



Sunday 22 April 2018

MORNING

Time of Issue: 0745 hours IST

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features

- ◆ The ongoing fairly widespread rainfall activity with isolated thunder-squalls are likely to continue over northeast India and Sub-Himalayan West Bengal & Sikkim during next 24 hours.
- ◆ Isolated thunderstorms/lightning and occasional thunder-squalls are very likely over southern parts of peninsular India and along the east-coast during the forecast period.
- ◆ Day maximum temperatures are likely to remain above 40°C over parts of northwest and central India and parts of Telangana and Interior Andhra Pradesh. Heat wave conditions at one or two pocket are likely to continue over eastern parts of Vidarbha. They are likely to develop over northern parts of Telangana, Central parts of Chhattisgarh and also over Western Himalayan region after 24 hours.
- ◆ Kindly visit <http://www.incois.gov.in/portal/osf/osf.jsp> for Sea conditions in association with swell wave warning.
- ◆ **Heavy rain** occurred at isolated places over Tripura and **hailstorm** at isolated places over Gangetic West Bengal.
- ◆ **Thunderstorm** observed at a few places over Gangetic West Bengal, Kerala, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, and at isolated places over Sub- Himalayan West Bengal & Sikkim and South Interior Karnataka from 0830 hours IST of yesterday to 0530 hours IST of today.

Main Weather Observations

- ◆ **Rainfall observed (from 0830 to 1730 hours IST of yesterday):** Rain/thundershowers at many places over Nagaland, Manipur, Mizoram & Tripura and Assam & Meghalaya; at a few places over Arunachal Pradesh and at isolated places over West Bengal & Sikkim, Coastal Andhra Pradesh, South Interior Karnataka, Tamilnadu and Kerala.
- Amount of Rainfall** recorded at 1730 hours IST of yesterday (1 cm or more) were: Agartala-7; Haflong-4; Shanti Niketan-2; Kottayam, Rentachintala, Deomali, Imphal and Guwahati-1 each.
- ◆ **Maximum temperature departures as on 21-04-2018:** Maximum temperatures were **above normal (1.6°C to 3.0°C)** at most places over Rayalaseema; at many places over Konkan & Goa, Madhya Maharashtra, Vidarbha, Jharkhand and Odisha; at a few places over Marathwada and at isolated places over Telangana, Coastal & South Interior Karnataka, Kerala and Tamilnadu & Puducherry. They were **markedly below normal (-5.1°C or Less)** at many places over Jammu & Kashmir and Nagaland, Manipur, Mizoram & Tripura; **appreciably below normal (-3.1°C to -5.0)** at most places over West Rajasthan; at many places over Punjab; at a few places over Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim; **below normal (-1.6°C to -3.0°C)** at most places over Himachal Pradesh, Haryana, Chandigarh & Delhi, West Uttar Pradesh, and East Rajasthan; at a few places over Gujarat Region; at isolated places over Saurashtra & Kutch and Madhya Pradesh and near normal over rest of the country. The **highest maximum temperature of 44.2°C** was recorded at Chandrapur (**Vidarbha**) over the plains of the country.
- ◆ **Minimum temperature departures as on 21-04-2018:** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at many places over Jharkhand; at isolated places over Saurashtra & Kutch; **above normal (1.6°C to 3.0°C)** at many places over Gangetic West Bengal, Bihar and Coastal Andhra Pradesh; at a few places over East Uttar Pradesh, East Madhya Pradesh, Vidarbha, Gujarat Region and Sub-Himalayan West Bengal & Sikkim; at isolated places over West Madhya Pradesh, Madhya Maharashtra, Tamilnadu & Puducherry. They were **appreciably below normal (-3.1°C to -5.0°C)** at most places over Jammu & Kashmir and Punjab; **below normal (-1.6°C to -3.0°C)** at many places over Himachal Pradesh and West Rajasthan and near normal over rest parts of the country.

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Meteorological Analysis (Based on 0530 hours IST)

- ◆ The Western Disturbance as an upper air cyclonic circulation over Jammu & Kashmir and neighbourhood at 3.1 km above mean sea level persists. The trough aloft in mid and upper tropospheric levels with its axis at 5.8 Km above mean sea level now runs roughly along longitude 77°E to the north of latitude 32°N.
- ◆ A fresh Western Disturbance is very likely to affect Western Himalayan region from 25th April.
- ◆ The cyclonic circulation extending upto 1.5 km above mean sea level over West Uttar Pradesh and adjoining Haryana persists.
- ◆ The north-south trough from East Uttar Pradesh to eastern parts of Vidharbha across East Madhya Pradesh at 0.9 km above mean sea level persists.
- ◆ The cyclonic circulation over Sub-Himalayan West Bengal & neighbourhood extending upto 0.9 km above mean level persists.
- ◆ The east-west trough at 0.9 km above mean sea level from Jharkhand to east Assam across the above cyclonic circulation persists.
- ◆ The north-south wind discontinuity at 0.9 km above mean sea level from North Interior Karnataka to south Tamilnadu across South Interior Karnataka & Kerala persists.

Weather Forecast for next 5 days * upto 0830 hours IST of 27th April 2018

- ◆ **Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table.**
- ◆ Day maximum temperatures are likely to remain above 40°C over central and Eastern India during next 4 days.
- ◆ No significant change in maximum temperatures likely over major parts of the country during next 24 hours. They are very likely to rise by 2-3°C over parts of northwest India Gujarat State and Maharashtra thereafter.

Weather Outlook for subsequent 2 days from 27th to 29th April 2018

- ◆ A fresh western Disturbance is likely to cause scattered precipitation over Western Himalayan region.
- ◆ Fairly widespread to widespread rain/thundershowers likely over northeast India.
- ◆ Isolated to Scattered rain/thundershowers likely over south peninsular India and along east coast.
- ◆ Dry weather likely over remaining parts of the country.
- ◆ Maximum temperatures are likely to rise by 2-3°C over Northwest and Central India, thereby leading to development of heat wave conditions over parts of Rajasthan around 26th April.



Weather Warning during next 5 days *

22 April (Day 1): ♦ **Thunderstorm accompanied with squall and hail** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim.

♦ **Thunderstorm accompanied with squall** very likely at isolated places over Gangetic West Bengal.

♦ **Thunderstorm accompanied with gusty winds** very likely at isolated places over Bihar, Odisha, Assam & Meghalaya, Mizoram & Tripura, Telangana, Rayalaseema, Tamilnadu, South Interior Karnataka and Kerala.

♦ **Heat wave conditions** very likely in some parts of north Telangana, in one or two pockets over Chhattisgarh and Vidarbha.

♦ **Strong winds speed** occasionally reaching 40-50 kmph with moderate to rough sea conditions are very likely along and off West Bengal-Odisha coasts. Fishermen are advised not to venture into the Sea along & off these coasts.

♦ Based on the forecast generated by INCOIS, moderate to rough sea conditions are very likely to prevail along & off the West coast of Andaman & Nicobar Islands. Fishermen are advised to be cautious while venturing into the Sea along & off these areas.

23 April (Day 2): ♦ **Thunderstorm accompanied with gusty winds** very likely at isolated places over Coastal Andhra Pradesh and North Interior Karnataka.

♦ **Heat wave conditions** very likely to prevail in some parts of north Telangana, Jammu & Kashmir, Himachal Pradesh, Uttarakhand and in one or two pockets over Chhattisgarh; **heat wave conditions** very likely in some parts with severe heat wave in one or two pockets over Vidharbha.

♦ Based on the forecast generated by INCOIS, rough to very rough sea conditions are likely to prevail along & off the West coast of Andaman & Nicobar Islands. Fishermen are advised not to venture into the Sea along & off these areas.

24 April (Day 3) : ♦ **Thunderstorm accompanied with gusty winds** likely at isolated places over Telangana.

♦ **Heat wave conditions** are likely to prevail in some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Vidharbha and in one or two pockets over Chhattisgarh.

25 April (Day 4): ♦ **Heat wave conditions** likely in some parts of Vidharbha and one or two pockets over West Rajasthan.

26 April (Day 5): ♦ **Heat wave conditions** likely in some parts of Vidharbha and one or two pockets over West Rajasthan.



Table-1

5 Day Rainfall Forecast (MORNING)

22-April-2018

Met-Sub-Division	22-Apr Today	23Apr Mon	24Apr Tue	25Apr Wed	26Apr Thu
1. Andaman & Nicobar Islands	ISOL	ISOL	ISOL	DRY	DRY
2. Arunachal Pradesh	FWS	SCT	SCT	FWS	FWS
3. Assam & Meghalaya	FWS	SCT	ISOL	SCT	SCT
4. N. M. M. & T.	FWS	SCT	ISOL	SCT	SCT
5. S.H. West Bengal & Sikkim	FWS	SCT	SCT	FWS	FWS
6. Gangetic West Bengal	ISOL	ISOL	DRY	ISOL	ISOL
7. Odisha	ISOL	ISOL	ISOL	ISOL	ISOL
8. Jharkhand	ISOL	DRY	DRY	DRY	DRY
9. Bihar	ISOL	DRY	DRY	DRY	DRY
10. East Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
11. West Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
12. Uttarakhand	DRY	DRY	DRY	DRY	DRY
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	DRY
14. Punjab	DRY	DRY	DRY	DRY	DRY
15. Himachal Pradesh	DRY	DRY	DRY	ISOL	ISOL
16. Jammu & Kashmir	DRY	DRY	DRY	ISOL	ISOL
17. West Rajsthan	DRY	DRY	DRY	DRY	DRY
18. East Rajasthan	DRY	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
21. Gujarat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	DRY	DRY	DRY	DRY	DRY
25. Marathawada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	ISOL	DRY	DRY	DRY	DRY
27. Chhattisgarh	ISOL	ISOL	ISOL	ISOL	ISOL
28. Coastal Andhra Pradesh	ISOL	ISOL	ISOL	ISOL	ISOL
29. Telangana	ISOL	ISOL	ISOL	ISOL	ISOL
30. Rayalaseema	ISOL	ISOL	ISOL	ISOL	ISOL
31. Tamilnadu & Puducherry	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	ISOL	ISOL	ISOL	ISOL	ISOL
33. North Interior Karnataka	ISOL	ISOL	ISOL	ISOL	ISOL
34. South Interior Karnataka	SCT	SCT	ISOL	ISOL	ISOL
35. Kerala	ISOL	SCT	SCT	SCT	SCT
36. Lakshadweep	ISOL	ISOL	SCT	SCT	SCT

% Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

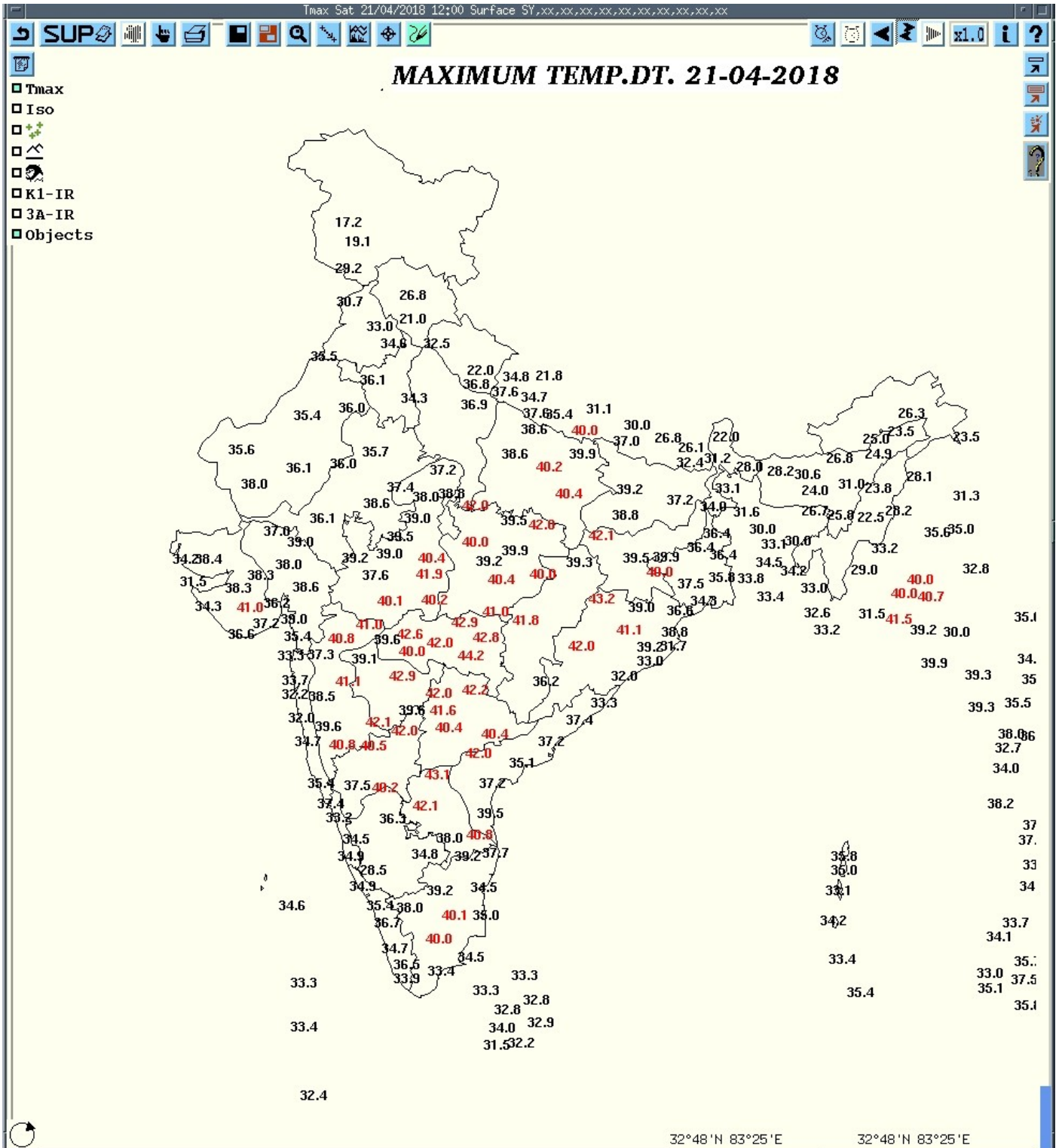
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Fig. 1: Maximum Temperature during past 24 hours



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Fig. 2: Minimum Temperature during past 24 hours

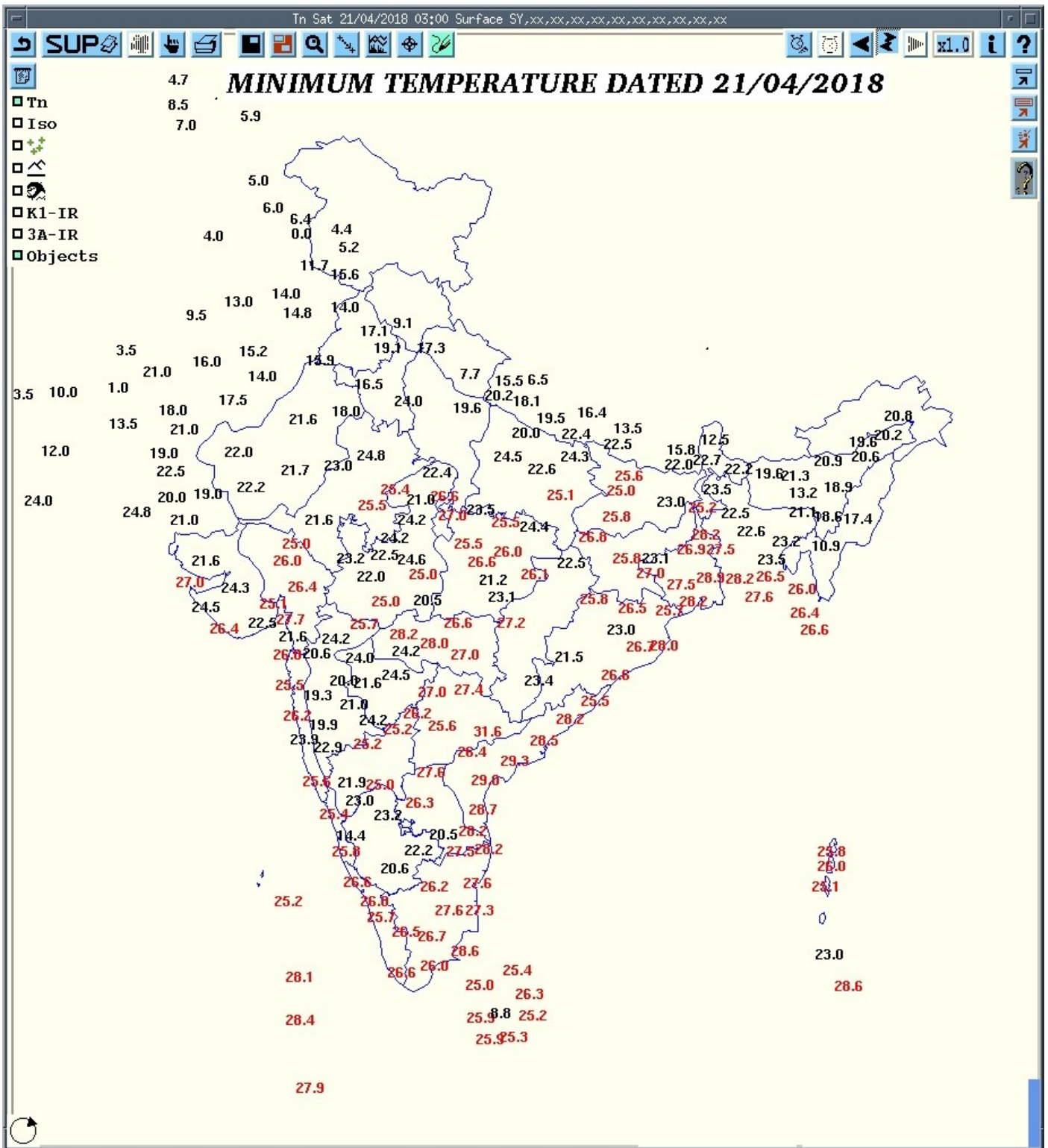
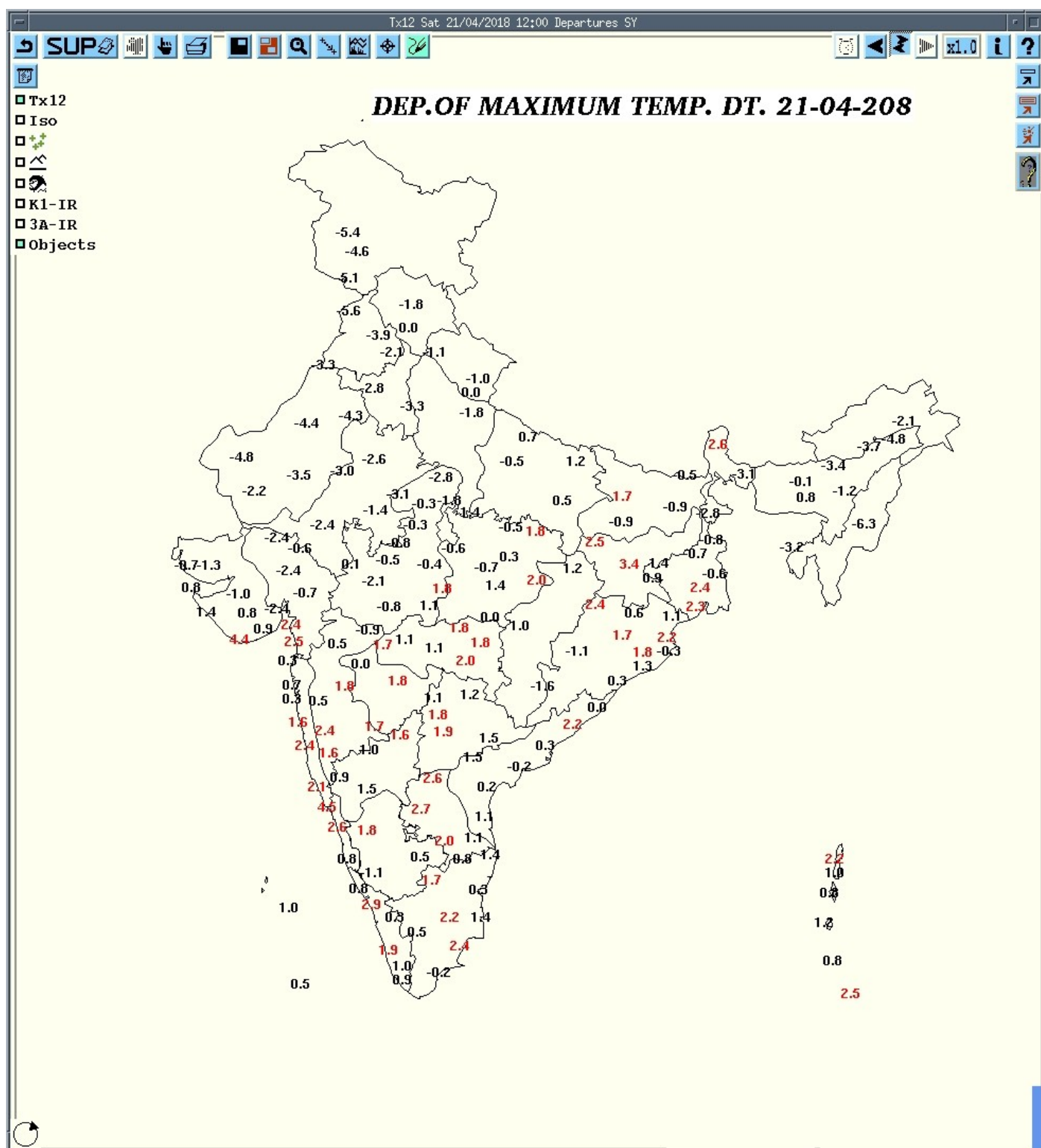


Fig. 3 : Departure from Normal of Maximum Temperatures

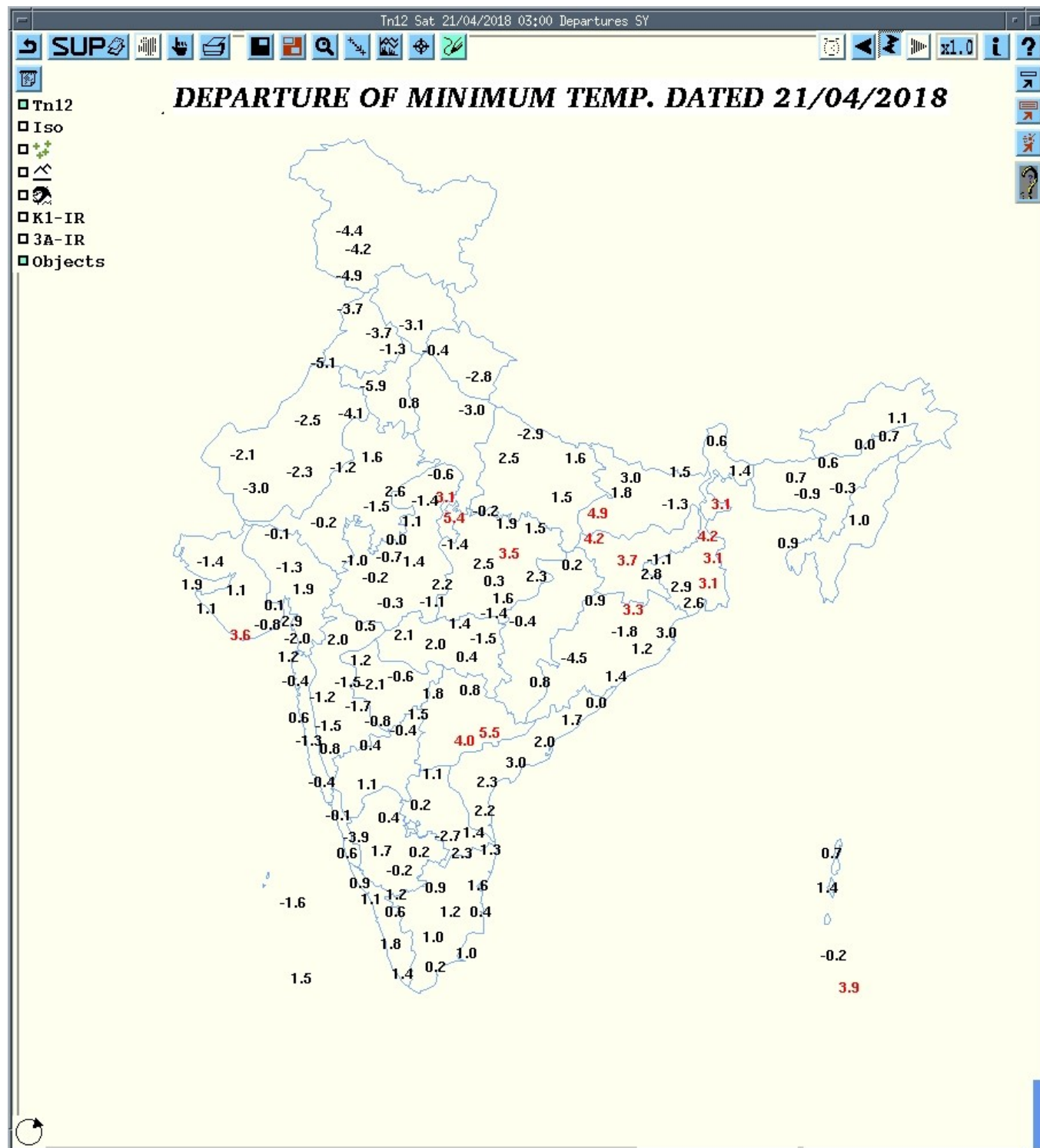


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Fig. 4 : Departure from Normal of Minimum Temperatures



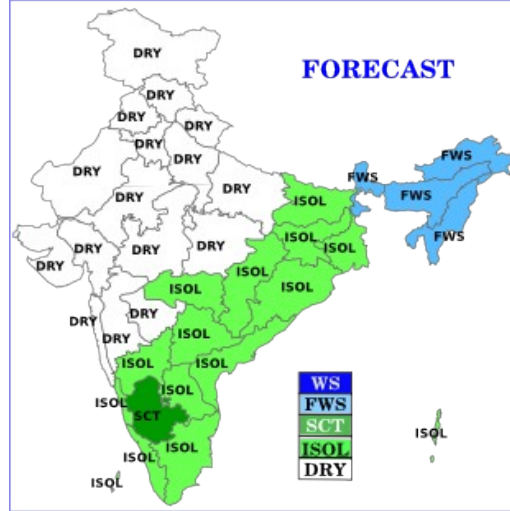
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Sunday 22 April 2018





22 April (Day 1): ♦ **Thunderstorm accompanied with squall and hail** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim.

♦ **Thunderstorm accompanied with squall** very likely at isolated places over Gangetic West Bengal.

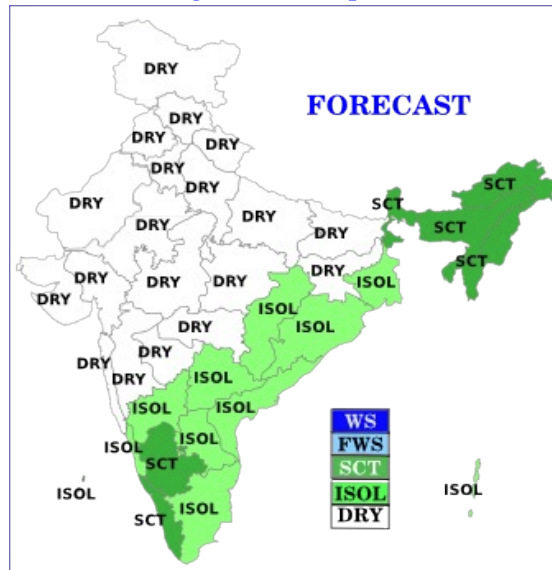
♦ **Thunderstorm accompanied with gusty winds very** likely at isolated places over Bihar, Odisha, Assam & Meghalaya, Mizoram & Tripura, Telangana, Rayalaseema, Tamilnadu, South Interior Karnataka and Kerala.

♦ **Heat wave conditions** very likely in some parts of north Telangana, in one or two pockets over Chhattisgarh and Vidarbha.

♦ **Strong winds speed** occasionally reaching 40-50 kmph with moderate to rough sea conditions are very likely along and off West Bengal-Odisha coasts. Fishermen are advised not to venture into the Sea along & off these coasts.

♦ Based on the forecast generated by INCOIS, moderate to rough sea conditions are very likely to prevail along & off the West coast of Andaman & Nicobar Islands. Fishermen are advised to be cautious while venturing into the Sea along & off these areas.

Monday 23 April 2018



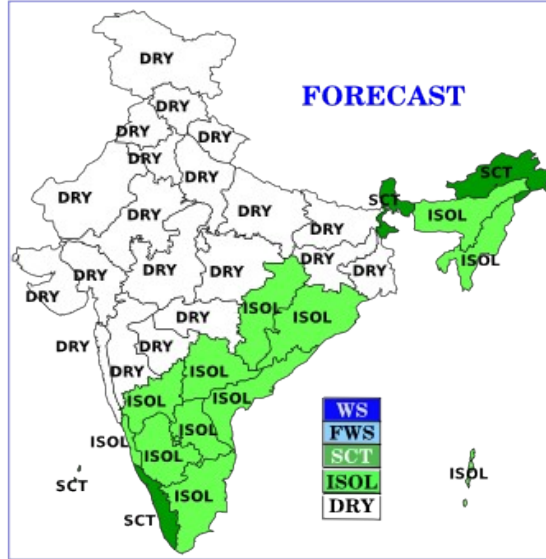
23 April (Day 2): ♦ Thunderstorm accompanied with gusty winds very likely at isolated places over Coastal Andhra Pradesh and North Interior Karnataka.

♦ **Heat wave conditions** very likely to prevail in some parts of north Telangana, Jammu & Kashmir, Himachal Pradesh, Uttarakhand and in one or two pockets over Chhattisgarh; **heat wave conditions** very likely in some parts with severe heat wave in one or two pockets over Vidharbha.

♦ Based on the forecast generated by INCOIS, rough to very rough sea conditions are likely to prevail along & off the West coast of Andaman & Nicobar Islands. Fishermen are advised not to venture into the Sea along & off these areas.



Tuesday 24 April 2018

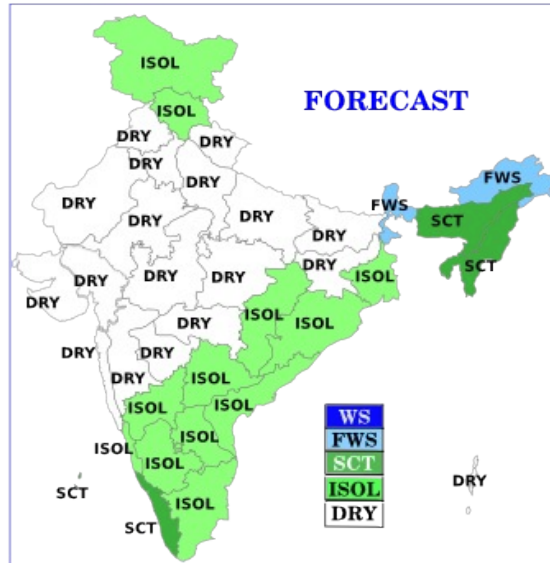


24 April (Day 3) : ♦ Thunderstorm accompanied with gusty winds likely at isolated places over Telangana.

♦ **Heat wave conditions** are likely to prevail in some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Vidharbha and in one or two pockets over Chhattisgarh.



Wednesday 25 April 2018



25 April (Day 4): ♦ Heat wave conditions likely in some parts of Vidharbha and one or two pockets over West Rajasthan.

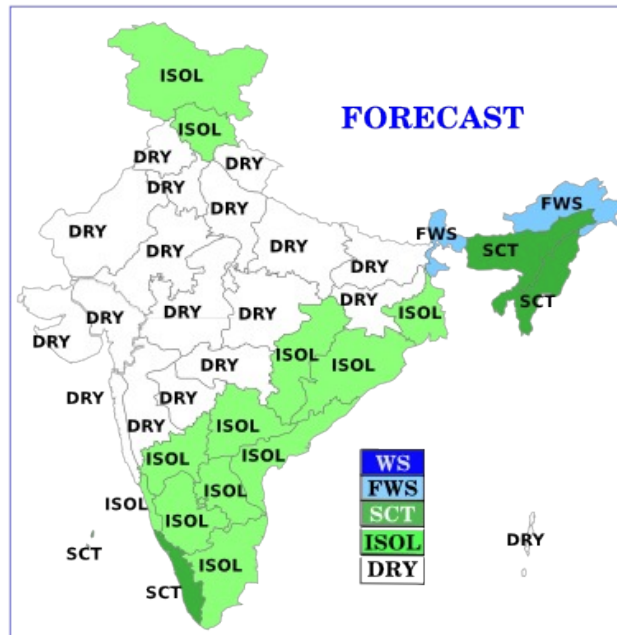
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Thursday 26 April 2018



26 April (Day 5): ♦ Heat wave conditions likely in some parts of Vidharbha and one or two pockets over West Rajasthan.

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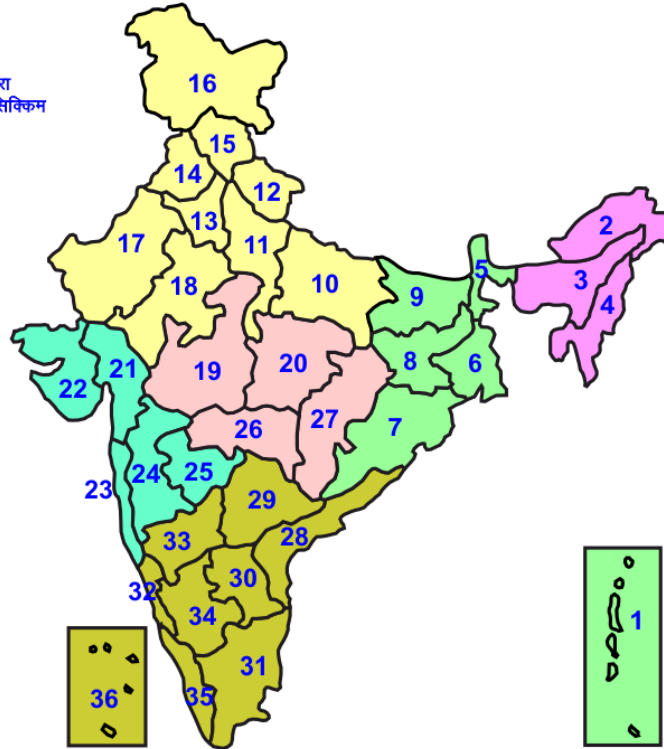
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LEGENDS

- 1 अंडमान और निकोबार द्वीप समुह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीजोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम गंगेय बंगाल
- 7 ओडिसा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा चंडीगढ़ एवं दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एवं कश्मीर
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात क्षेत्र
- 22 सौराष्ट्र एवं कच्छ
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठावाडा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 तटिय आंध्र प्रदेश
- 29 तेलंगाना
- 30 रायलसीमा
- 31 तमिलनाडु
- 32 तटिय कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी कर्नाटक
- 35 केरल
- 36 लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Orissa
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chd & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathwada
26. Vidharbha
27. Chhattisgarh
28. Coastal Andhra Pradesh
29. Telangana
30. Rayalaseema
31. Tamilnadu & Pondi
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala
36. Lakshadweep

SPATIAL DISTRIBUTION (% of Stations reporting)

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
Dry (No station reported Rainfall)			

WARNING

WARNING (TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



Heavy Rain



Heavy Snow



Thunderstorm



Dust Storm



Strong Winds



Visibility



Cyclone



Squall/ Hail



Frost



Cold Wave



Heat Wave



Sea State

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LEGENDS

WARNING

WARNING (TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



Rain/ Snow *

Heavy: 64.5 to 115.5 mm/cm *
Very Heavy: 115.6 to 204.4 mm/cm*
Extremely Heavy: > 204.4 mm/cm *



Heat Wave

When maximum temperature of a station reaches $\geq 40^{\circ}\text{C}$ for plains and $\geq 30^{\circ}\text{C}$ for hilly regions
(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C .

Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^{\circ}\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature $\geq 45^{\circ}\text{C}$.

Severe Heat Wave: When actual maximum temperature $\geq 47^{\circ}\text{C}$

(c). Criteria for heat wave for coastal stations

When maximum temperature departure is $> 4.5^{\circ}\text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^{\circ}\text{C}$



Warm Night

When maximum temperature remains 40°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°C .

Severe Warm Night: When minimum temperature departure $> 6.4^{\circ}\text{C}$.



Cold Wave

When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C .

Severe Cold Wave: Minimum Temperature Departure from normal $\geq -6.5^{\circ}\text{C}$

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave : When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$

Severe Cold Wave: When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is $\leq -4.5^{\circ}\text{C}$ or actual Minimum Temperature is $\leq 15^{\circ}\text{C}$



Cold Day

When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions
Based on departure

Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C .

Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$



Fog

Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres

Dense Fog: when the visibility between 50- 200 metres

Very Dense Fog: when the visibility < 50 metres



Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)



Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.



Frost

Ice deposits on ground

Air temperature $\leq 4^{\circ}\text{C}$ (over Plains)



Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed > 87 kmph



Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre

High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre

Phenomenal: Wind speed > 117 kmph (> 63 knots) & Wave height > 14 metre



Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)

Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)

Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)

Super Cyclone Strom: Wind speed > 220 kmph (> 119 knots)

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