

NOWCAST FORECAST TOOLS

► **SWIRLS** (Short range Warnings of Intense Rainstorms in Localized Systems):

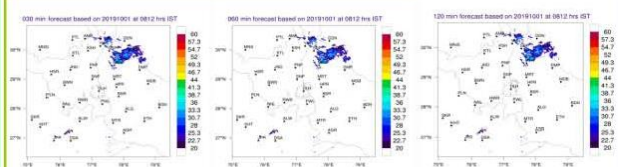
(Adopted from Hong Kong Met Office)

Provides nowcasts of rainfall area and intensity based on radar data for the next 30, 60 & 120 minutes for 12 radar sites around India.

30 min f/c

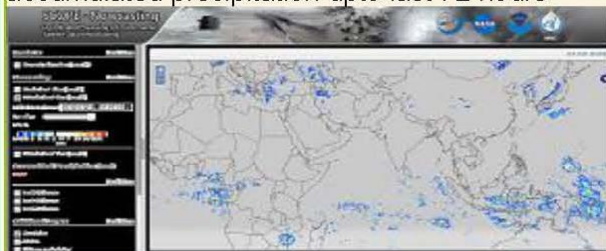
60 min f/c

120 min f/c



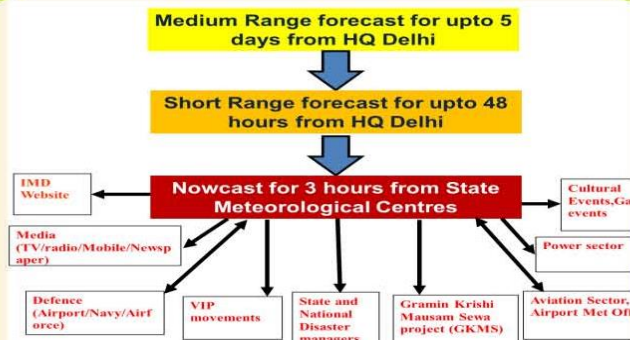
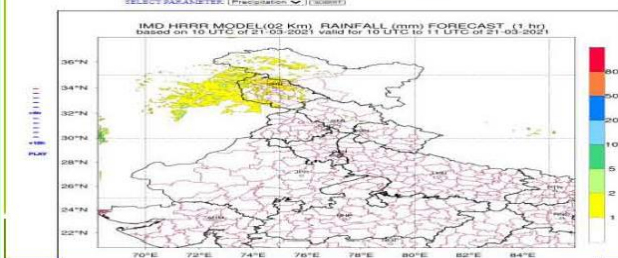
► **SCOPE Nowcasting** (WMO Sustained, Co-Ordinated Processing of Environmental Satellite Data for Nowcasting):

Uses multi-satellite data and gives next 60, 120 and 180 minutes rain rate (mm/hour) and accumulated precipitation upto last 72 hours



► **Dynamic Modelling: WRF with HRRR**

WRF mesoscale model with High Resolution Rapid Refresh capacity with hourly DWR assimilation



ACTIVITIES OF NOWCAST SERVICES

Severe Weather Advisory Bulletin: 24 hour forecast of severe weather issued daily throughout the year by Nowcast Unit, NWFC. It highlights potential areas for Severe Weather (Heavy Rainfall/ Thunderstorm & Associated Phenomenon) in text as well as visual form.

FDP STORM Bulletin: Issued daily during May to June every year by Nowcast Unit, NWFC. It contains detailed analysis of current situation, NWP model forecast guidance and past 24 hour realized weather over the country.

Nowcast Warning Bulletin: 3 hourly detailed nowcast of severe weather and associated impact information at district level issued throughout the year by Meteorological Centres to stake holders through SMS and e-mail.

Nowcast Guidance: 3 hour updation of Nowcasts on IMD website by Meteorological Centres.

Significant cities, towns district HQs
https://mausam.imd.gov.in/imd_latest/contents/stati
https://mausam.imd.gov.in/imd_latest/contents/stati
[onwise-nowcast-warning.php](https://mausam.imd.gov.in/imd_latest/contents/stati)

All districts of India

https://mausam.imd.gov.in/imd_latest/contents/districtwisewarnings.php

For further details kindly contact

Nowcast Unit, NWFC, IMD
 Mausam Bhawan, Lodi Road, New Delhi - 110003
 Tel: 011, 24653948, 011-43824241

srf.tropmet.res.in/srffts_prediction_system/index.php



भारत मौसम विज्ञान विभाग

India Meteorological Department

पृथ्वी विज्ञान मंत्रालय

Ministry of Earth Sciences

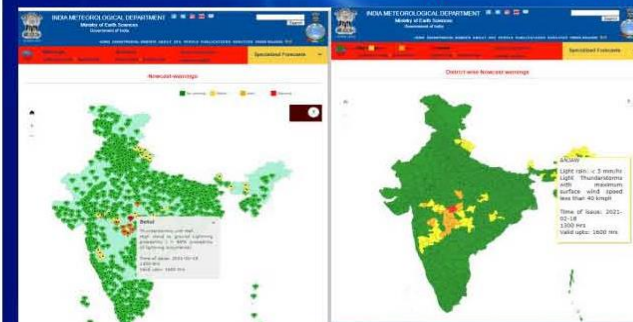
भारत सरकार

Government of India

Nowcast Services of IMD

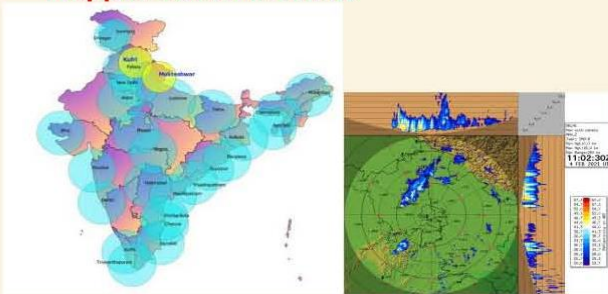
- In the year 2013, a three hourly nowcast system of thunderstorm, squall and hail storm was developed by IMD for 120 stations in India.
- 971 Nowcast stations at present for issuing 18 different three hourly severe weather warnings nowcast warnings.
- Three hourly Nowcast for all the districts of country started in 2019.
- Daily 24 hour Severe Weather Advisory for Nowcast Guidance Bulletin is issued throughout the year.
- Thunderstorm Observation and Regional Modelling (STORM) – FDP STORM project is conducted every year during March to June.
- A daily FDP bulletin containing two days severe weather advisory (IOP) is issued during FDP.
- Severe Weather bulletin from Nowcast Centres to stake holders in case of severe weather.

Station and District level nowcasts (updated 3 hourly)

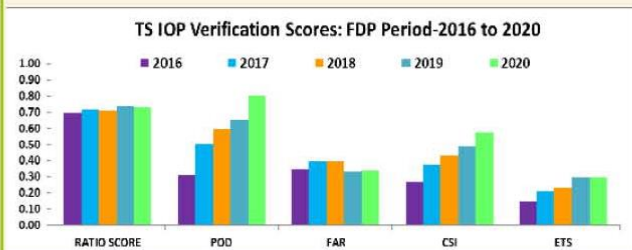


NOWCAST OBSERVATION TOOLS

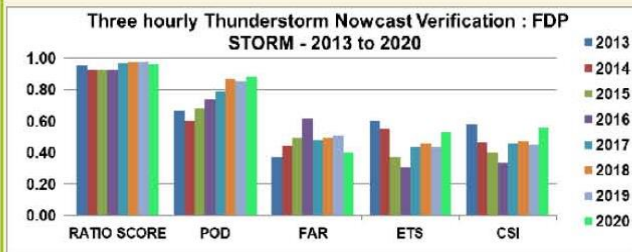
Doppler Radar Network



24 hour Thunderstorm IOP Verification Scores



3 hour Thunderstorm Nowcast Verification Scores



THUNDERSTORM RESEARCH

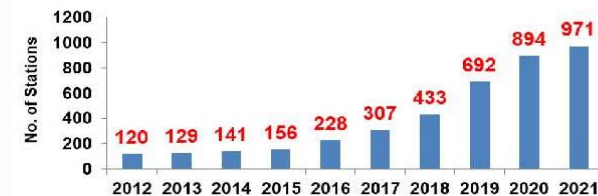
FDP STORM Reports Published by the Nowcast Unit



1. "Spatial patterns of long-term trends in thunderstorms in India." 2021. *Natural Hazards*, pp.1-14.
2. "A new paradigm for short range forecasting of severe weather over the Indian region" 2021. *Meteorology and Atmospheric Physics*.

NOWCAST DISSEMINATION

Cumulative Number of Nowcast Stations



Nowcast Warning SMS/Whatsapp Message

Weather Section Hyderabad (+917901090675) sent: In view of the thunderstorm and hail storm occurrences over Telangana State. District levels officers/SDMA are requested to intimate the above information if it comes to your notice (place, date and approximate time) through weather group whatsapp.

తెలంగాణ రాష్ట్రంలో ఉరుములు మరియు వడర్పండ్ల వర్షం వాతావరణ పరిస్థితులు ఏర్పడతే ప్రదేశం, తేదీ, సమయం మార్కు పంటి సమాచారం మీ ద్వారా

Doppler Weather RADAR, IMD-Bhopal

Nowcast Bulletin - 21 March 2021 15:15 IST

District wise warnings

| Warning | Weather Features / Surface wind / Impacts | Period of occurrence |
|-----------------------|---|----------------------|
| Light Thunderstorm | Light rain, drizzle and light winds. Light rain, drizzle and light winds. Light rain, drizzle and light winds. | 3-4 hours |
| Moderate Thunderstorm | Heavy rain, drizzle and light winds. Heavy rain, drizzle and light winds. Heavy rain, drizzle and light winds. | 3-4 hours |
| Heavy Thunderstorm | Very heavy rain, drizzle and light winds. Very heavy rain, drizzle and light winds. Very heavy rain, drizzle and light winds. | 3-4 hours |
| Light Rain | Light rain, drizzle and light winds. Light rain, drizzle and light winds. Light rain, drizzle and light winds. | 3-4 hours |
| Heavy Rain | Heavy rain, drizzle and light winds. Heavy rain, drizzle and light winds. Heavy rain, drizzle and light winds. | 3-4 hours |

Warnings for Tourist places/ Airports

| Warning | Weather Features / Surface wind / Impacts | Period of occurrence |
|-----------------------|---|----------------------|
| Light Thunderstorm | Light rain, drizzle and light winds. Light rain, drizzle and light winds. Light rain, drizzle and light winds. | 3-4 hours |
| Moderate Thunderstorm | Heavy rain, drizzle and light winds. Heavy rain, drizzle and light winds. Heavy rain, drizzle and light winds. | 3-4 hours |
| Heavy Thunderstorm | Very heavy rain, drizzle and light winds. Very heavy rain, drizzle and light winds. Very heavy rain, drizzle and light winds. | 3-4 hours |
| Light Rain | Light rain, drizzle and light winds. Light rain, drizzle and light winds. Light rain, drizzle and light winds. | 3-4 hours |
| Heavy Rain | Heavy rain, drizzle and light winds. Heavy rain, drizzle and light winds. Heavy rain, drizzle and light winds. | 3-4 hours |

Head, DWR-Bhopal

Damini:Lightning Alert

Ministry of Earth Sciences, Govt. of India

Type your location here

0 - 5 mins
5 - 10 mins
10 - 15 mins

No lightning warning issued at present

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Rain Alarm App

Ministry of Earth Sciences, Govt. of India

Type your location here

0 - 5 mins
5 - 10 mins
10 - 15 mins

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Lightning Products

India Meteorological Department

Integrated Display of Weather and Thunderstorm Warnings

Sunday March 21 2021 19:17:57

Regional Meteorological Centers : New Delhi / Chennai / Guwahati / Kolkata / Mumbai / Nagpur

DDOHH Name

India

2021-03-21 13:29:51 UTC

Legend

Lightning Stroke

Thunderstorm

Thunderstorm

Thunderstorm

Thunderstorm

Thunderstorm

Thunderstorm