



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

**Tropical Cyclone Forecast Programme
Report Dated 15th November 2024**

Time of Issue: 0800 UTC

Synoptic features (based on 0300 UTC analysis):

Yesterday's cyclonic circulation over south Tamil Nadu & neighbourhood now lies over Gulf of Mannar & adjoining Sri Lanka coast and extends upto 1.5 km above mean sea level marked at 0300 UTC of today, the 15th November, 2024.

Yesterday's cyclonic circulation over Lakshadweep and adjoining southeast Arabian Sea extending upto 3.1 km above mean sea level has become less marked at 0300 UTC of today, the 15th November, 2024.

Environmental Features:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	<ul style="list-style-type: none"> ➤ 27-29°C over Northern BoB and 29-31°C over rest BoB. 	<ul style="list-style-type: none"> ➤ 26-29°C over northern, west central and southwest parts of AS off Somalia, Yemen coasts. ➤ 29-31°C over rest of AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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)	<ul style="list-style-type: none"> ➤ 20-30 over southwest BoB & Gulf of Mannar on Sri Lanka/Tamil Nadu coast. 	<ul style="list-style-type: none"> ➤ 20-30 over some parts of southwest AS and off Somalia coast. ➤ 10-20 over Lakshadweep Island area off Karnataka coast.
Low Level convergence (X10⁻⁵ s⁻¹)	<ul style="list-style-type: none"> ➤ 5-10 over southwest & adjoining west central BoB off Tamil Nadu/Sri Lanka coasts. 	<ul style="list-style-type: none"> ➤ No significant convergence
Upper-Level divergence (X10⁻⁵ s⁻¹)	<ul style="list-style-type: none"> ➤ 10-15 over southwest & adjoining west central BoB on Tamil Nadu/Sri Lanka coasts. 	<ul style="list-style-type: none"> ➤ 5-10 over Maharashtra and Karnataka coast
Vertical Wind Shear (VWS knots) Low: 05-10 knots	<ul style="list-style-type: none"> ➤ High over northern BoB. ➤ Low-Moderate over rest of BoB. 	<ul style="list-style-type: none"> ➤ High over northern AS. ➤ Low-Moderate over rest of AS.

Moderate: 10-20 knots High: >20 knots		
Wind Shear Tendency (knots)	Decreasing over northern parts of BoB and increasing over Andaman Islands area.	Decreasing over central adjoining southwest parts of AS.
Upper tropospheric Ridge	At 17° N.	At 16° N.

Satellite observations based on INSAT imagery (0300 UTC):

a) Over the BoB & Andaman Sea: -

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

b) Over the Arabian Sea:

Scattered low and medium clouds with embedded isolated intense to very intense convection lay over central & south Arabian Sea, Comorin area off Kerala coast and Maldives area.

c) Outside India:

Scattered low and medium clouds with embedded moderate to intense convection lay over Gulf of Mannar, Maldives, north Pakistan, north Tibet, China, Thailand, Gulf of Thailand, Cambodia, Sumatra Strait of Malacca, Malaysia, Borneo, south China sea, Java islands & sea, Celebes islands & sea, Philippines, east China sea, yellow sea and over Indian ocean between latitude 5.0° N to 22.0° S longitude 50.0° E to 100.0° E.

M.J.O. Index:

Madden Julian Oscillation (MJO) index is currently in Phase 2 with an amplitude less than 1. It will remain in the same phase till 20th with amplitude less than 1.

Storms and Depression over South Taiwan and neighbourhood/ South Indian Ocean:

Vortex (Bheki) over South Indian Ocean (area E65 adj E80) centered near 10.9 S / 75.9 E. Intensity T3.5/3.5. Maximum sustained winds 48-63 kts. Associated broken low and medium clouds with embedded intense to very intense convection lay over area between latitude 3.0° S to 18.0° S longitude 70.0° E to 80.0° E.

Vortex (Usagi) over north Philippines and neighbourhood centered near 21.1° N / 120.6° E. Intensity T4.5/4.5. Maximum sustained winds 64-89 kts. Associated broken low and medium clouds with embedded intense to very intense convection lay over area between latitude 17.0° N to 25.0° N longitude 117.0° E to 126.0° E & Taiwan and north Philippines.

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	No Significant circulation over BoB.	No Significant circulation over AS.

IMD-GEFS	No Significant circulation over BoB.	No Significant circulation over AS.
IMD-WRF	No Significant circulation over AS.	A Cyclonic circulation is observed over Southeast Arabian Sea on 18 th November.
NCMRWF-NCUM(G)	No Significant circulation over BoB.	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	No Significant circulation over BoB.	An extended Cyclonic circulation is observed over Southeast Arabian Sea on 18 th November, having its westwards movement without intensification.
NCEP-GFS	No Significant circulation over BoB.	No Significant circulation over AS.

Summary:

(a) Bay of Bengal:

Most of the models are indicating no significant cyclonic circulation over Bay of Bengal for the next seven days. However, IMD WRF and ECMWF Models are indicating an extended cyclonic circulation over southeast Arabian Sea on 18th November having westward movement without intensification.

(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:

No fresh cyclogenesis is likely over the Bay of Bengal & Arabian Sea for the next seven days.

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

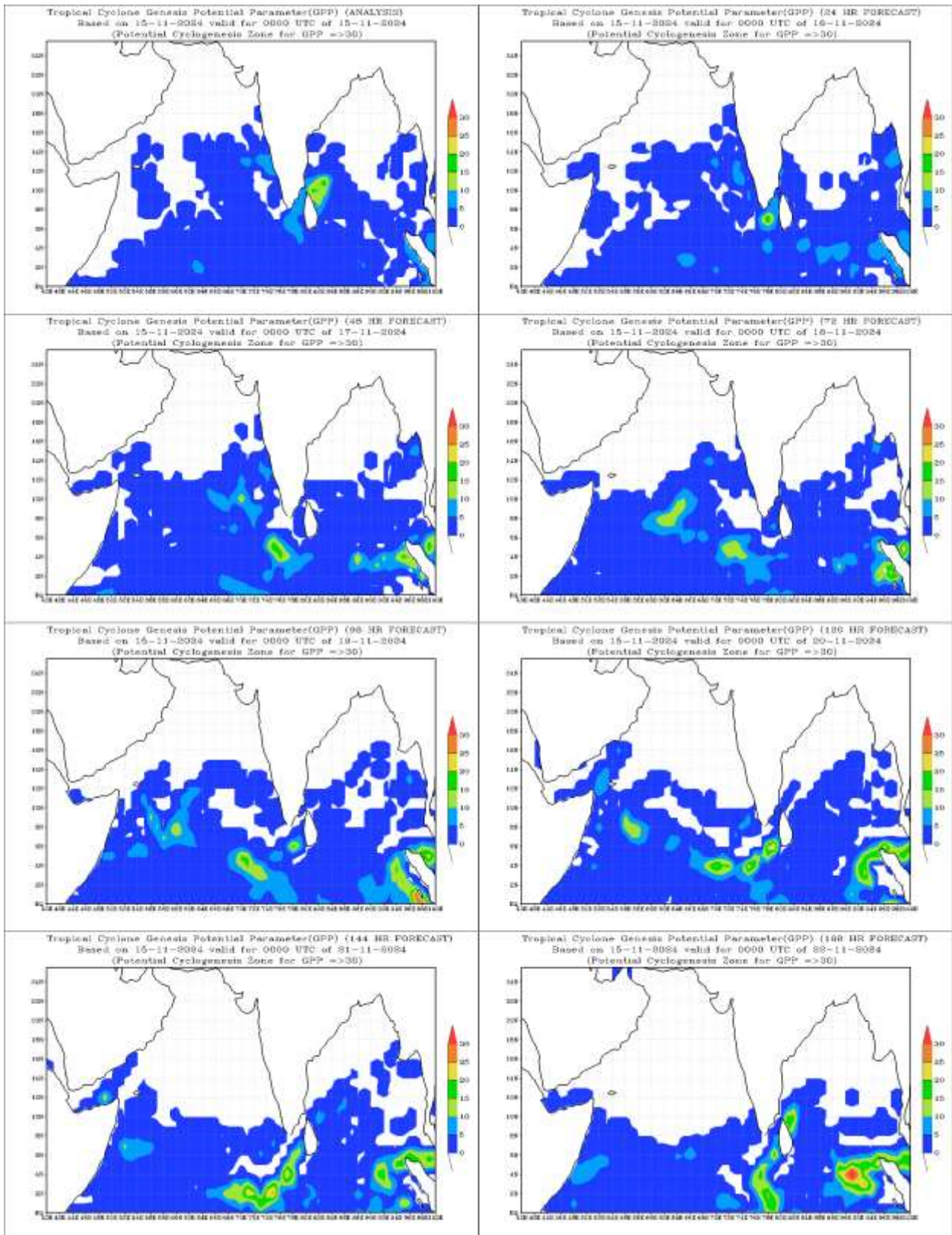
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

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

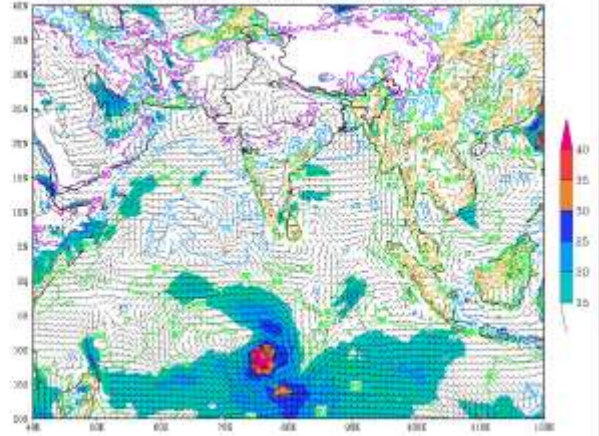


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 15-11-2024 valid for 00 UTC of 15-11-2024



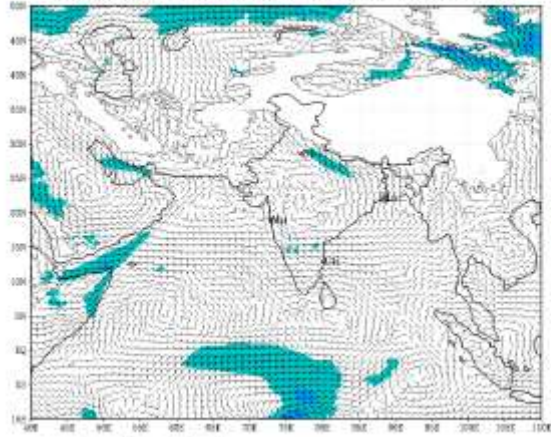
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IMD :GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (00 HR)
based on 00 UTC of 15-11-2024 valid for 00 UTC of 15-11-2024



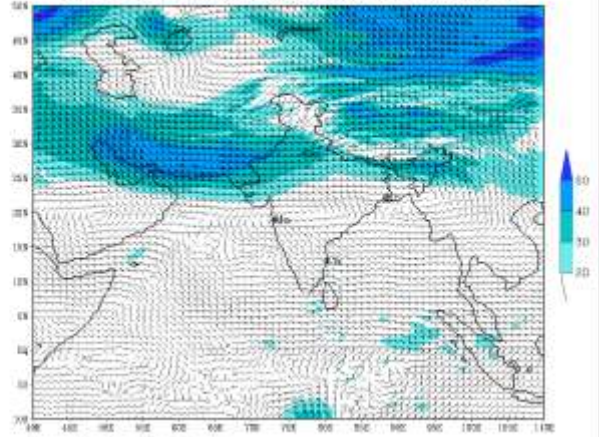
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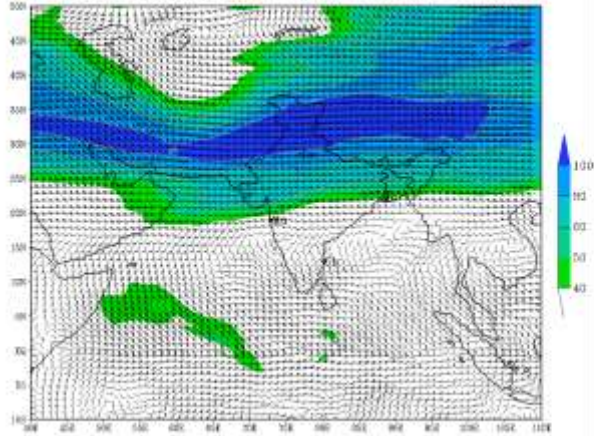
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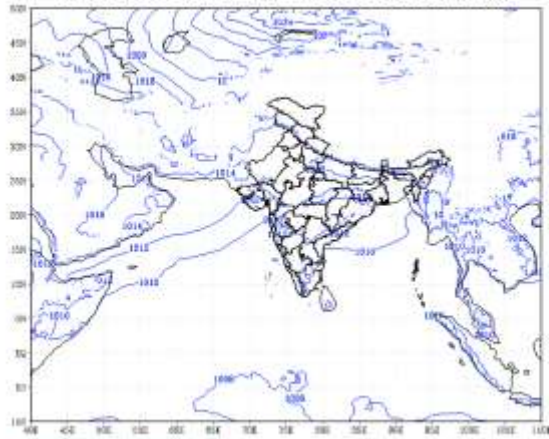
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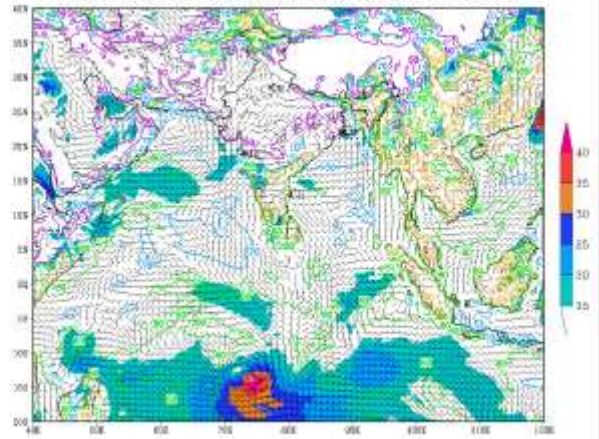
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based on 00 UTC of 15-11-2024 valid for 00 UTC of 16-11-2024



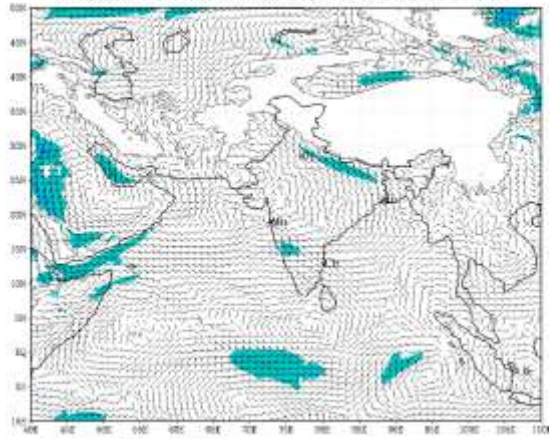
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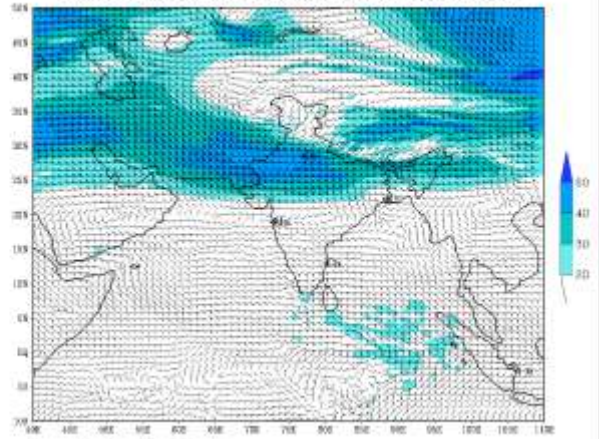
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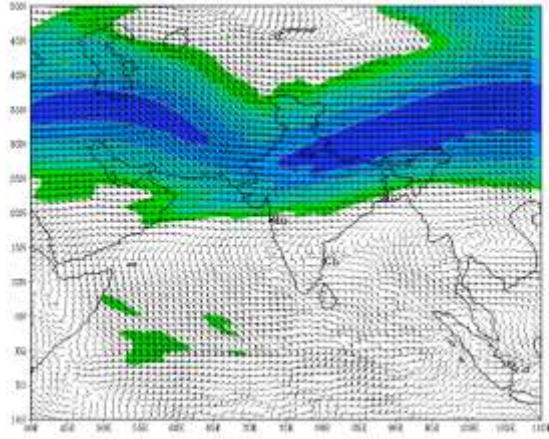
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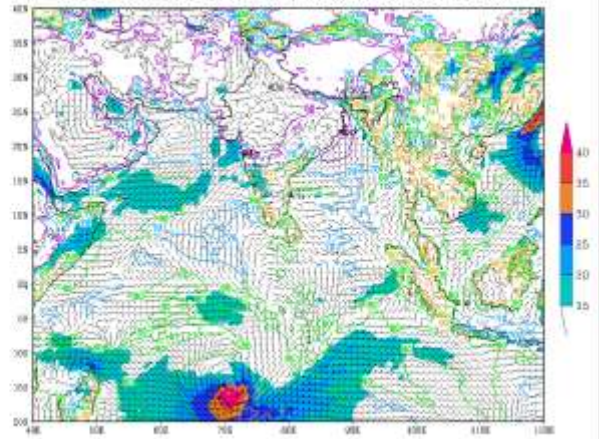
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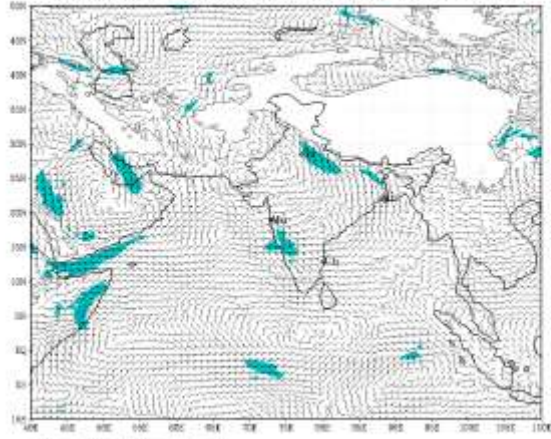
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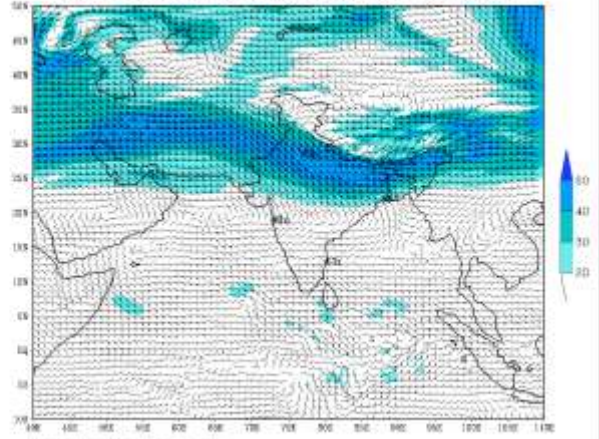
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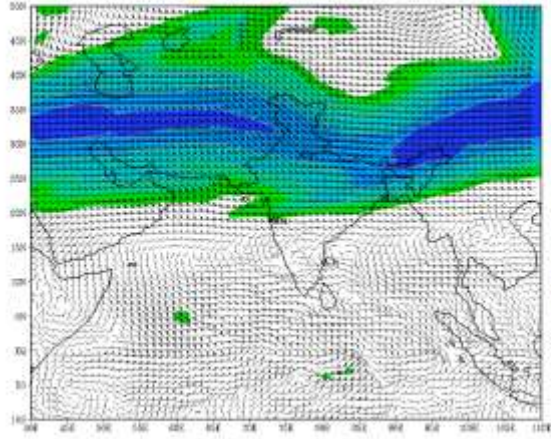
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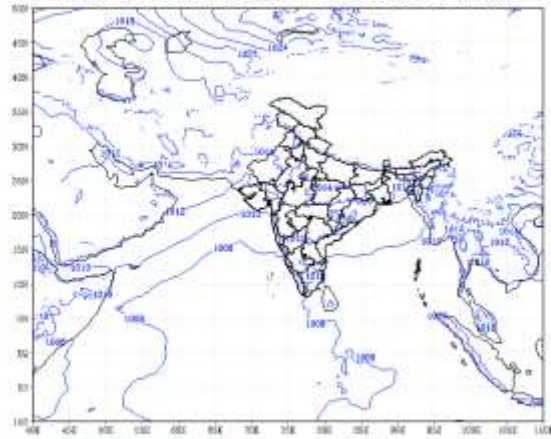
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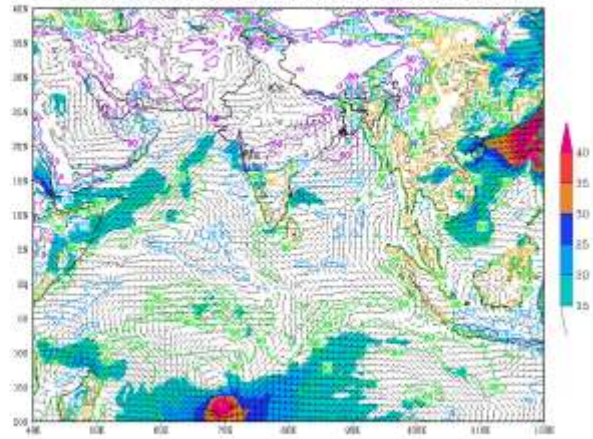


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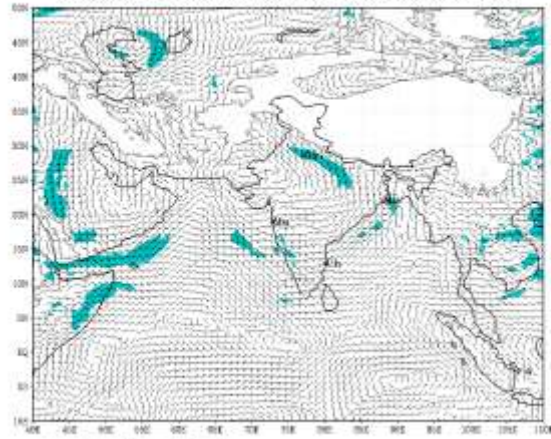
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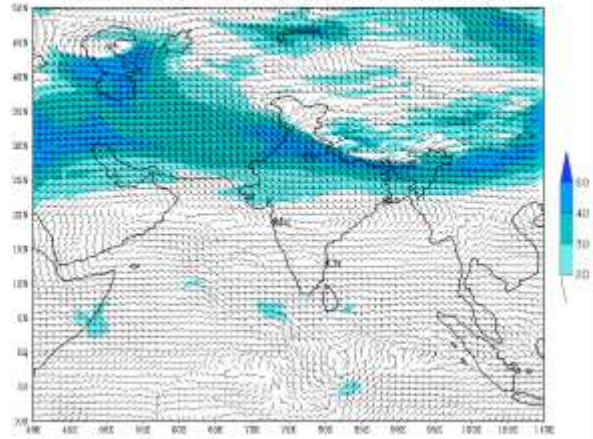
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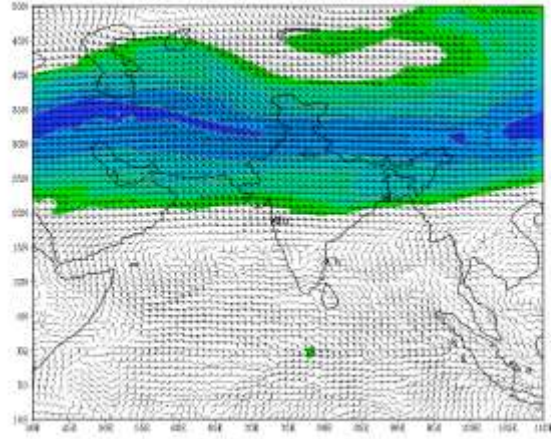
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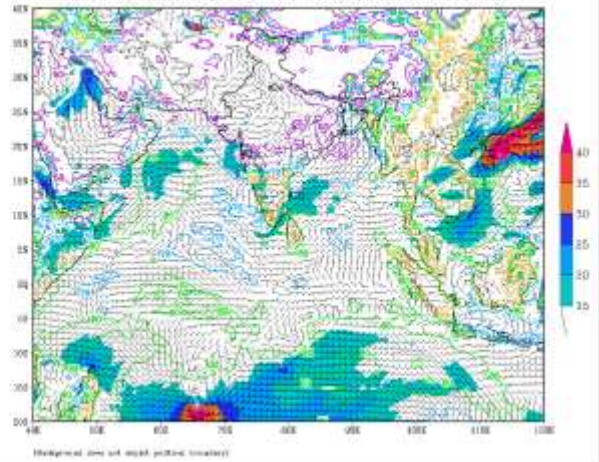
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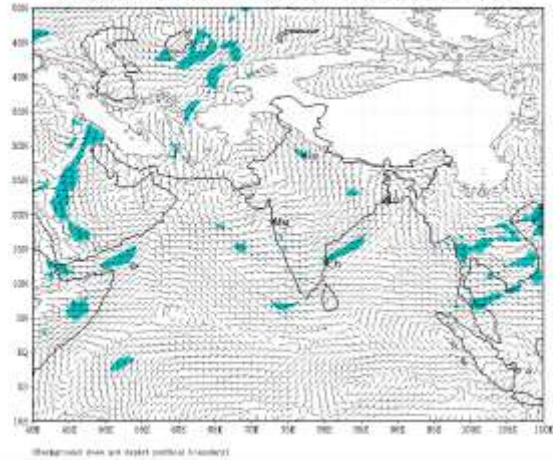
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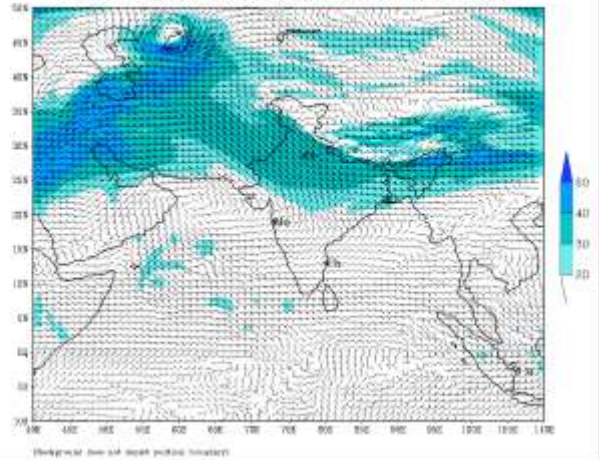
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