



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

**Tropical Cyclone Forecast Programme
Report Dated 17th November 2024**

Time of Issue: 0730 UTC

Synoptic features (based on 0300 UTC analysis):

- A fresh cyclonic circulation formed over Maldives & adjoining Equatorial Indian Ocean (EIO) at 0.9 km above mean sea level at 0300 UTC of today, the 17th November, 2024.

Environmental Features:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	➤ 28-30°C over entire BoB and Andaman Sea.	➤ 28-30°C over entire Arabian Sea except westcentral and southwest Arabian Sea.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	➤ 160-180 over northeastern & east central BoB & 100-140 over south Andaman Sea and north, southeast BoB & adjoining EIO. ➤ 70-80 over remaining parts of BoB	➤ 100-110 over southeast AS & adjoining EIO. ➤ 30-60 over west central & southwest AS off Oman, Yemen & Somalia coasts. ➤ 60-80 over rest of the Arabian Sea.
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	➤ 50-60 over south Andaman Sea off Sumatra coast.	➤ 40-50 over north Arabian Sea off Gujarat coast.
Low Level convergence (X10⁻⁵ s⁻¹)	➤ 5-10 over south Andaman sea off Sumatra Coast.	➤ 5-10 over southeast Arabian Sea.
Upper-Level divergence (X10⁻⁵ s⁻¹)	➤ 10-20 over south Andaman Sea	➤ 5-10 over South Arabian Sea and East Arabian Sea.
Vertical Wind Shear (VWS knots) Low: 05-10 knots Moderate: 10-20 knots High: >20 knots	➤ Low-Moderate over rest of south and adjoining central BoB.	➤ Low-Moderate over rest of south and adjoining central AS.
Wind Shear Tendency (knots)	No change over central and south BoB.	Decreasing over south and adjoining central AS.
Upper tropospheric Ridge	At 18 ^o N.	At 18 ^o N.

Satellite observations based on INSAT imagery (0300 UTC):

a) Over the BoB & Andaman Sea: -

Scattered low and medium clouds with embedded intense to very intense convection lay over south Andaman Sea. Scattered low and medium clouds with embedded moderate to intense convection lay over south Bay of Bengal.

b) Over the Arabian Sea:

Scattered low and medium clouds with embedded intense to very intense convection lay over Eastcentral and southeast Arabian Sea, Lakshadweep islands area, Maldives & Comorin area. Scattered low and medium clouds with embedded moderate to intense convection lay over eastcentral adjoining southwest Arabian Sea.

c) Outside India:

Scattered low and medium clouds with embedded moderate to intense convection lay over Palk strait, Gulf of Mannar, Maldives, Tibet, China yellow sea, east China sea, Sumatra, Strait of Malacca, Malaysia, Borneo, south China sea, Java islands & sea, Celebes islands & sea, Philippines, Sulu sea, Mozambique Channel, Madagascar and over Indian ocean between latitude 5.0° N to 23.0° S longitude 50.0° E to 110.0° E.

M.J.O. Index:

Madden Julian Oscillation (MJO) index is currently in Phase 3 with an amplitude close to 1. It will be in the same phase with amplitude close to 1 during next 10 days.

Storms and Depression over east China sea adjoining Taiwan/ South Indian Ocean:

Vortex (Bheki) over South Indian Ocean (area E80) centered near 15.4S / 71.1E. Intensity T5.5/5.5. Maximum sustained winds 90-119 knots. Associated broken low and medium clouds with embedded intense to very intense convection lay over area between latitude 13.0° S to 20.0° S longitude 67.0° E to 74.0° E.

NWP Guidance for FDP Cyclone based on 0000 UTC for the next 7 days:

MODEL GUIDANCE	Bay of Bengal (BoB)	Arabian Sea (AS)
IMD-GFS	An extended trough over South Andaman Sea and adjoining EIO on 22 nd Nov, Low pressure area over southeast BoB on 23 rd Nov, Depression over central parts of BoB on 24 th Nov, VSCS over southwest BoB near south Sri Lanka on 25 th & 26 th Nov, crossing Tamil Nadu coast near Karaikal (12.0 N/79.5 E) as VSCS on 27/00 UTC.	No Significant circulation over AS.
IMD-GEFS	A trough over Southeast BoB during 17-21 Nov, Low pressure area over Southeast BoB on 22 nd Nov, Depression over the same region on 24 th Nov.	No Significant circulation over AS.
IMD-WRF	Easterly waves over south BoB during next 32 days.	A Cyclonic circulation likely over Southwest Arabian Sea on 19 th November.
NCMRWF-NCUM(G)	A Cyclonic circulation likely over South Andaman Sea on 23 rd Nov, Low pressure area over southeast BoB on 24 th Nov with westwards movement towards South Sri Lanka till 26 th Nov.	No Significant circulation over AS.
NCMRWF-NCUM(R)	No Significant circulation over BoB.	No Significant circulation over AS.
NCMRWF-NEPS	No Significant circulation over BoB.	No Significant circulation over AS.
ECMWF	A trough over southeast BoB during 21 st to 23 rd Nov, Low pressure area over southeast BoB and EIO on 24 th Nov, Depression over southwest BoB on 25/12 UTC with west-northwestwards movement towards South Tamil Nadu Coast, crossing near Ramanathapuram (10.4 N/79.0 E) as Depression on 27/06 UTC.	An extended cyclonic circulation over southeast Arabian Sea on 17 th November, having its westwards movement till 19 th November towards Somalia coasts without intensification.
NCEP-GFS	Low pressure area over southeast BoB on 23 rd Nov with westwards movement, Depression over southwest BoB on 24/12 UTC with west-northwestwards movement towards Tamil Nadu Coast and crossing near Karaikal (12.0 N/79.2 E) as Depression on 27/18 UTC. In between it is also indicating intensification of the system during 25 th to 26/12 UTC and weakening thereafter.	No Significant circulation over AS.
GPP	Potential for cyclogenesis over southeast BoB on 21 st Nov with	-

	westwards movement till 22 nd Nov.	
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Summary:

(a) Bay of Bengal:

Most of the models (IMD GFS, IMD GEFS, NCUM, NCEP GFS, ECMWF) are indicating likely formation of a cyclonic circulation over South Andaman Sea and adjoining Southeast BoB around 23rd, low pressure area over southeast BoB around 24th and depression over southwest & adjoining southeast BoB around 25th November. However, NCUM is not indicating development of depression. IMD GFS is indicating higher intensification. ECMWF is indicating intensification upto depression stage. Most of the models are indicating crossing on 27th over south Tamil Nadu between Karaikal & Ramanathapuram as a depression (GFS & ECMWF) and NCUM as a low pressure.

(b) Arabian Sea

Most of the models are indicating no significant cyclonic circulation over Arabian Sea for the next seven days.

Inference:

Considering various environmental conditions and model guidance, it is inferred that:

There is likelihood of formation of cyclonic circulation over south Andaman Sea around 23rd November, low pressure area over southeast Bay of Bengal around 24th November and depression over southwest Bay of Bengal around 25th November. Hence probability of cyclogenesis during next 7 days may be treated as NIL. However, continuous watch may be maintained for probable development of cyclonic disturbance over south Bay of Bengal during 23rd November onwards.

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:

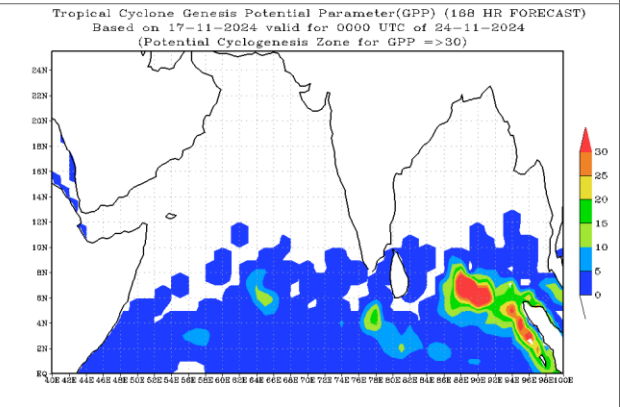
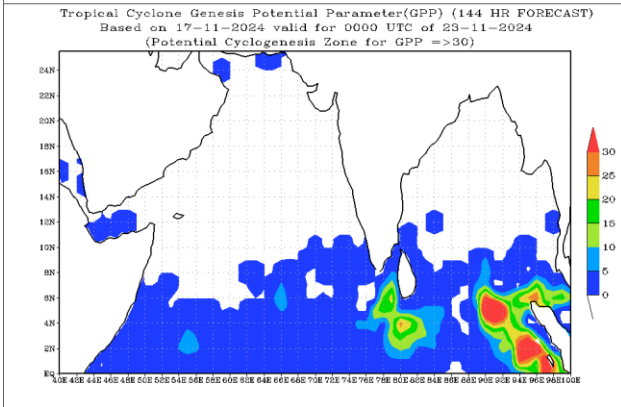
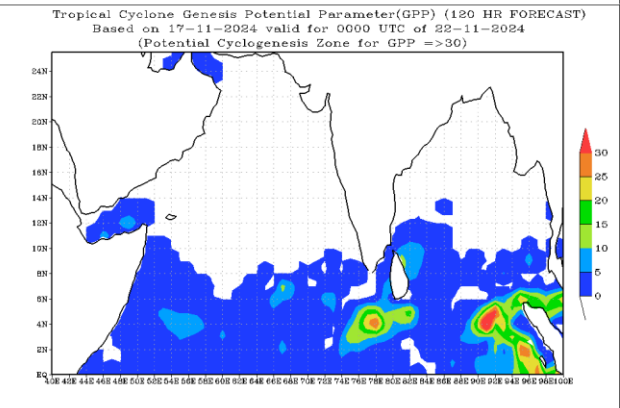
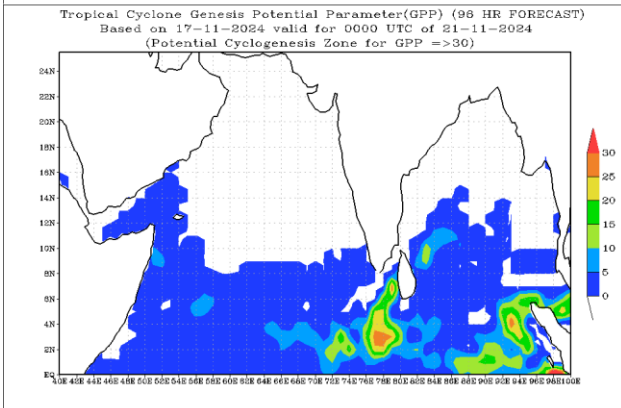
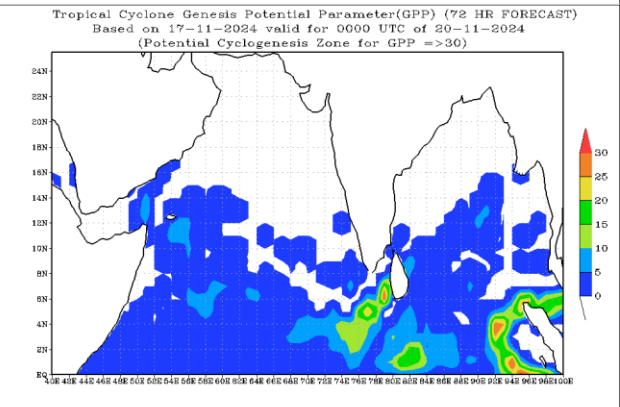
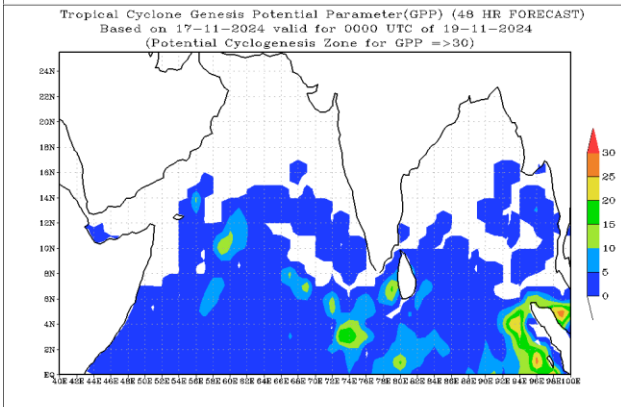
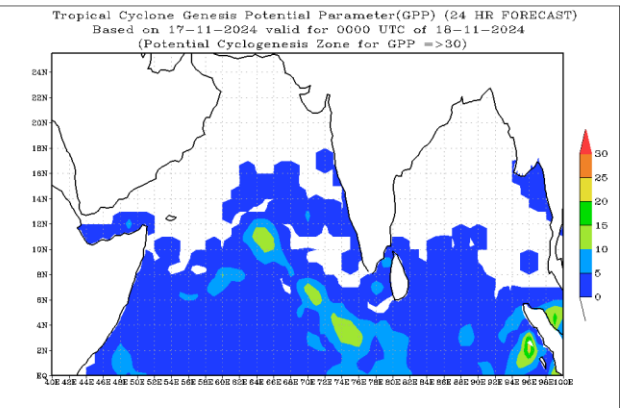
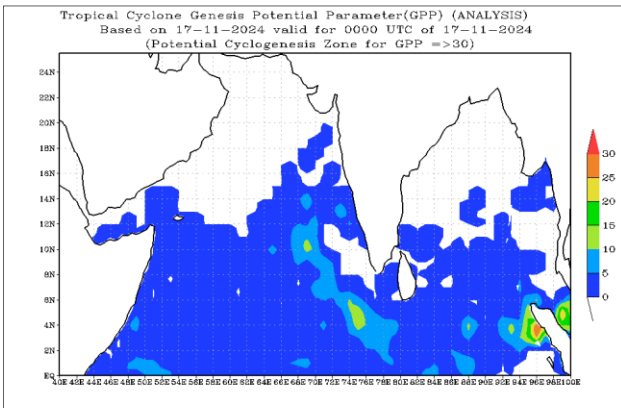
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

“- “indicates genesis has already occurred.

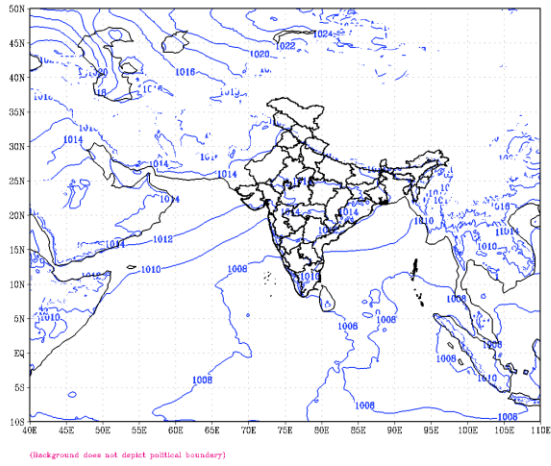
Probability is indicated as NIL for 0%, LOW for 1-33%, MOD for 34-67% and High for 68-100%.

Intense Observation Period (IOP): NIL

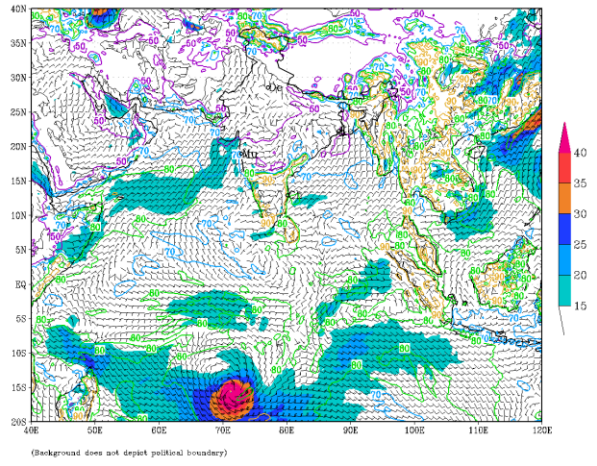
ANNEXURE



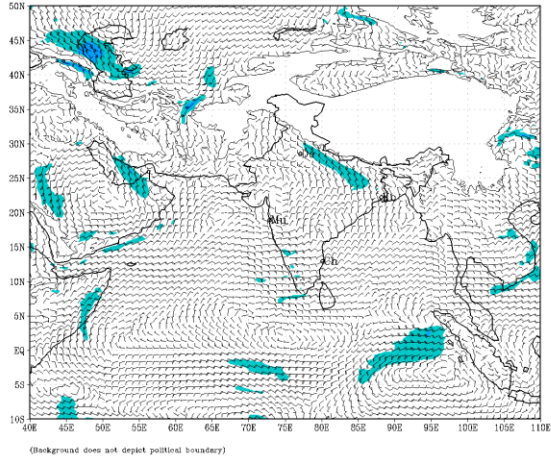
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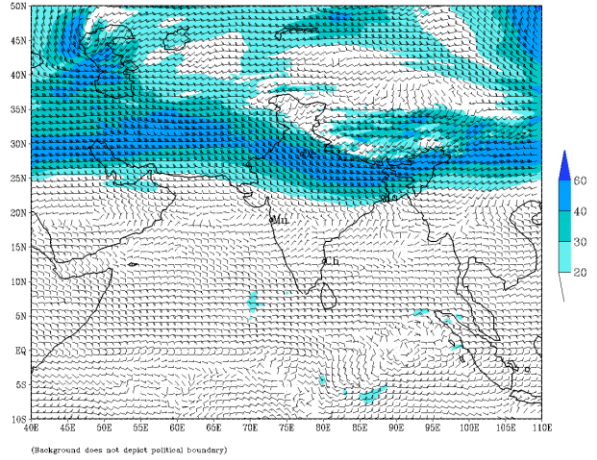
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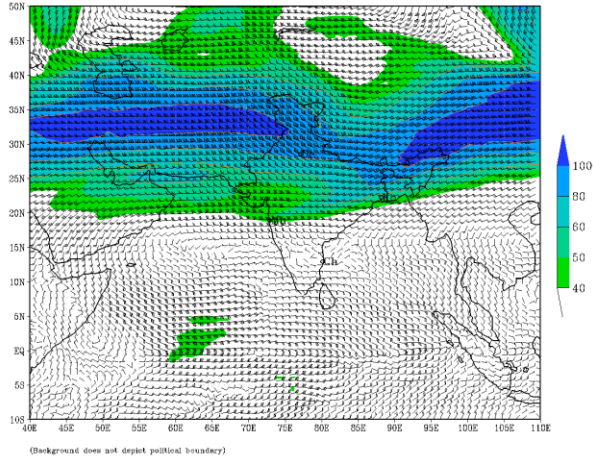
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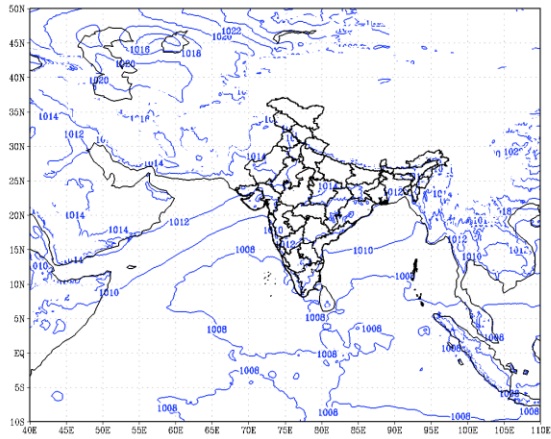
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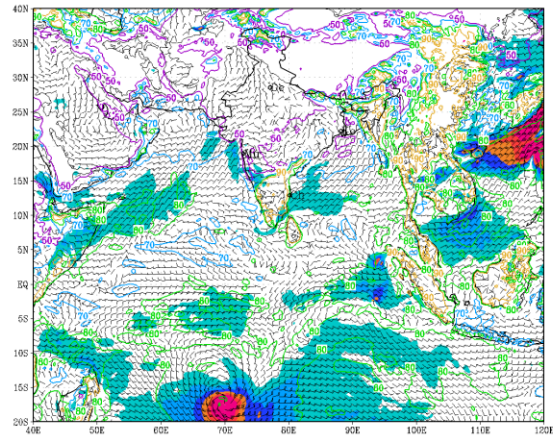


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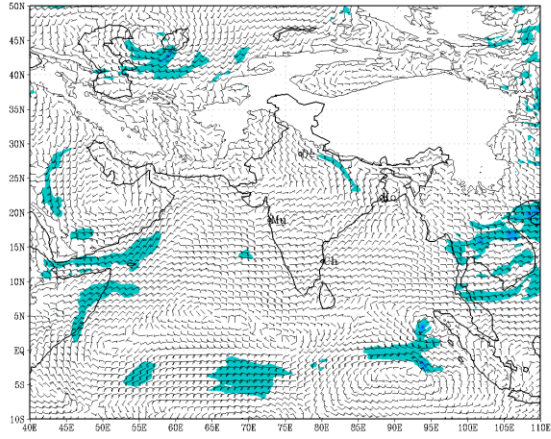
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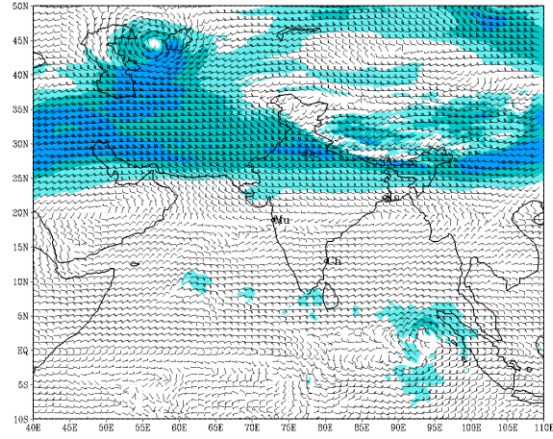
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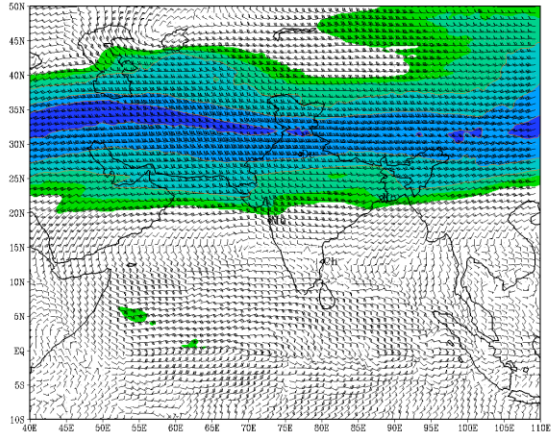
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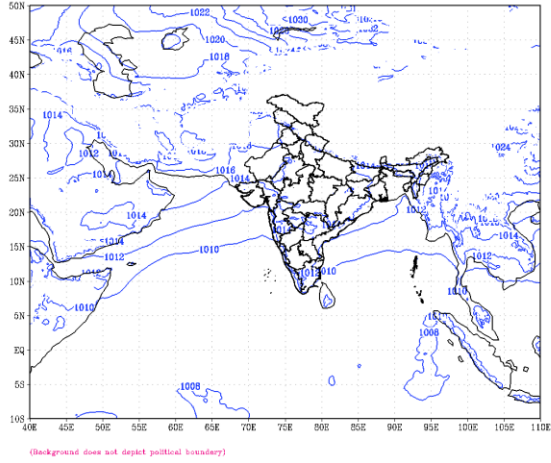
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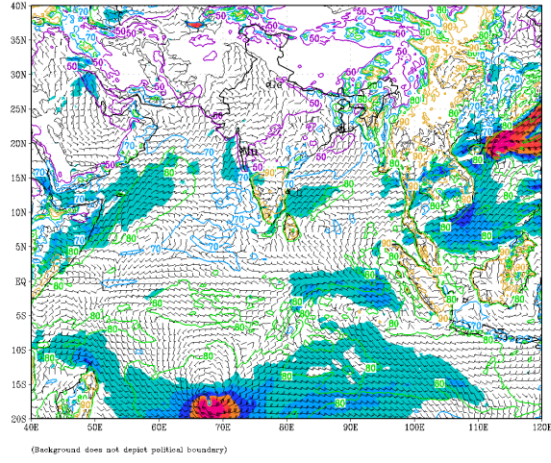


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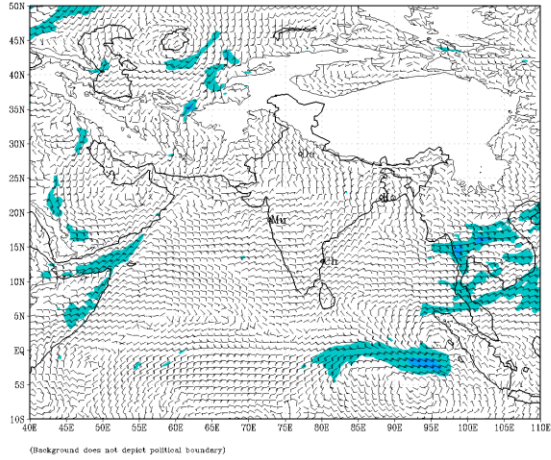
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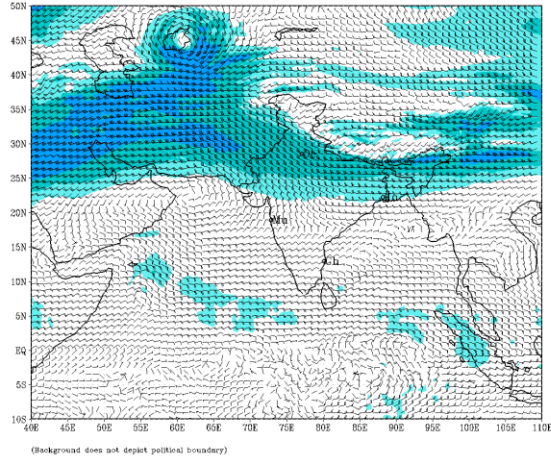
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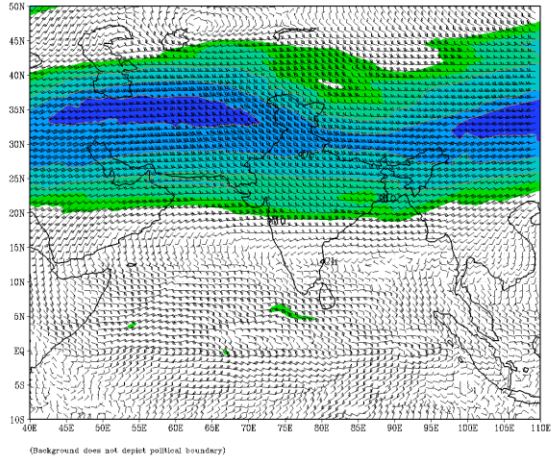
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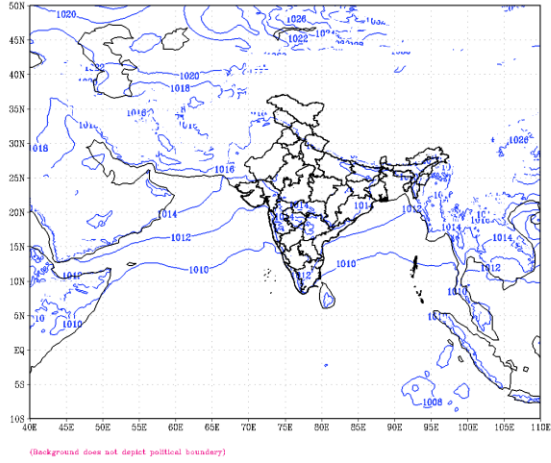
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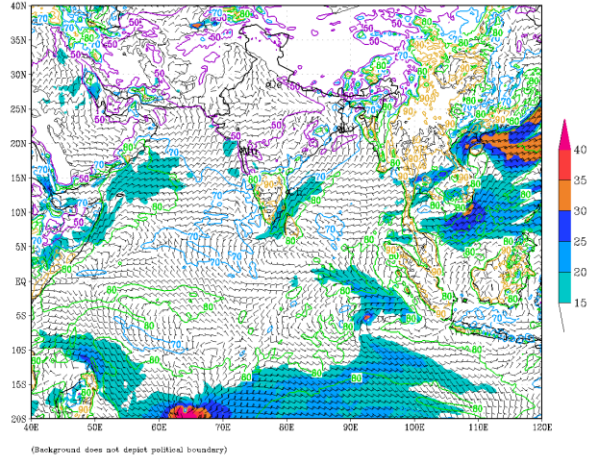
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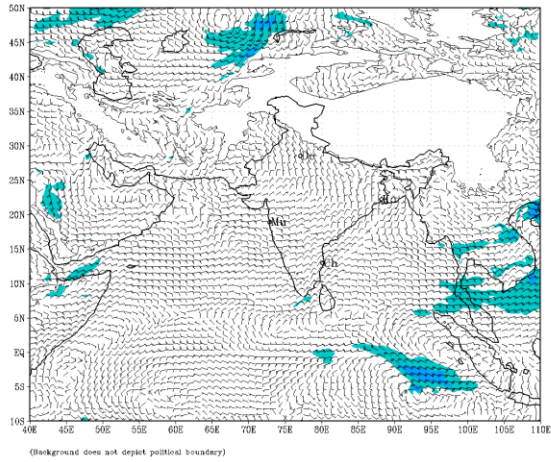
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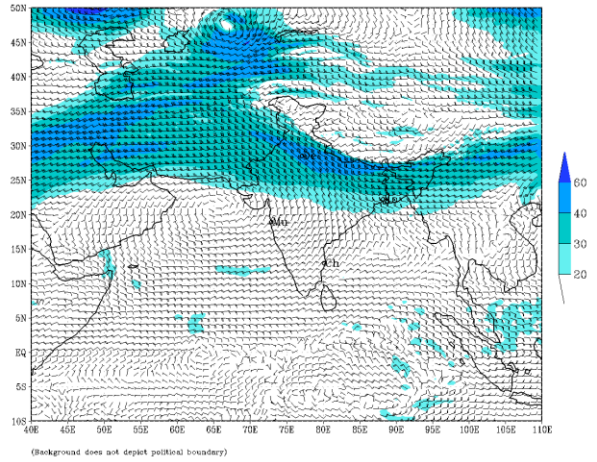
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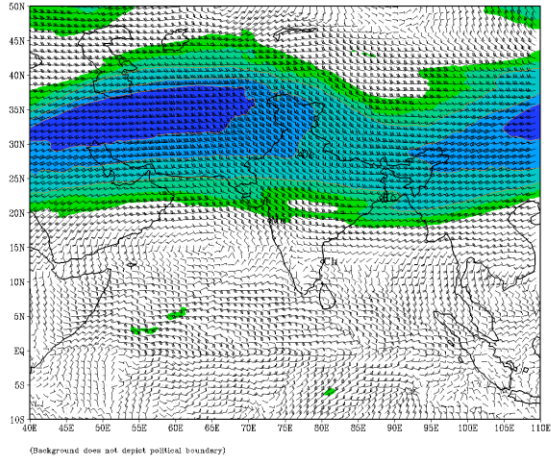
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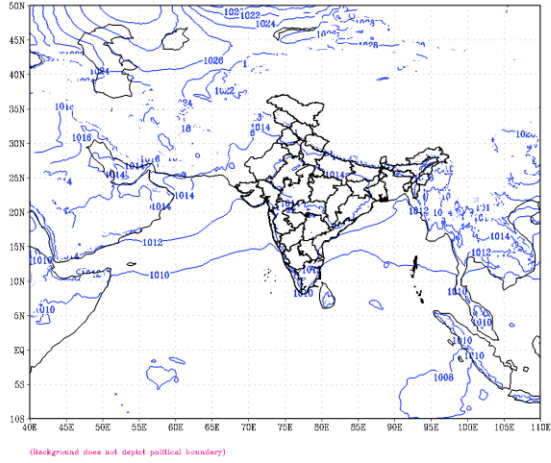
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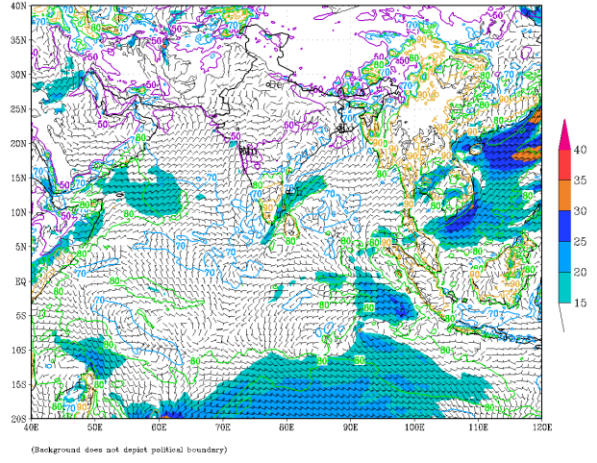
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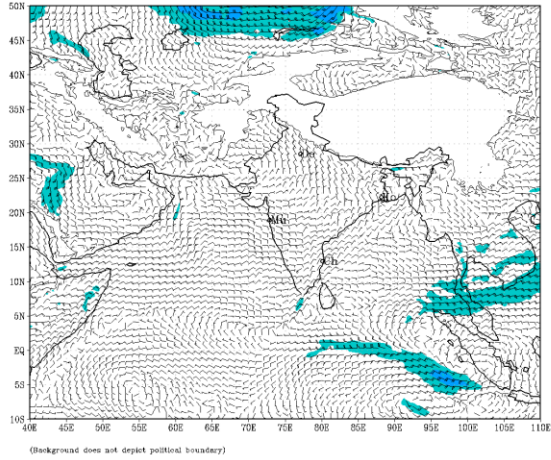
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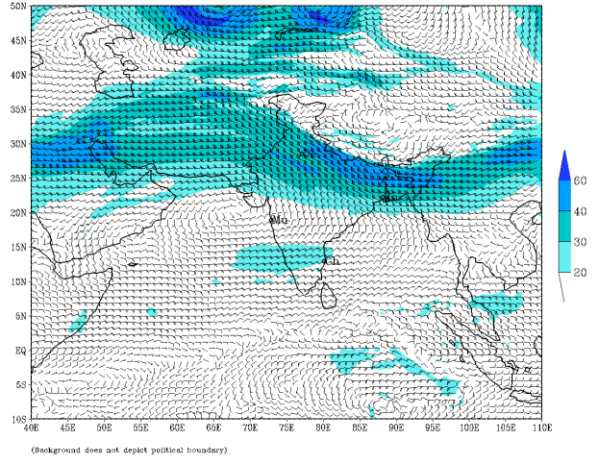
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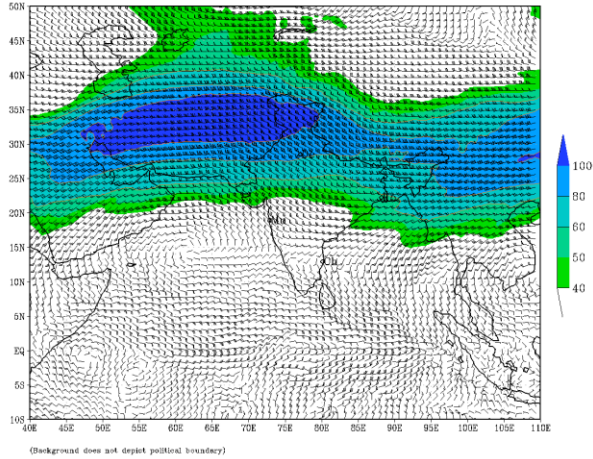
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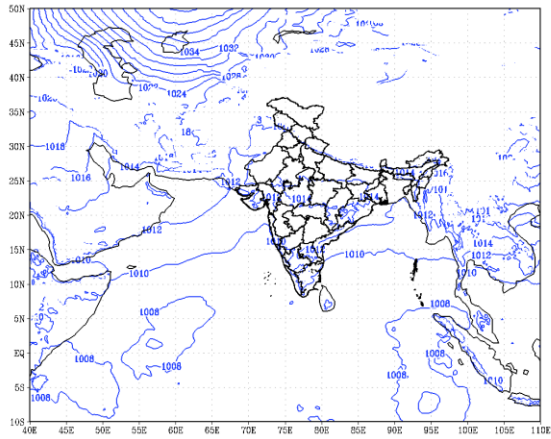
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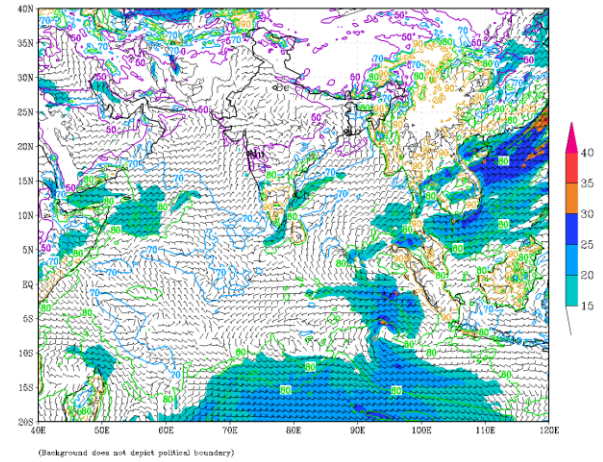
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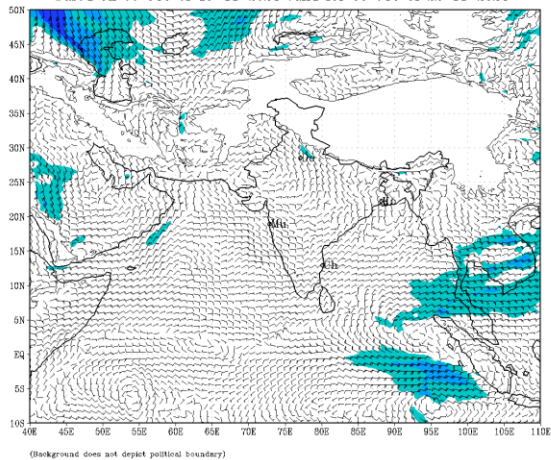
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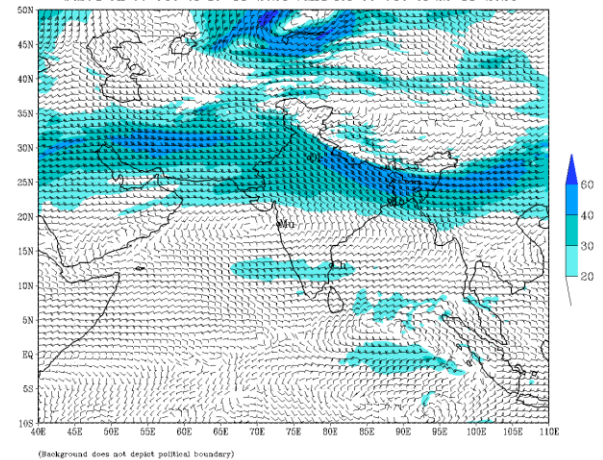
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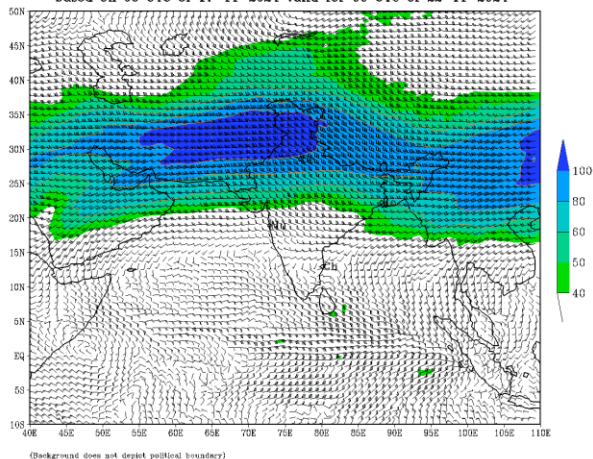
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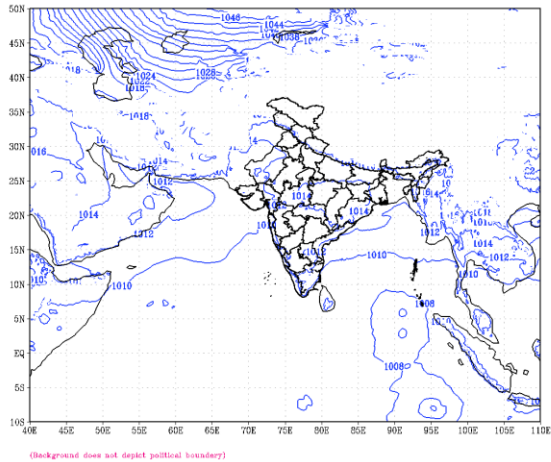
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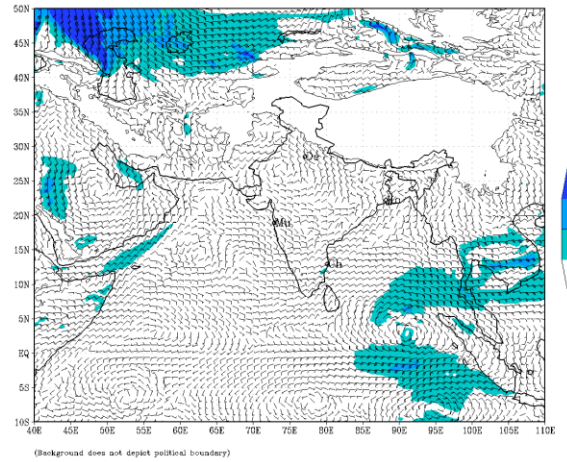


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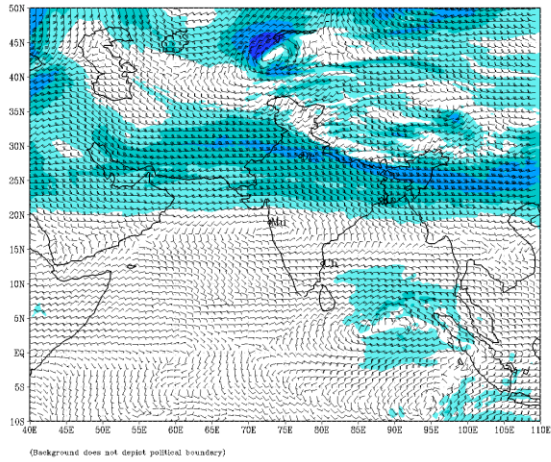
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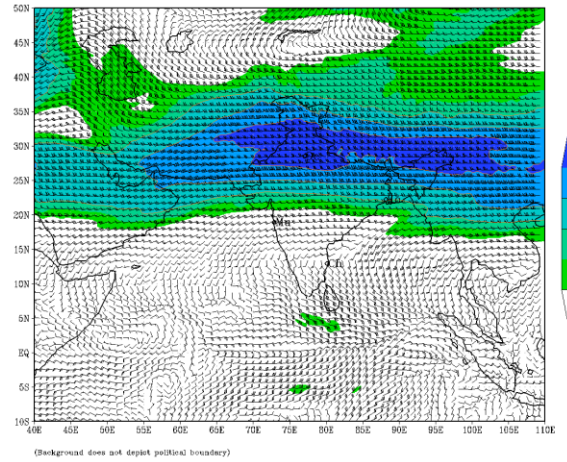
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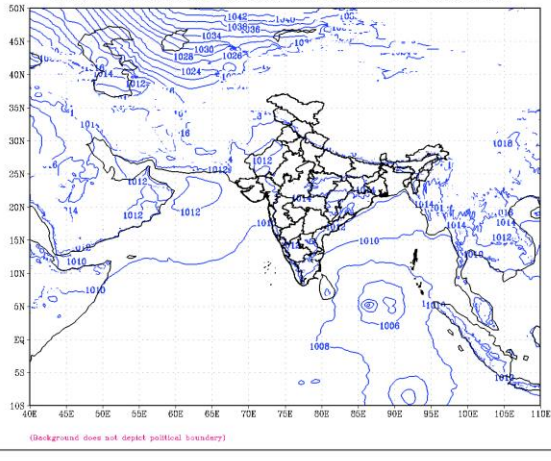
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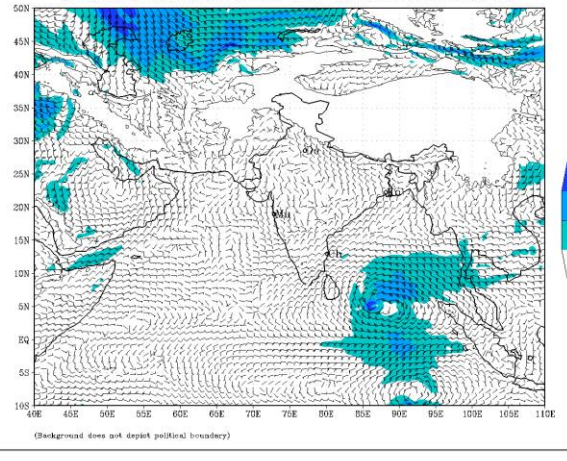
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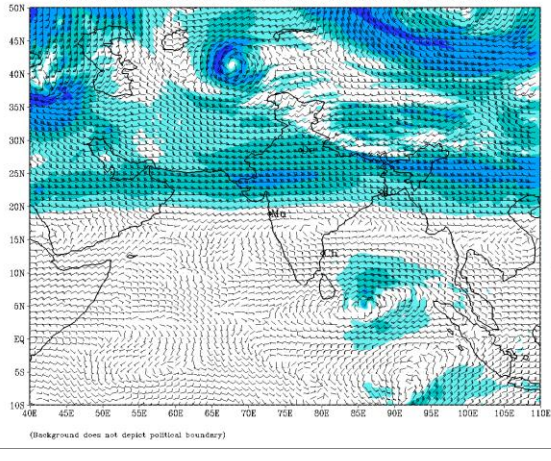
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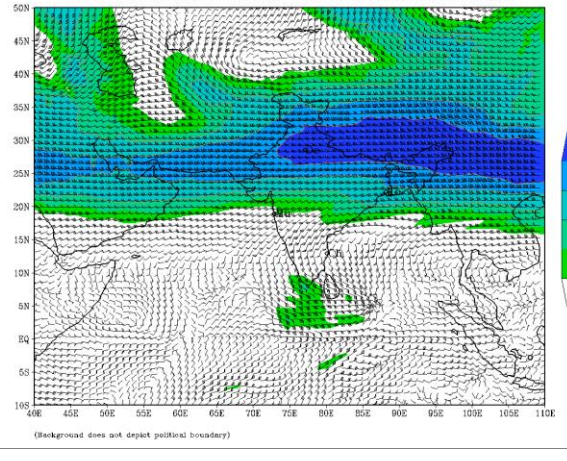
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(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 17-11-2024 valid for 00 UTC of 24-11-2024



(Background does not depict political boundary)