



India Meteorological Department
FDP STORM Bulletin No.43 (17-04-2017)

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

SYNOPTIC FEATURES:

The depression over Myanmar moved northeastwards and weakened further into a well marked low pressure area and lay over central Myanmar & neighbourhood at 0300 UTC of today, the 17th April, 2017. Associated broken low/medium clouds with embedded moderate to intense convection lies over Myanmar.

The trough from north Telangana to eastcentral Arabian sea across North Interior Karnataka now runs from north Telangana to Konkan with an embedded upper air cyclonic circulation over north Telangana & neighbourhood and extends upto 0.9 km above mean sea level. A cyclonic circulation lies over north Odisha & adjoining Jharkhand & Chhattisgarh and extends upto 1.5 km above mean sea level. A trough runs from this system to Coastal Karnataka across Andhra Pradesh at 1.5 km above mean sea level

Another trough runs from South Interior Karnataka to south Tamilnadu and extends upto 0.9 km above mean sea level. A fresh feeble western disturbance likely to affect western Himalayan region from 19th onwards.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

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

VORTEX (MAARUTHA):-

VORTEX (MAARUTHA) OVER MYANMAR & N/HOOD (.) ASSTD BKN LOW/MED CLOUDS WITH EMBDD ISOL MOD TO INT CONVTN OVER MYANMAR (.)

WESTERN DISTURBANCE (WD) :-

SCT M/LAYERED CLOUDS OVER NW SAUDI ARABIA W PERSIAN GULF IRAN AND OVER AREA BET LAT 37.0N TO 48.0N LONG 60.0E TO 115.0E IN ASSW WD OVER THE AREA (.)

CLOUDS DESCRIPTIONS WITHIN INDIA:-

NORTH:-

ISOL LOW/MED CLOUDS OVER J&K (.)

EAST:-

SCT LOW/MED CLOUDS OVER ARUPR ASSAM NAGA MANI (.)

WEST:-

NO SIG CLOUDS OVER THE REGION (.)

SOUTH:-

SCT LOW/MED CLOUDS WITH EMBDD MOD TO INT CONVTN OVER BAY ILS (.) SCT LOW/MED CLOUDS OVER SIK (.)

ARABIAN SEA:-

NO SIG CLOUDS OVER THE REGION (.)

BAY OF BENGAL & ANDAMAN SEA:-

SCT LOW/MED CLOUDS WITH EMBDD INT CONVTN OVER ANDAMAN SEA ADJ SE BAY GULF OF MARTABAN TENASSERIM COT (.)

CLOUDS DESCRIPTION OUTSIDE INDIA:-

SCT LOW/MED CLOUDS WITH EMBDD MOD TO INT CONVTN OVER MYANMAR SE CHINA BORNEO S CHINA SEA SOUTH OF LAT 15.0N JAVA SEA CELEBES ILS & SEA YELLOW SEA E CHINA SEA MOZAMBIQUE CHANNEL WC MADAGASCAR ADJ MOZAMBIQUE CHANNEL AND OVER INDIAN OCEAN BET LAT EQ TO LAT 14.0S LONG 68.0E TO 94.0E (.)

Past Weather

Convection

Moderate to Intense convection was observed over SIK KER TN N ORS ADJ JHRKND.

OLR:-

Up to 270 wm^{-2} was over J&K, NHP.

Up to 310 wm^{-2} was over S HP, S UTRKND, E UP BHR S GWB AND VID.

Up to 340 wm^{-2} was over N GUJ, REST MAHA, CHTGH, W JHRKND, TLNGN, NIK

Up to 370 wm^{-2} was over W MP and S GUJ

JetStream:

No Jet stream and trough observed over India.

Precipitation:

IMR: Rainfall upto 20mm was observed over SIK, NW TN, S KER, NE ORS ADJ GWB SE JHRKND and ARUPR.

HEM: Rainfall upto 14 mm was observed over SIK, NW TN, NE ORS SE JHRKND, ASSAM. and MANI.

RADAR and RAPID observation:

Radar composite at 1310 IST does not indicate convection anywhere over the Indian region. **RAPID** image of 1230 IST indicated convection has already started over interior Karnataka.

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

No significant dust concentration observed over Arabian Peninsula and west Rajasthan. dust concentration is expected to increase over north-west India for next three days.

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

12UTC Charts all of the days from day-1 to Day-4 show feeble trough over J & K. 12UTC Charts all of the days show Heat Low over Rajasthan and adjoining Pakistan and its extension over IG plains is prominent. The MSLP values are well below 994 hPa over a large area.

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-WB region. (ii)S-N extending from southern parts of TN to northern parts of Karnataka-Telangana region.

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

500hPa Jet core (>60kt) Weaker core winds at 12 UTC on all days over India.

3. Convergence at 850 hPa:

At 12UTC on all Days: Along the west coast prominently over Maharashtra. Over isolated locations over Odisha and adjoining Chattisgarh and Jharkhand on Day-2,3 and 4.

4. Low level Vorticity:-Positive Vorticity (>15 x 10⁻⁵/s):

Positive Vorticity (>15 x 10⁻⁵/s)

At 12UTC on Day-1-2: Isolated locations over Eastern UP, Bihar, Odisha, Chattisgarh and Jharkhand and Assam.

At 12UTC on Day2 to Day-4: Isolated locations of Bihar and adjoining UP and Jharkhand WB and Odisha

At 00UTC on all days: Strong structure over land extending N-S from western part of India

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

At 12UTC: Day 0-2: Along west coast, some parts of Bihar, WB and large parts of NE India

Day-3 and Day-4 High magnitude over east UP, Bihar, Jharkhand, WB, Odisha, along west & east coast of India and southern parts of NE states.

At 00UTC on Day-3-5: Large belt of high magnitude extending SW to NE from NI Karnataka-Telangana region to Chattisgarh Odisha region.

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

At 12UTC: Day 0: Along west coast of Karnataka and adjoining Kerala and TN. In Eastern India over WB, and Jharkhand with adjoining Odisha and Chattisgarh.

At 12UTC: Day 1-2: Along west coast of Karnataka and adjoining Kerala and TN. In Eastern India over WB, and Jharkhand with adjoining Odisha and Chattisgarh. Entire NE India.

Day-3 and Day-4 High magnitude over most parts of NE India.

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

At 12UTC : Day0: Coastal Maharashtra, WB and coastal Odisha, and large parts of NE India.

At 12UTC : Day1 Same as in Day-0 with enhanced magnitude over J & K region, eastern India.

At 12UTC :Day-2: J & K region, Odisha and Chattisgarh WB, Bihar and Jharkhand.

Day-3&4: Increased values over J & K widespread over eastern India covering parts of MP UP, parts of Bihar, WB.

8. Rainfall and thunder storm activity:

>4 cm/day in Day-3 over Assam and Meghalaya. In Day-4 & 5 enhanced rainfall activity over wider region

>2cm/day in Day-3 to 5 over J & K region.

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

Not Received

3.IOP ADVISORY FOR 24 and 48 Hrs:

Summary and Conclusions:

Presently, the trough from north Telangana to Konkan with an embedded upper air cyclonic circulation over north Telangana & neighbourhood and extends upto 0.9 km above mean sea level due to this Kerala and South Interior Karnataka may experience the thunderstorms with gusty winds on Day-1. In association with the cyclonic circulation which lies over north Odisha & adjoining Jharkhand & Chhattisgarh and extends upto 1.5 km above mean sea level and the trough runs from this system to Coastal Karnataka across Andhra Pradesh at 1.5 km above mean sea level, thunder squall with hail are expected over Orissa region on Day-1 and Day-2.

Day 1 & Day 2:

24 hour Advisory for IOP:

Orissa
South East Jharkhand
Kerala and South Interior Karnataka

48 hour Advisory for IOP:

Orissa and GWB
Assam, Meghalaya and Nagaland, Manipur, Mizoram and Tripura

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

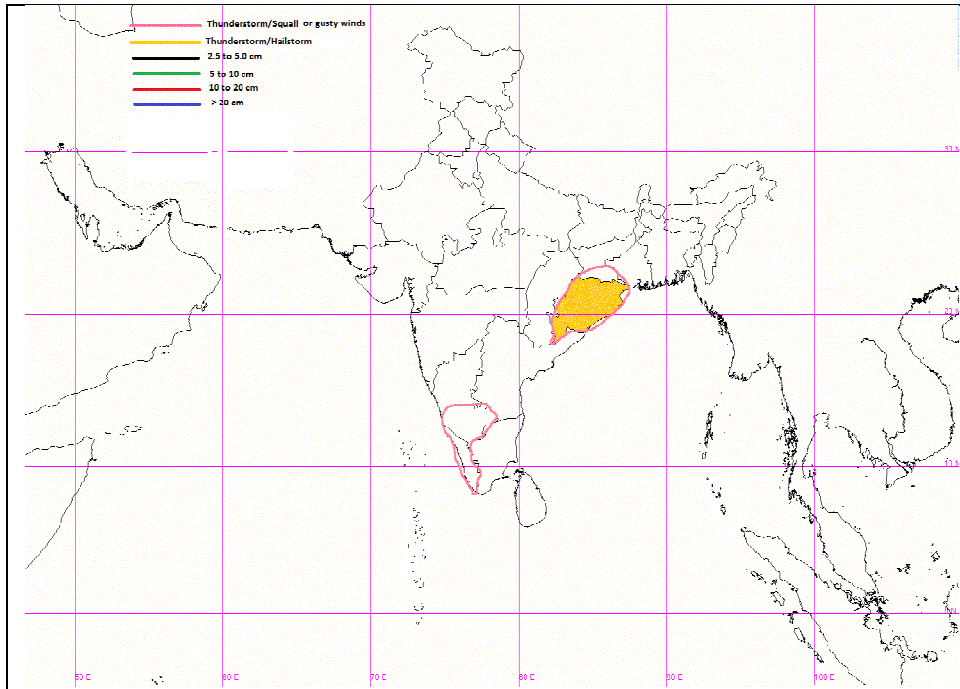
HEM:http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

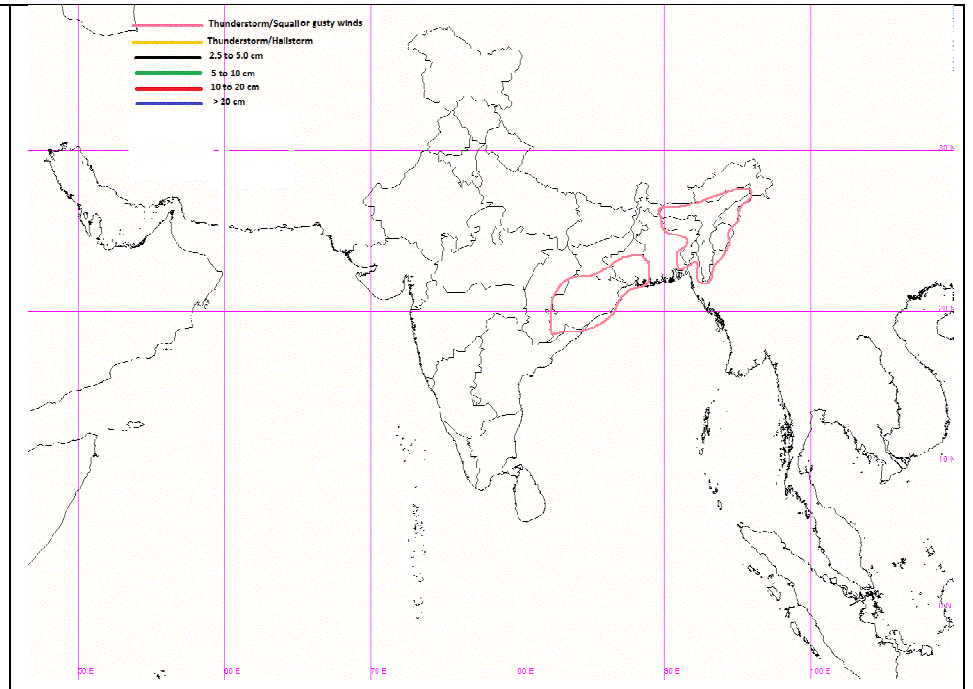
http://ddgmui.imd.gov.in/dwr_img/

SatellitesounderbasedT-Phigram

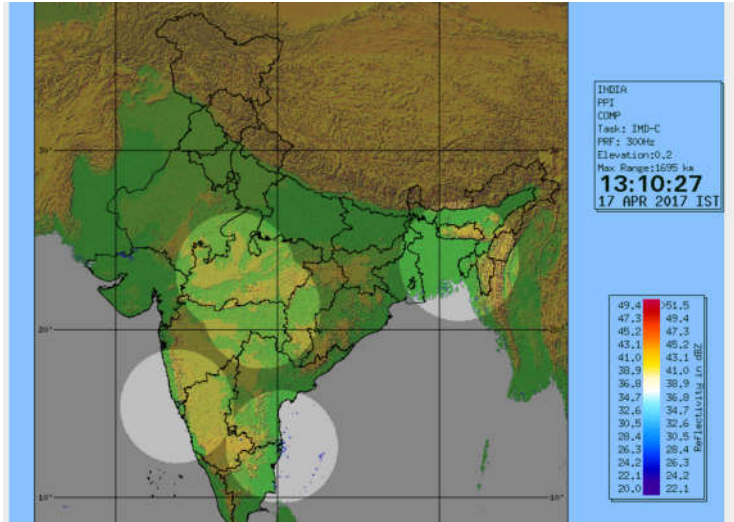
http://satellite.imd.gov.in/map_skm2.html



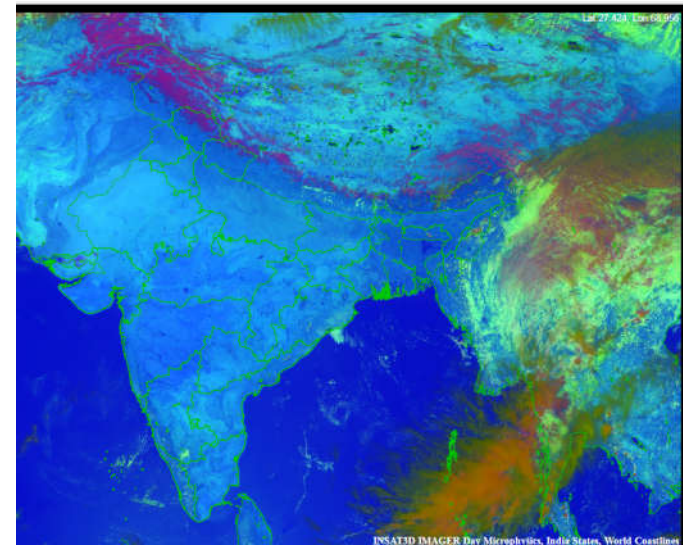
IOP Advisory for 24 hours



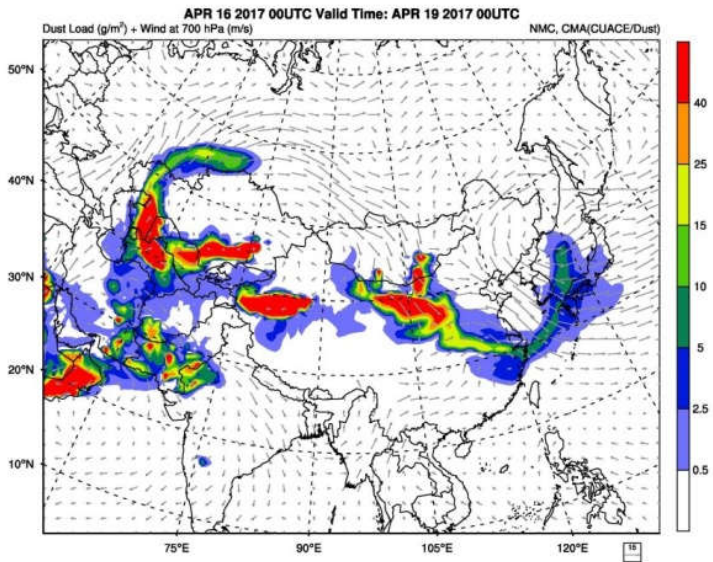
IOP Advisory for 48 hours



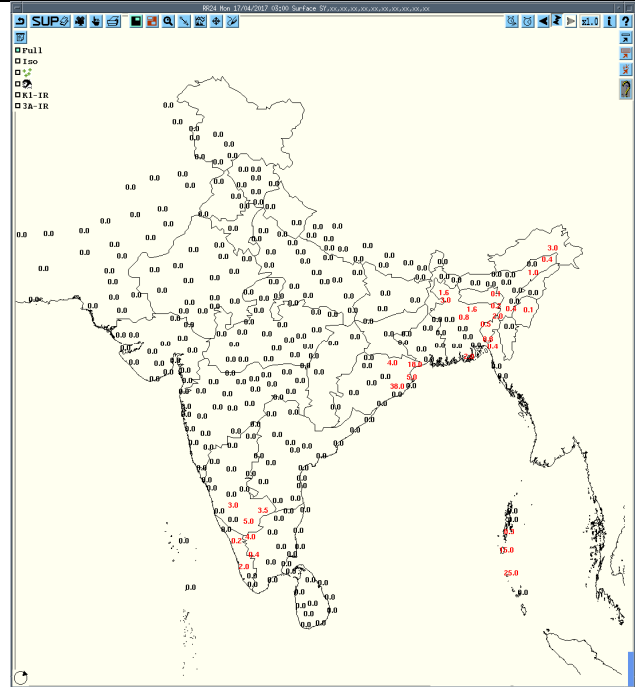
DWR Composite at 1310 hrs IST of today



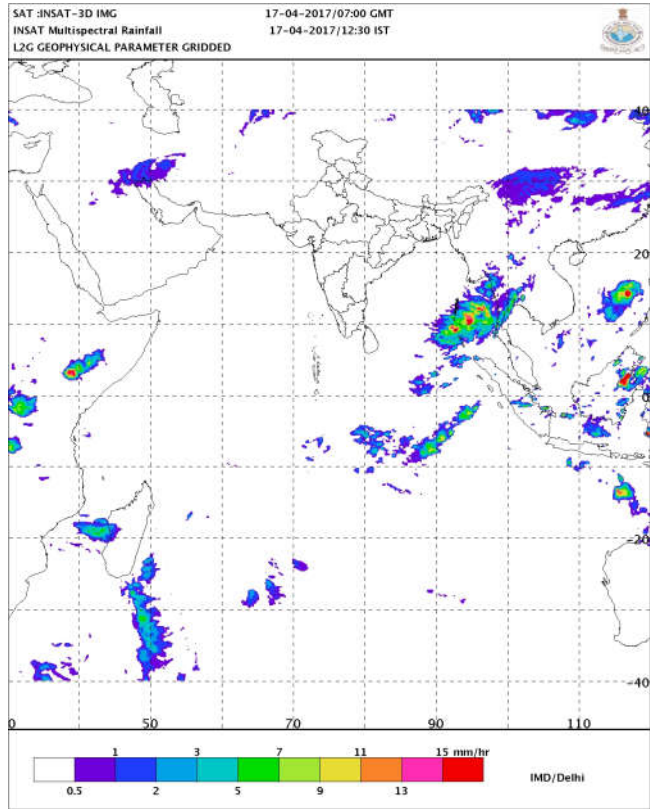
RAPID RGB Image of INSAT 3D at 1230 hrs IST of today



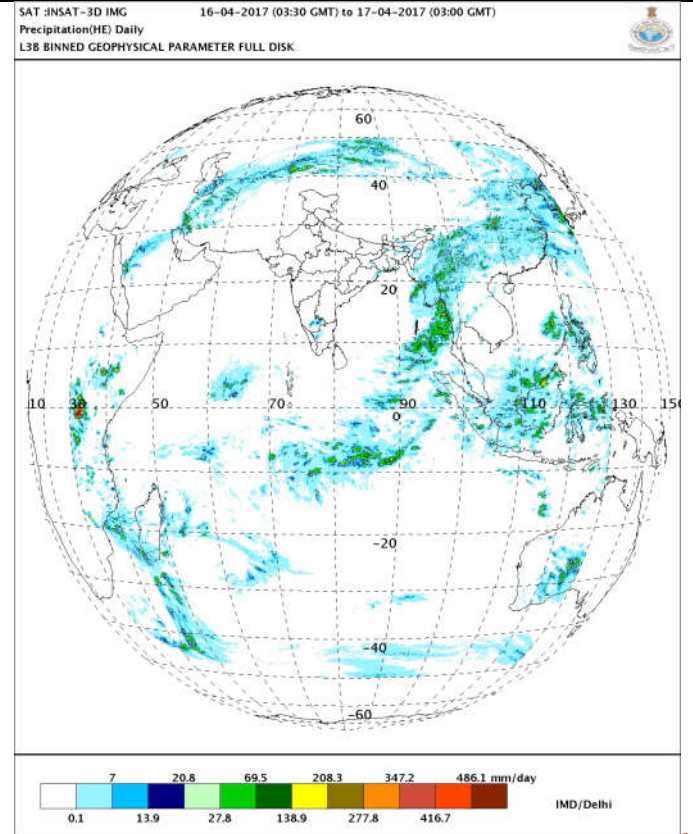
Forecast Dust Concentration for 00UTC of 19th April



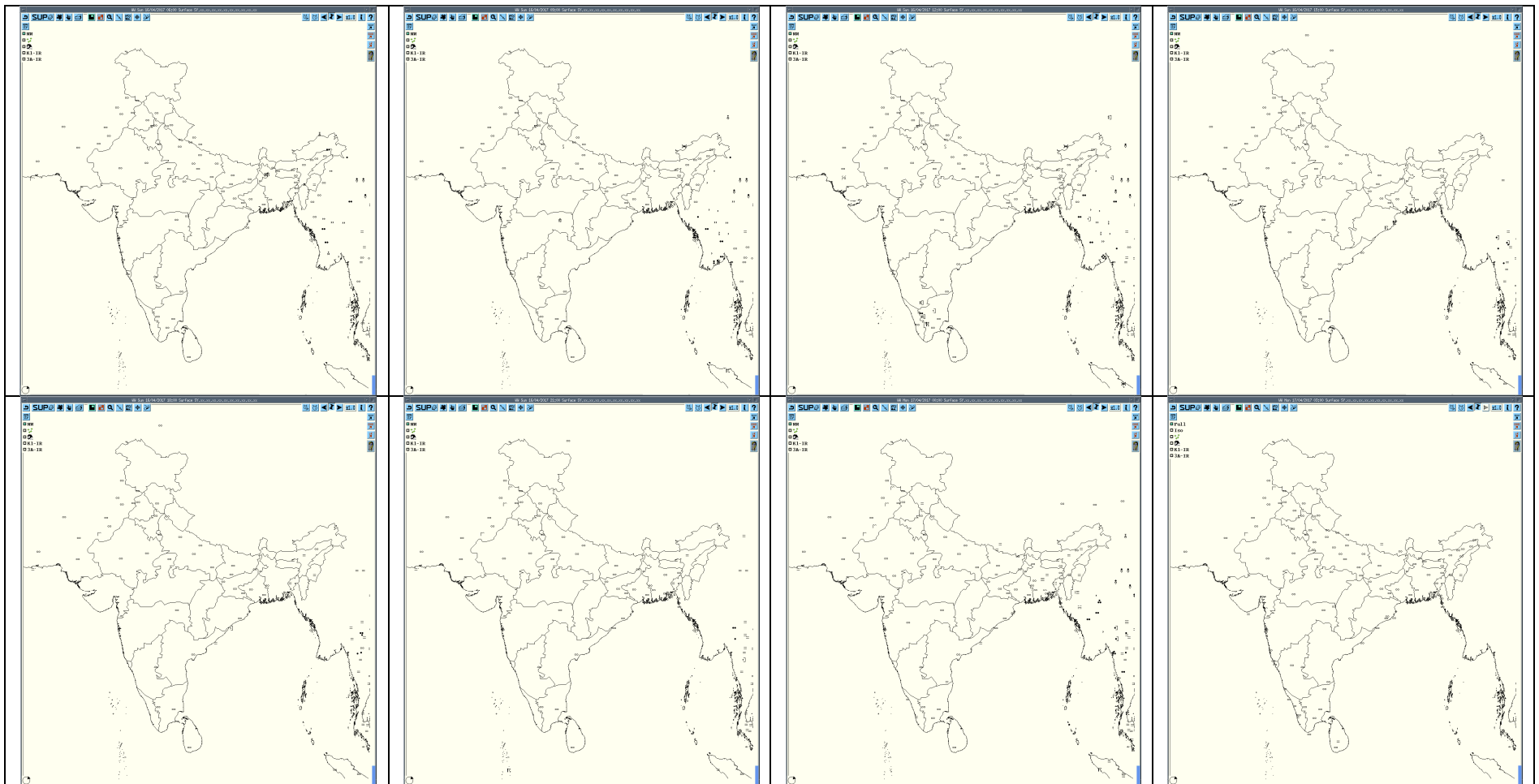
Accumulated 24 Hour rainfall (in red) recorded at 0300 UTC of today



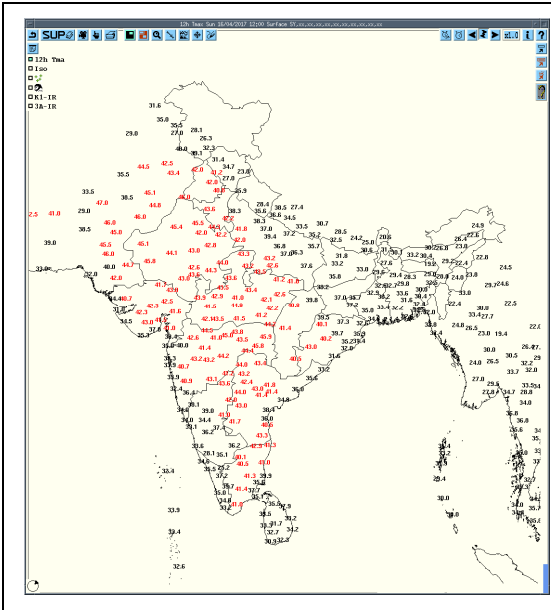
IMR Rainfall



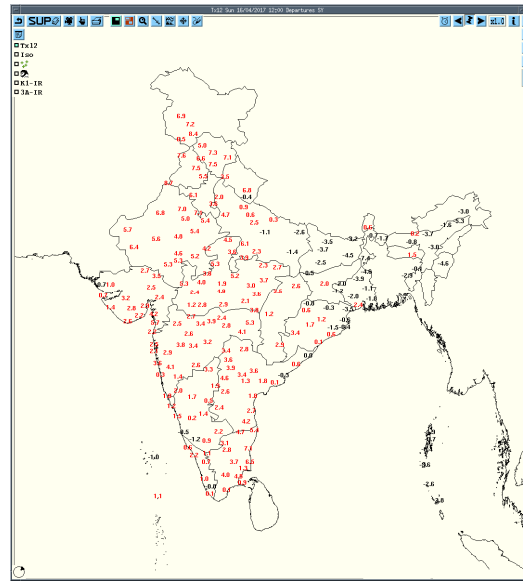
HEM Rainfall



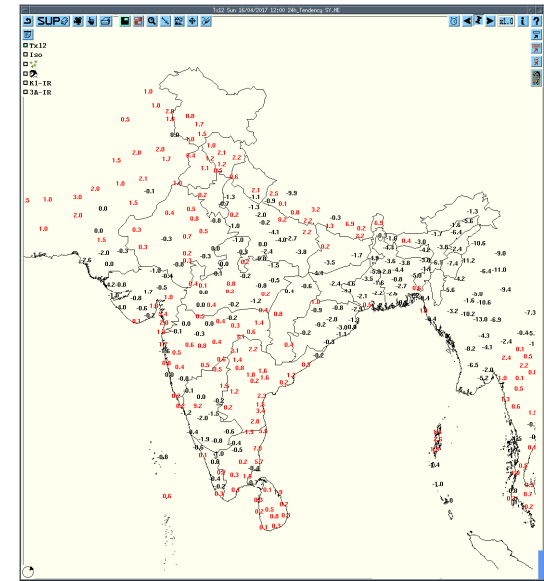
3 hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



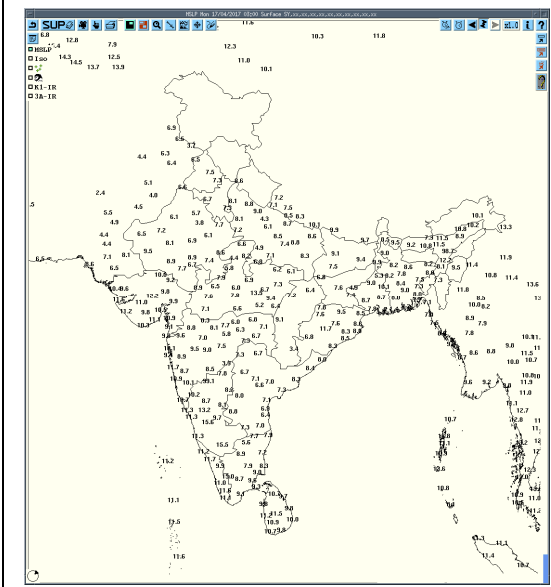
Tmax



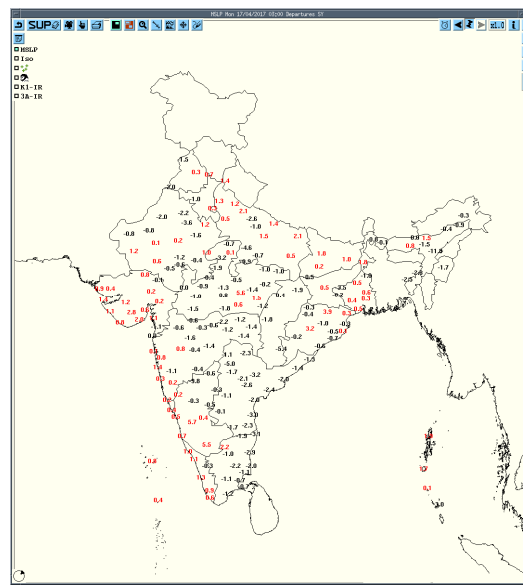
DepartureTmax



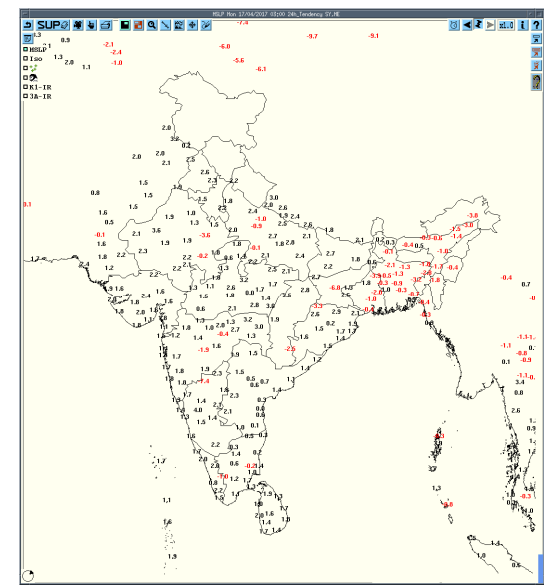
TendencyTmax



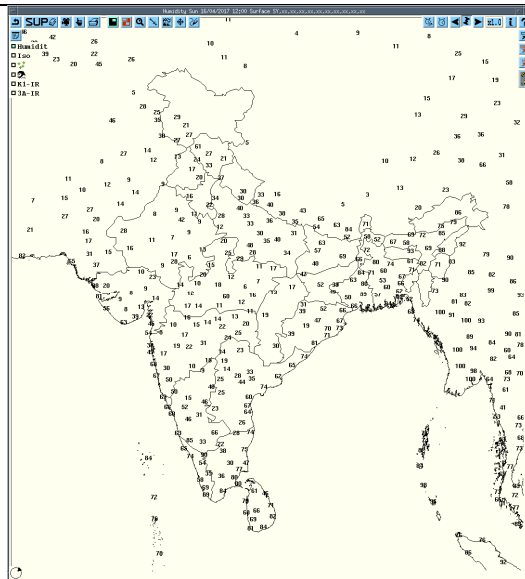
MSLP



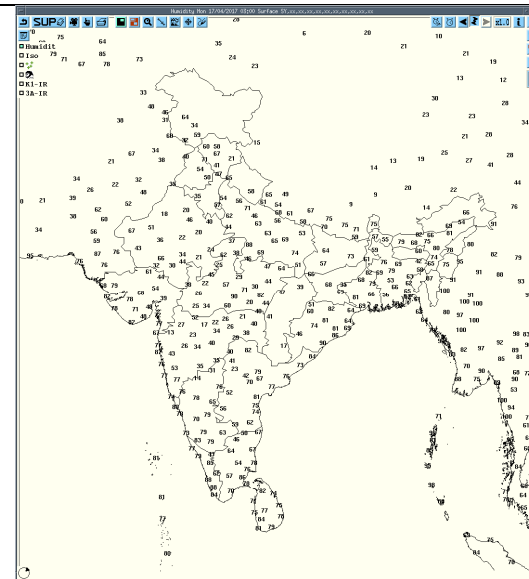
DepartureMSLP



TendencyMSLP



RH at 12UTCyesterday



RH at 03UTCtoday

Realized weather past 24 hours(Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
16-04-17	0600 UTC	Dinajpur	East India	West Bengal	Thunderstorm
16-04-17	0900 UTC	Nagpur	Central I ndia	Maharastra	Thunderstorm with Hail
16-04-17	1200 UTC	Coimbatore, Kodaikanal	South India	Tamilnadu	Thunderstorm
		Mandya	South India	Karnataka	Thunderstorm
16-04-17	1500 UTC	Bhubaneswar, Chandbali	East India	Orissa	Thunderstorm
16-04-17	1800 UTC	Nil	Nil	Nil	Nil
16-04-17	2100 UTC	Nil	Nil	Nil	Nil
17-04-17	0000 UTC	Nil	Nil	Nil	Nil
17-04-17	0300 UTC	Nil	Nil	Nil	Nil

Past24hoursDWRReport:

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
PATNA	17/04/2017	160300 - 170300	NIL	NIL	N/A	N/A	N/A
PARADEEP	16/04/17	0300-1800 UTC	Multiple cells seen to develop around 0900 UTC having maximum reflectivity of 62 Dbz and heights exceeding 14 kms. Cells originating as single cells and transforming to multiple cells in later stages.	Position: 300-355 degrees in the range of 80-200 kms.	The cells are seen have large coverage.	TS with Rain. Lightening also expected.	Sambalpur, Deogarh, Angul, Sudergarh, Keonjhar, Jajpur, Cuttack, Khorda, Puri, Jagatsinghpur,

							Kendrapada, Baleshwar and Bhadrak.
MC Lucknow	17/04/2017	160300 UTC TO 170300UTC	NIL	NIL	NIL	NIL	NIL
DWR HYDERABAD	16/17.04.2017. (0300 utc to 0300utc)	0932 – 1442 UTC	Isolated cells with an average height of 6.0 Km with a max reflectivity of 49.5 dBZ	SSE (Between 147 and 197 Kms) moving in Southerly Direction at a speed of 7.2 Kmph.	Cells started forming at 0932 UTC at SSE (197 Kms) from radar, matured a bit with max reflectivity between 1122 to 1142 UTC and dissipated at 1212 UTC.	Not Known	Not Known
PATIALA	17/04/2017	16 April 0302 to 17 April 0252 UTC	NIL	NIL	NIL	NIL	NIL
Machilipatnam	03Z of 16/04/17 to 03Z of 17/04/17	1001 to 1211 UTC	Isolated cell with average height of 8.7km with maximum reflectivity of 51.5 dBZ	W(228KM) , moving SW ly direction average speed of 8.57kmph	Cells started forming at 1001UTC at W(228km) from radar. Maximum reflectivity during 1041 to 1131 and died down at 1211 UTC	Possibility of Thunder storm and rain with light winds.	Prakasam (district) North of Giddalur
	03Z of 16/04/17 to 03Z of 17/04/17	1001 to 1231 UTC	Isolated cell with average height of 9.0km with maximum reflectivity of 50.5 dBZ	WSW(207KM) moving SW ly direction average speed of 12kmph	Cells started forming at 1001UTC at WSW(207km) from radar. Maximum reflectivity during 1031 to 1131 and died down at 1231 UTC	Possibility of Thunder storm and rain with light winds.	Prakasam (district) Between Giddalur and Kanigiri (79.195Lon/15.351Lat)
	03Z of 16/04/17 to 03Z of 17/04/17	1111 to 1351 UTC	Isolated cell with average height of 9.0km with maximum reflectivity of 55.5 dBZ	SW(197KM) moving SW ly direction average speed of 18kmph	Cells started forming at 1111UTC at SW(197km) from radar. Maximum	Possibility of Thunder storm and rain with light winds.	Prakasam (district) near Kanigiri (79.476Lon/15.234Lat)










					reflectivity during 1121 to 1321 and died down at 1351 UTC		
Kolkata	16-04-2017	0311-0411 UTC	NIL	NIL	NO ECHO	NIL	NIL
		0421-0721 UTC	Small scattered different cells, one of them having maximum reflectivity of 56 dBz and maximum height of 8.33 km at 0532 UTC	Formation in E-ly (88.9 km) moving towards ESE-ly	Small scattered cells started forming at 0421 UTC in E at a distance of 88.9 km from Radar combined to a single cell. Not matured. Dissolved at 0721 UTC	TS/Rain	N/A
	0731-1421 UTC	<p>Single cell with maximum height of 10.93 Km at 0801 UTC and maximum reflectivity of 57.5 dBz at 0751 UTC</p> <p>Single cell with maximum height of 08.96 Km at 0901 UTC and maximum reflectivity of 55.5 dBz at 0841 UTC</p>	<p>SE (099.3 km) moving in SE-ly direction at a speed of 16.9 kmph.</p> <p>SE (074.4 km) moving in SSE-ly direction at a speed of 18.7 kmph.</p>	<p>Cells started forming at 0731 UTC at SE (099.3 Km) from radar. Matured, dissipated at 0841 UTC in SE at a distance of 114.9 km from Radar</p> <p>Cells started forming at 0801 UTC at SE (099.3 Km) from radar. Matured, dissipated at 0941 UTC in SSE at a distance of 087.6 km from</p>	<p>Thunderstorm /Rain</p> <p>Thunderstorm /Rain</p>	<p>N/A</p> <p>N/A</p>	

					Radar		
	16-04-2017	0731- 1421 UTC	Multicelled system with maximum height of 14.51 Km at 1051 UTC and maximum reflectivity of 65.5 dBz at 1111 UTC	Coming from WSW moving in SE-ly direction at a speed of 53.6 kmph.	Multicelled system started coming at 1011 UTC from WSW. Matured, dissipated at 1421 UTC in SW at a distance of 214 km from Radar	Thunderstorm Hail/Rain	N/A
		1421 – 2351 UTC	NIL	NIL	NO ECHO	NIL	NIL
	17-04-2017	0001 – 0301 UTC	NIL	NIL	NO ECHO	NIL	NIL
DWR AGARTALA	17-04-17	160300 - 160610	Multiple cells with Maximum Height 12km and maximum reflectivity 34 dBZ (at 0350 UTC over Tripura)	Cells continuously formed one after another 300 KM NW of DWR Agartala since 1750 UTC of 15.04.17 moving SE-wards at around 30 kmph	Cells dissipated at 0610 UTC of 16.04.17 over Mizoram and adjoining Bangladesh	N/A	N/A
DWRVSK	16/04/17	0300 UTC-0600 UTC	NIL	NIL		-	
DWRVSK	16/04/17	0600 UTC-0900 UTC	NIL	NIL	-	--	
DWRVSK	16/04/17	0900 UTC-1200 UTC	A Cell at NE of max reflectivity 45dbz with height 11kms	Formed at 10.01 UTC and moving southerly.	Cell is formed at 10.01 UTC with 35 dbz and intensified to 45 dbz and dies during 10.01UTC 1151 UTC.	-	
DWRVSK	16/04/17	1200 UTC-1500 UTC	A cell NE ly with max reflectivity 41 dbz and height is 4kms at 164 kms from radar.	Formed at 13.51 UTC and moving southerly.	Not an effective cell	-	
DWRVSK	16/04/17	1500 UTC-1800 UTC	A cell in the NE with max reflectivity 41dbz and height 4kms	Formed in the NE and moving southerly	Dissipated during the period 15.01UTC AND 16.01UTC.	-	

DWR VSK	16/04/17	1800 UTC-0000 UTC/17-04-17	NIL	NIL	NIL	-	!
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∞	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