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

Tropical Cyclone Forecast Programme
Report Dated 27th December 2024

Time of Issue: 1100 UTC

Synoptic features (based on 0300 UTC analysis):

- Yesterday's cyclonic circulation over southwest & adjoining westcentral Bay of Bengal off South Andhra Pradesh-North Tamil Nadu coasts became less marked at 0300 UTC of today, the 27th December, 2024.
- A cyclonic circulation lay over southeast Arabian Sea off south Kerala coast at 3.1 km above mean sea level at 0300 UTC of today, the 27th December, 2024.

Environmental Features based on 0300 UTC:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) ºC	➢ 26-28°C over north & adjoining central BoB. ➢ 28-30°C over rest of BoB.	➢ 28-30°C over southeast AS & adjoining southwest AS, most parts of eastcentral AS, Lakshadweep Islands and Maldives. ➢ 25-26°C over northern parts of AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm^2	➢ 150-200 over northeast BoB and adjoining parts of northwest & eastcentral BoB and Andaman Sea ➢ 100-140 over southeast & east central BoB and adjoining southern parts of southwest Bay of Bengal along and off Andhra Pradesh and north Tamil Nadu coasts. ➢ 20-30 over some parts of southwest BoB along & off north Sri Lanka coast. ➢ 60-80 over rest of BoB.	➢ 110-130 over southeast AS, Maldives Islands, Lakshadweep Islands and areas of eastcentral AS along Karnataka-Kerala coasts. ➢ 20-60 over rest AS.
Cyclonic Relative - vorticity (X10^{-6}s^{-1})	➢ 20 over southeast & adjoining Westcentral Bay of Bengal	➢ 30-40 over some parts of central AS and adjoining northeast AS off Gujarat coast.
Low-Level convergence (X10^{-5} s^{-1})	➢ 5 along and off Tamil Nadu and north Sri Lanka coasts	➢ 5 over Lakshadweep Islands & Comorin area.
Upper-Level divergence (X10^{-5} s^{-1})	➢ 5 - 10 over westcentral BoB along south Andhra Pradesh & north Tamil	➢ 5 along and off Karnataka coasts

	Nadu coasts.	
Vertical Wind Shear (VWS knots) **Low: 05-10 knots** **Moderate: 10-20 knots** **High: >20 knots**	➢ Moderate to high over BoB	➢ Low-Moderate over parts of Lakshadweep Islands, Maldives & Comorin area and southern parts of southwest AS & adjoining southeast AS. ➢ High over rest of AS.
Wind Shear Tendency (knots)	➢ Increasing over central BoB	➢ Increasing over northern parts of central AS and central parts of south AS
Upper tropospheric Ridge	13^0N over BoB.	--

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 southwest Bay of Bengal and south Andaman Sea. Scattered low and medium clouds over southeast Bay of Bengal.

b) Over the Arabian Sea:
Scattered low and medium clouds with embedded isolated moderate to intense convection lay over Lakshadweep Island area. Scattered low and medium clouds lay over Arabian Sea.

c) Outside India:
Scattered low & medium clouds with embedded moderate to intense convection lay over Tibet, China, Yellow Sea, east China Sea, south Thailand, Gulf of Thailand, Vietnam, Sumatra, Strait of Malacca, Malaysia, Borneo, South China Sea, Java Islands & Sea, Celebes Islands & Sea, Philippines, Sulu Sea, north Madagascar, north Mozambique Channel and over Indian Ocean between latitude 5.0N to 20.0S longitude 45.0E to 110.0E.

M.J.O. Index:

MJO is currently in phase 7 with amplitude greater than 1. It will be in same phase with amplitude greater than 1 till 1st January 2025.

NWP Guidance for FDP Cyclone:

MODEL GUIDANCE	Bay of Bengal (BoB)	Arabian Sea (AS)
IMD-GFS	Model is indicating no significant system over BoB.	The model indicates no significant system over AS.
IMD-GEFS	Model is indicating no significant system over BoB.	The model indicates no significant system over AS.
IMD-WRF	The model indicates no significant system over BoB for the next 3 days.	The model indicates no significant system over AS.
NCMRWF-NCUM(G)	The model indicates cycir over EIO & adjoining southwest BoB on 30th with nearly westward movement till 31st without further intensification.	The model indicates no significant system over AS.

NCMRWF-NCUM(R)	The model indicates no significant system over BoB for the next 3 days.	The model indicates no significant system over AS.
NCMRWF-NEPS	The model indicates cycir over EIO & adjoining southwest BoB on 30th with nearly westward movement till 31st without further intensification.	The model indicates no significant system over AS.
ECMWF	The model indicates cycir over EIO & adjoining southwest BoB on 30th with nearly westward movement till 31st without further intensification.	The model indicates no significant system over AS.
NCEP-GFS	Model is indicating no significant system over BoB.	The model indicates no significant system over AS.

Summary:

(a) Bay of Bengal:
Most of the models are indicating no significant system over Bay of Bengal for the next seven days. NCUM group of models and ECMWF model are indicating a cycir on 30th December over east EIO and adjoining southwest BoB having nearly westward movement without further intensification.

(b) Arabian Sea
Most of the models are indicating no significant system over Arabian Sea.

Inference:

There is likelihood of formation of a low pressure area/cyclonic circulation over central parts of south Bay of Bengal and adjoining Equatorial Indian Ocean around 30th December with nearly westwards movement during subsequent 2-3 days across southwest Bay of Bengal and south Sri Lanka.

Probability of cyclogenesis (formation of depression and above intensity systems) over the Bay of Bengal 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

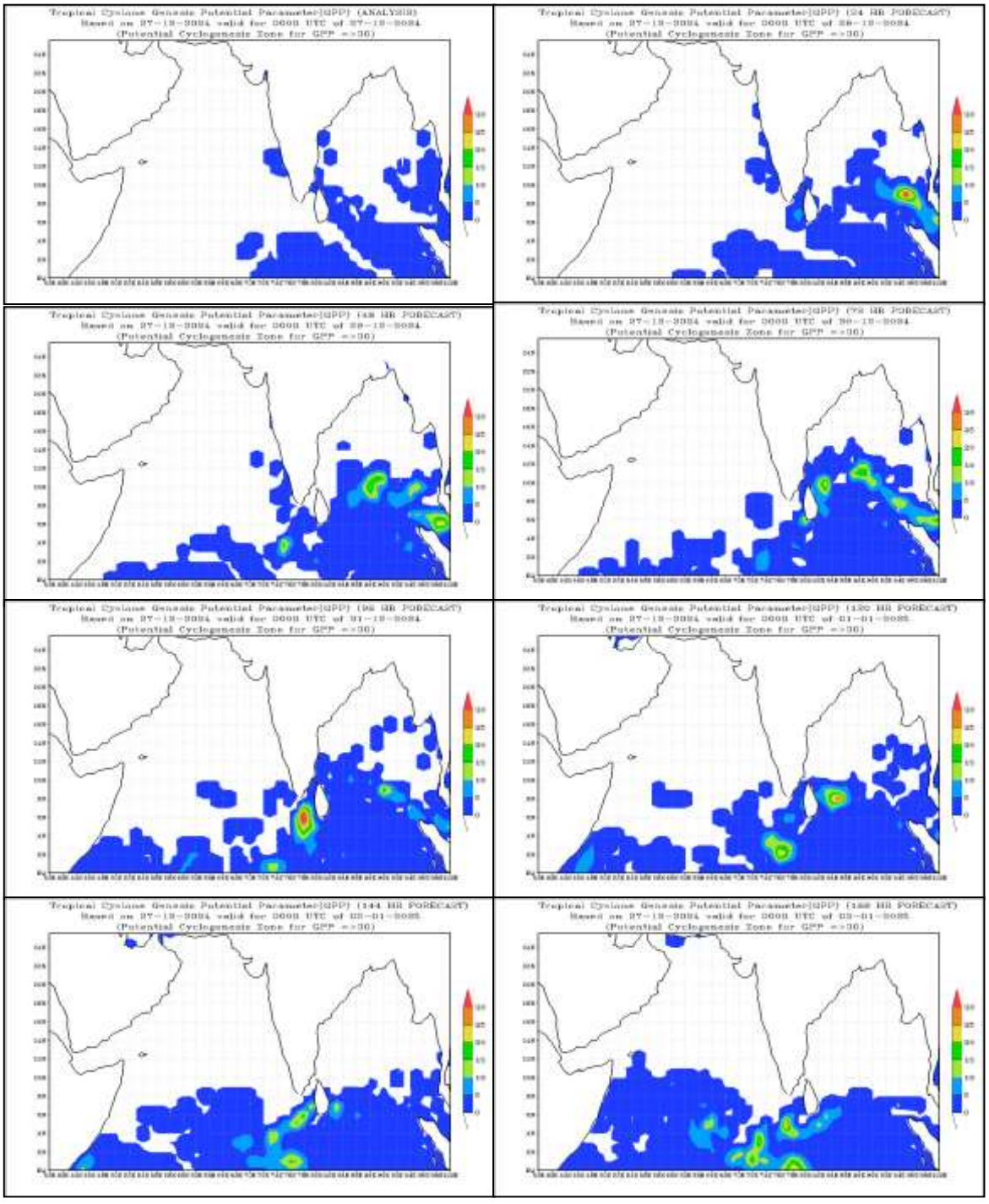
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

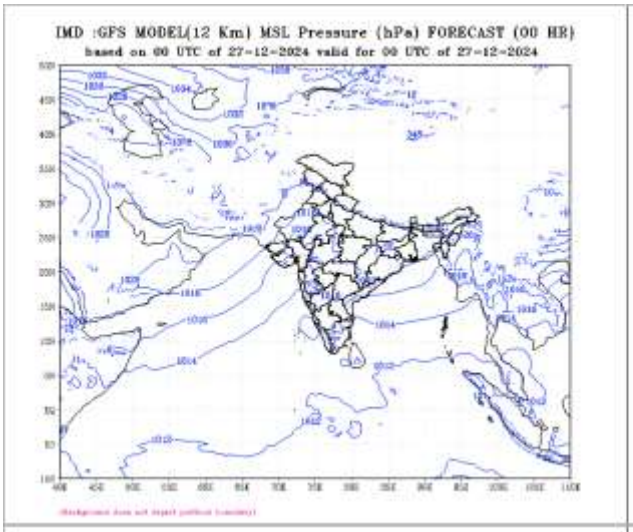
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

"- "indicates genesis has already occurred.
Probability is indicated as NIL for 0%, LOW for 1-33%, MOD for 34-67% and High for 68-100%.

Intense Observation Period (IOP): Nil.

ANNEXURE

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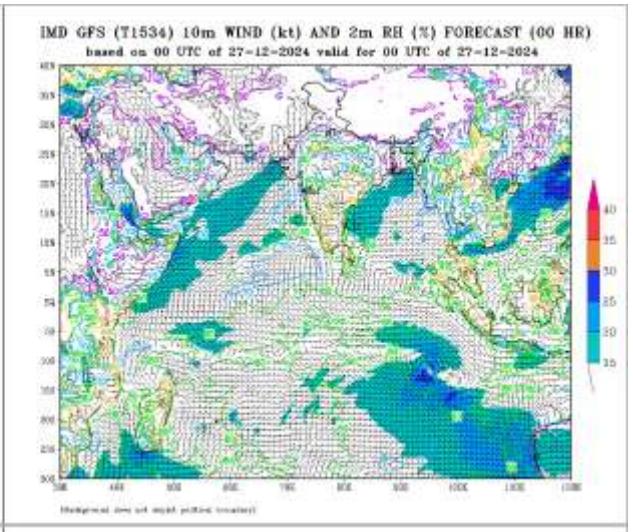
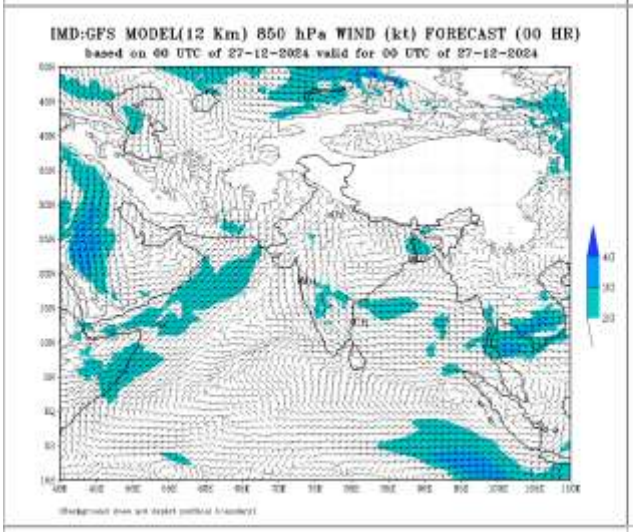
based on 00 UTC of 27-12-2024 valid for 00 UTC of 27-12-2024


IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (00 HR)
based on 00 UTC of 27-12-2024 valid for 00 UTC of 27-12-2024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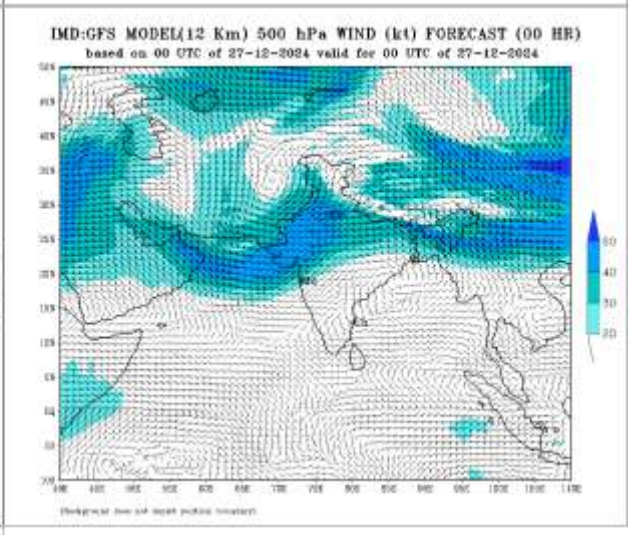
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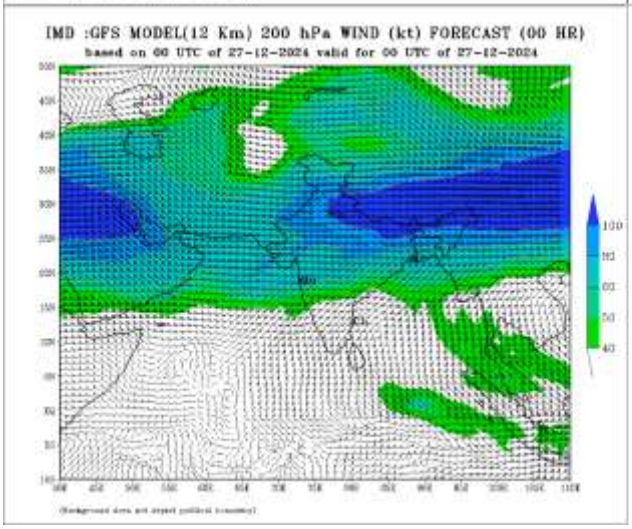
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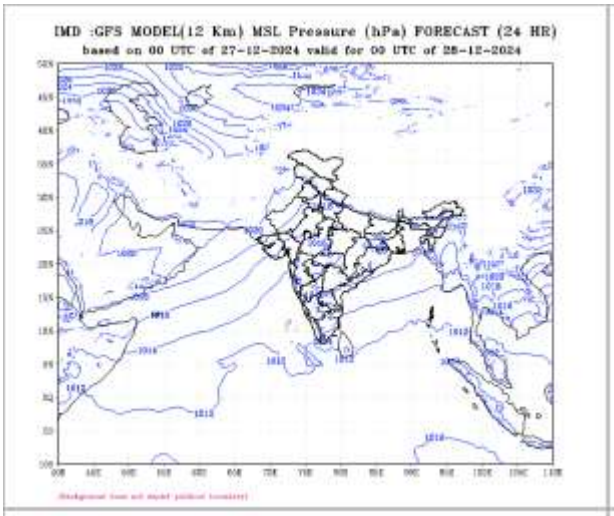
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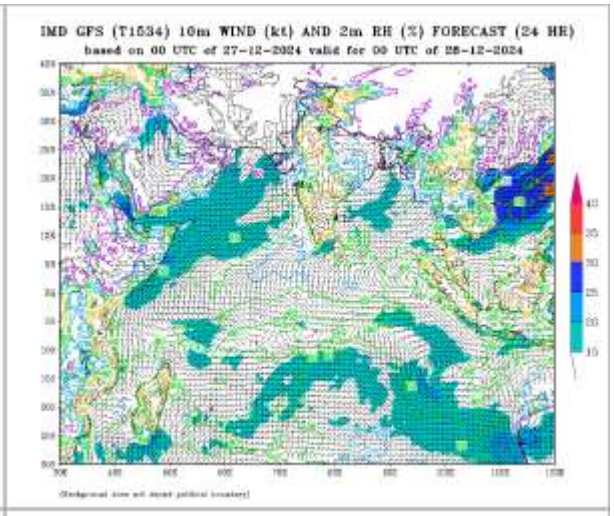
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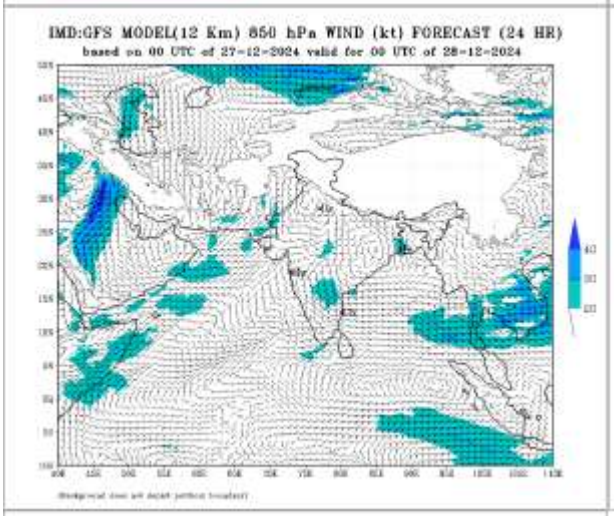
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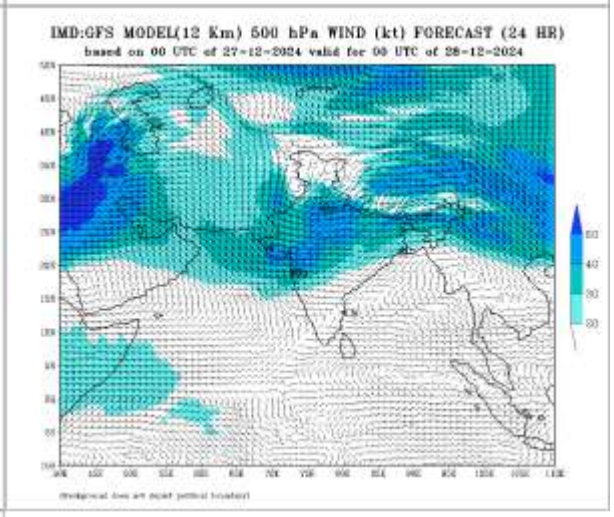
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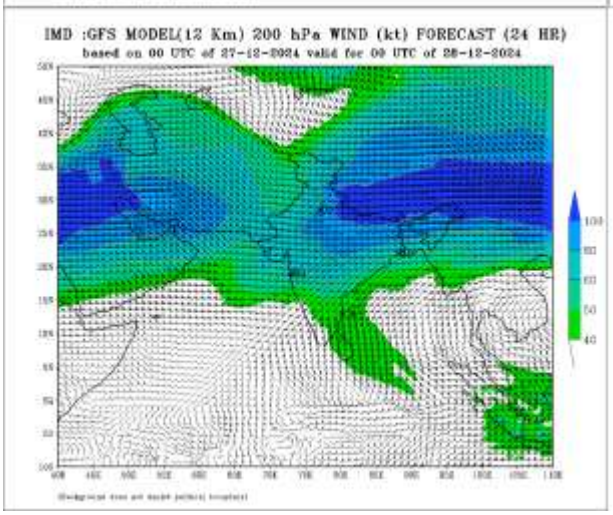
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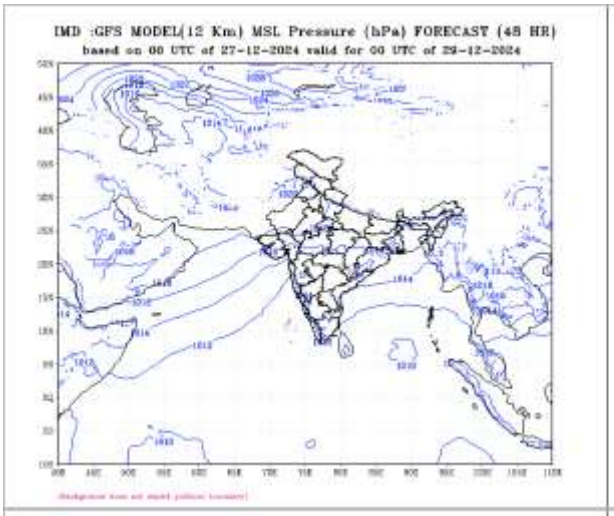
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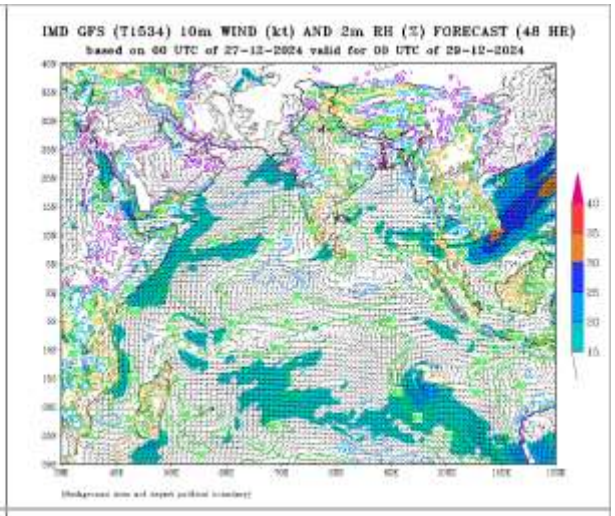
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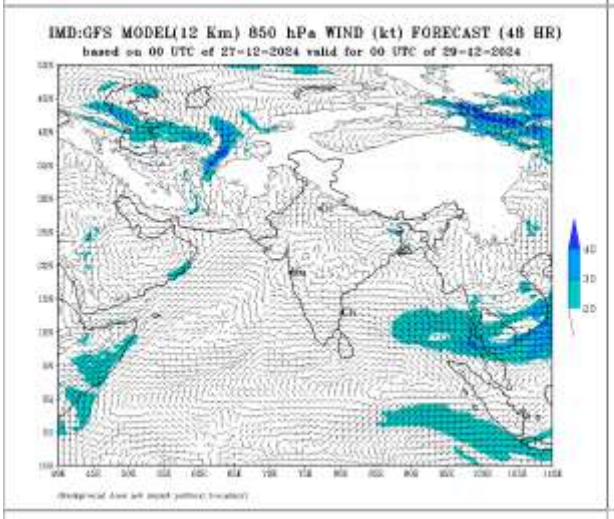
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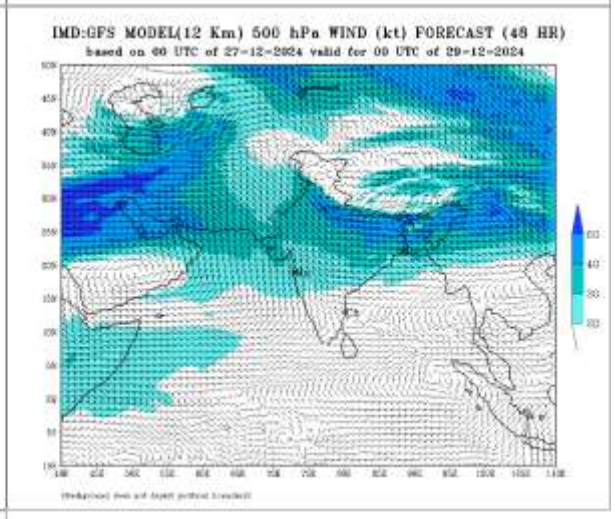
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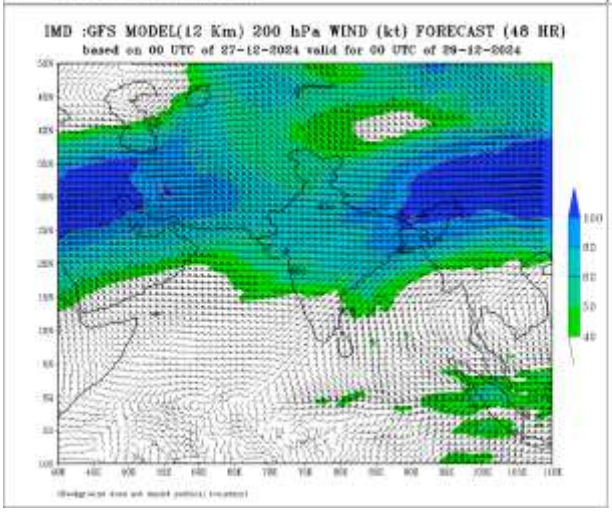
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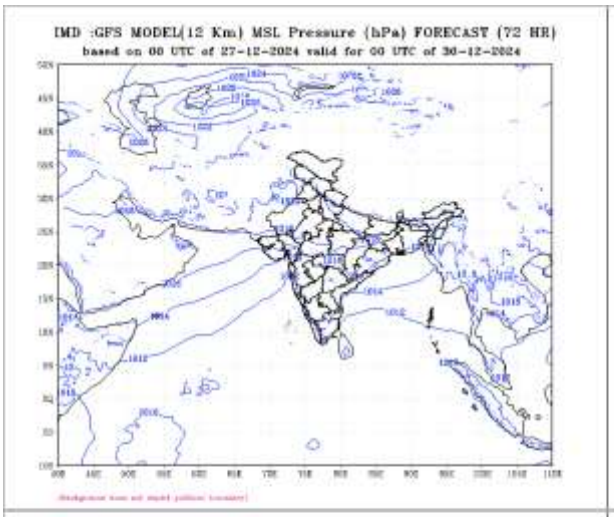
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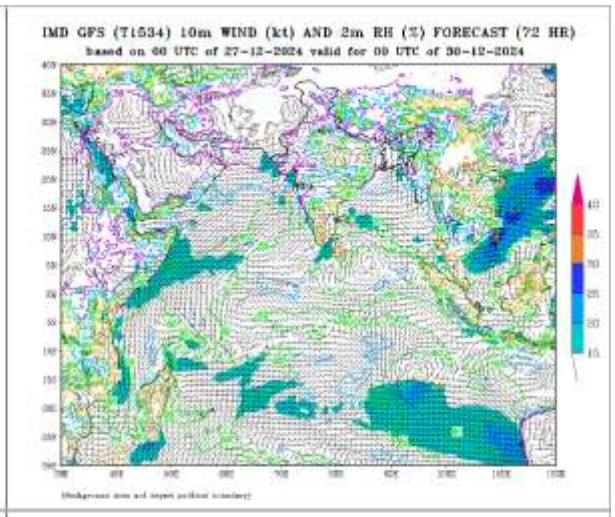
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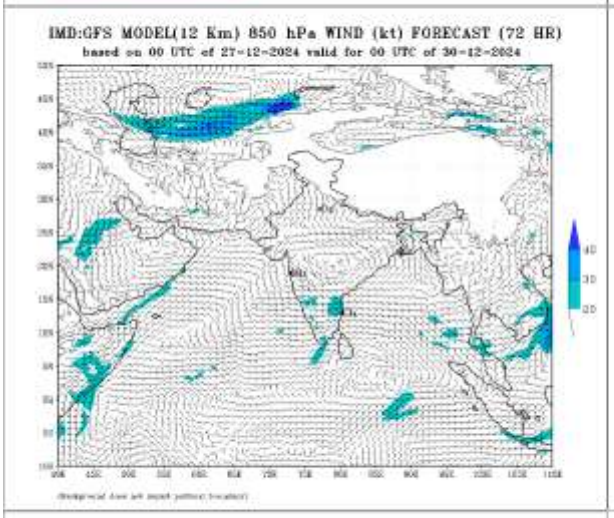
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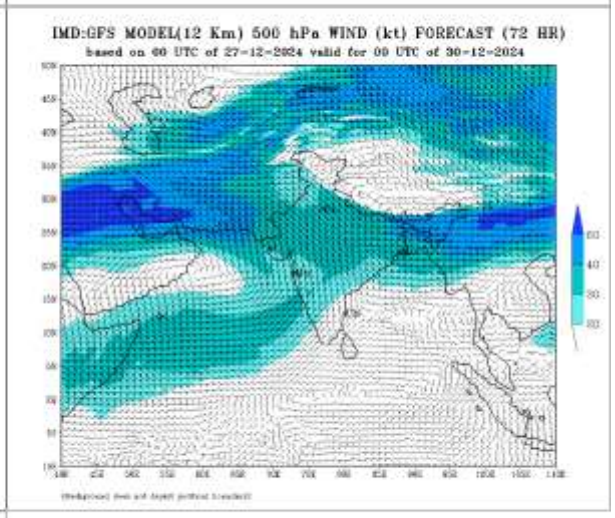
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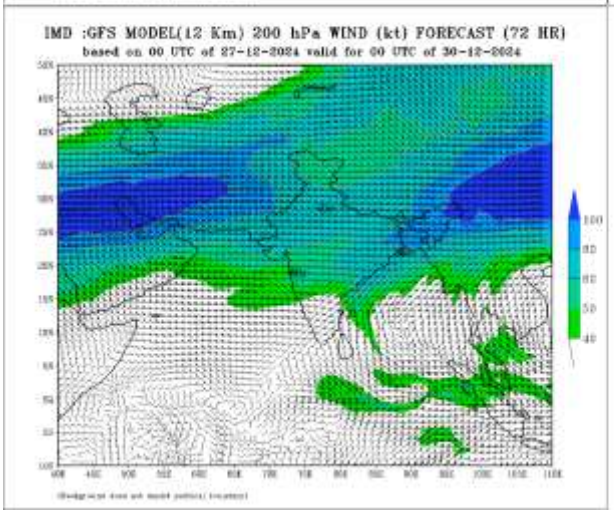
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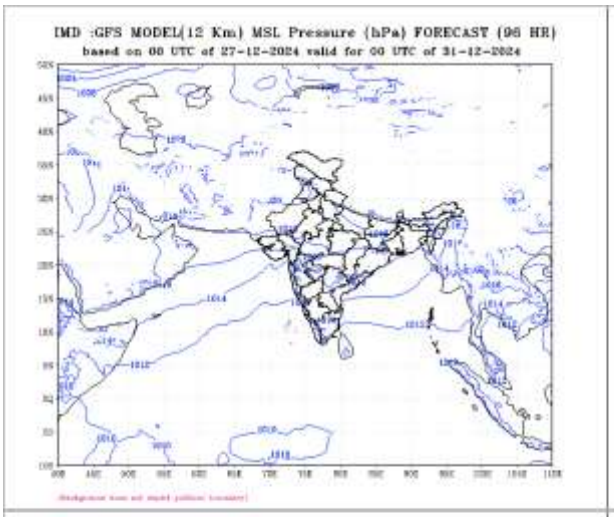
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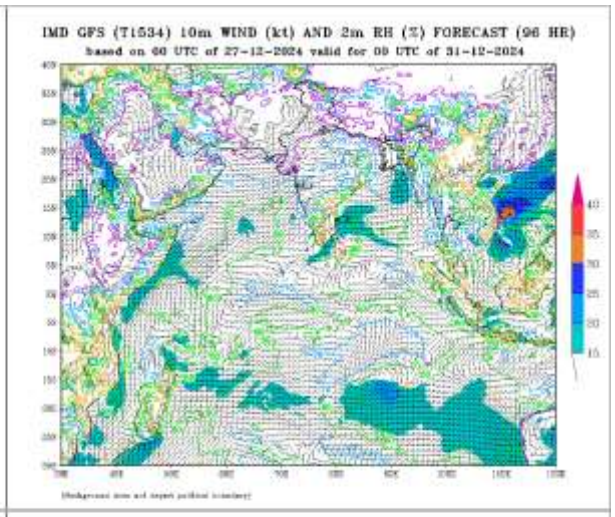
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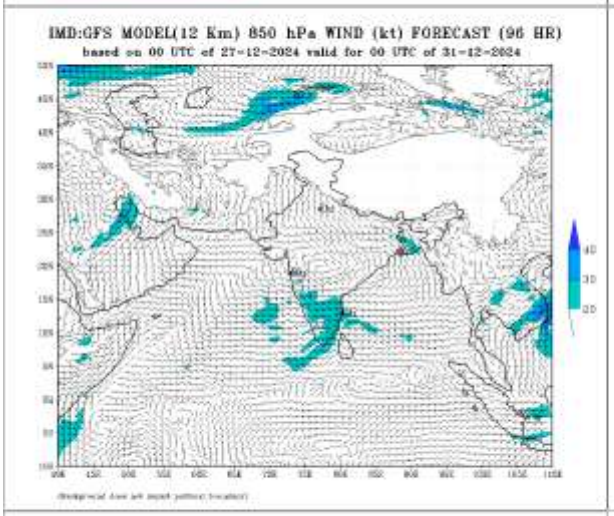
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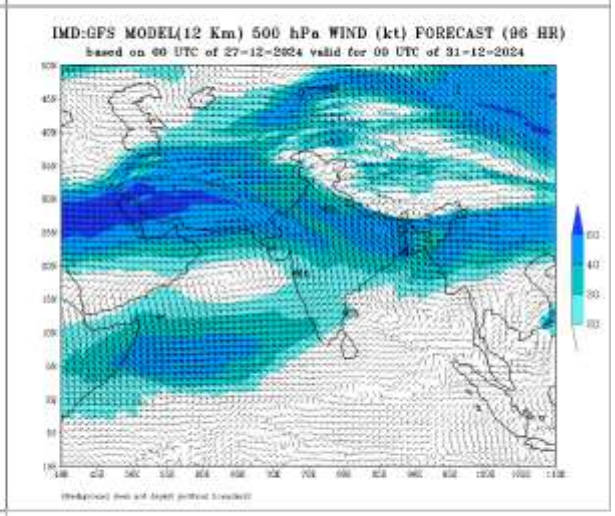
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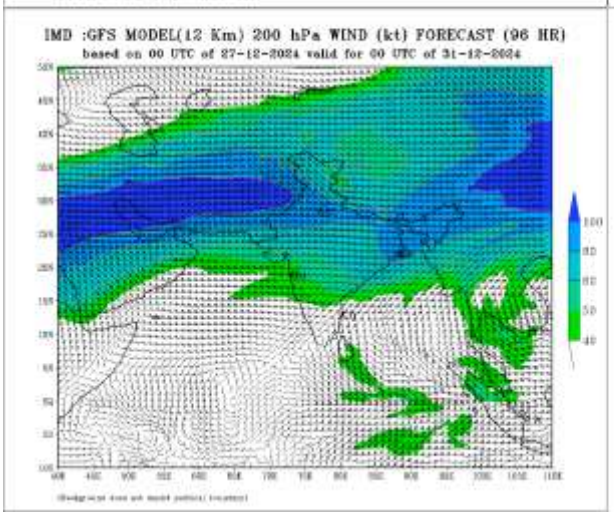
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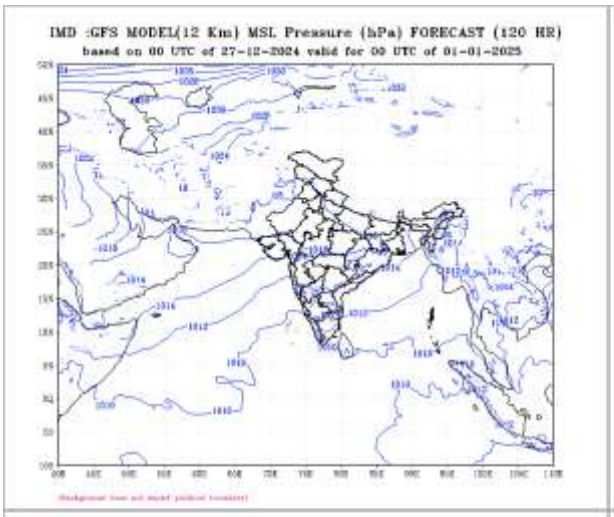
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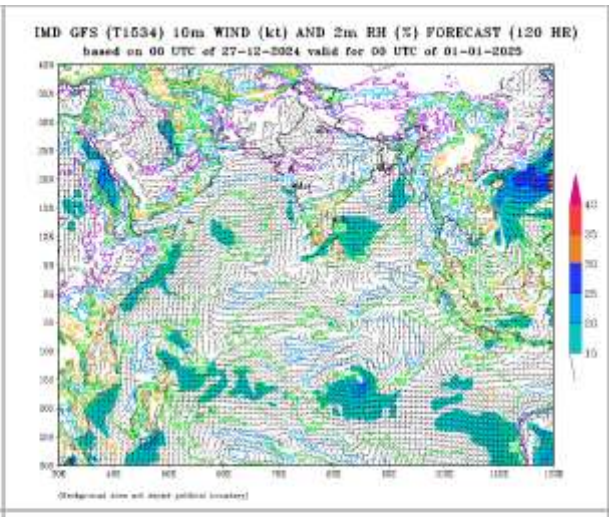
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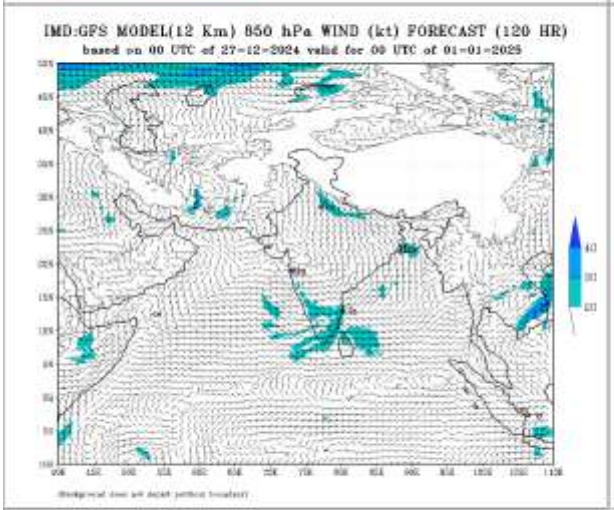
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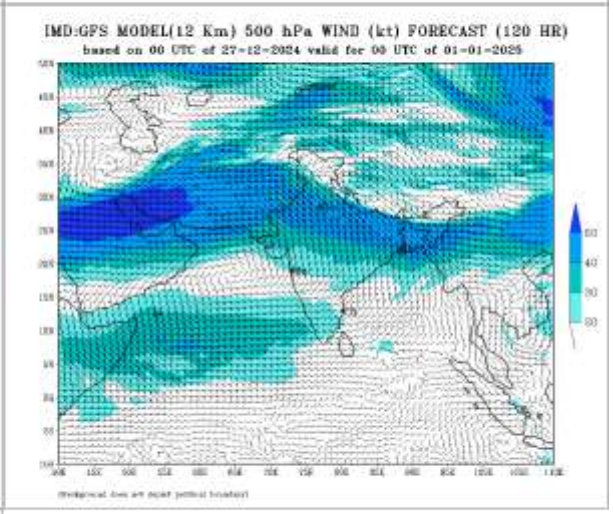
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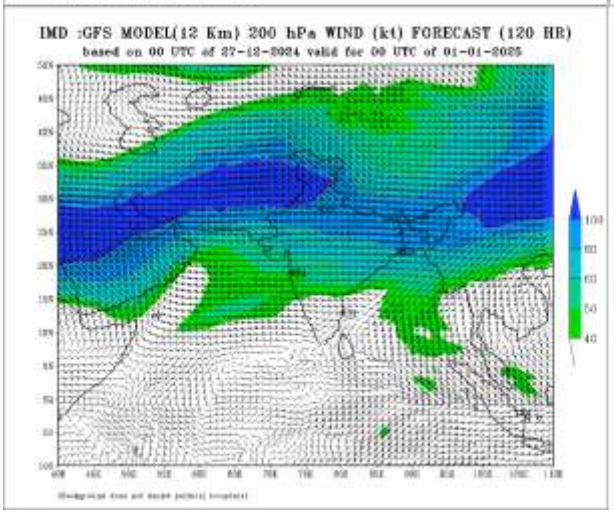
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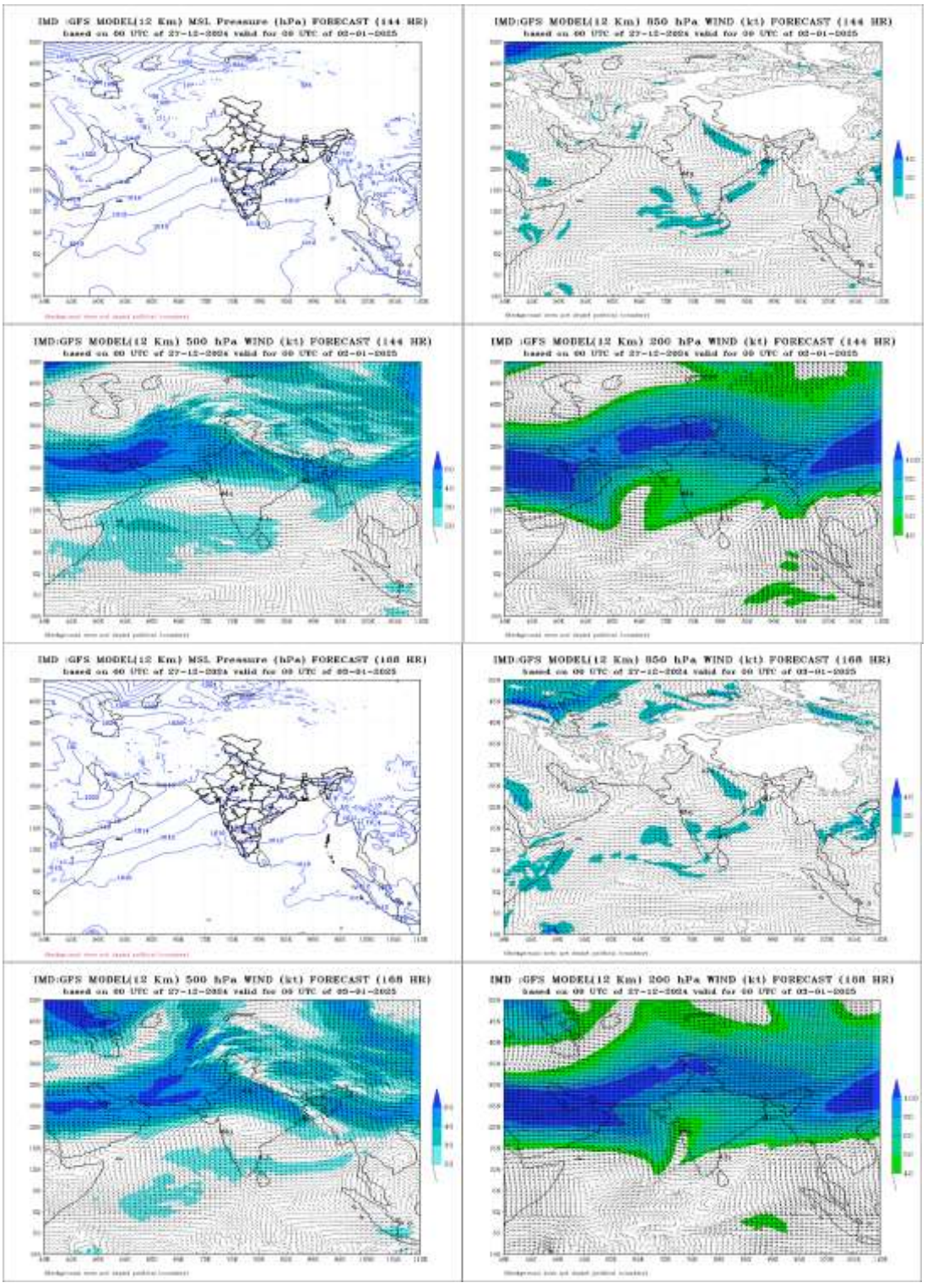
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IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (144 HR)
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (168 HR)
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IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
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