Ministry of Earth Sciences
India Meteorological Department
Cyclone Warning Division, New Delhi

Tropical Cyclone Forecast Programme
Report Dated 07TH November, 2023

Time of Issue: 1230 UTC

Synoptic features (based on 0300 UTC analysis):

- The cyclonic circulation over Southeast Arabian Sea & adjoining Lakshadweep islands now lies over Southeast & adjoining Eastcentral Arabian Sea and extends upto 3.1 km above mean sea level. Under its influence, a Low Pressure Area is likely to form over Eastcentral Arabian Sea on 08th November, 2023.
- The trough from Southeast Arabian Sea & adjoining Lakshadweep area to Westcentral Bay of Bengal & adjoining south Andhra Pradesh coast across Kerala, South Interior Karnataka and Andhra Pradesh extending upto 1.5 km above mean sea level has become less marked.

Dynamical and thermo-dynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) ºC	29-31ºC over major parts of BoB, Andaman Sea, Gulf of Mannar, 26-28ºC over parts of southwest BoB.	29-31ºC over southeast, adjoining southwest and adjoining eastcentral AS, north AS, along and off south Gujarat, Maharashtra coasts, 26-28ºC over central, adjoining north AS, southwest AS, along and off Kerala and Karnataka coasts. Less than 24 along and off Yemen-Oman & Somalia coasts and adjoining sea areas.
Tropical Cyclone Heat Potential (TCHP) kJ/cm^2	100-120 over eastcentral BoB adjoining southeast BoB. 80-100 over south Andaman Sea. 60-80 over most parts of BOB and north Andaman Sea adjoining south Andaman Sea. Less than 40 along Andhra Pradesh and Tamil Nadu coasts, adjoining sea areas, less than 20-30 over Gulf of Mannar and adjoining Comorin area, parts of southwest BoB.	60-90 over southeast, adjoining eastcentral and adjoining southwest AS, 50-60 over Gulf of Khambat, Less than 20 over eastcentral and adjoining southeast & north AS, along and off Kerala, Karnataka and south Maharashtra coasts, less than 10 over westcentral and southwest AS.

Cyclonic Relative vorticity ($X10^{-6}s^{-1}$)	Around 30 over northeast BoB along and off Bangladesh coast.	30-40 over parts of southeast AS and adjoining Lakshadweep area, around 30 over parts of northwest AS, 10-20 over parts of south and westcentral AS.
Low Level convergence ($X10^{-5}$ s^{-1})	5 over few parts of southwest BoB along and off Sri Lanka coast, -10 over along and off north Odisha coast.	-5 over parts of eastcentral AS, 5 over Comorin Area, 5 over few parts of southwest AS.
Upper Level divergence ($X10^{-5}$ s^{-1})	5 over Gulf of Mannar, -5 over southwest BoB. 5-10 over elongated zone over East EIO adjoining south BoB.	5 over eastcentral AS and along and off south Kerala coast. -5 over some parts of central and north AS.
Vertical Wind Shear (VWS knots) **Low: 05-10 knots** **Moderate: 10-20 knots** **High: >20 knots**	5-15 over south BoB, Andaman Sea, 20 over central BoB adjoining to south BoB. High (>20 knots) over remaining parts of BoB.	5-15 over south AS, 20 central AS adjoining to south AS, High over (>20 knots) over remaining parts of AS.
Wind Shear Tendency (knots)	Decreasing over central parts of Andaman Sea.	Decreasing over eastcentral AS and adjoining areas, increasing over southeast and adjoining areas.
Upper tropospheric Ridge	Along 13^{o}N over BoB	Along 12^{o}N over AS.

Satellite observations based on INSAT imagery (0300 UTC):

(a) Over the BoB & Andaman Sea:-

Scattered low and medium clouds with embedded moderate to intense convection lay over south Bay of Bengal, Andaman Sea, Gulf of Martaban and isolated weak to moderate convection lay over westcentral & northwest Bay of Bengal.

(b) Over the Arabian Sea:-

Scattered low and medium clouds with embedded intense convection lay over eastcentral Arabian Sea. Scattered low and medium clouds with embedded moderate to intense convection lay over south Arabian Sea, Lakshadweep islands area, Comorin area and isolated weak to moderate convection lay over westcentral Arabian Sea.

(c) Convection outside India:-

Scattered low and medium clouds with embedded moderate to intense convection lay over Sri Lanka, Palk str, Gulf of Mannar, Maldives, north Pak, Tibet, China, Thailand, Gulf of Thailand, Cambodia, Laos, Vietnam, Sumatra, Strait of Malacca, Malaysia, Borneo, South China Sea, Philippines, Madagascar and over Indian ocean between latitude 5.0N to 10.0S longitude 40.0E to 100.0E.

M.J.O. Index:

MJO index is currently in Phase 5 with amplitude less than 1 & will remain there for next 1 day. It will move to phase 6 with amplitude less than 1 on 9th November & it will remain there till 10th. It will move to phase 7 on 11th November and remain there for next three days.

Storms and Depression over South China Sea/ South Indian Ocean: Nil

Input for FDP Cyclone based on 0000 UTC for the next 7 days

MODEL GUIDANCE	Bay of Bengal (BoB)	Arabian Sea (AS)

IMD-GFS	No significant system.	No significant system.
IMD-GEFS	No significant system.	No significant system.
IMD-WRF	No significant system.	Extend cycir on 8th Nov over southeast AS and adjoining Lakshadweep area, it will have westward movement lay over southeast and adjoining southwest AS on 9th Nov without intensification.
NCMRWF-NCUM	No significant system.	No significant system.
NCMRWF-NEPS	No significant system.	No significant system.
NCMRWF-UM (Regional)	No significant system.	No significant system.
ECMWF	No significant system.	Cycir over southeast AS on 7th Nov, LPA over eastcentral AS on 8th Nov, it will move westnorthwestwards and lay over eastcentral AS on 9th Nov without intensify further, it will then move westsouthwestwards and lay over eastcentral AS on 10th without further intensification, it will continue moves in same direction without intensification and less marked thereafter.
NCEP-GFS	No significant system.	Cycir over southeast AS on 7th Nov, it moves westnorthwestwards and lay over southeast and adjoining eastcentral AS on 8th Nov, it then moves westwards and lay over eastcentral and adjoining westcentral AS on 9th Nov, less marked thereafter.
IMD-Genesis Potential Parameter	A feeble potential zone over southwest BoB on day 7.	No potential zone over AS for next 7 days.

Summary and conclusion:

1. **For Bay of Bengal**:

As per model guidance, no significant cyclonic disturbance is likely over the Bay of Bengal during next seven days.

Probability of Cyclogenesis (formation of depression and above intensity systems) over Bay of Bengal and Andaman Sea during next 168 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

2. **For the Arabian Sea**:

Models such as IMD-GFS, IMD-GEFS and NCUM group are not indicating any significant system over Arabian Sea for the next seven days. However, IMD-WRF, ECMWF & NCEP-GFS are indicating a cyclonic circulation over southeast Arabian Sea on 7th November, and it will lay over eastcentral Arabian Sea as low pressure area (LPA) on or around 8th November. These models are also indicating that the LPA thereafter would move west-southwestwards till 10th November.

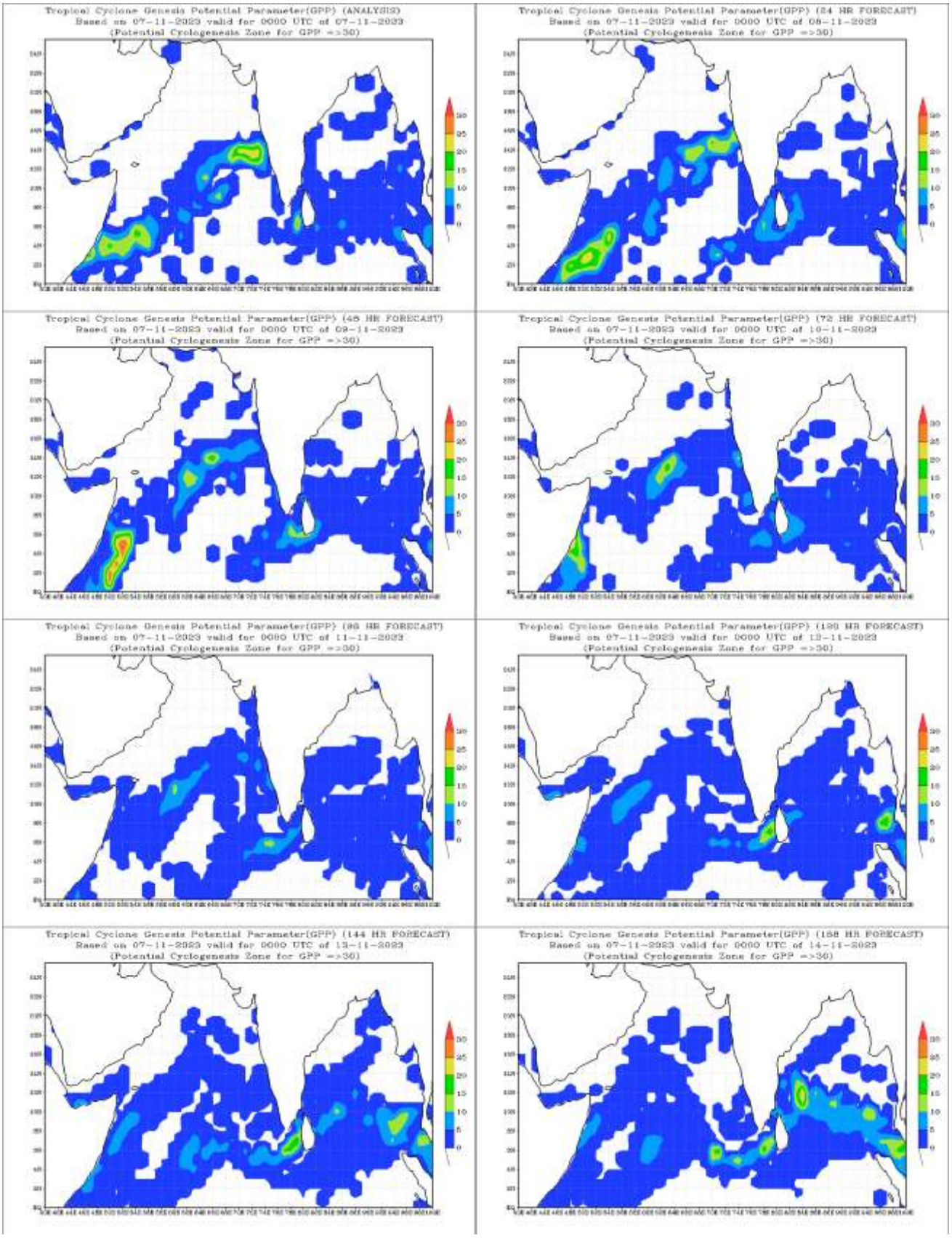
From the consensus on the significant system, it is inferred that yesterday's cyclonic circulation over southeast Arabian Sea off Kerala coast now lies over southeast and adjoining eastcentral Arabian Sea at 0300 UTC of today, the 7th November 2023. Under its influence a low pressure area is likely to form over eastcentral Arabian Sea on 08th November, 2023. Models are also indicating no further intensification and hence, there is no probability for cyclogenesis over the AS for the next seven days.

Probability of Cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

IOP: Nil**.**

Annexure


Tropical Cyclone Genesis Potential Parameter(GPP) (ANALYSIS)
Based on 07-11-2023 valid for 0000 UTC of 07-11-2023
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (24 HR FORECAST)
Based on 07-11-2023 valid for 0000 UTC of 08-11-2023
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (48 HR FORECAST)
Based on 07-11-2023 valid for 0000 UTC of 09-11-2023
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (72 HR FORECAST)
Based on 07-11-2023 valid for 0000 UTC of 10-11-2023
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (96 HR FORECAST)
Based on 07-11-2023 valid for 0000 UTC of 11-11-2023
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (120 HR FORECAST)
Based on 07-11-2023 valid for 0000 UTC of 12-11-2023
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (144 HR FORECAST)
Based on 07-11-2023 valid for 0000 UTC of 13-11-2023
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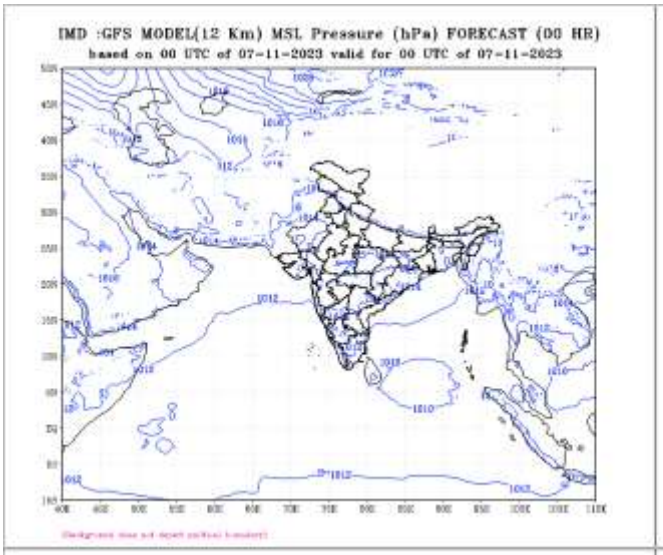
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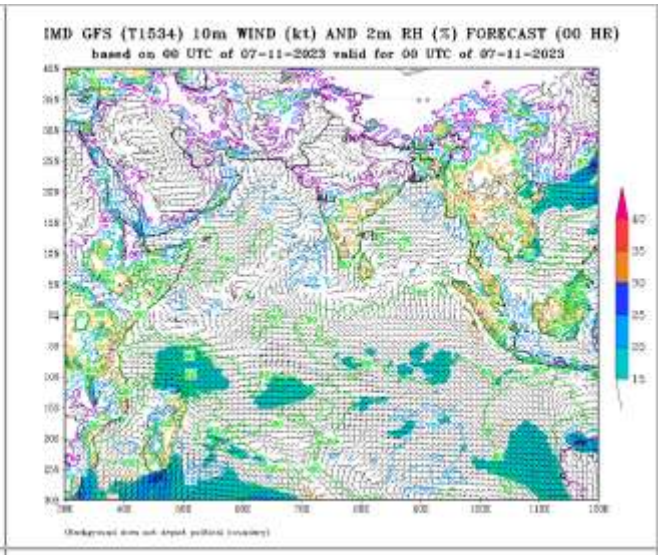
based on 00 UTC of 07-11-2023 valid for 00 UTC of 07-11-2023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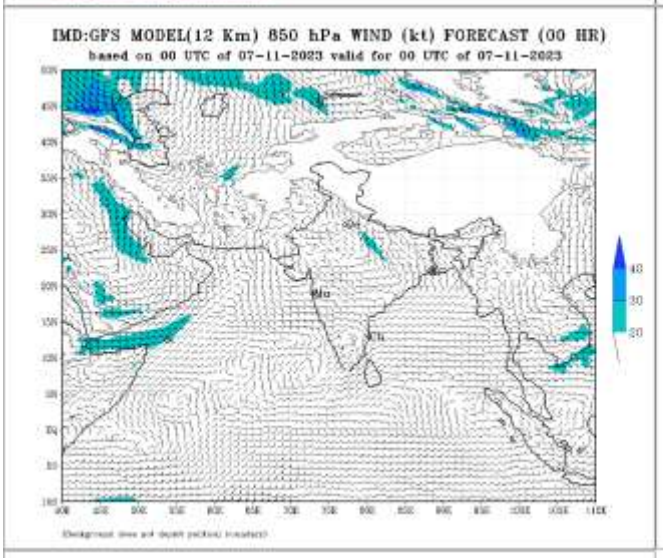
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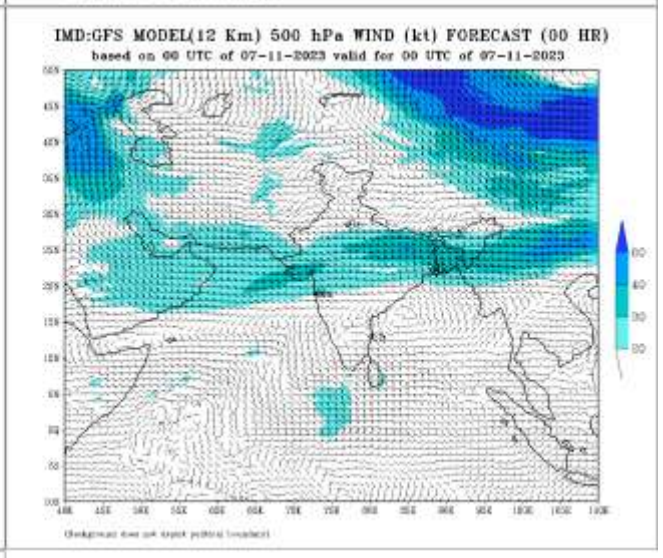
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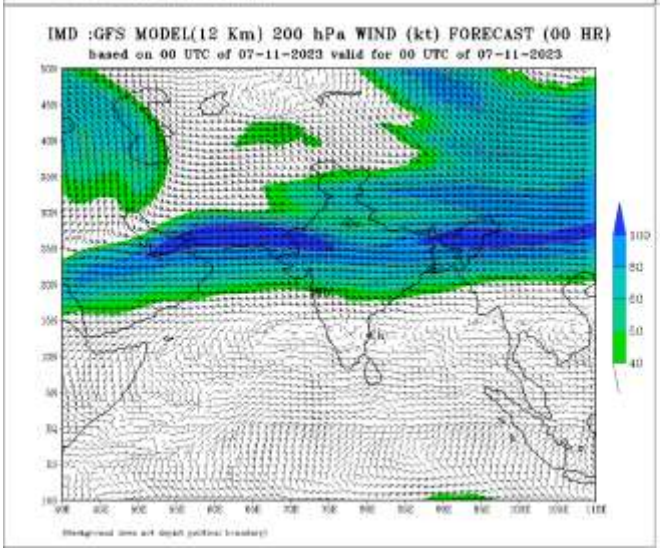
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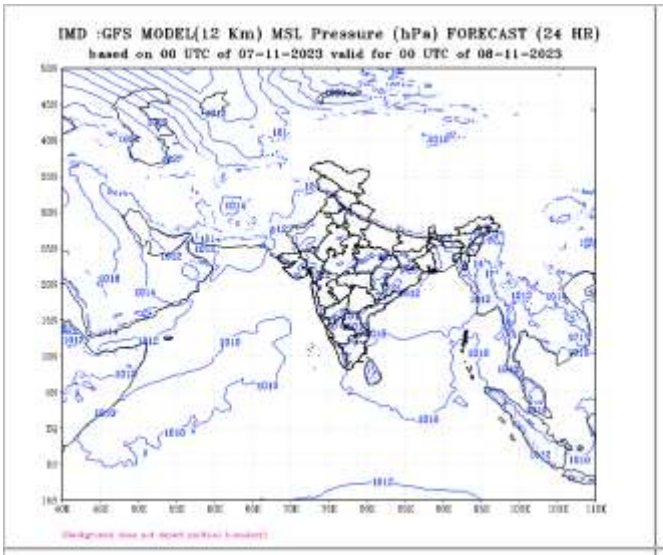
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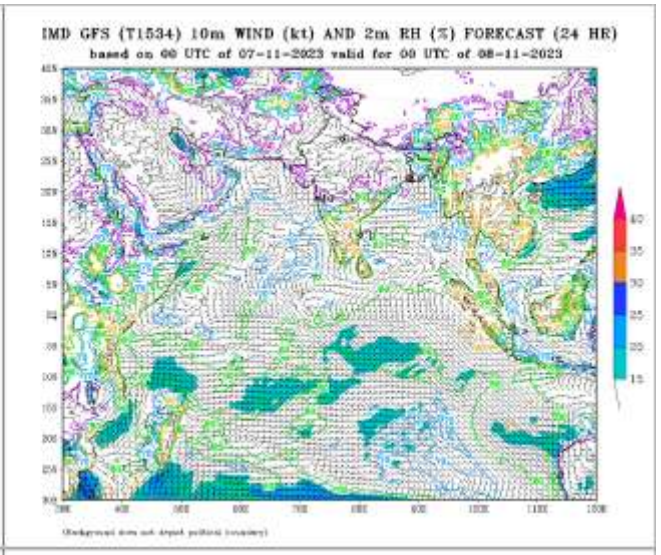
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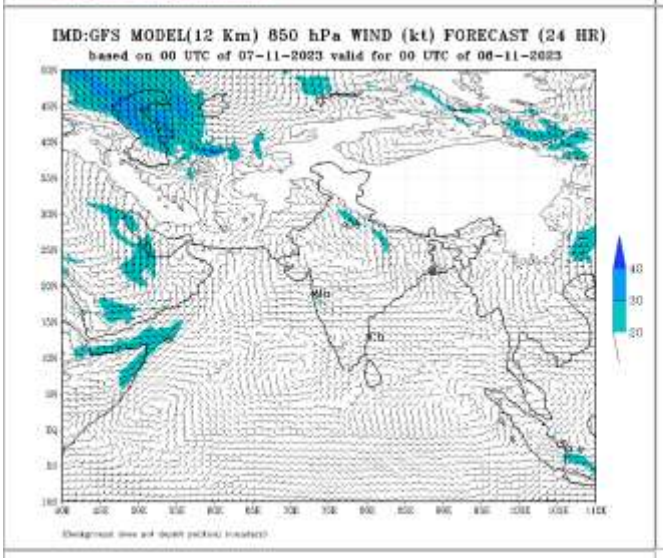
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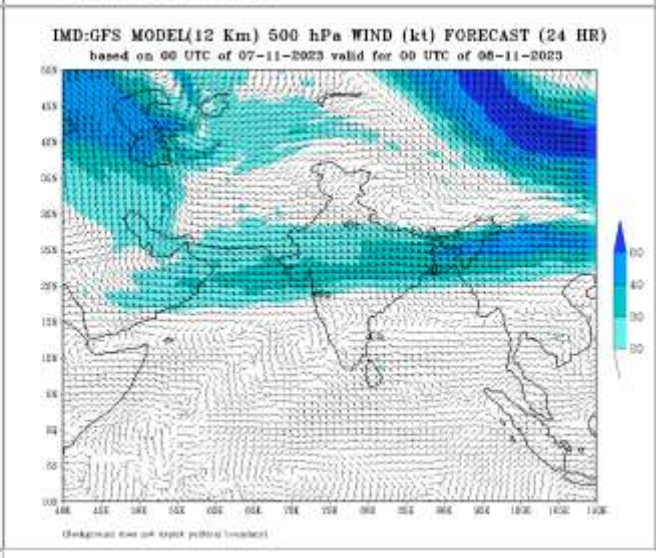
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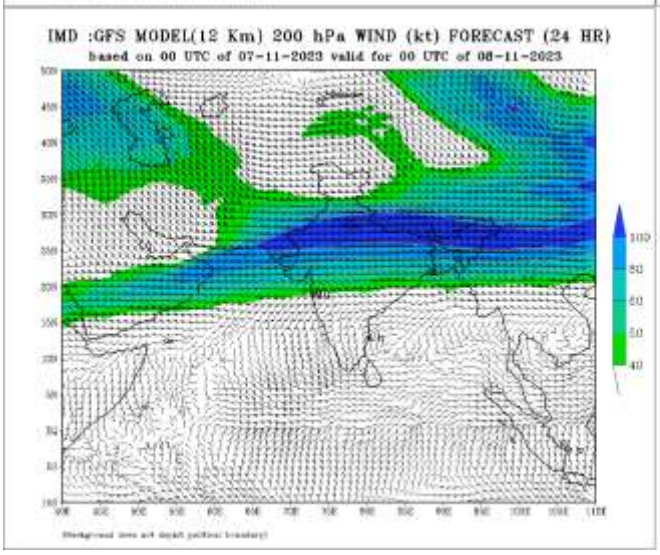
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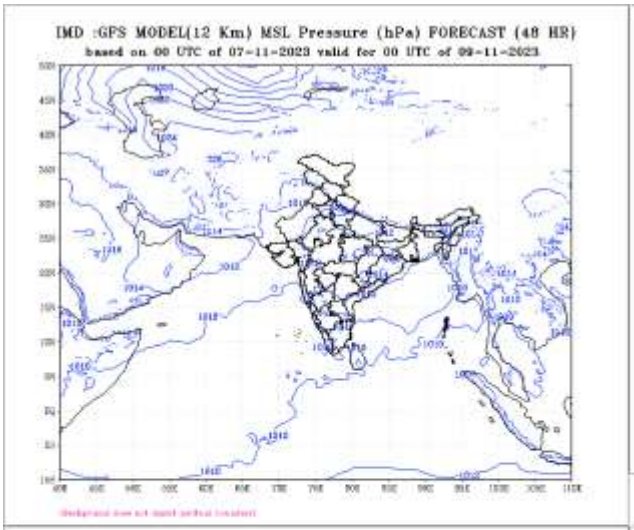
IMD :GPS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)
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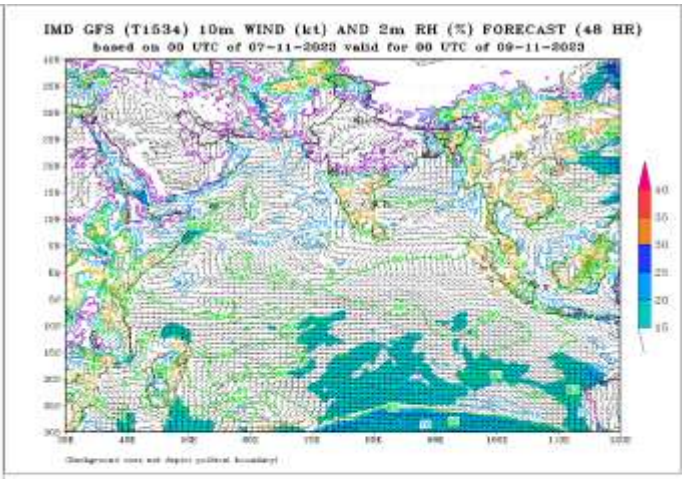
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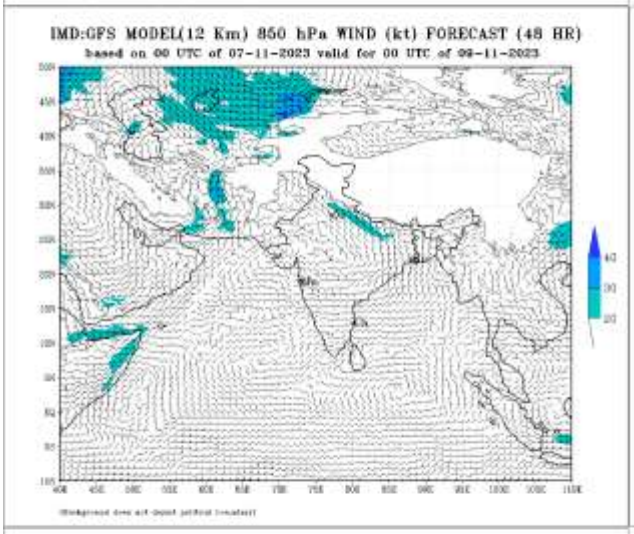
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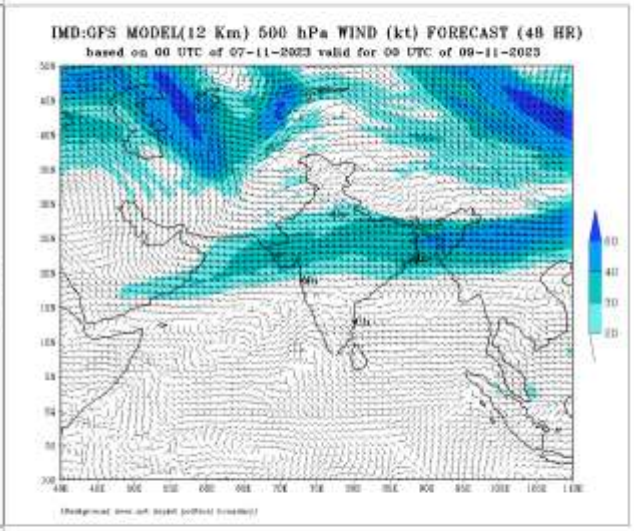
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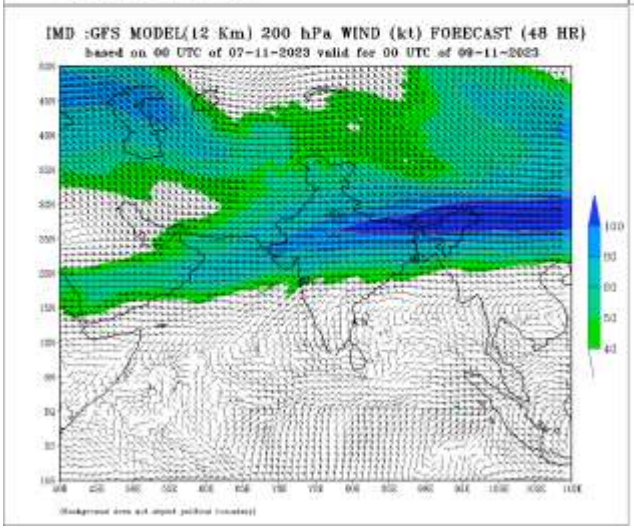
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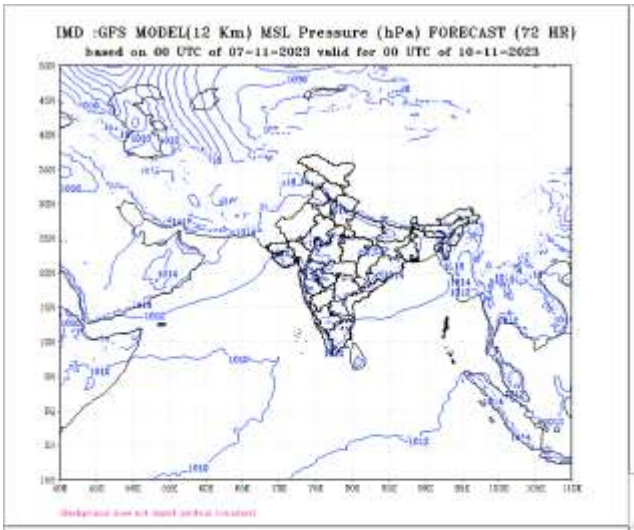
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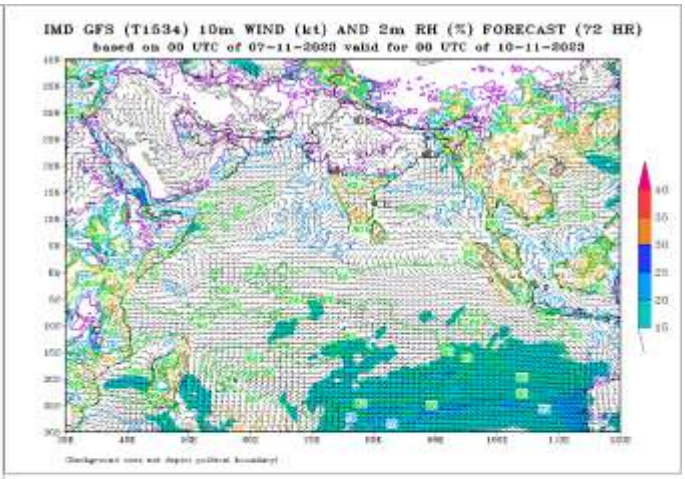
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (72 HR)
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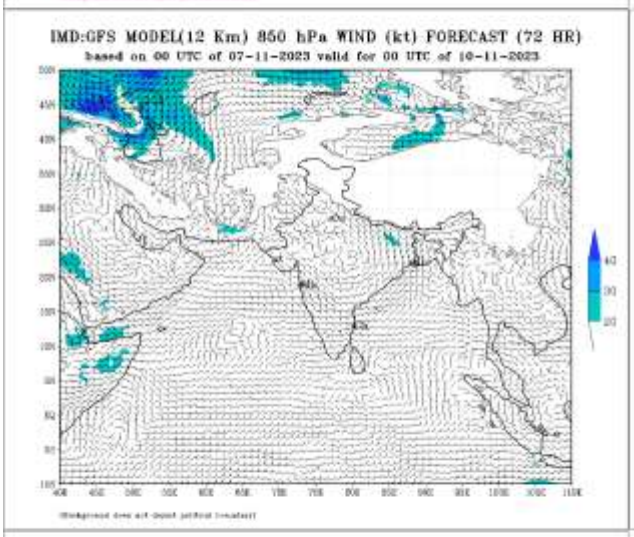
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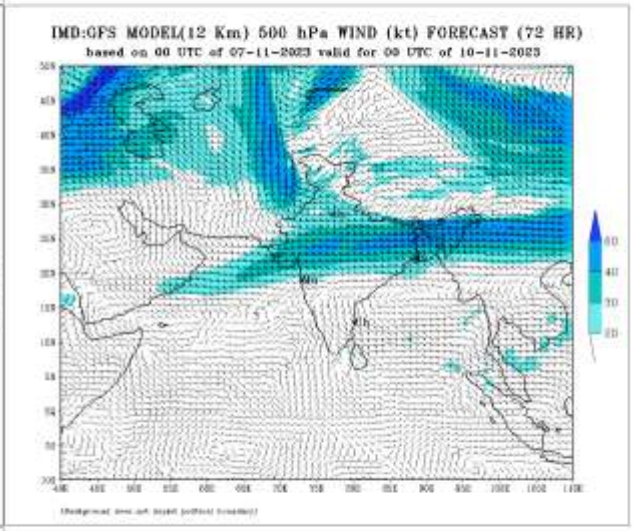
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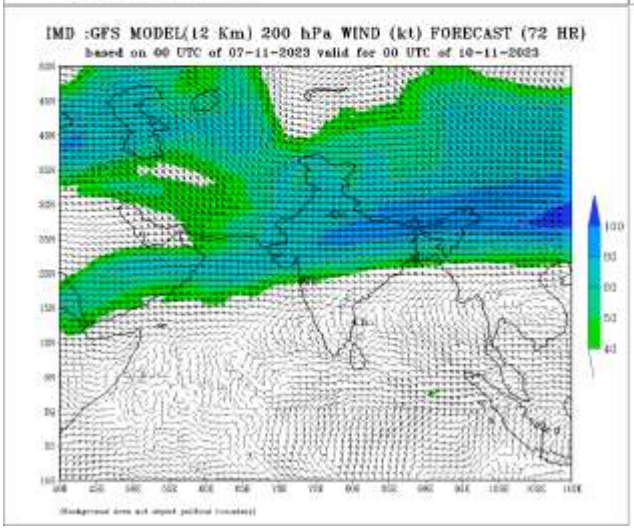
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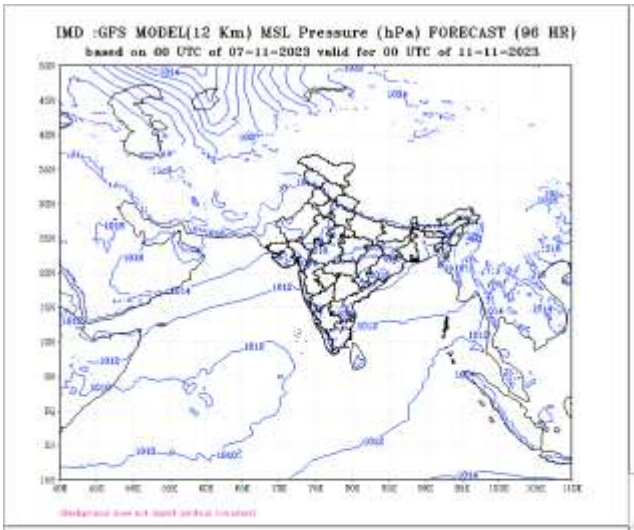
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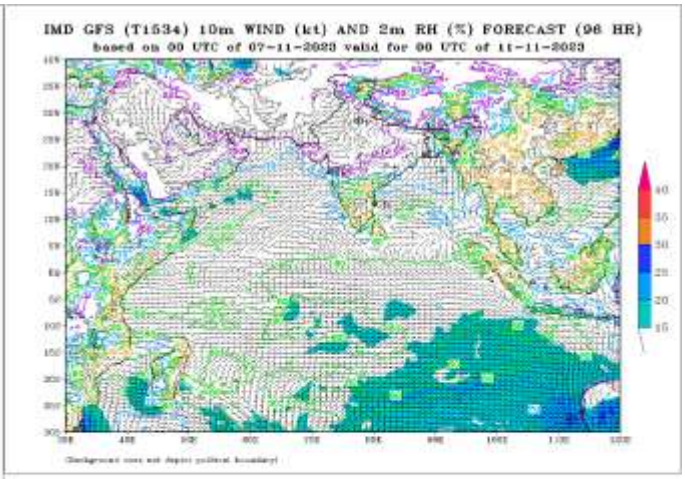
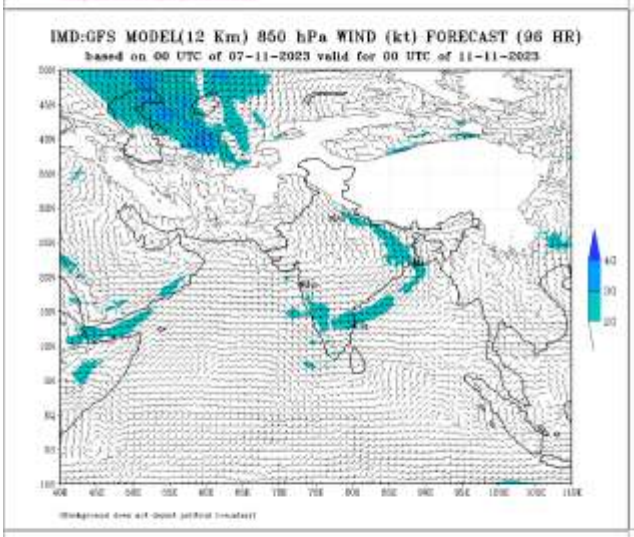

IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (96 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 11-11-2023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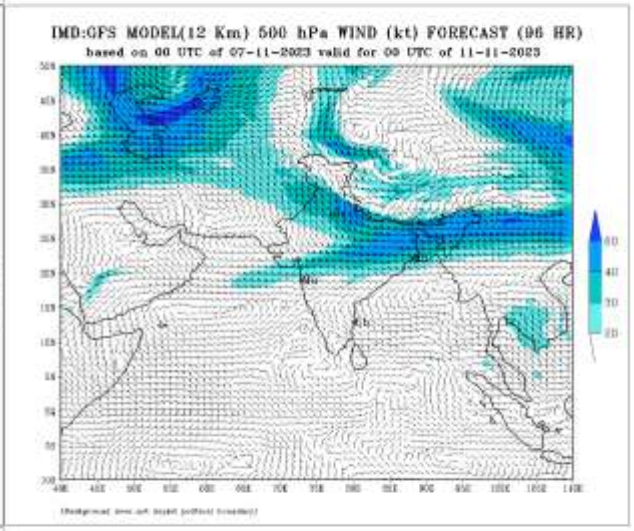
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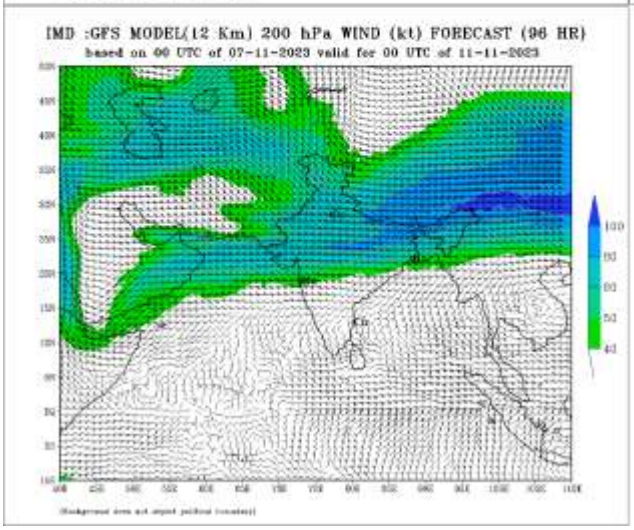
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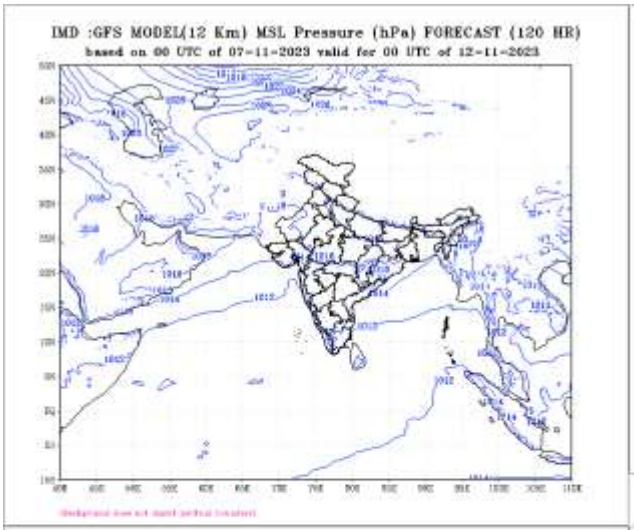
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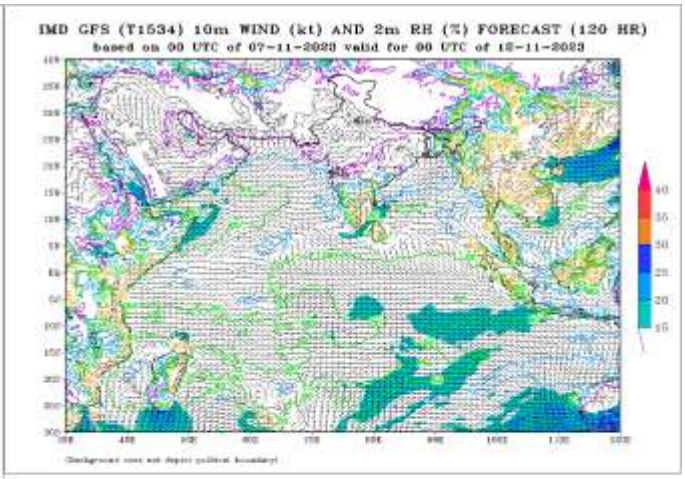
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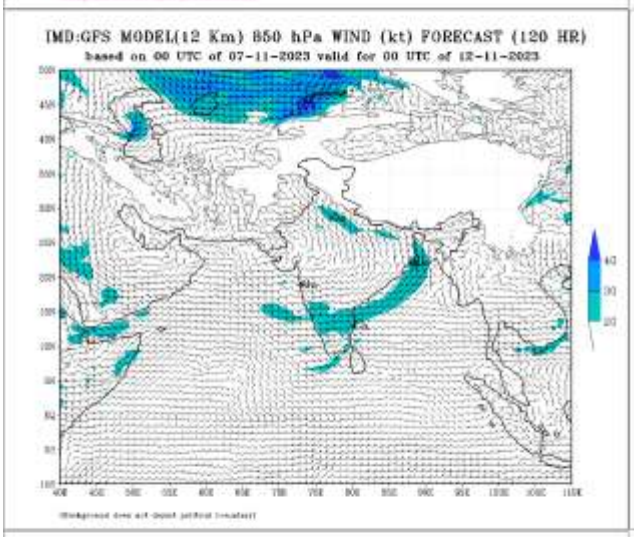
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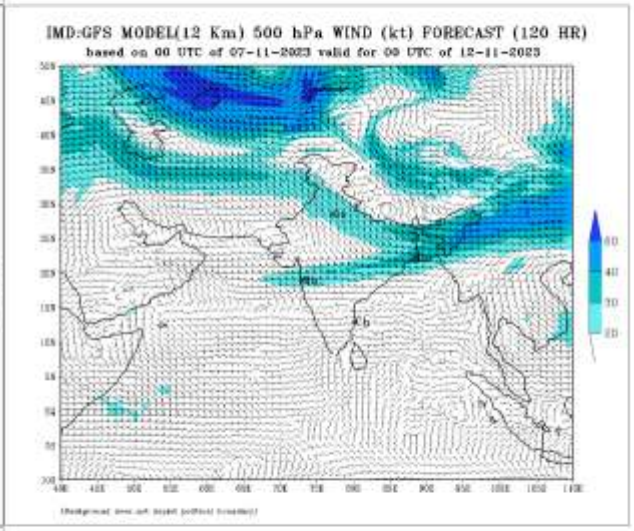
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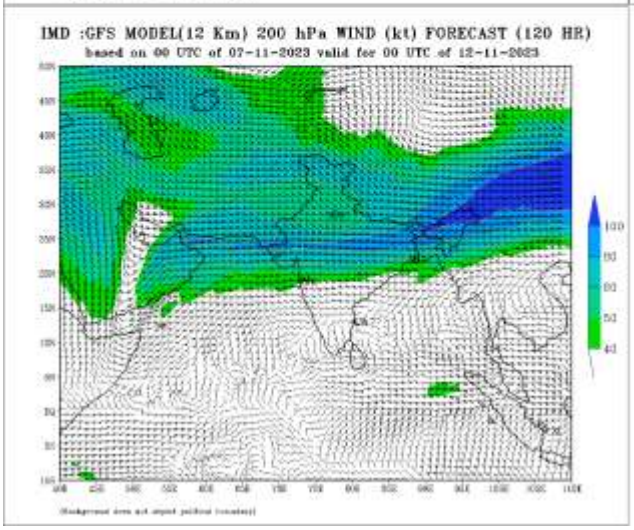
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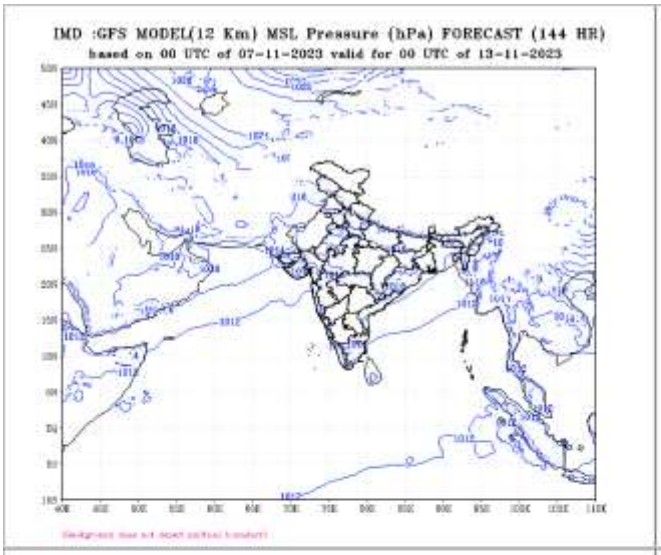
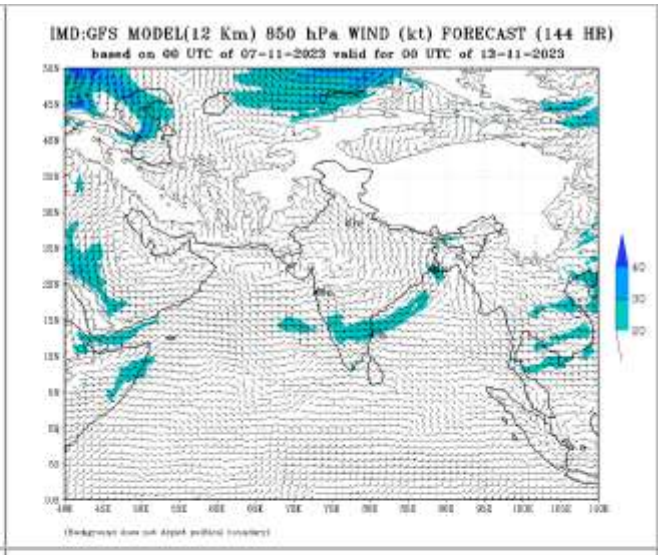
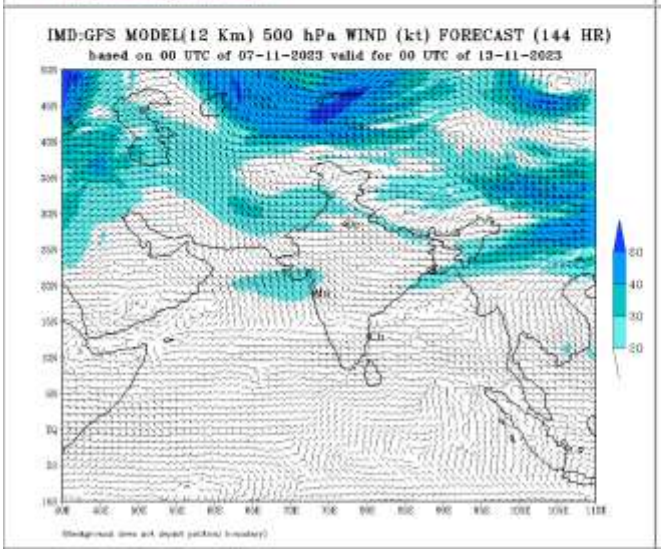
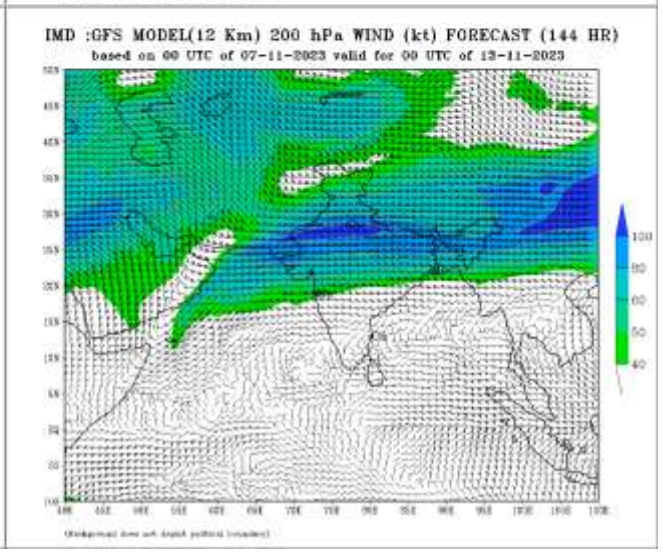
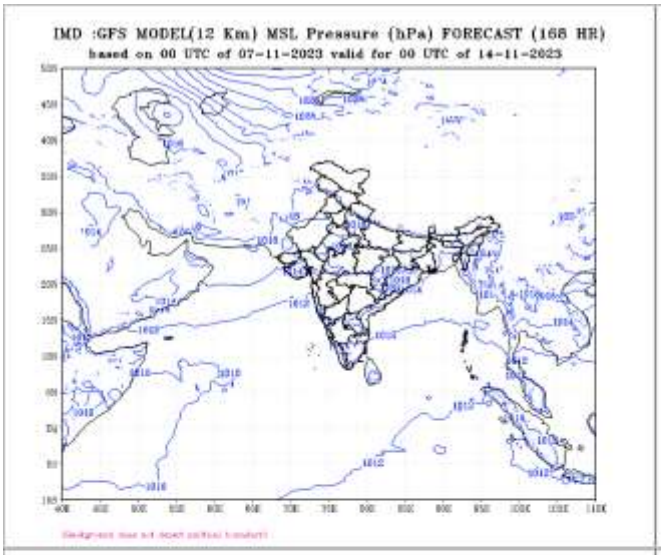
based on 00 UTC of 07-11-2023 valid for 00 UTC of 12-11-2023

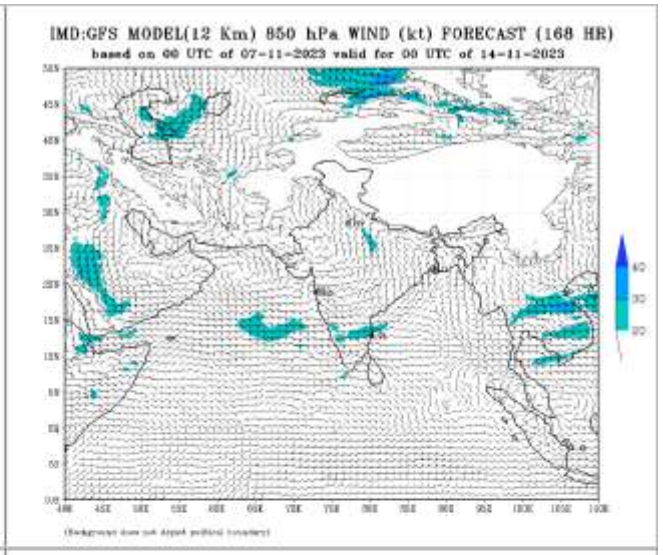

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (144 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 13-11-2023

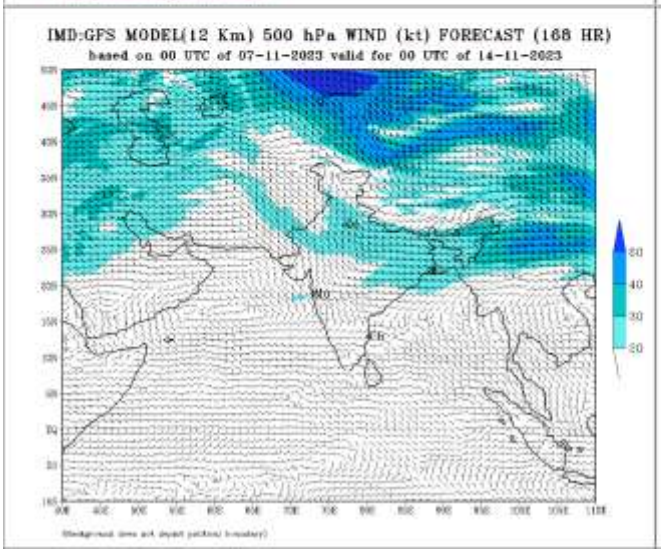

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 13-11-2023

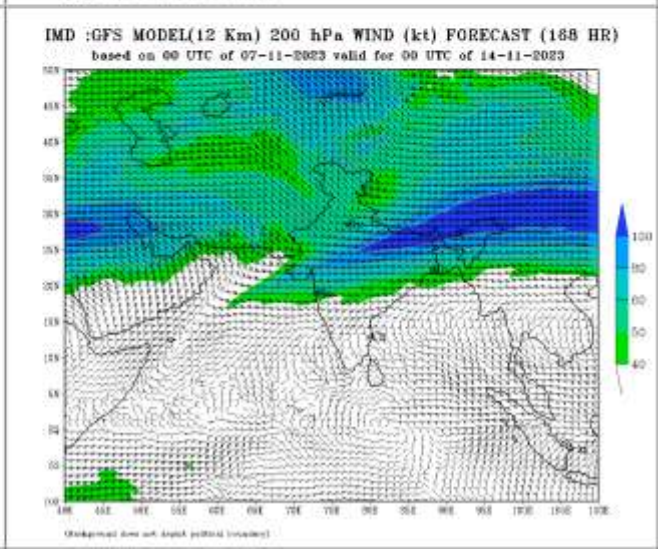

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 13-11-2023


IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 13-11-2023


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (168 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 14-11-2023


IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 14-11-2023


IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 14-11-2023


IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 07-11-2023 valid for 00 UTC of 14-11-2023