Andhra Pradesh	Thunderstorm	09-05-17	2340	2400
Masulipatnam	South India	Andhra Pradesh	Thunderstorm	10-05-17	0000 0345	0150, 0435
Bapatla	South India	Andhra Pradesh	Thunderstorm	10-05-17	0045	0450
Anantapur	South India	Andhra Pradesh	Thunderstorm	09-05-17	1915	2015
Kavali	South India	Andhra Pradesh	Thunderstorm	10-05-17	0545	0700
Tirupathi AP	South India	Andhra Pradesh	Thunderstorm	09-05-17	1500	1900
Karipur A P	South India	Kerala	Thunderstorm	10-05-17	0044	0200

Realised TS/HS/SQ during past 24 hours ending at 0300UTC of today(received from RMCs/MCs)						
Name of Station Reporting	Region	STATE	Weather Event (TS/Hail/Squall)	Date	Time of Commencement (IST)	Time of end (IST)
Gangtok	East India	Sikkim	Thunderstorm	09-05-17	0845	1105
Tadong	East India	Sikkim	Thunderstorm	09-05-17	0830	1140
Coochbehar	East India	West Bengal	Thunderstorm	09-05-17	0830	1000
Jalpaiguri	East India	West Bengal	Thunderstorm	09-05-17	0850	0910
Jalpaiguri	East India	West Bengal	Thunderstorm	10-05-17	0640	0650
Malda	East India	West Bengal	Thunderstorm	10-05-17	1010	1200
Haldia	East India	West Bengal	Thunderstorm	09-05-17	2210	2225
Digha	East India	West Bengal	Thunderstorm	09-05-17	1815	2200
Bhagalpur	East India	Bihar	Thunderstorm	09-05-17	0830	0910
Purnia	East India	Bihar	Thunderstorm	09-05-17	0900 1030	0920 1110
Bhubaneswar	East India	Odisha	Thunderstorm	09-05-17	2020	2225
Bhubaneswar	East India	Odisha	Thunderstorm	10-05-17	0103	0325
Balasore	East India	Odisha	Thunderstorm	10-05-17	1800	2100
Chandbali	East India	Odisha	Thunderstorm	09-05-17	1940	2020
Puri	East India	Odisha	Thunderstorm	10-05-17	0240	0440
Sambalpur	East India	Odisha	Thunderstorm	10-05-17	2130	2300
Keonjhargarh	East India	Odisha	Thunderstorm	09-05-17	1645 2100	1800 2400
Keonjhargarh	East India	Odisha	Thunderstorm	10-05-17	0000	0110
MO Chitradurga	South India	Karnataka	Thunderstorm	09-05-17	1500 1715 1900	1515 1805 2130
Bengaluru City	South India	Karnataka	Thunderstorm	09-05-17	0930 1300	1200 1500
Yelahanka IAF	South India	Karnataka	Thunderstorm	09-05-17	0820	1500
Bengaluru KIAL	South India	Karnataka	Thunderstorm	09-05-17	0744 0940	0850 1710
GKVK	South India	Karnataka	Thunderstorm	09-05-17	1400	1500
Nagapattinam	South India	Tamilnadu	Thunderstorm	10-05-17	0030	0055
Kodaikanal	South India	Tamilnadu	Thunderstorm	09-05-17	1340 2330 0040 0230	1640 0040 0230 0300
SALEM	South India	Tamilnadu	Thunderstorm	09-05-17	2205	2300
CHENNAI AIRPORT	South India	Tamilnadu	Thunderstorm	09-05-17	1850 1945 2050 2340	2340 2235 2300 2355
TONDI	South India	Tamilnadu	Thunderstorm	09-05-17	0250	0315

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
Paradeep	10-05-2017	09/0900-10/0200	Isolated cells formed before 1430 IST and thereafter multiple convective cells covering SW sector and NNW to NE sector at height of 11 to 14km having reflectivity value 38dBZ to maximum reflectivity 50 dBZ.	Cells formed from Radar station to range of 240 km between Az 240 deg. to 040 deg covering SW sector and NNW to NE sector. These clouds moved towards SW direction and weakened in next morning.	nil	TS with rain	Bolangir, Dhenkanal, Cuttack, Puri Anugul, Keonjhar, Jagatsinghpur Mayurbhanj, Sundargarh.
Patiala	10-05-2017	09/0302 - 0602	Nil	Nil	No Echoes	Nil	Nil
		09/ 0602-0902	Nil	Nil	No Echoes	Nil	Nil
		09/0902-1202	Nil	Nil	No Echoes	Nil	Nil
		09/0902-1202	Nil	Nil	No Echoes	Nil	Nil
		09/1502-1802	Multiple cells ,max dbz=50.0 , Ht 10-15 km	FORMATION OVER SW-SECTOR. MOVEMENT SE-WARDS	-----	RA/TS	Sirsa; Loharu; Mussoorie; Faridabad
		09/1802-2102	Multiple cells ,max dbz=44.0 , Ht 78-12 km	FORMATION ON SE SECTOR. MOVEMENT SE- WARDS.	---	-----	Bhiwani, Faridabad.
		09 MAY 2102UTC -04MAY 0252	Multiple cells ,max dbz=41.0 , Ht 8-10 km	FORMATION ON SE SECTOR. MOVEMENT SE- WARDS.	-----	----	Rewari.
		10/0002-10/ 0252	Multiple cells ,max dbz=41.0 , Ht 8-10 km	FORMATION ON SW SECTOR. MOVEMENT SE- WARDS.	-----	----	Abohar; Bhatinda.

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
Nagpur	09/05/17	0302-0822 0822-2122	No observation Isolated convective cloud cell NW of Radar ranging from 40 to 150 kms with maximum reflectivity 50.0 DBZ observed at 1052 UTC and height 9.0 kms at range 46.4 kms WNW direction	Cloud formation start at 0822 UTC around the radar and movement of cloud was ESE direction	DWR was shut down for Annual Preventive Maintenance	Thunderstorm warning generates at QLW at 1052 UTC to 1222 UTC with slight rainfall	Some part of Nagpur, Yeotmal, Chandrapur districts in M.S and Betul. Chhindwada, Seoni, Balaghat in M.P
	10/05/17	0002-0302	No echoes	-	No convective cloud observed	Nil	-
Hyderabad	09/10 (0300 - 0300)	09/0752 - 1022	Isolated cells with an average height of 12 Km with a max reflectivity of 55.5 dBZ	SE (160 Kms) moving in NE- ly Direction at a speed of 6 kmph	Cells started forming at 0752 UTC. Matured between 0922 and 1002 with max ref of 55.5 dBz and dissipated by 1022 UTC	Moderate Thunderstorm with or without rain	Not Known
		09/1052-1232	scattered cells with an average height of 10 Km with a max reflectivity of 58.0 dBZ	NE (173 Kms) and stagnant	Cells started forming at 1052 utc. Matured between 1102 and 1122 with max ref of 58.0 dBz and dissipated by 1232 UTC	Mod Thunderstorm with or without rain	Not Known.
		09/1122-1232	Isolated cells with an average height of 13 Km with a max reflectivity of 58.0 dBZ	SE (218 Kms) with no movement	Cells started forming at 1122 utc. Matured between 1132 and 1212 with max ref of 58.0 dBz and dissipated by 1232 UTC	Mod Thunderstorm with or without rain	Areas near Praksham district.
		09/1402-1632	scattered cells with an average height of 12 Km with a max reflectivity of 55.0 dBZ	ENE (140 Kms) moving in SW- ly Direction at a speed of 15 kmph	Cells started forming at 1402 utc. Matured between 1402 and 1632 with max ref of 55.0 dBz and dissipated by 1332 UTC	Mod Thunderstorm with or without rain	Not Known.
		09/1542-2212 UTC	scattered cells with an average height of 12 Km with a max reflectivity of 63.0 dBZ	NW(47 Kms) moving in SE- ly Direction at a speed of 12 kmph	Cells started forming at 1542 utc. Matured between 1642 and 2052 with max ref of 63.0 dBz and dissipated by 2212 UTC	Severe Thunderstorm/Hailstorm with or without rain	50Kms areas around Hyderabad. HAILSTORMS were reported at Tirumalgiri, Bowenpally, Begumpet etc

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
Kolkata	09-05-2017	0301 – 0511 UTC	1. Isolated Single cells with maximum reflectivity of 53.5 dBz at 0341 UTC and maximum height of 9.59 Km at 0351 UTC	NNW (199.4 km) Moving in ESE-ly direction with speed of 33 kmph.	1. Isolated single cells formed at 0301 UTC in NNW at a distance of 199.4 km from radar. Converted to multi celled system. Not matured, dissipated at 0511 UTC in N at a distance of 166 km from Radar.	Thunderstorm / Rain	N/A
		0422 – 0511 UTC	2. Isolated Single cells with maximum reflectivity of 65.5 dBz at 0541 UTC and maximum height of 12.00 Km at 0541 UTC	NNW (243.6 km) Moving in SE-ly direction with speed of 52 kmph.	2. Isolated single cells formed at 0422 UTC in NNW at a distance of 243.6 km from radar. Converted to multi celled system, matured, merged with cell no. 3 at 0822 UTC dissipated at 1251 UTC in ESE at a distance of 195 km from Radar	Thunderstorm /Hail/ Rain	N/A
		0601 – 1251 UTC	3. Isolated Single cells with maximum reflectivity of 63.5 dBz at 0711 UTC and maximum height of 17.28 Km at 0651 UTC	NNE (105.6 km) moving in E-ly direction with a speed of 41 kmph	3. Isolated single cells formed at 0601 UTC in NNE at a distance of 105.6 km from radar. Converted to multi celled system, matured, merged with cell no. 2 at 0822 UTC dissipated at 1251 UTC in ESE at a distance of 195 km from Radar	Thunderstorm / Hail/Rain	N/A
		0731 – 1251 UTC	4. Isolated Single cells with maximum reflectivity of 67.5 dBz at 0751 UTC and maximum height more than 18.0 Km at 0841 UTC	NNW (84.9 km) moving in ESE-ly direction with a speed of 52.0 kmph	4. Isolated single cells formed at 0731 UTC in NNW at a distance of 84.9 km from radar. Converted to multi celled system, matured, moving in SE direction into Bangladesh.	Thunderstorm /Hail/ Rain	N/A
Lucknow	10/05/2017	092252 UTC TO 100142 UTC	Multiple cell system started forming at around 09/2252 UTC over 50 Km W to NW. Cells converged in one hour to form a single convective Cell which gradually weakened in course of its movement. Max. reflectivity was 38 dBZ, height reached 8 Km (20 dBZ echo top).	Original multiple cells over 50 Km W/NW moved SEly With avg. speed 30 Km/h towards the station. Single large cell formed over 50 Km east at 10/0032 UTC which weakened and dissipated at 10/0142 UTC over 100 Km ESE.	NIL	TS	Orai

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
Kolkata	09-05-2017	1001 – 1511 UTC	5. Isolated Single cells with maximum reflectivity of 66.0 dBz at 1202 UTC and maximum height of 17.82 Km at 1152 UTC	WSW (229 km) moving in SE-ly direction with a speed of 24.6 kmph	5. Isolated single cells formed at 1001 UTC in WSW at a distance of 229.0 km from radar. Matured, Converted to multi celled system, matured, merged with cell no. 7,8 in 1322 UTC and moving into Bay of Bengal at 1511 UTC in SE at a distance of 149.6 km from Radar	Thunderstorm / Hail/Rain	N/A
		1031 – 1121 UTC	6. Isolated Single cells with maximum reflectivity of 59.5 dBz at 1041 UTC and maximum height of 10.66 Km at 1031 UTC	W (81.8 km) moving in ESE-ly direction with a speed of 27.6 kmph	6. Isolated single cells formed at 1031 UTC in W at a distance of 81.8 km from radar. Matured, dissipated at 1121UTC in W at a distance of 63.5 km from Radar	Thunderstorm / Rain	N/A
		1101 – 1511 UTC	7. Isolated Single cells with maximum reflectivity of 64.5 dBz at 1111 UTC and maximum height of 16.66 Km at 1251 UTC	WSW (176.8 km) moving in SSW-ly direction with a speed of 22 kmph	7. Isolated single cells formed at 1101 UTC in WSW at a distance of 176.8 km from radar, matured and merged with cell no. 5,8 in 1322 UTC and moving into Bay of Bengal at 1511 UTC in SE at a distance of 149.6 km from Radar	Thunderstorm / Hail/Rain	N/A
		1152 – 1511 UTC	8. Isolated Single cells with maximum reflectivity of 64.0 dBz at 1221 UTC and maximum height of 17.73 Km at 1211 UTC	WSW (115.3 km) moving in WSW-ly direction with a speed of 46 kmph	8. Isolated single cells formed at 1152 UTC in WSW at a distance of 115.3 km from radar. Matured and merged with cell no. 5,7 in 1322 UTC and moving into Bay of Bengal at 1511 UTC in SE at a distance of 149.6 km from Radar	Thunderstorm / Hail/Rain	N/A
	09-05-2017	1521 – 2351 UTC	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
	10-05-2017	0001 – 0301 UTC	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL

∞	haze
☁	smoke
☁	dust or sand storm
☁	fog
☁	drizzle
•	rain
*	snow
▽	showers
△	hail
⚡	thunderstorm
Weather Symbols	

		
+ thunderstorm	+ heavy thunderstorm	sandstorm or dust storm
		
squall	hail shower	tropical storm
		
+ tornado	+ lightning	+ hurricane

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