



India Meteorological Department
FDP STORM Bulletin No.73 (17-05-2017)

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

The Northern Limit of Monsoon (NLM) continue to pass through Lat.5.0°/Long. 80.0°E, Lat. 7.0°N/Long. 85.0°E, Lat.10.0°N/Long.90.0°E, Maya Bandar and Lat. 16.0°N/Long.98.0°E. Conditions are favourable for further advance of southwest monsoon into some more parts of southeast Bay of Bengal, some parts of east-central Bay of Bengal and remaining parts of north Andaman Sea during next 24 hours.

The Western Disturbance as an upper air cyclonic circulation over northeast Jammu & Kashmir and neighbourhood is moving away east-northeast-wards.

Another Western Disturbance as a trough in mid-tropospheric westerlies roughly along longitude 68.0°E and north of latitude 27.0°N now runs roughly along longitude 72.0°E and north of latitude 25.0°N.

The upper air cyclonic circulation over southeast Uttar Pradesh and neighbourhood, now lies over north Chhattisgarh & neighbourhood and extends upto 0.9 km above mean sea level. The trough from this system to Northwest Bay of Bengal, now runs from this system to north Coastal Andhra Pradesh and extends upto 1.5 km above mean sea level.

The upper air cyclonic circulation over Meghalaya & neighbourhood, now lies over Mizoram & neighbourhood between 1.5 km and 5.8 km above mean sea level.

The upper air cyclonic circulation over Gulf of Martaban & neighbourhood extending upto 3.6 km above mean sea level persists.

The trough at mean sea level from north Coastal Andhra Pradesh to south coastal Tamilnadu, now runs from south Coastal Andhra Pradesh to south Tamilnadu.

An upper air cyclonic circulation lies over northwest Uttar Pradesh & neighbourhood between 1.5 km and 2.1 km above mean sea level.

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 (UTC)	Area/Location	CTT (- Deg C)	Movement	Remarks
1	17/0300	N Uttar Pradesh adjoining Nepal	76		Developing
	0400	do	77		
	0500	NE Uttar Pradesh adjoining Nepal	80		
	0600	N Uttar Pradesh adjoining Nepal adjoining Bihar	75		
	0700	do	77		
	0800	NW Bihar adjoining Nepal	82	SE-wards	
	0900	do	80		

2	17/0800 0900	Central Uttar Pradesh do	85 93		Developing
3	17/0800 0900	E Jharkhand do	88 91		Developing

Western Disturbance: Scattered multi-layered clouds were seen over J & K, Himachal Pradesh, Punjab and Uttarakhand in association with WD over the area.

Westerly Trough:

Trough in westerlies runs roughly along long 73.0°E north of latitude 25.0°N

Broken low/medium clouds with embedded intense to very intense convection were seen over C Uttar Pradesh, NW Bihar adjoining Nepal and E Jharkhand. Scattered low/medium clouds with embedded moderate to intense convection were seen over SW Bihar, SE Odisha, Coastal Bangladesh and Nicobar Islands. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over E North Interior Karnataka and N Coastal Andhra Pradesh. Scattered low/medium clouds with embedded isolated weak convection were seen over N Rajasthan and Marathawada. Scattered low/medium clouds were seen over Haryana, rest Uttar Pradesh, Madhya Pradesh, rest Maharashtra, S Gujarat, and rest parts of East & South India.

Arabian Sea:

Scattered low/medium clouds with embedded moderate to intense convection were seen over south Arabian Sea.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convection were seen over Andaman Sea, Gulf of Martaban and Tenasserim coast.

Past Weather:

Convection:-

Moderate to Intense convection was observed over J & k, Himachal Pradesh, Uttarakhand, Punjab, Uttar Pradesh, Jharkhand, Odisha, West Bengal, Mizoram, Tripura, Karnataka, Rayalaseema.

OLR:-

Upto 200 wm^{-2} was observed over West J&K, East Arunachal Pradesh, Extreme East Assam, North Nagaland. Upto 230 wm^{-2} was observed over South West Bengal adjoining Jharkhand. Upto 250 wm^{-2} was observed over Rest J&K, Himachal Pradesh, North Uttarakhand, Extreme North Punjab, Sikkim, Rest Arunachal Pradesh Rest Assam, Rest Nagaland, Manipur, Mizoram, Tripura, Kerala, South Tamilnadu.

Westerly Trough & Jet-Stream:

Trough in westerlies runs roughly along long 73.0e north of latitude 27.0n & no jet stream over India.

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 Saurashtra, Chhattisgarh, Bihar Odisha, North Coastal Andhra Pradesh.

Positive low level convergence observed over Rajasthan, Odisha, North Coastal Andhra Pradesh, Coastal Tamilnadu Negative low level convergence observed over rest parts of India

Precipitation:

IMR:

Rainfall Up to 70 mm was observed over South East Jharkhand, South West Bengal. Rainfall Up to 50mm was observed over South Interior Karnataka. Rainfall Up to 10mm was observed over J&K, Himachal Pradesh, Extreme South West Punjab, Uttarakhand, Extreme North West Uttar Pradesh, North Rajasthan, South East West Bengal, Nagaland, Mizoram, Tripura, Arunachal Pradesh, East Assam.

HEM:

Rainfall Up to 70 mm was observed over North East Odisha South Interior Karnataka.

North Uttarakhand, South Konkan, adjoining West Bengal, East Bihar, North East Jharkhand, Meghalaya, Mizoram, Sikkim, Rainfall Up to 14 mm was observed over South West J&K, East Arunachal Pradesh, East Assam.

Rainfall Up to 07 mm was observed over North West Rajasthan, Himachal Pradesh, Punjab, Haryana, Extreme North West Uttar Pradesh, West Bengal, Rest Assam Rest Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Kerala, West Central Tamilnadu.

RADAR and RAPID Observation:

DWR Composite at 1720hrs IST indicated significant convection over North Interior Tamilnadu, North Odisha, south Himachal Pradesh and adjoining Uttarakhand. Strong echoes were seen in DWR Kolkata (dBZ more than 55-60 and height around 15km) at 1142 UTC (1712hrs IST) and DWR Chennai (dBZ around 55 & height 15km) at 1200UTC (1730hrs IST).

RAPID RGB Satellite imagery at 1630hrs IST indicated convective clouds over Central parts of Uttar Pradesh, Bihar, Chhattisgarh, West Bengal, J & K, Himachal Pradesh and Nicobar Islands. It also indicated isolated convective cells over Interior Tamilnadu, south Interior Karnataka, Kerala and Rajasthan.

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 north India for next five days. High PM10 concentration was observed over north-west India.

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

12UTC Charts of Day-0-4, except Day-1 show evolution of heat low extending from over NW India and adjoining Pakistan south-eastwards over the IG plains. The MSLP values lower than 992hPa on Day-3 &4. Weak trough can be seen over on all days from Day-0-4

12UTC charts on days from Day1-2: show a zones of wind discontinuity at 925 hPa :(i) SW-NE extending from northern Telangana-Maharashtra region to Chhattisgarh-Jharkhand region.

Over Arabian Sea a CYCIR is seen near to coast of Kerala at 925, 850 and 500 hPa from Day-2

At 500hPa Day-0 to Day-3 strong anticyclone is evolving over central peninsula..

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:

(Day/Index : Subdivisions with Lower Level Convergence > 15 x 10⁻⁵ /s):

Day0: West RJ, Odisha, West MP,

Day1: Jharkhand, Odisha, TN Puducherry,

Day2: West RJ, Odisha, West MP, Chhattisgarh, TN Puducherry,

Day3: Assam Meghalaya, Gangetic WB, Jharkhand, West UP, Punjab, West MP, East MP, Chhattisgarh,

Day4: Assam Meghalaya, Jharkhand, Bihar, West UP, Punjab, West RJ, Odisha, Madhya Maharashtra, Chhattisgarh, TN Puducherry, NI Karnataka

4. Low level Vorticity:-Positive Vorticity ($>15 \times 10^{-5}/s$):

(Day/Index : Subdivisions with Lower Level Vortex $> 15 \times 10^{-5} /s$):

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Odisha,

Day1: Assam Meghalaya, TN Puducherry,

Day2: Arunachal Pradesh, Assam Meghalaya, Uttarakhand, Himachal Pradesh, TN Puducherry,

Day3: Arunachal Pradesh, Assam Meghalaya, Gangetic WB, Bihar, West UP, Uttarakhand, TN Puducherry,

Day4: Arunachal Pradesh, Assam Meghalaya, West UP, Punjab, Odisha, Chhattisgarh, 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, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Chhattisgarh, Coastal AP, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka

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

(Day/Index : Subdivisions with K Index > 40):

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

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

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Saurashtra Kutch, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka

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, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Coastal AP,

Day1: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Guj Reg, Saurashtra Kutch, Madhya Maharashtra, Chhattisgarh, Coastal AP, TN Puducherry,

Day2: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Saurashtra Kutch, Madhya Maharashtra, Chhattisgarh, Coastal AP,

Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Guj Reg, Saurashtra Kutch, Chhattisgarh, Coastal AP,

Day4: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Chhattisgarh, Coastal AP, Telangana, SI Karnataka

8. Rainfall and thunder storm activity:

(Day/Index : Subdivisions with Precipitation > 2 cm):

Day1: Arunachal Pradesh, Assam Meghalaya, East UP, Jammu Kashmir, Andaman Nicobar, TN Puducherry, Kerala

Day2: Arunachal Pradesh, Assam Meghalaya, Andaman Nicobar, Coastal Karnataka, Kerala

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Andaman Nicobar, TN Puducherry, Kerala

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jammu Kashmir, Andaman Nicobar, Kerala

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Andaman Nicobar, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala

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

1. Weather Systems:

00 UTC analyses shows an east-west trough over UP and Bihar along with a low level CYCIR over western UP region. The analysis charts also indicate a trough at low level from this CYIR and passes through Odisha and north Andhra. The N-S oriented trough from west UP and adjoining Bihar to north Odisha and subsequently parallel to the east coast up to the Coastal AP region almost persists during next 4 to 5 days with slight variation.

Another CYCIR over northeast Rajasthan and adjoining Pakistan on day 3 to day 5

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 except over a smaller region south of Delhi in the analysis chart

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 with interior Odisha, Chhattisgarh and adjoining east MP. The high vorticity belts confine over eastern coastal states over Odisha, Coastal AP and Chhattisgarh region along with the foothills during 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, Odisha, Chhattisgarh and coastal AP in the analysis field. Forecast shows high threshold values over west coast of India particularly over the Gujarat region along with the eastern coastal states covering Jharkhand, GWB, Odisha, Coastal AP during next 3 days.

Lifted Index (< -2): The areas with index less than -2 mainly lies over East UP, Bihar, GWB, Odisha, Chhattisgarh and coastal AP during next 3 days.

Sweat Index (> 400): 00UTC shows significant values over major parts along east UP, Jharkhand, GWB, Chhattisgarh, GWB, Coastal AP and also over west coast of India (particularly over the Gujarat region).

CAPE (> 1000): Mostly along east coast of India over east UP, Bihar, Jharkhand, GWB, Odisha Chhattisgarh, and adjoining AP regions along with parts in south peninsular region and Gujarat region during the next 3 days.

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

5. Rainfall and thunderstorm activity:

10-40 mm rainfall is forecasted tomorrow over NE states, GWB, belts over northern India. Odisha, GWB, SHWB along with relatively more rainfall (> 40 mm) over region of GWB and adjoining region. The rainfall over GWB and adjoining region will likely to increase on day 2.

Rainfall activity over south interior Karnataka, Tamil Nadu and Kerala will increase for the next 2-3 days and decrease thereafter

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

1. Model Reflectivity (Max.dBz): (>25 dBZ)

15-40 dBZ over parts of North Odisha, GWB, Jharkhand, during today (11 UTC to 14 UTC).

15-40 dBZ over isolated regions of East UP, Bihar, Jharkhand, GWB during the day 2. (08 UTC-13 UTC)

2. Spatial distribution of CAPE and CIN [High potential for thunderstorm]

CAPE (> 1000): Mostly along east coast of India, over east UP, Bihar, Jharkhand, Odisha, SHWB, GWB, coastal AP, west coast with particularly over Gujarat during next 3 days.

CIN (50-150): Higher values over most regions of India except over central India, NW India, J & K region and NE states particularly during morning hours of next three days..

3. Rainfall and thunderstorm activity:

10-40 mm over North-eastern states for next 1-3 days along with that over the Kerala coast.

On day one the high rainfall belt is likely to be over GWB and Jharkhand region, which moves towards the NE states during day 2 and day 3.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

The Western Disturbance over northeast Jammu & Kashmir will give rise to hailstorm on day 1 over J&K, Himachal Pradesh and Uttarakhand. This will continue on day 2 over Himachal Pradesh and Uttarakhand.

The presence of the upper air cyclonic circulations, one over northwest Uttar Pradesh & neighbourhood and the other over north Chhattisgarh & neighbourhood and the trough from this system to north Coastal Andhra Pradesh and a third cyclonic circulation over northwest Uttar Pradesh & neighbourhood combined with the high temperature present over the region will cause thunderstorm with gust/squall on day 1 and day 2. Similar is the situation over west and east Rajasthan for day1 and day 2.

The positioning of the upper air cyclonic circulation over Gulf of Martaban & neighbourhood does not have much influence on the rainfall activity over Andaman and Nicobar islands and hence no heavy rainfall is expected over the bay islands for the next 48 days.

24 hour Advisory for IOP:

Kerala, Interior Tamilnadu, South Interior Karnataka,
Gangetic west Bengal, Sub Himalayan West Bengal, Orissa, Bihar, Jharkhand
Himachal Pradesh, Punjab, Haryana, West and East UP, Uttarakhand
West and East Rajasthan
Jammu& Kashmir

48 hour Advisory for IOP:

Kerala, Interior Tamilnadu, South Interior Karnataka, Rayalaseema
Gangetic west Bengal, Sub Himalayan West Bengal, Orissa, Bihar, Jharkhand
Himachal Pradesh, West and East UP, Uttarakhand
West and East Rajasthan

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

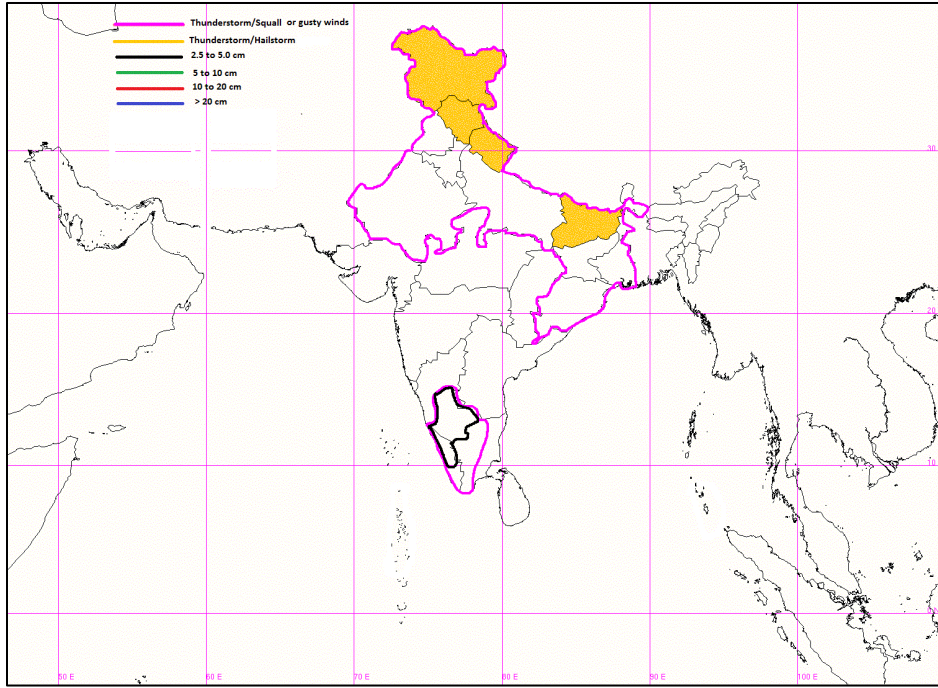
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

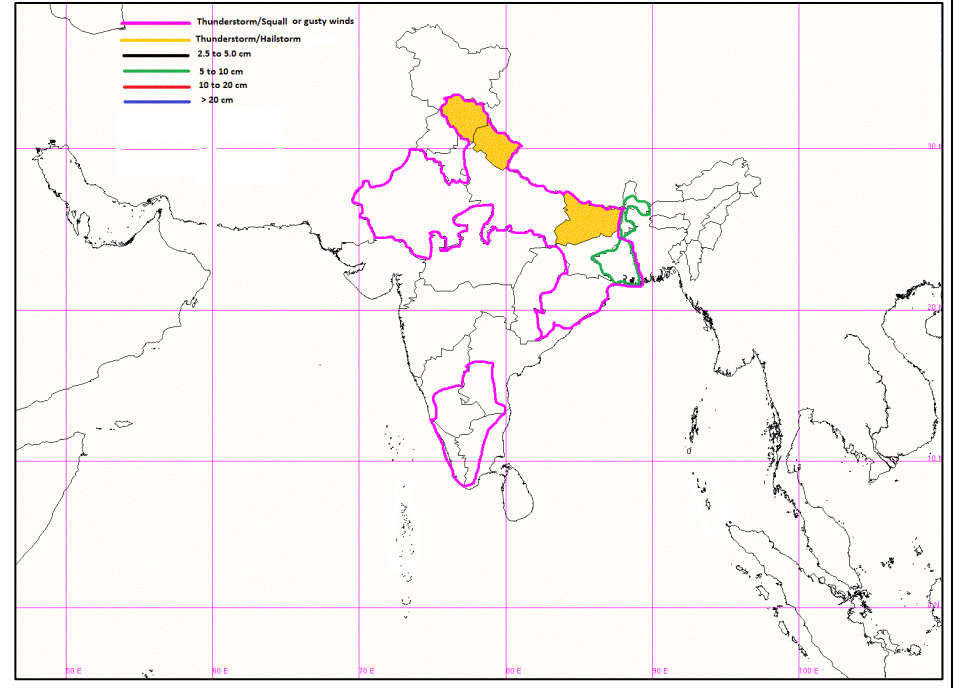
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T- Phigram

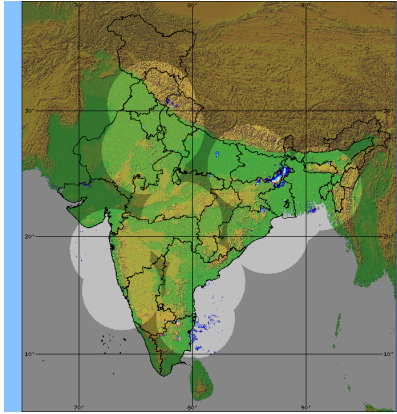
http://satellite.imd.gov.in/map_skm2.html



IOP Advisory for 24 hours

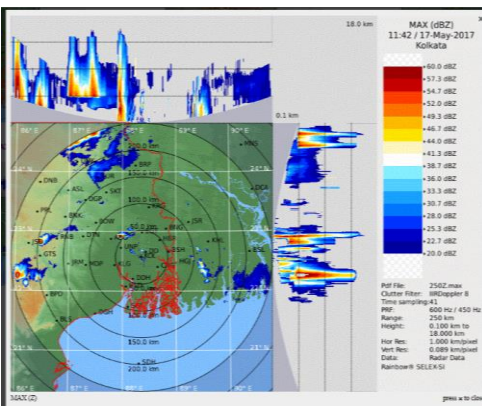


IOP Advisory for 48 hours



INDIA
 PDP
 COMP
 Task: DWR-C
 PPT: 250km
 Elevation: 0
 No. Channels: 19
17:21
 17 MAY 2017

49.0
 47.5
 45.0
 42.5
 40.0
 37.5
 35.0
 32.5
 30.0
 27.5
 25.0
 22.5
 20.0



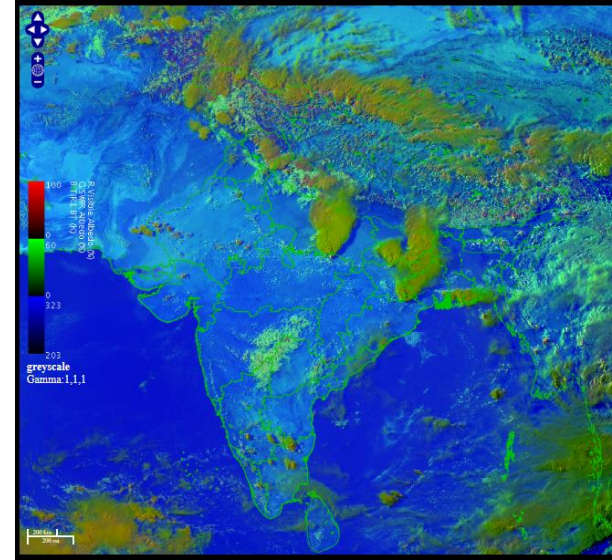
MAX (dBZ) x
 11:42 / 17-May-2017
 Kolkata

60.0 dBZ
 57.3 dBZ
 54.7 dBZ
 52.0 dBZ
 49.3 dBZ
 46.7 dBZ
 44.0 dBZ
 41.3 dBZ
 38.7 dBZ
 36.0 dBZ
 33.3 dBZ
 30.7 dBZ
 28.0 dBZ
 25.3 dBZ
 22.7 dBZ
 20.0 dBZ

PDF File: 2502_max
 Cluster Filter: 8000pphr 0
 Time sampling: 43
 PRF: 6000 Hz / 450 Hz
 Range: 250 km to
 Height: 0.180 km to
 Hor Res: 18.000 km
 Vert Res: 0.089 km/pphr
 Data: Radar Data
 Rainbow: SILEX Si

18.0 km
 0.1 km
 150.0 km
 200.0 km

3000 x 1500

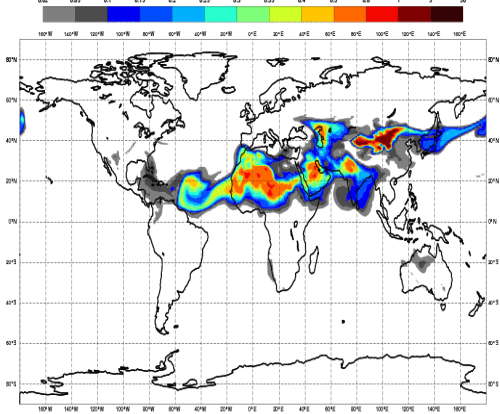


**DWR Composite at 1720 hrs
 IST of today**

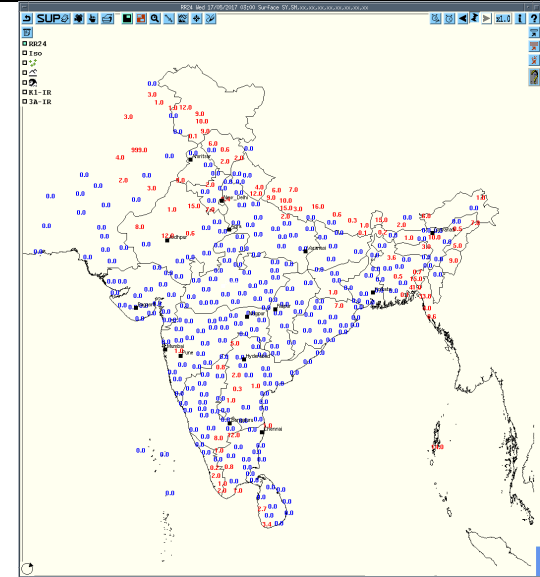
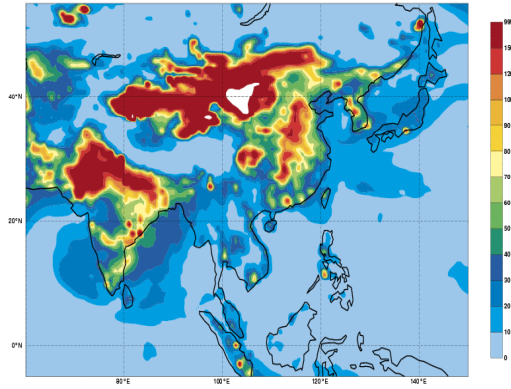
**DWR Kolkata at 1142UTC
 (1712hrs IST)**

INSAT 3D CTBT satellite Imagery at 1630 hrs IST of today

Tuesday 16 May 2017 00UTC CAMS Forecast (+120 VT: Sunday 21 May 2017 00UTC
Dust Aerosols Optical Depth at 550 nm



Tuesday 16 May 2017 00UTC CAMS Forecast (+120 VT: Sunday 21 May 2017 00UTC
Surface PM10 [$\mu\text{g}/\text{m}^3$]

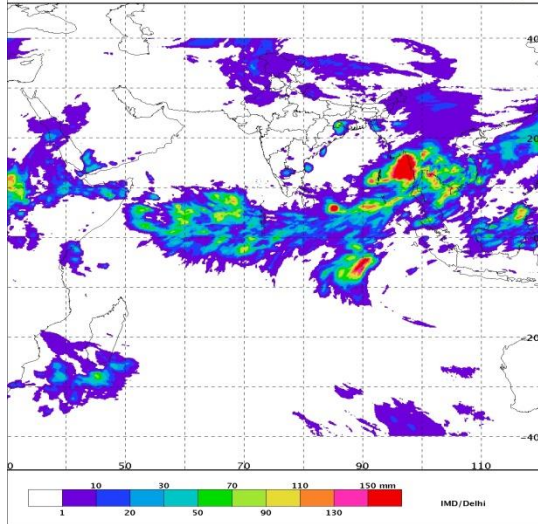


Forecast Dust Concentration for 00UTC of 21th May

PM10 Forecast for 00UTC of 21th May

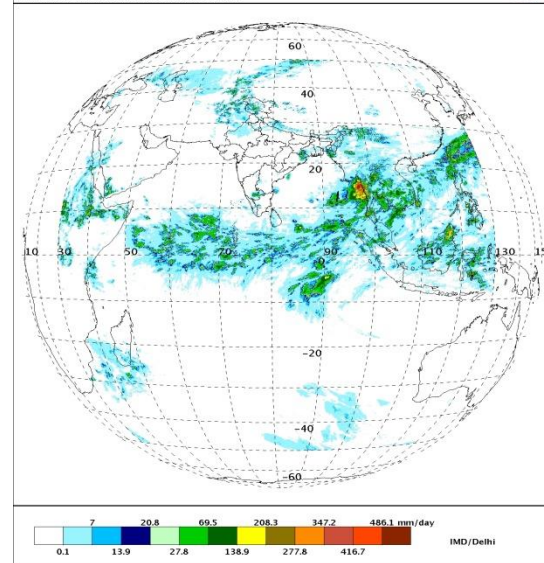
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today

SAT-INSAT-3D IMG 16-05-2017 (03:30 GMT) to 17-05-2017 (03:00 GMT)
INSAT Multispectral Rainfall(Daily)
L3B BINNED GEOPHYSICAL PARAMETER GRIDDED

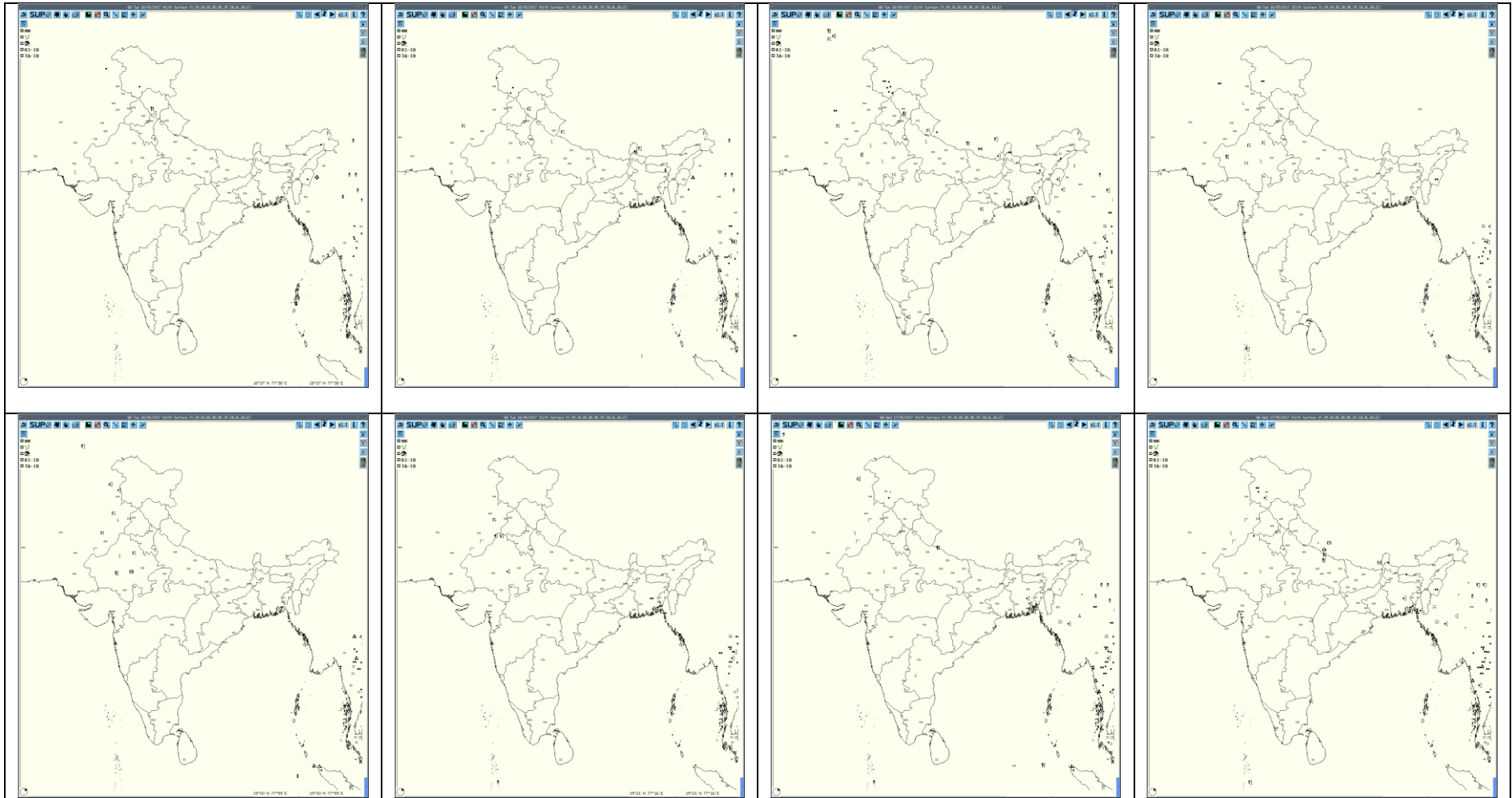


IMR Rainfall

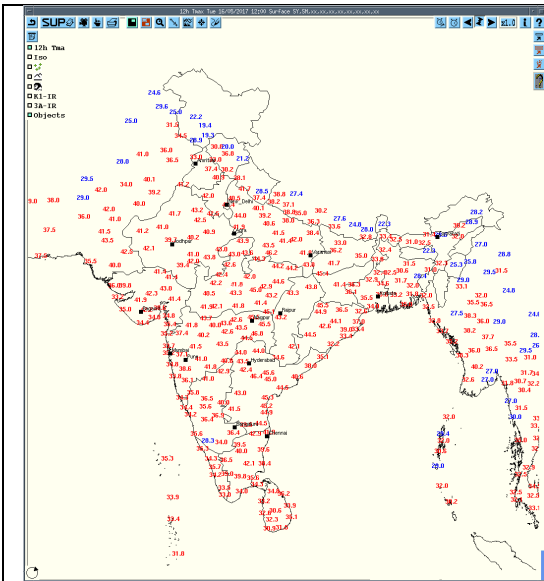
SAT-INSAT-3D IMG 16-05-2017 (03:30 GMT) to 17-05-2017 (03:00 GMT)
Precipitation(HE) Daily
L3B BINNED GEOPHYSICAL PARAMETER FULL DISK



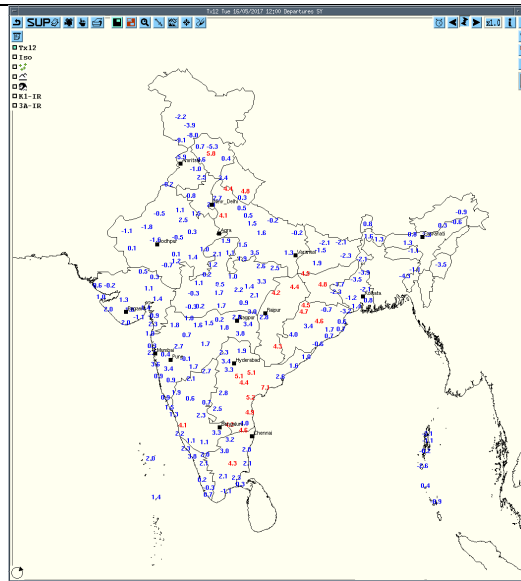
HEM Rainfall



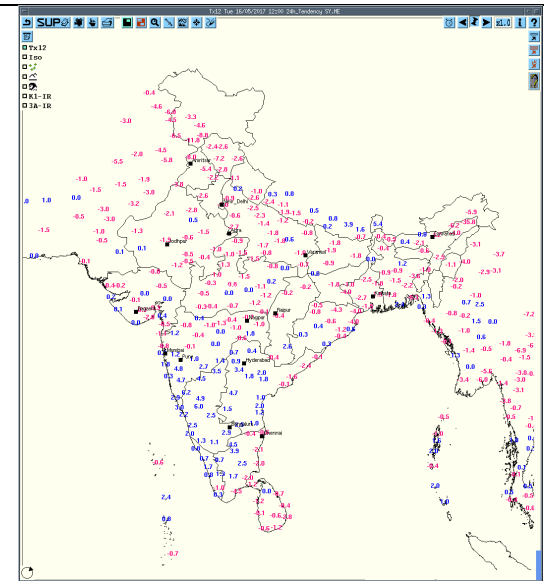
3hourly Past weather at 06,09,12,15,18,21UTC of yesterday and 00 & 03 hrs UTC of today



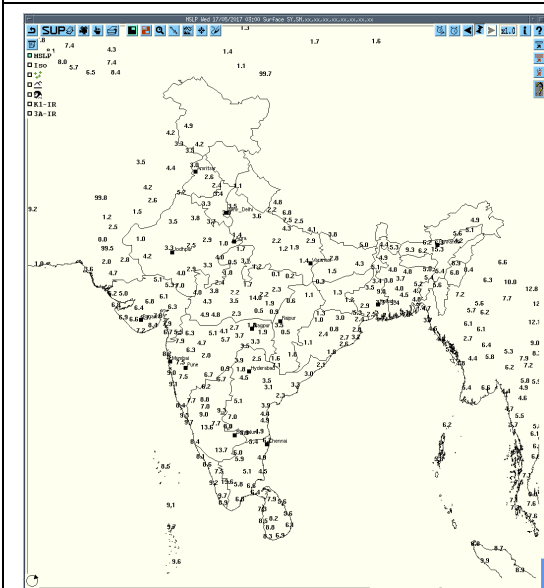
max



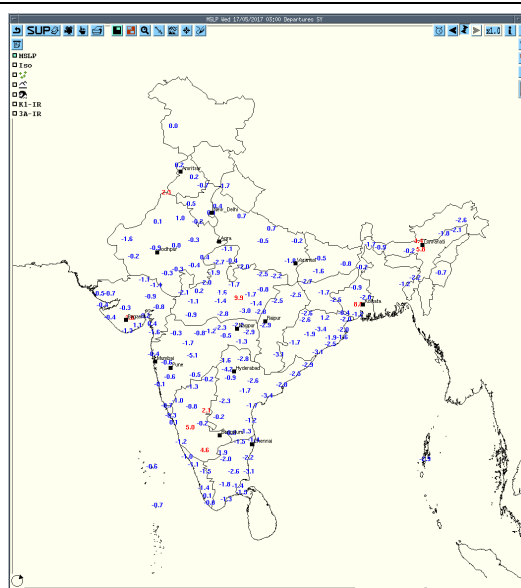
Departure Tmax



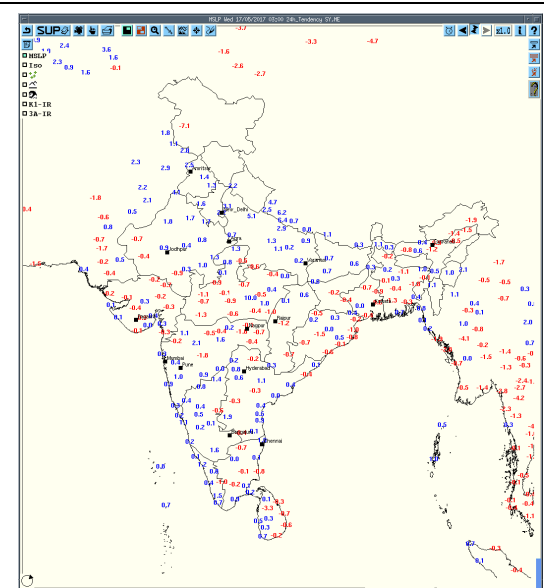
Tendency Tmax



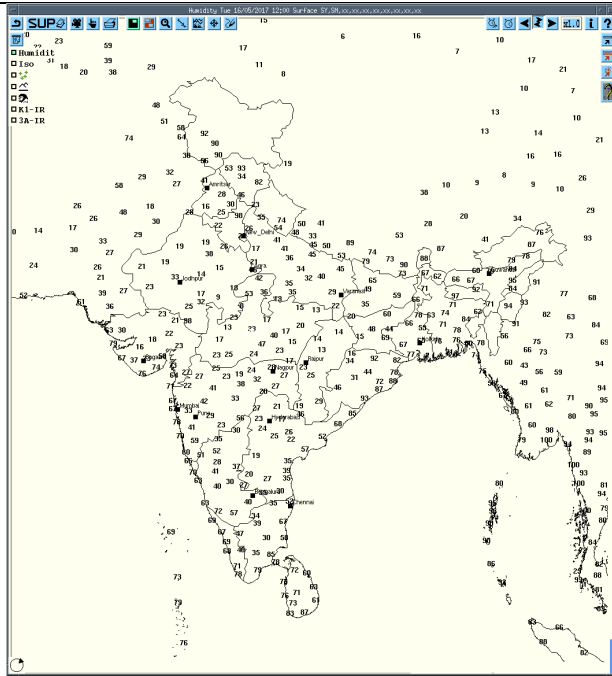
SLP



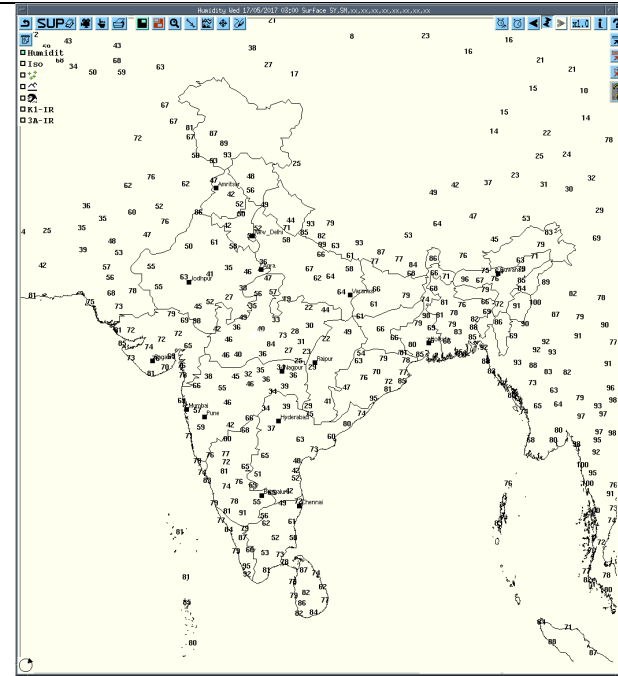
Departure MSLP



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
16-05-17	0600UTC	Sundernagar	NW India	Himachal Pradesh	Thunderstorm
16-05-17	0900UTC	Gangtok	E India	Sikkim	Thunderstorm
		Sundernagar	NW India	Himachal Pradesh	Thunderstorm
16-05-17	1200UTC	Shimla	NW India	Himachal Pradesh	Thunderstorm
		Mukteshwar	NW India	Uttarakhand	Thunderstorm
		Phalodi	NW India	Rajasthan	Thunderstorm with Duststorm
		Keonjhar	E India	Odisha	Thunderstorm
		Kodaikanal	S India	Tamilnadu	Thunderstorm
		Thiruvananthapuram	S India	Kerala	Thunderstorm
16-05-17	1500UTC	Jaisalmer, Bikaner, Churu	NW India	Rajasthan	Thunderstorm
		Bhubaneswar	E India	Odisha	Lightening
16-05-17	1800UTC	Jodhpur, Churu	NW India	Rajasthan	Thunderstorm
		Ajmer	NW India	Rajasthan	Duststorm
		Safdarjung	NW India	Delhi	Lightening
		Palam	NW India	Delhi	Thunderstorm
		Kalingapatnam	S India	Andhra Pradesh	Lightening
		Bengaluru	S India	Karnataka	Lightening
16-05-17	2100UTC	Ganganagar	NW India	Rajasthan	Thunderstorm
17-05-17	0000UTC	Kurnool	S India	Andhra Pradesh	Lightening
17-05-17	0300 UTC	Bahraich	NW India	Uttar Pradesh	Thunderstorm
		Chennai	S India	Tamilnadu	Thunderstorm

Realized 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 Comment (IST)	Time of end (IST)
Sunder Nagar	NW India	Himachal Pradesh	Thunderstorm	16-05-17	1104 1300 1402	1134 1322 1410
Pantnagar	NW India	Uttarakhand	Thunderstorm	17-05-17	0230	0345
Mukteshwar	NW India	Uttarakhand	Thunderstorm	16-05-17 16-05-17 17-05-17	1500 1730 0500	1730 1830 0540
Tehri	NW India	Uttarakhand	Thunderstorm	16-05-17	1410	1435
Amritsar	NW India	Punjab	Thunderstorm	16-05-17	0830	1030
Sikar	NW India	Rajasthan(E)	Thunderstorm	16-05-17	2000	2100
Er. Road	NW India	Rajasthan(E)	Thunderstorm	16-05-17	2120	2145
Ganganagar	NW India	Rajasthan(W)	Thunderstorm	17-05-17	0100 0645	0145 0715
Jaisalmer	NW India	Rajasthan(W)	Thunderstorm	16-05-17	1800 1945	1900 2100
Bikaner	NW India	Rajasthan(W)	Thunderstorm	16-05-17 17-05-17	1805 0135	2235 0140
Jodhpur	NW India	Rajasthan(W)	Thunderstorm	16-05-17	1950	2345
Churu	NW India	Rajasthan(W)	Thunderstorm	16-05-17	1930	2400
Pilani	NW India	Rajasthan(W)	Thunderstorm	16-05-17	1815	2300
Bahraich	NW India	Uttar Pradesh(E)	Thunderstorm	17-05-17	0820	0830
Kheri	NW India	Uttar Pradesh(E)	Thunderstorm	16-05-17 17-05-17	2100 0630	2200 0700
Aligarh	NW India	Uttar Pradesh(W)	Thunderstorm	16-05-17	2300	2330
Bhaderwah	NW India	J & K	Thunderstorm	16-05-17	1150	1215
Keonjhar	E India	Odisha	Thunderstorm	16-05-17	1635	1755
			Hailstorm With Small Diameter	16-05-17	1640	1643
Chandbali	E India	Odisha	Lightening	16-05-17	2300	2345
Bhubaneswar			Lightening	16-05-17	1920	2055
Gangtok	E India	Sikkim	Thunderstorm	16-05-17	1410	1430

Bengaluru City	S India	Karnataka(SIK)	Thunderstorm	16-05-17	2055	2130
Bengaluru(HAL)	S India	Karnataka(SIK)	Thunderstorm	16-05-17 17-05-17	1750 0045	1900 0115
Yelahanka IAF	S India	Karnataka(SIK)	Thunderstorm	16-05-17 17-05-17	2000 0100	2230 0230
Bengaluru (KIAL)	S India	Karnataka(SIK)	Thunderstorm	16-05-17	2013	2200
Belgaum AP	S India	Karnataka(NIK)	Thunderstorm	16-05-17	2100	2130
Chennai Nungambakkam	S India	Tamilnadu(North)	Thunderstorm	17-05-17	0640	0815
Chennai Airport	S India	Tamilnadu(North)	Thunderstorm	17-05-17	0715	0735
Kodaikanal	S India	Tamilnadu(South)	Thunderstorm	16-05-17	1500	1710

Past 24 hours DWR Report:

Radar Station name	Date of Reporting	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
Kolkata	17-05-17	170301-171851	NIL	NIL	NO SIG ECHO	NIL	N/A
		171851-172321	Isolated cells later transformed into multi cells with maximum reflectivity of 65.0 dBz at 2011 UTC and maximum height of 11.65 Km at 2011 UTC	NE (185.7 km) Moving in SE-ly direction at a speed of 34 kmph	A cell formed at 1911 UTC in NE at a distance of 186 km from radar. Matured to Multiple cells and dissipated at 2321UTC in ENE at a distance of 242.4 km	Thunderstorm Hail/ Rain	N/A
		172331 – 172351	NIL	NIL	NO SIG ECHO	NIL	N/A
		180001 – 180301	NIL	NIL	NO SIG ECHO	NIL	N/A
Patiala	17-05-17	160302-160602	Multiple cells Max= 48.0 dBz Ht.=6-8 km	Formation in NW& NE sector. MOVEMENT NE-WARDS.	-----	TS/RA	KAPURTHLA, JALANDHAR, AMBALA, SOLAN, HOSHIARPUR AND ITS ADJ. AREAS..
		160602-160902	Multiple cells Max= 42.0 dBz Ht.=6-8 km	Formation in NW& NE sector. MOVEMENT NE-WARDS.	-----	-----	PALAMPUR, GURDASPUR, RAMPUR AND ITS ADJ. AREAS..
		160902-161202	NO SIGNIFICANT ECHOE	-----	-----	-----	-----

		161202-161502	NO SIGNIFICANT ECHOE	----- .	----	-----	-----
		161502-161802	Multiple cells Max= 40.0 dBz Ht.= 9-11 km	Formation in SOUTHERN sector. MOVEMENT E-WARDS.	-----	-----	MOHINDERGARH, BHIWANI, REWARI AND ITS ADJ. AREAS..
		161802-162102	Multiple cells Max= 40.0 dBz Ht.=9- 11 km	Formation in SOUTHERN sector. MOVEMENT E-WARDS.	-----	-----	ROHTAK, JHAZZAR AND ITS ADJ. AREAS..
		162102-170002	Multiple cells Max= 41.0 dBz Ht.=8 -9 km	Formation in SOUTHERN sector. MOVEMENT E-WARDS.	-----	-----	SONEPAT, JIND, ROHTAK AND ITS ADJ. AREAS..
		170002-170252	Multiple cells Max= 35.5 dBz Ht.=9-10 km	Formation in SE sector. MOVEMENT NNE-WARDS.	-----	---	PANIPAT, SHAMLI, ISRANA AND ITS ADJ. AREAS.
Jaipur	17-05-17	161032-170252	Multiple cell with average height of 6.0 km maximum reflectivity 57.0 dBZ	Cell develop 1032 to 0232 UTC towards north west of Jaipur .No movement was seen.	Cell continuous forming from 1222 UTC NW of Jaipur and maximum relectivity during 0252 and died down at 0252 UTC.	Moderate Thunderstorm	Churu,Bikaner,Jaisalmer,Ganganagar, Jodhpur,Sikar,pilani,Er.Road,Ajmer,alwar,Nagaur,Jhunjhunu.
Hyderabad	17-05-17	16/ 1132 - 1242 UTC	isolated cells with an average height of 10 Km with a max reflectivity of 53.0 dBZ	NW (97 Kms) moving in E- ly Direction	Cells started forming at 1132 utc. Matured between 1142 and 1212 with max ref of 53 dBz and dissipated by 1242 UTC	Moderate Thunderstorm with or without rain	Kamareddy District.
Patna	17-05-17	160300-170300	Nil				
Nagpur	17-05-17	161142-161242	Multiple	100-140km in south dir, moving SE-LY	Max Z=28 height of cloud 2-5.8km		Isolated places of District Gadchiroli, Chandrapur, Brahmapuri and Adilabad.
		161242-161400	Multiple	230km in south dir, moving SE-ly	Max Z=29 ht of cloud 5.6-8km		
		161412-170022	Multiple	138km in South dir, moving SE-ly			

					Max Z=32 ht of cloud 2.3-6.8km At 1452, max Z=40 ht of cloud 2.3-4km		
		170002- 170242	nil				
Agartala	170517	160600 - 161400	Multiple cells with Maximum Height 09 km and maximum reflectivity 35 dBZ (at 0840 UTC of over West Meghalaya)	Started forming in the NW-NE sector of DWR AGT around 200 km at 0600 UTC and moved SE-wards at around 20 kmph	Cells Dissipated at 1400 UTC over East Meghalaya	N/A	N/A
		161820 - 170300	Multiple Cells with Maximum Height 14 km and maximum reflectivity 46 dBZ (at 2030 UTC over Bangladesh-70km WSW of DWR AGT)	Formed 160 km WSW of DWR AGT at 1820 UTC and moved ESE- wards at around 55 kmph	At 0300 UTC of 17.05.17, cells moved away from land region to BoB	TS with light/ moderate rain	West, Sipahijala, Gomati, South districts of Tripura
Machilipatnam	17-05-17	161101- 161331	Isolated Multiple cells average height of 7.68 km with maximum reflectivity of 59.0dBZ	WSW(232KM) . Stationary.	Cell started forming at 1101UTC, at WSW (232km) from Radar the maximum reflectivity during 1111 to 12211 UTC and died down at 1251UTC	Possibility of Thunder storm with rain and light winds.	Ongole District
		161521- 162211	Isolated Multiple cells average height of 6.48 km with maximum reflectivity of 62.5dBZ	N(94KM) , moving Sly direction average speed of22.0kmph	Cell started forming at 1521UTC, at N (189km) from Radar the maximum reflectivity during 1841 to 2111 UTC and died down at 2201UTC	Possibility of Thunder storm with hail and light winds.	West Godavari district
		161931- 170111	Isolated Multiple cells average height of 4.75 km with maximum reflectivity of 55.5dBZ	NE(125KM) , moving SWly direction average speed of16.0kmph	Cell started forming at 1931UTC, at NE (125km) from Radar the maximum reflectivity during 2001 to 0101 UTC and died down at 0111UTC	Possibility of Thunder storm with l and light winds.	East Godavari district
Bhuj	17-05-17	160430- 161200	Nil	Nil	Nil	--	--

Karaikal	17-05-17	160300-170300	---	----	DWR U/S	---	---
----------	----------	---------------	-----	------	---------	-----	-----

	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