



India Meteorological Department
FDP STORM Bulletin No.51(25-04-2017)

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

SYNOPTIC FEATURES:

The western disturbance as an upper air cyclonic circulation over north Pakistan & adjoining Jammu & Kashmir extending upto mid tropospheric level persists.

The trough at mean sea level from northwest Rajasthan to north Coastal Odisha now runs from East Uttar Pradesh to Assam across Bihar and extends up to 0.9 Km above mean sea level.

The trough at mean sea level from Jharkhand to South Tamilnadu now runs from Telangana to comorin area with an embedded cyclonic circulation over Telangana & neighbourhood and extends up to 0.9 Km above mean sea level.

The trough from east Bihar to northwest Bay of Bengal persists and now extends upto 0.9 Km above mean sea level.

The upper air cyclonic circulation over southwest Rajasthan & neighbourhood now lies over West Rajasthan & neighbourhood and extends upto 1.5 Km above mean sea level.

The upper air cyclonic circulation over Nagaland, Manipur, Mizoram & Tripura and neighbourhood extending upto 1.5 km above mean sea level has become less marked.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

Current Observation (based on 0300UTC imagery of INSAT 3D):

Convective Activity and cloud description:

Scattered low/medium clouds with embedded moderate to intense convection were seen over Central Mizoram. Scattered low/medium clouds were seen over J & K, N Himachal Pradesh, N Uttarakhand, N Punjab, SE Rajasthan, rest north eastern states, Kerala and Tamilnadu.

Arabian Sea:

Scattered low/medium clouds with embedded weak convection were seen over SE Arabian Sea.

Bay of Bengal & Andaman Sea:

No Significant clouds over the region.

Past Weather:

Convection:

Moderate to Intense convection was observed over TN ADJ SIK ADJ S AP, ASSAM, TRP, MIZO, GWB, & BD.

OLR:-

Up to 280 Wm^{-2} was over J&K, N HP, UTRKND, ASSAM, ARUPR & NAGA.

Up to 300 Wm^{-2} was over KER TN & LKSDWP.

Up to 370 Wm^{-2} was over rest parts of India.

Westerly Trough & Jet Stream:

No Trough & Jet stream observed.

Precipitation:

IMR: Rainfall upto 10 mm was observed over N J&K, UTRKND, MANI, N MIZO. Rainfall 10 – 20 mm was observed over NW TN ADJ SIK ADJ S AP, TRP ADJ BD.

HEM: Rainfall upto 14 mm was observed over NW TN ADJ SIK, EXT S AP, ASSAM, MANI, MIZO, TRP ADJ BD.

RADAR and RAPID observation:

No significant convection was observed in Radar Composite of 1250UTC.

Isolated Convective clouds were observed over Manipur and Mizoram in RAPID RGB Satellite imagery of 1200hrs IST..

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

Dust concentration was observed over northern Africa and some parts of middle-east and eastern Asia. Dust concentration is expected to decrease over west and north India for next five days.

High PM10 concentration was observed over west and north-east India. PM10 concentration is expected decrease over north India for next five days.

2. NWP MODEL GUIDANCE:**NCMRWF(NCUM Forecasts based on 00UTC of the day):****1. Weather Systems:**

12UTC Charts of Day-0 to Day-4 show feeble trough in MSLP over J & K. 12UTC Charts of Day-0 to Day-4 show weakened **Heat Low over Rajasthan and adjoining Pakistan** and its extension over IG plains is prominent with MSLP is at around 1002 hPa.

12UTC charts on all days from Day0-4 show two zones of wind discontinuity at 925 hPa:(i) SW-NE extending from northern Karnataka-Telangana region to Odisha region. (ii) S-N extending from southern parts of TN to northern parts of Telangana-AP region

Trough at 850 hPa over GWB and SHWB in Day 0-4, CYCIR over NW of India covering Punjab and adjoining Pakistan region at 850 hPa, from Day-2 to Day-4, Strong anti-cyclone at 500 hPa from Day-0 to Day-1 off AP coast, Trough at 500 hPa over J & K region from Day-0 to Day-2.

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:

At 12UTC Day-0-1: high values over isolated locations over AP, Odisha, Jharkhand and Chattisgarh and over parts of Assam.

At 12UTC Day-3-5: In addition to above locations prominent over prominent over western Ghats in Maharashtra and Karnataka.

At 00UTC very high values: over several places in Assam and over Assam-Arunachal region in Day-2 & 4.

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

At 12UTC on Day-0-2 :mainly over Assam & Arunachal. On day-3-4 enhanced activity at isolated locations over WB, Assam and over NW over Punjab-adjoining Pakistan.

At 00UTC: very high values along the line of low level confluence and strong convergence.

5. Showalter Index: Day-wise Sub-divisions with Showalter index <-4 :

Day0: Arunachal Pradesh, Assam, Meghalaya, Northeast NMMT, Sub Himalayan West Bengal, Uttarakhand, Himachal_Pradesh, Odisha, Saurashtra_Kutch, Coastal_AP, Rayalseema, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day1: Arunachal Pradesh, Assam, Meghalaya, Sub Himalayan West Bengal, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Coastal_AP, TN_Puducherry, SI_Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam, Meghalaya, NORTHEAST NMMT, Sub Himalayan West Bengal, Gangetic_WB, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Saurashtra_Kutch, Chhattisgarh, Coastal_AP, TN_Puducherry, SI_Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam, Meghalaya, NORTHEAST NMMT, Sub Himalayan West Bengal, Gangetic_WB, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Odisha, Saurashtra_Kutch, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam, Meghalaya, Northeast NMMT, Sub Himalayan West Bengal, Gangetic_WB, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, Guj_Reg, Saurashtra_Kutch, Coastal_AP, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

6. K-Index :Daywise Sub-divisions with K-index >40:

Day0: Arunachal Pradesh, Sub Himalayan West Bengal , Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu & Kashmir, West Rajasthan, East_ Rajasthan, Odisha, West Madhya Pradesh, Gujarat , Saurashtra, Kutch, Coastal Andhra Pradesh, Telangana, Rayalseema, Tamlnadu, North Puducherry, South Interior Karnataka, Kerala,

Day1: Arunachal Pradesh, Sub Himalayan West Bengal, East_UP, West_UP, Uttarakhand, Hry_ChD_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, West_MP, Guj_Reg, Madhya_Maharashtra, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, SI_Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam, Meghalaya, Sub Himalayan West Bengal, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Hry_ChD_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, Saurashtra_Kutch, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam, Meghalaya, Northeast NMMT, Sub Himalayan West Bengal, Gangetic_WB, Jharkhand, Bihar, East_UP, Uttarakhand, Hry_ChD_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Odisha, Guj_Reg, Saurashtra_Kutch, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam, Meghalaya, Northeast NMMT, Sub Himalayan West Bengal, Gangetic_WB, Jharkhand, Bihar, West_UP, Uttarakhand, Hry_ChD_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, Guj_Reg, Saurashtra_Kutch, Konkan_Goa, Madhya_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

7. Spatial distribution of TTI: Daywise Sub-divisions with TTI >52:

Day0: Arunachal Pradesh, Assam, Meghalaya, NORTHEAST NMMT, Sub Himalayan West Bengal, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, SI_Karnataka, Kerala,

Day1: Arunachal Pradesh, Sub Himalayan West Bengal, Odisha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, SI_Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam, Meghalaya, Sub Himalayan West Bengal, Uttarakhand, Odisha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

Day3: Arunachal Pradesh, Sub Himalayan West Bengal, Jammu_Kashmir, Odisha, Chhattisgarh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, Coastal_Karnataka, NI_Karnataka, SI_Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam, Meghalaya, Northeast NMMT, Sub Himalayan West Bengal, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Chhattisgarh, Coastal_AP, Telangana, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

8. Rainfall :Daywise Sub-divisions with Precipitation>2cm:

Day1: Arunachal Pradesh, Assam, Meghalaya, Northeast NMMT, Jammu_Kashmir, Rayalseema,

Day2: Arunachal Pradesh, Assam, Meghalaya,

Day3: Arunachal Pradesh, Assam, Meghalaya,

Day4: Arunachal Pradesh, Assam, Meghalaya, Sub Himalayan West Bengal, Jammu_Kashmir,

Day5: Arunachal Pradesh, Assam, Meghalaya, Sub Himalayan West Bengal, Himachal_Pradesh, Jammu_Kashmir,, Jammu_Kashmir,,

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

1.WeatherSystems:

The analysis and forecasts based on 00 UTC shows the north-south oriented low level trough over West Bengal extended to coastal AP and adjoining regions persists for the next 5 days. Forecasts show a feeble CYCIR would develop over Punjab and adjoining areas during day-2 to day-7. The low level CYCIR over extreme NE parts of India will persist for the next 5 days. Contour at 500 hPa shows a WD would affect the northern parts of the India during next two days.

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 ($>12 \times 10^{-1}/s$):

Mostly along the trough at 850 hPa, Gangetic plain and along the foot hill of Himalaya during next 5 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): 3-3.5 mostly over east coast, eastern part of the country and over Gujarat and adjoining areas but less than threshold value 4 all over the country during next 5 days.

Lifted Index (< -2): Less than threshold value mostly along east coast from Gangetic West Bengal to south peninsula and over Bihar, Jharkhand and Gangetic West Bengal during next 5 days.

Total Total Index (> 50) : Above threshold value over the most parts of central and eastern parts of India at 12 UTC during next 5 days.

Sweat Index (> 300): Mostly along east coast and Gujarat and adjoining areas during next 5 days and over eastern part of India during day3 to day5.

CAPE (> 1000): Mostly along east coast, extreme south peninsula and Gujarat and adjoining areas during next 5 days and over eastern part of India during day3 to day5.

CINE (50-150): Mostly along east coast, west coast and Gujarat and adjoining areas during next 5 days.

5. Rainfall and Rainfall activity:

10-70 mm rainfall over NE states during next 24 hours.

10-40 mm rainfall over NE states during day2 to day5.

10-40 mm rainfall over extreme south peninsula during next 2 days.

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

Model Reflectivity:

15-35 dBZ Model reflectivity over most parts of NE states during next 36 hours.

5-15 dBZ over some parts of J&K, HP, SHWB, GWB and coastal Odisha on day3.

Spatial distribution of Total Total Index, K-Index, CAPE and CINE:

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

K-Index (> 35): Less than threshold value is observed over the country during the next 72 hour.

CAPE (> 1000): Mostly along east coast of India, over SHWB and GWB during next 3 days.

CINE(50-150): CINE values are mostly less than threshold value over coastal regions and higher than central parts of India during next three day

Rainfall Activity:

Rainfall activity (10-70 mm) over most parts of NE states during next 3 days.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day 1 & Day 2:

Presently, a trough runs from Telangana to Comorin area with an embedded cyclonic circulation over Telangana & neighbourhood and extends up to 0.9 Km above mean sea level. This may result in thunderstorm with squall/gusty winds over Telangana, Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka and Tamilnadu on Day 1 & Day 2.

The trough at mean sea level from northwest Rajasthan to north Coastal Odisha now runs from East Uttar Pradesh to Assam across Bihar and extends up to 0.9 Km above mean sea level. The trough from east Bihar to northwest Bay of Bengal persists and now extends upto 0.9 Km above mean sea level. Due to these systems heavy rainfall is expected over Assam, Meghalaya, NMMT and Arunachal Pradesh on Day 1 which will decrease on Day 2. Thunderstorm with squall/gusty winds is also expected over Assam, Meghalaya and NMMT on Day 1 & Day 2.

The upper air cyclonic circulation over southwest Rajasthan & neighbourhood now lies over West Rajasthan & neighbourhood and extends upto 1.5 Km above mean sea level. This may cause thunderstorm/duststorm over Rajasthan on Day 1 & Day2.

24 hour Advisory for IOP:

Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura and Arunachal Pradesh
Telangana, Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka, Tamilnadu

48 hour Advisory for IOP:

Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura and Arunachal Pradesh
Telangana, Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka, Tamilnadu

ForNCMRWFNWPproducts:(<http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php>)

ForIMDNWPproducts:(http://nwp.imd.gov.in/diagpro_new.php)

ForSynopticplotteddataandcharts

<http://amssdelhi.gov.in/>

<http://www.amsskolkata.gov.in/>

ForRAPIDtool:

<http://rapid.imd.gov.in/>

LowLevelWinds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR_2017/?C=M;O=D

Upperlevelwinds

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

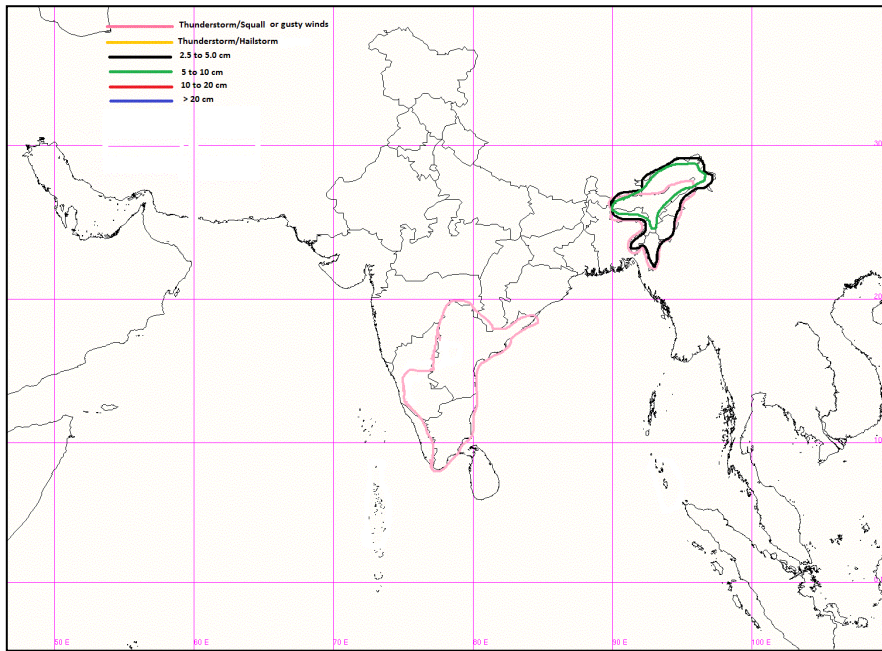
HEM:http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

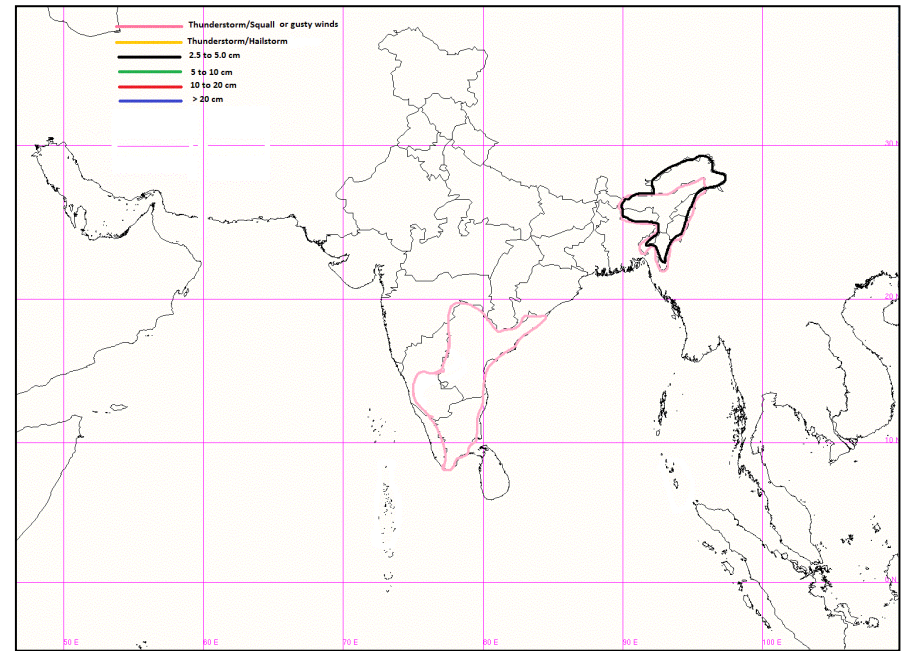
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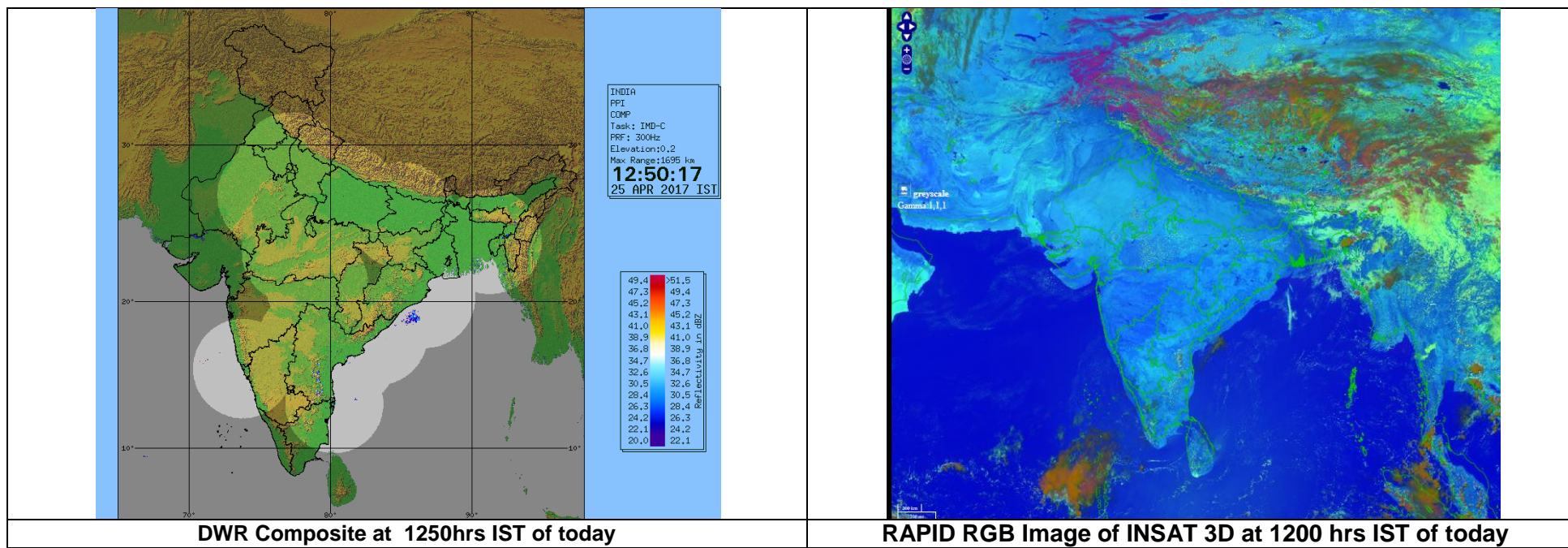
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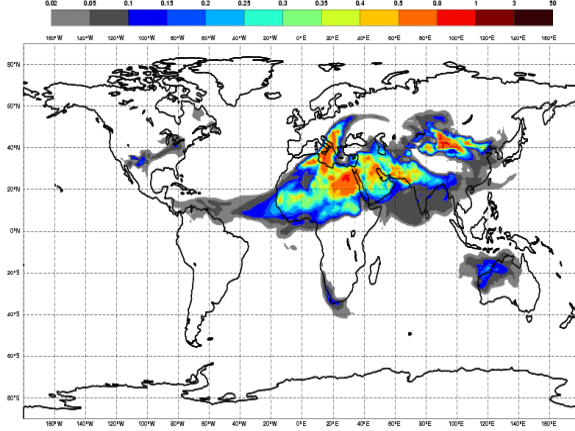


IOP Advisory for 24 hours



IOP Advisory for 48 hours





SAT-INSAT-3D IMG
Precipitation(HE) Daily
L3B BINNED GEOPHYSICAL PARAMETER FULL DISK

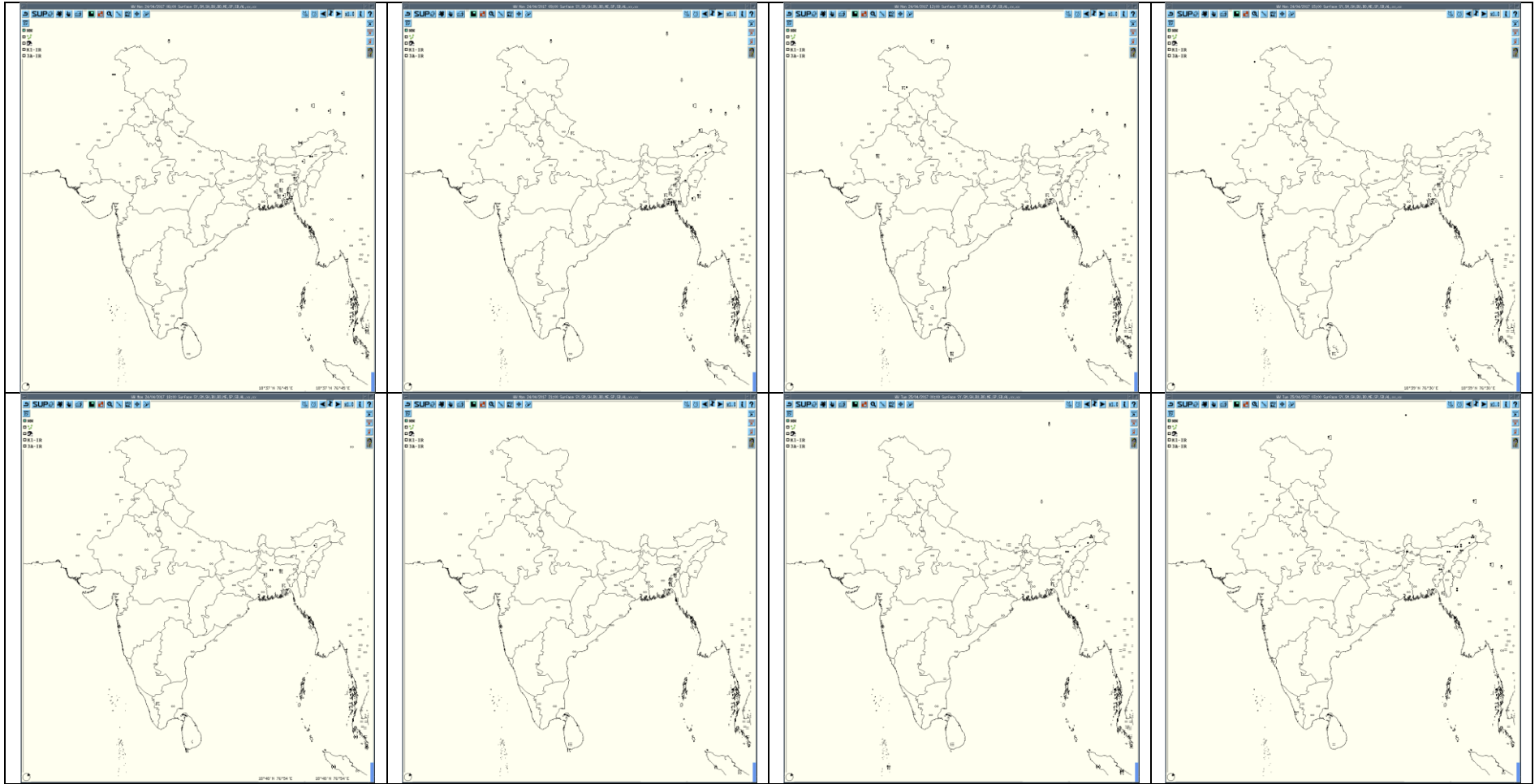
24-04-2017 (03:30 GMT) to 25-04-2017 (03:00 GMT)

7 20.6 69.5 208.3 347.2 466.1 mm/day

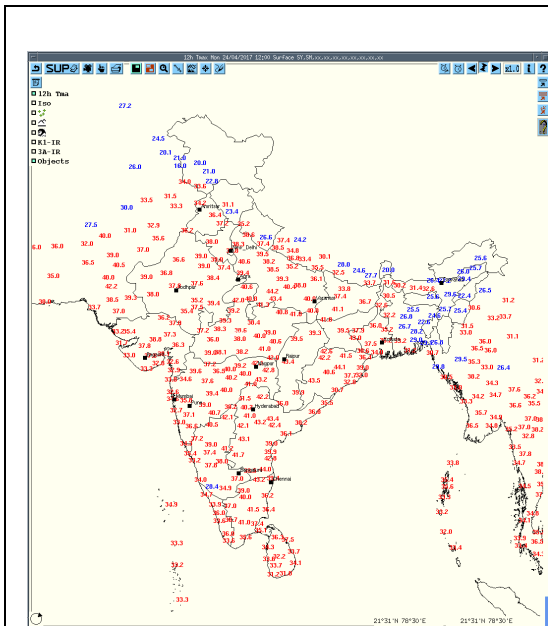
0.1 13.9 27.8 118.9 277.8 416.7

(IMD/Delhi)

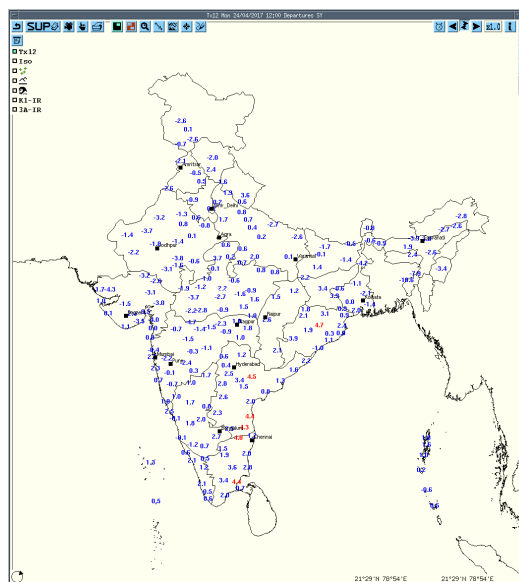
IMR Rainfall



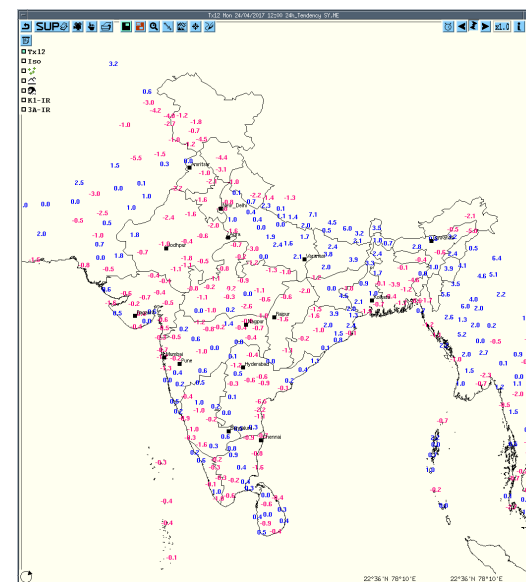
3hourly Past weather at 06,09,12,15,18,21UTC of yesterday and 00 & 03hrs UTC of today



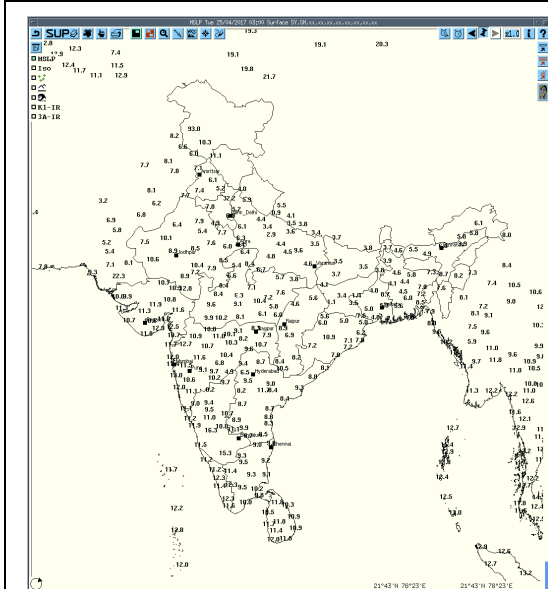
Tmax



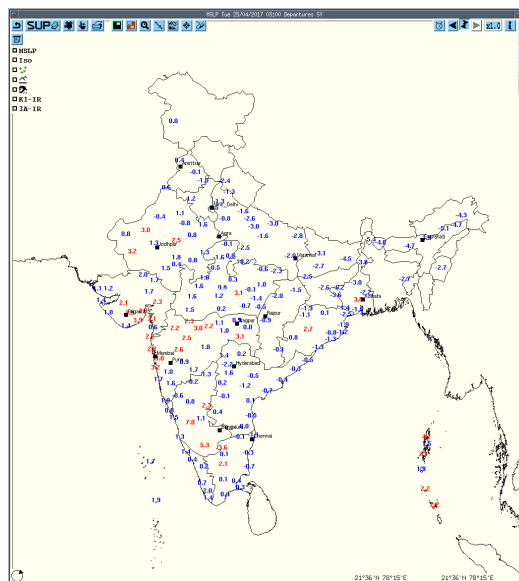
Departure Tmax



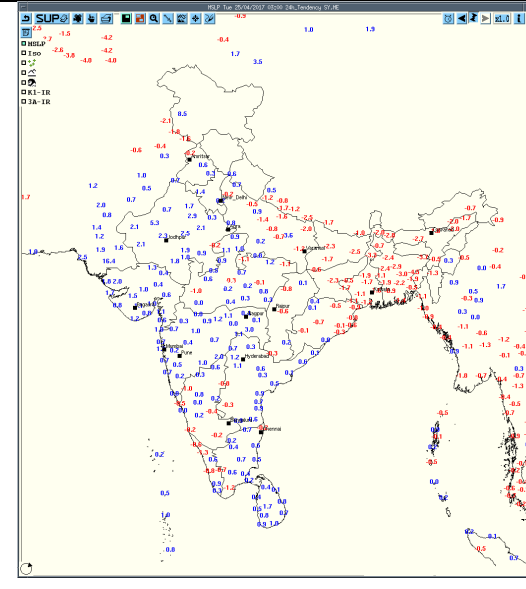
Tendency Tmax



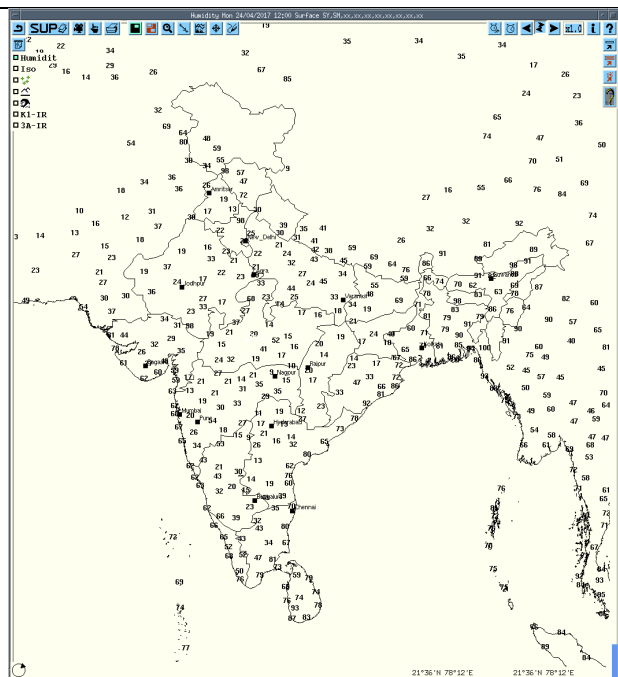
MSLP



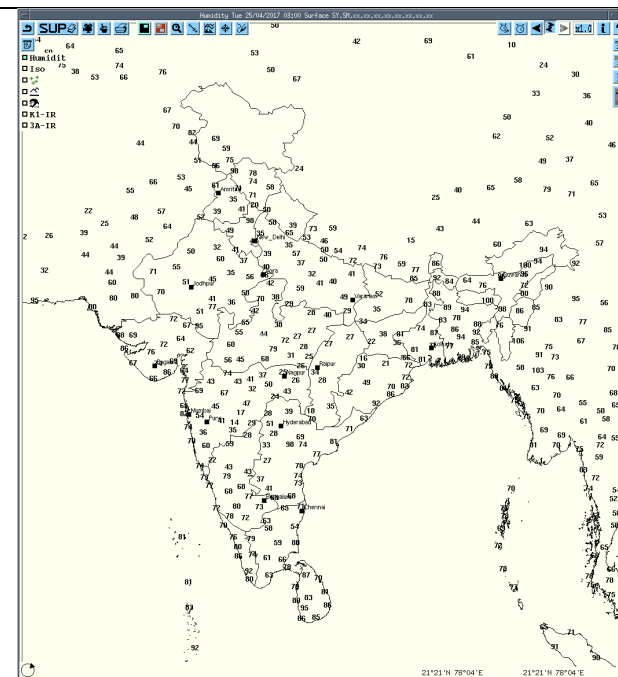
Departure MSLP



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
24-04-17	0600 UTC	Agartala	Northeast India	Tripura	Thunderstorm
24-04-17	0900 UTC	Nil	Nil	Nil	Nil
24-04-17	1200 UTC	Phalodi	Northwest India	Rajasthan	Thunderstorm
		Banihal	Northwest India	J & K	Thunderstorm
		Tirupathi	South India	Andhra Pradesh	Thunderstorm
24-04-17	1500 UTC	Barmer	Northwest India	Rajasthan	Lightening
		Tiruchirappalli	South India	Tamilnadu	Lightening
24-04-17	18000 UTC	Coimbatore	South India	Tamilnadu	Thunderstorm
		Agartala	Northeast India	Tripura	Thunderstorm
25-04-17	0000 UTC	Nil	Nil	Nil	Nil
25-04-17	0300 UTC	Nil	Nil	Nil	Nil

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
Vishakhapatnam	25-04-17	240600-240900	Isolated single cells with Maximum reflectivity of 45dBZ and Max.height of 2kms	NEly 73km	Cells start forming and not well matured and start dissipating.		-
		240900-241200	Isolated single cells with Maximum reflectivity of	NEly 155km	Cells start forming and not well matured and start dissipating.		-

			35dBZ and Max.height of 2kms				
		241200-241500	A convective region at NE of max reflectivity 39dbz at a208kms with height 6kms.	Moving easterly.	Not matured and hence no effect.	-	-
		241500-241800	Convective region at 170kms from radar with max reflectivity 45dbz in the SE and average height 6kms.	-	Not matured and in dissipating stage.	-	-
		241800-250000	A cell at SE 218kms from radar with max reflectivity 44dbz and height 7kms.	Moving SE ly.	Being dissipated.	-	-
		250000-2550300	Convective region NEly 100km to 200km with max reflectivity 50dbz and average height 2kms and convective region SWly 200km with max reflectivity 40dbz and average height 2km	NEly and SWly	Forming and quickly dissipating.	-	-
Kolkata	25-04-17	0312 - 0801 UTC	Single isolated cell formed , later transformed into a multi cell system and then after formed a squall line with maximum reflectivity of 67.0 dBz at 0411 Utc	N (203.2 km) moving towards SE-ly direction with a speed of 65.0 kmph	Yesterday's squall line became multicelled system and moved out of radar range in ESE direction at 0801 UTC.	Hailstorm /Thunderstorm /Squall / Rain	N/A

			and maximum height more than 18 km between 0411 to 0441 UTC.				
		0801 - 1512 UTC	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
		1522 – 1651 UTC	Single isolated cell with maximum reflectivity of 60.0 dBz at 1611 UTC and maximum height 9.5 km at 1522 UTC.	N (233 km) moving towards SE-ly direction with a speed of 40.0 kmph	Formation started at 1522 UTC in N at a distance of 233 km from Radar. Did not mature and dissipated at 1651 UTC in N at a distance of 205 km from Radar.	Thunderstorm / Rain	N/A
		1702 – 2351 UTC	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
		0001 - 0302 UTC	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
Bhuj	25-04-17	240300-240900	Nil				
Hyderabad	25-04-17	240300-250300	NII				

∞	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