



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 Tamilnadu 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 0300UTC imagery of INSAT 3D):

Convective Activity and cloud description:

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Southwest Punjab adjoining west central Haryana, Northeast Uttar Pradesh, West Bihar, Chhattisgarh, Odisha, North Gangetic West Bengal, Meghalaya, Arunachal Pradesh, East Telangana, Andhra Pradesh, North Kerala, Tamilnadu, and Nicobar Islands.

Scattered low/medium clouds were seen over J & K, Northwest Punjab, South Uttar Pradesh, North Rajasthan, Madhya Pradesh, Maharashtra and rest parts of the region.

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:

No significant convection was seen in Radar Composite of 1310hrs IST and in RAPID RGB Satellite imagery of 1230hrs 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,

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 Utrakhand 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, Utrakhand, Punjab, Haryana

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

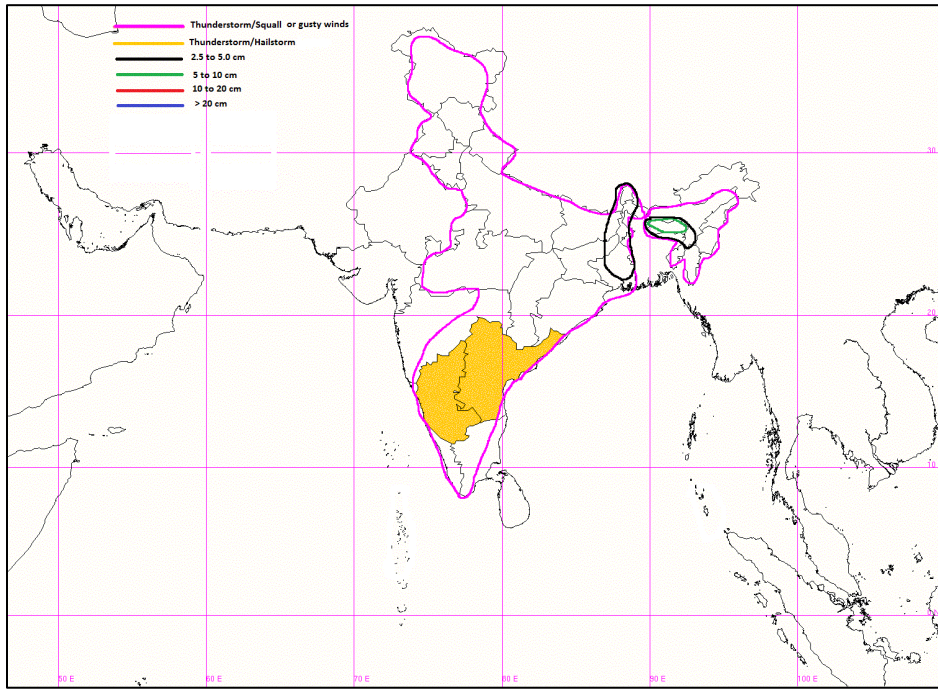
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

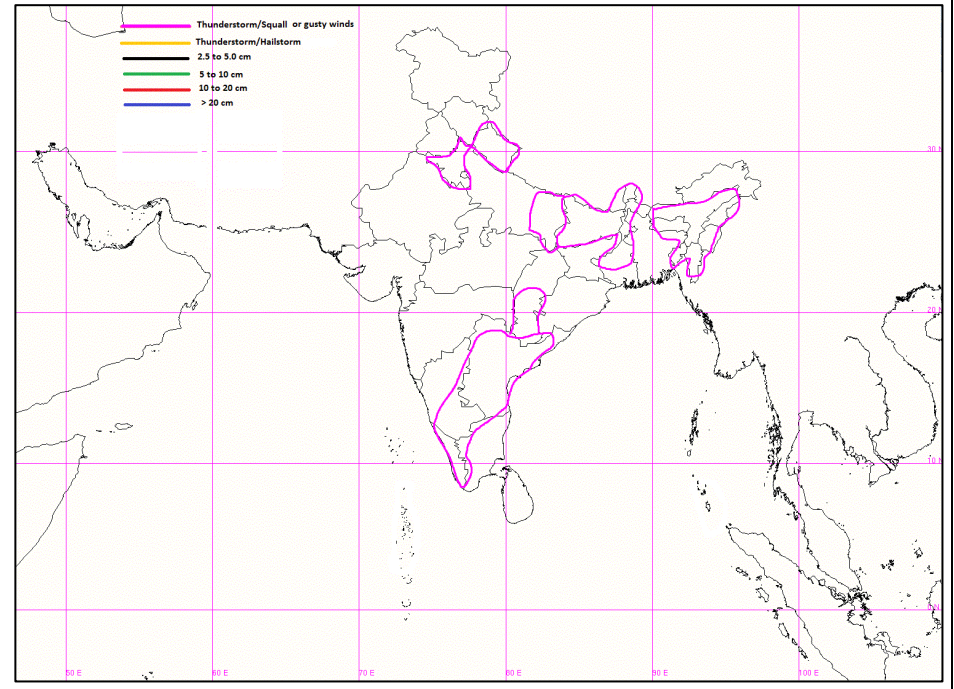
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T- Phigram

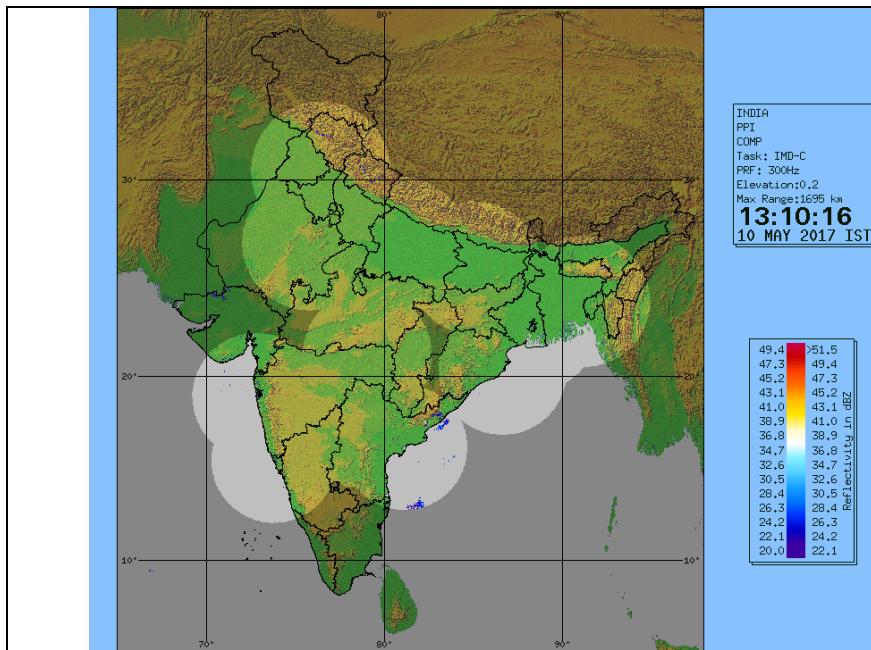
http://satellite.imd.gov.in/map_skm2.html



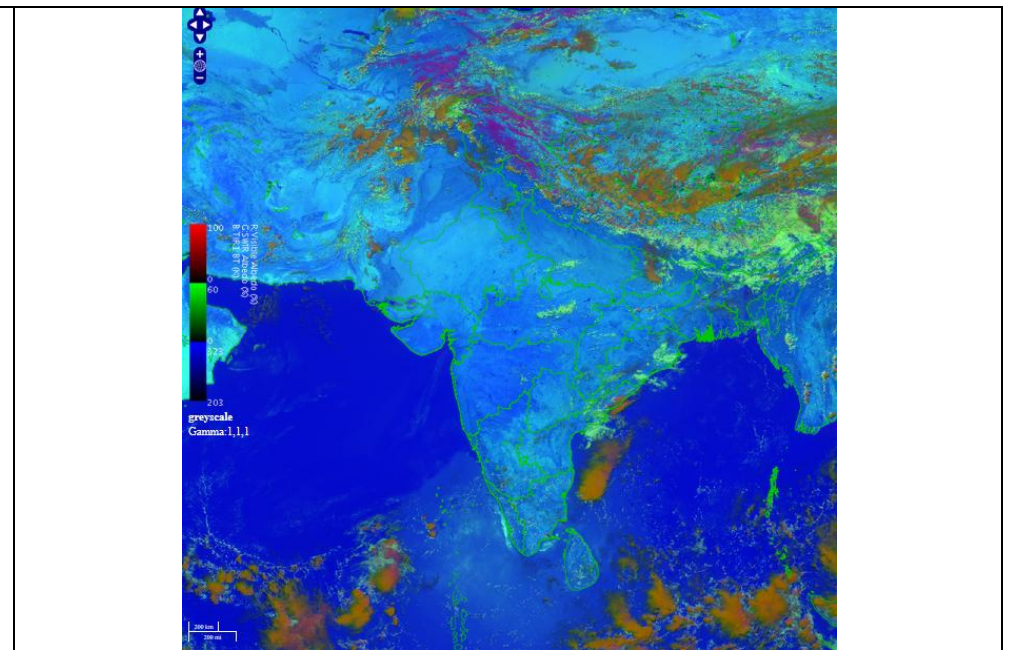
IOP Advisory for 24 hours



IOP Advisory for 48 hours

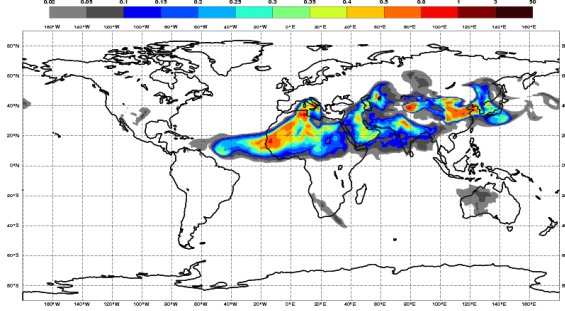


DWR Composite at 1310hrs IST of today

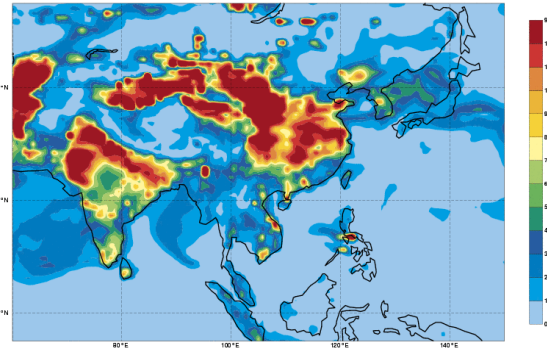


RAPID RGB Image of INSAT 3D at 1230 hrs IST of today

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

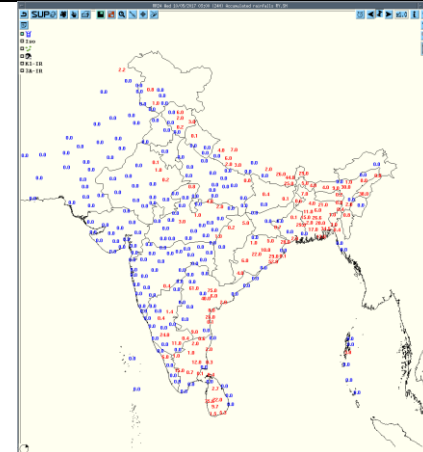


Tuesday 09 May 2017 00UTC CAMS Forecast (+120 VT: Sunday 14 May 2017 00UTC
Surface PM10 [$\mu\text{g}/\text{m}^3$]

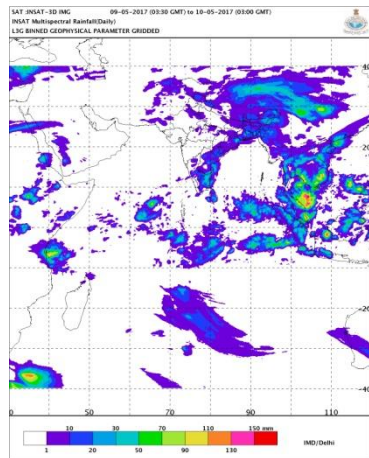


Forecast Dust Concentration for 00UTC of 14th May

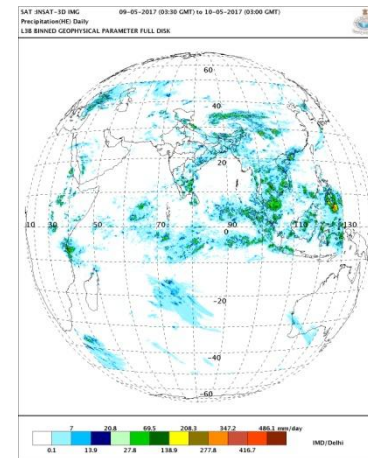
PM10 Forecast for 00UTC of 14th May



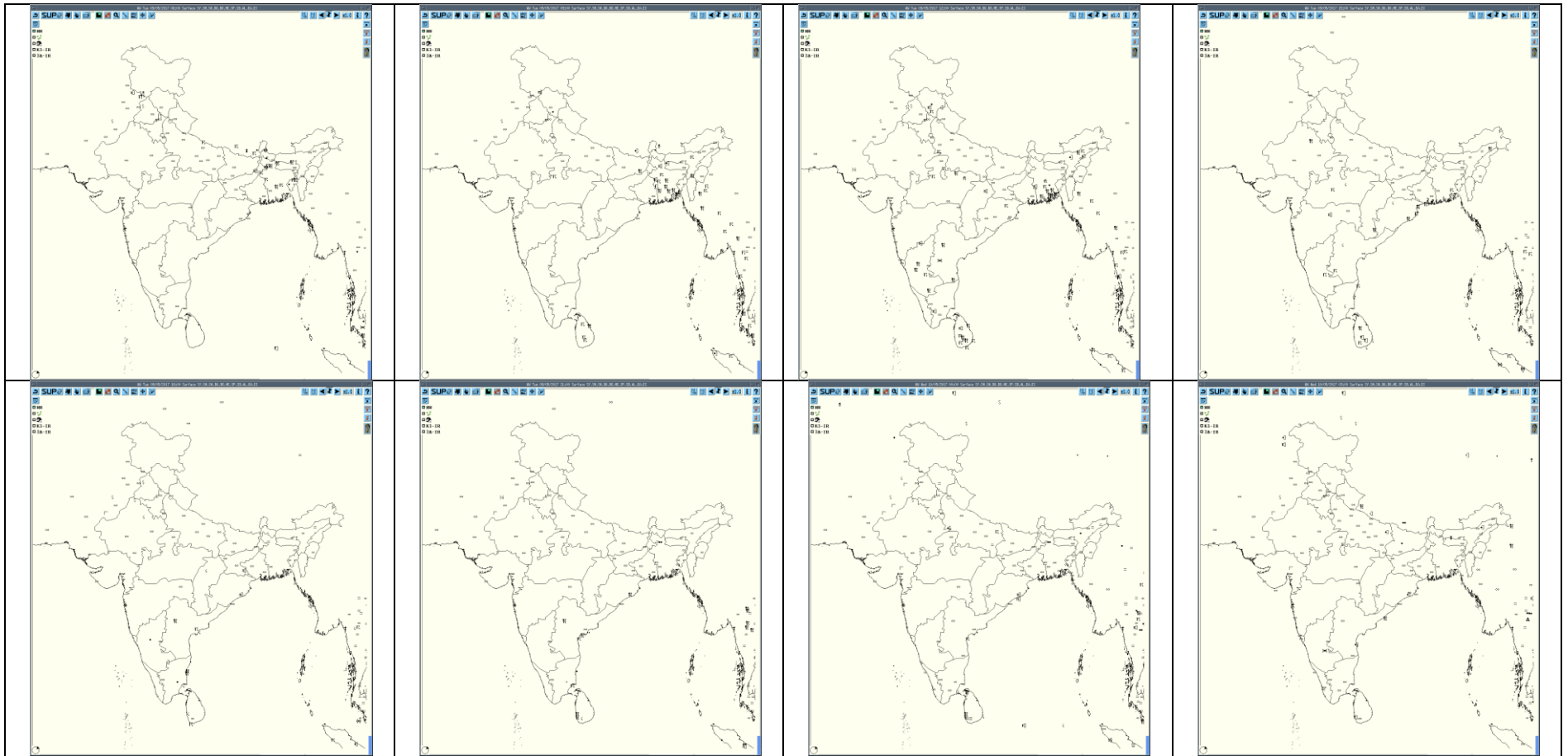
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



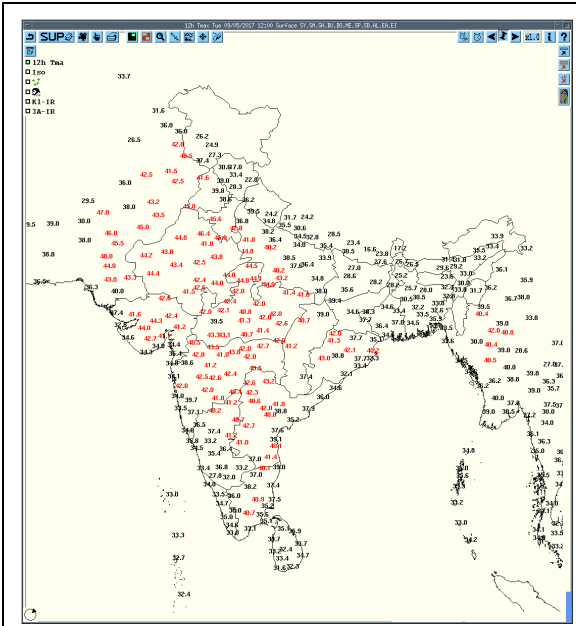
IMR Rainfall



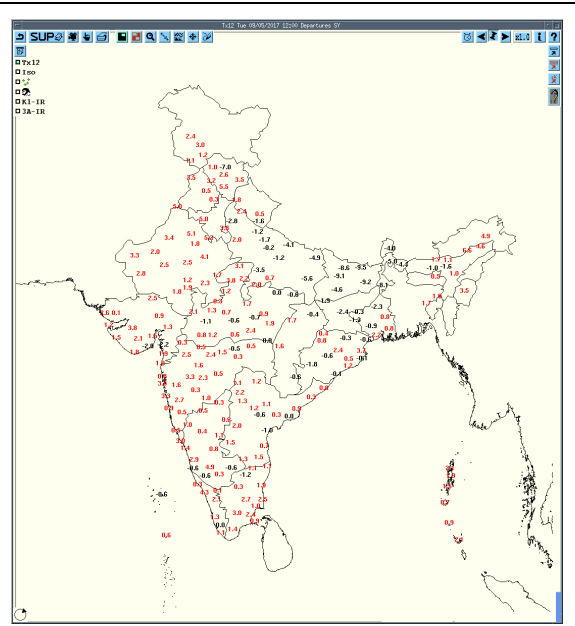
HEM Rainfall



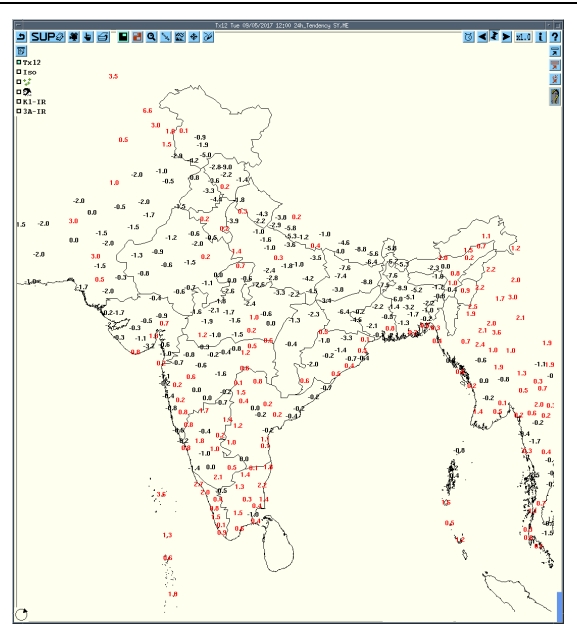
3hourly Past weather at 06, 09,12,15,18, 21UTC of yesterday and 00 & 03hrs UTC of today



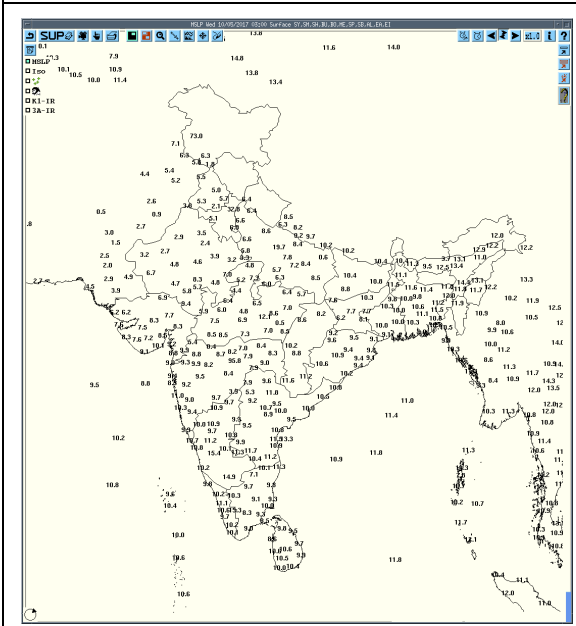
Tmax



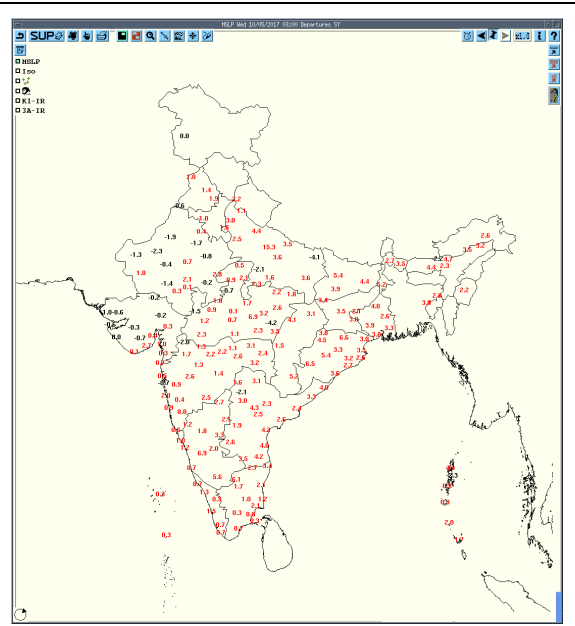
Departure Tmax



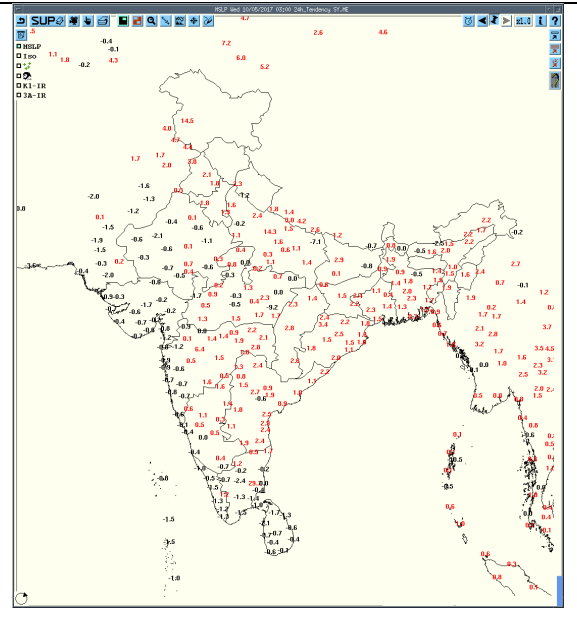
Tendency Tmax



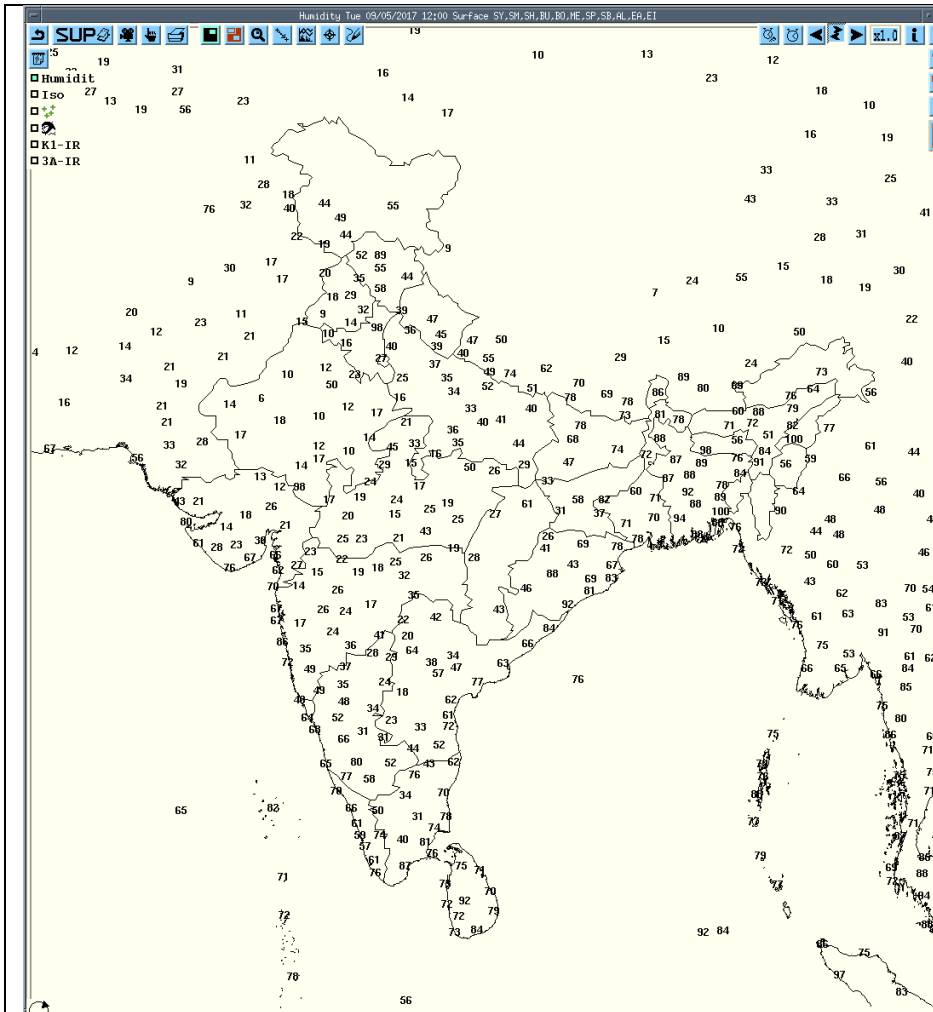
MSLP



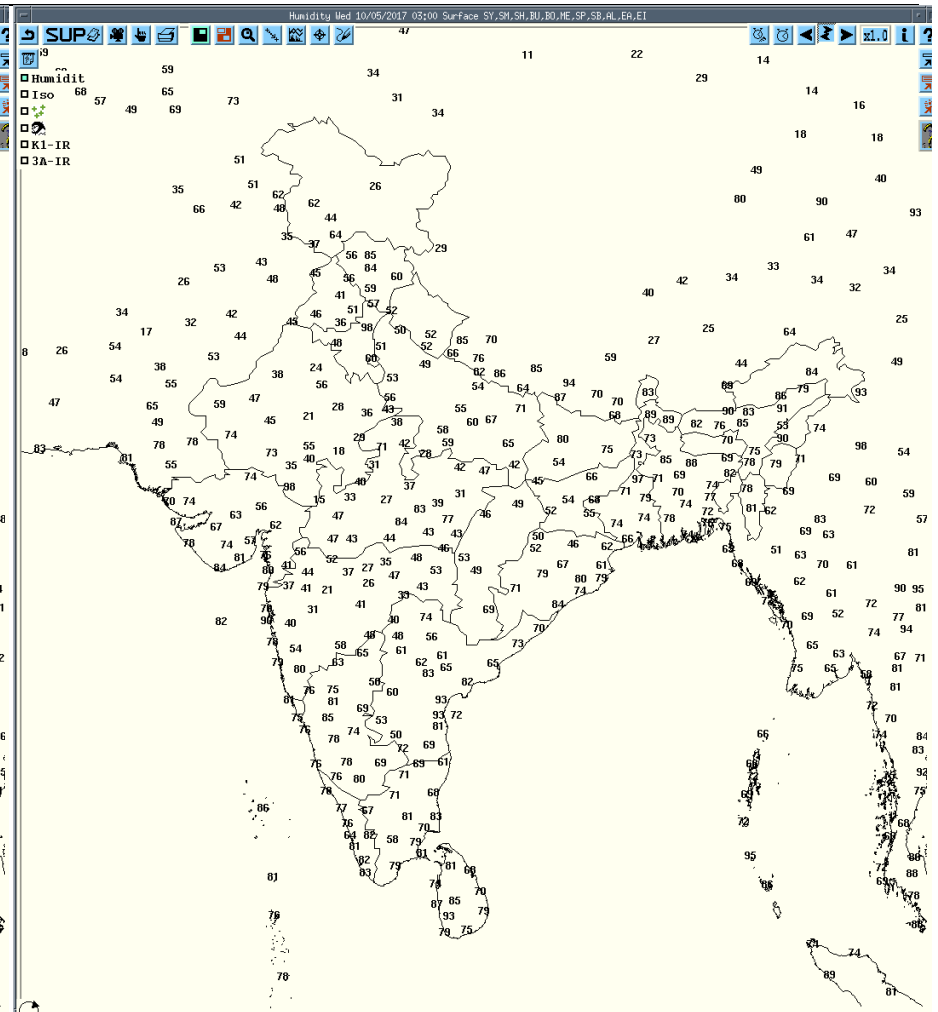
Departure MSLP



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
		Adiramapatinam	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

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.

Radars Station name	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
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 starts 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

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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