



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

**Tropical Cyclone Forecast Programme
Report Dated 04th November 2024**

Time of Issue: 1130 UTC

Synoptic features (based on 0300 UTC analysis):

- A cyclonic circulation has been formed over southeast Bay of Bengal and extended upto 3.1 km above mean sea level today at 03 UTC of 4th November, 2024.
- Yesterday's cyclonic circulation over southeast Arabian Sea off south Kerala coast lay over southeast Arabian Sea and extended upto 3.1 km above mean sea level at 0300 UTC of today, the 04th of November, 2024.

Environmental Features:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	30°C over entire BoB	➤ 26-28°C over parts of southwest Arabian Sea off Somalia coast. ➤ 28-30°C over rest of AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm ²	➤ 110-160 over south Andaman Sea & adjoining north Andaman Sea and northeast BoB. ➤ 90-120 KJcm ⁻² over eastcentral, southeast BoB & adjoining westcentral BoB & EIO and north Andaman Sea. ➤ 60-90 KJcm ⁻² over rest of BoB.	➤ 90-110 KJcm ⁻² over southeast AS and adjoining southwest AS & EIO. ➤ <40 KJcm ⁻² over westcentral & southwest AS off Oman & Somalia coasts. ➤ 60-70 KJcm ⁻² over rest of Arabian Sea.
Cyclonic Relative vorticity (X10 ⁻⁶ s ⁻¹)	20-30 over south Andaman Sea and Andaman islands area.	20-30 over southeast AS, Lakshadweep islands area and Comorin area.
Low Level convergence (X10 ⁻⁵ s ⁻¹)	5 over south Andaman islands area.	5-10 over Comorin area, Maldives area and southeast AS.
Upper-Level divergence (X10 ⁻⁵ s ⁻¹)	5-10 over south Andaman Sea.	5 over Lakshadweep islands area off Karnataka-Kerala coasts and another 5 over Comorin area off south Sri Lanka coast.
Vertical Wind Shear (VWS knots)	Low to Moderate over entire BoB except extreme north	Low to Moderate over entire AS.

Low: 05-10 knots Moderate: 10-20 knots High: >20 knots	BoB.	
Wind Shear Tendency (knots)	Increasing over north, eastcentral BoB and north Andaman sea. Decreasing over south Andaman sea, Andaman islands and adjoining southeast BoB.	Increasing over extreme central parts of south BoB AS & adjoining EIO and Gulf of Eden. Decreasing over westcentral & southwest AS off Oman, Yemen & Somalia coasts.
Upper tropospheric Ridge	-	-

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

b) Over the Arabian Sea:

Scattered low and medium clouds with embedded moderate to intense convection lay over central & south Arabian Sea, Lakshadweep Islands area, Maldives and Comorin area.

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection lay over Sri Lanka, Palk Strait, Gulf of Mannar, Maldives, Tibet China, Yellow Sea, Thailand, Gulf of Thailand, Cambodia, Laos, Vietnam, Gulf of Tonkin, Hainan, Sumatra, Strait of Malacca, Malaysia, Borneo, south China Sea, Java islands & Sea, Celebes Islands & Sea, Philippines, Sulu sea, north Madagascar and over Indian Ocean bet latitude 5.0⁰N to 20.0⁰S longitude 48.0⁰E to 110.0⁰E and between latitude 20.0⁰S to 35.0⁰S longitude 55.0⁰E to 75.0⁰E.

M.J.O. Index:

Madden Julian Oscillation (MJO) index is currently in Phase 8 with an amplitude greater than 1. It will be in the same phase TILL 8TH Nov with an amplitude more than 1. It will then enter into phase 1 on 9th Nov with amplitude equal to 1, later it will be in the same phase till 11th Nov with amplitude less than 1.

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

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	IMD-GFS model indicates Extended	Extended Cyclonic Circulation over

	Cyclonic Circulation over southeast & adjoining southwest BoB on 05 th November, having westward movement towards Tamil Nadu coast till 11 th November without intensification.	southeast & adjoining southwest AS on 05 th November, having westward movement till 6 th November.
IMD-GEFS	IMD-GEFS model indicates Extended Cyclonic Circulation over southeast & adjoining southwest BoB on 05 th November, having westward movement towards Tamil Nadu coast till 12 th November without intensification.	Extended Cyclonic Circulation over southeast & adjoining southwest AS on 05 th November, having westward movement till 6 th November.
IMD-WRF	NCMRWF-NCUM(R) model indicates Extended Cyclonic Circulation over southwest & adjoining southeast BoB on 06 th November, having westward movement.	Extended Cyclonic Circulation over southeast & adjoining southwest AS on 05 th November, having westward movement till 7 th November.
NCMRWF-NCUM(G)	NCMRWF-NCUM(G) model indicates Extended Cyclonic Circulation over southeast & adjoining southwest BoB on 05 th November, having westward movement towards Tamil Nadu coast till 9 th November without intensification.	Extended Cyclonic Circulation over southeast & adjoining southwest AS on 05 th November, having westward movement till 6 th November.
NCMRWF-NCUM(R)	NCMRWF-NCUM(R) model indicates Extended Cyclonic Circulation over southwest & adjoining southeast BoB on 06 th November, having westward movement.	Extended Cyclonic Circulation over southeast & adjoining southwest AS on 05 th November, having westward movement till 6 th November.
NCMRWF-NEPS	NCMRWF-NEPS model indicates Extended Cyclonic Circulation over southeast & adjoining southwest BoB on 05 th November, having westward movement towards Tamil Nadu coast till 11 th November without intensification.	Extended Cyclonic Circulation over southeast & adjoining southwest AS on 05 th November, having westward movement till 6 th November.
ECMWF	ECMWF model indicates Extended Cyclonic Circulation over southeast BoB on 05 th November, having westward movement till 6 th November. Then it moves north-northeastward till 8 th November.	Extended Cyclonic Circulation over southeast AS on 05 th November, having westward movement till 6 th November without intensification.
NCEP-GFS	NCEP-GFS model indicates Extended Cyclonic Circulation over southeast & adjoining southwest BoB on 05 th November, having westward movement towards Tamil Nadu coast till 11 th November without intensification.	Extended Cyclonic Circulation over southeast AS on 05 th November, having westward movement till 6 th November.

Summary:**(a) Bay of Bengal:**

Most of the models like IMD-GFS, IMD-GEFS, NCUM-Global, NCMRWF-NEPS, ECMWF, NCEP-GFS are indicating an extended cyclonic circulation over southeast and adjoining Southwest Bay of Bengal on 5th November, having its westwards movement towards Tamil Nadu coast till 11th November while gradually become cyclonic circulation without further intensification. However, ECMWF is indicating similarly but with initial westward movement till 6th November then moves north-northeastwards till 8th November.

(b) Arabian Sea

Most of the models indicate no significant system over AS during the next 7 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:

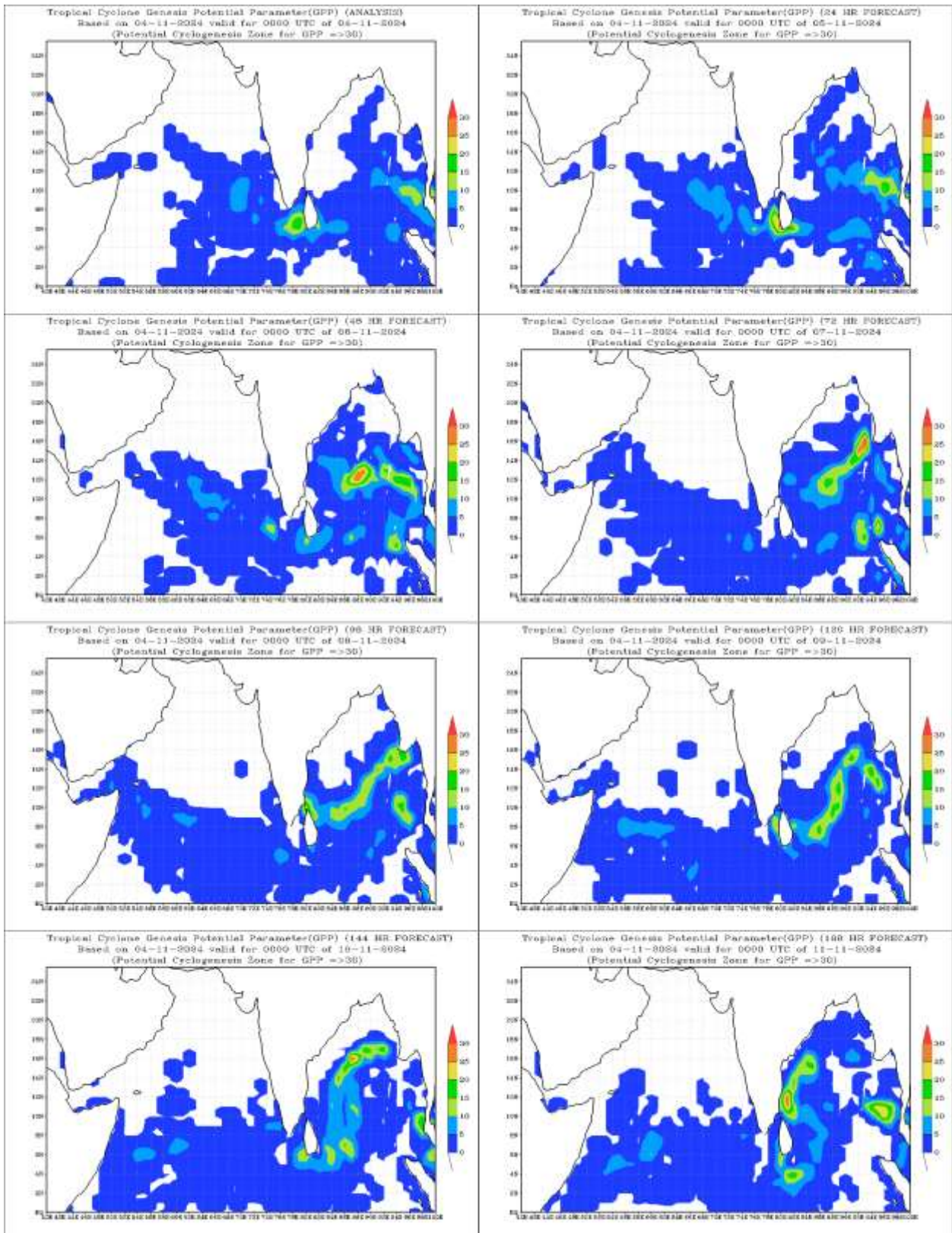
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

“-“ indicate genesis has already occurred.

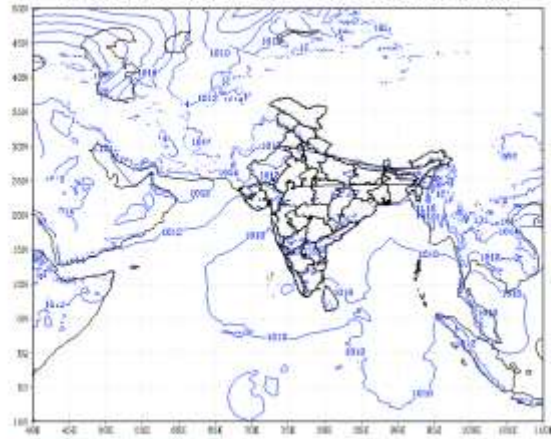
Probability is indicated as NIL for 0%, LOW for 1-33%, MOD for 34-67% and High for 68-100%.

Intense Observation Period (IOP): NIL

ANNEXURE

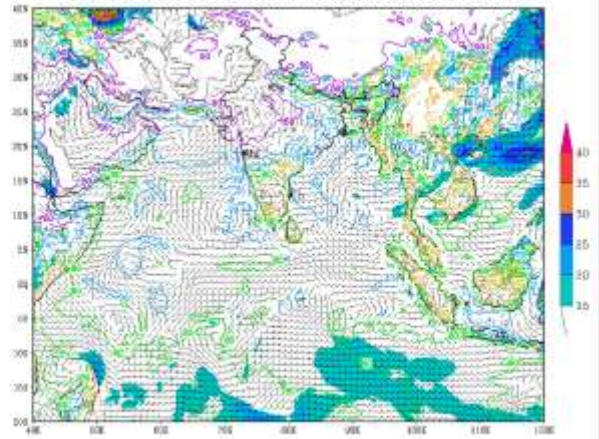


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 04-11-2024 valid for 00 UTC of 04-11-2024



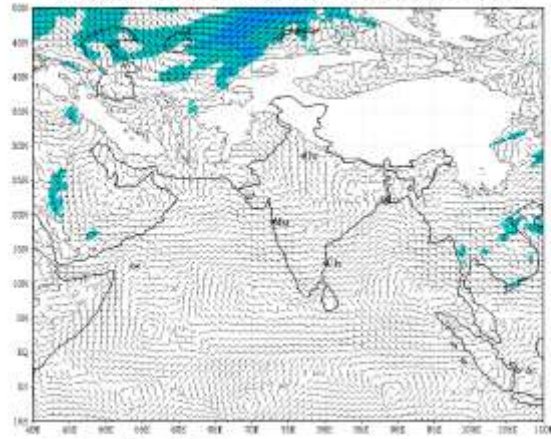
(Background area not depict political boundary)

IMD :GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (00 HR)
based on 00 UTC of 04-11-2024 valid for 00 UTC of 04-11-2024



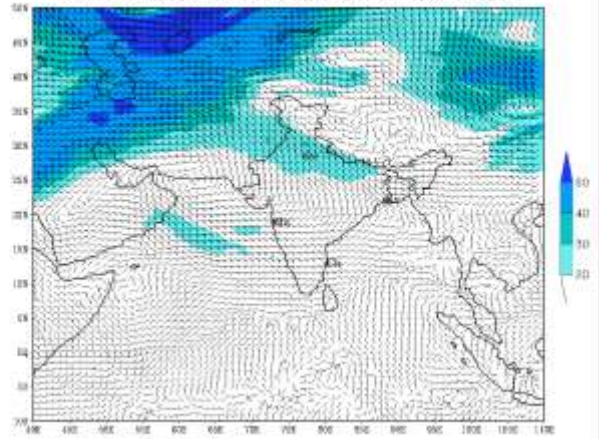
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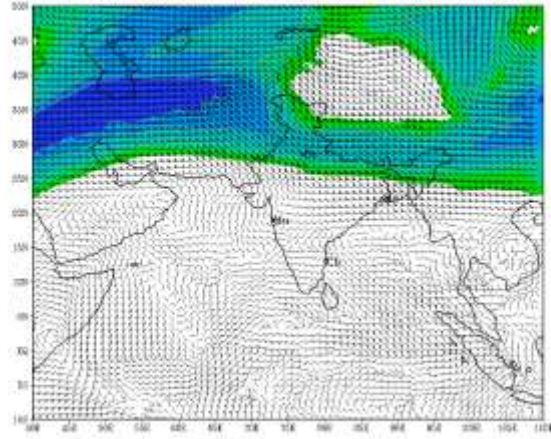
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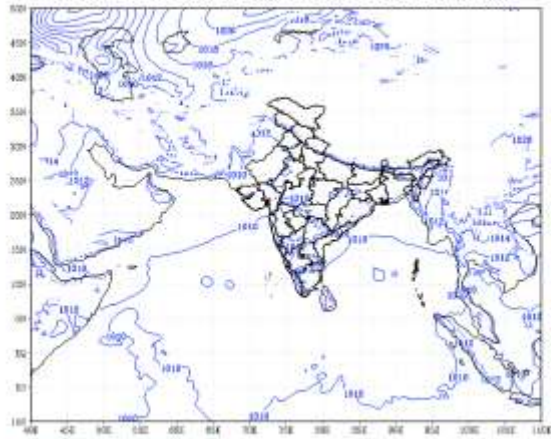
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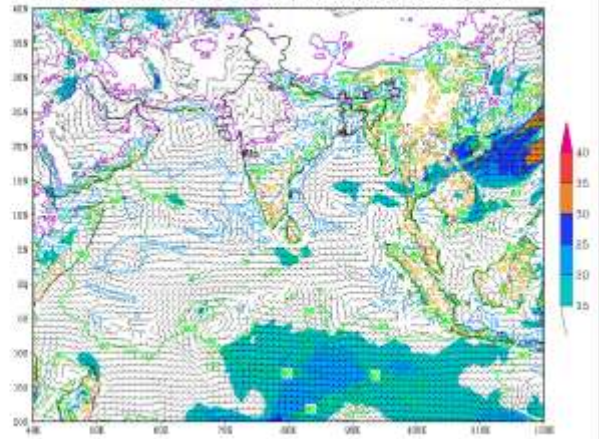
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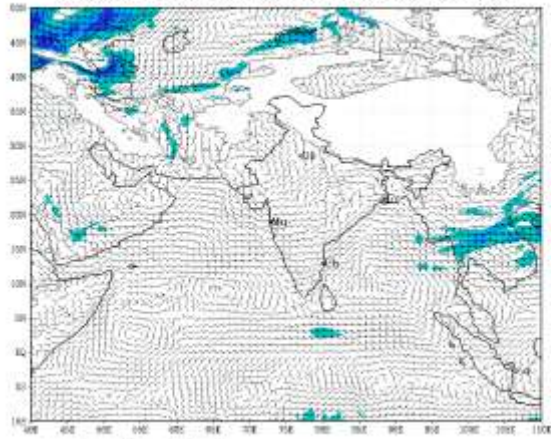
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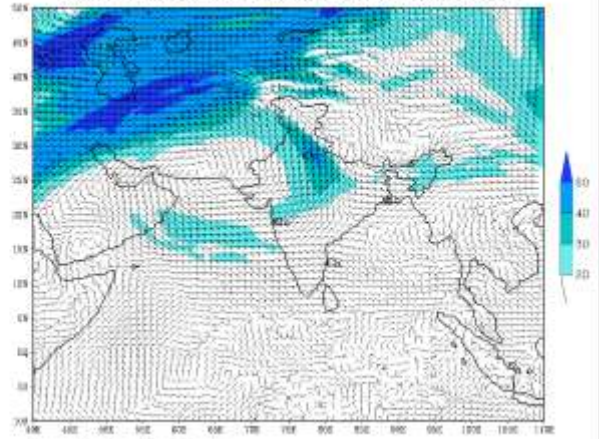
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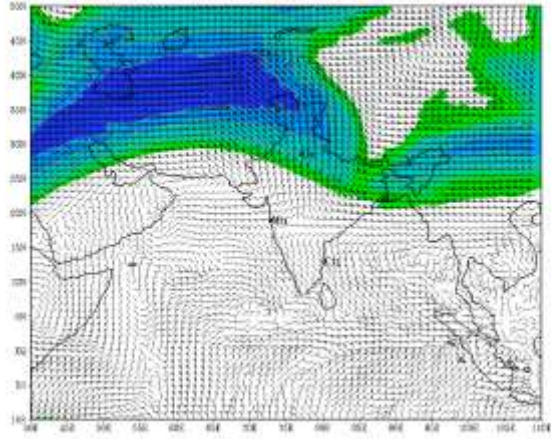
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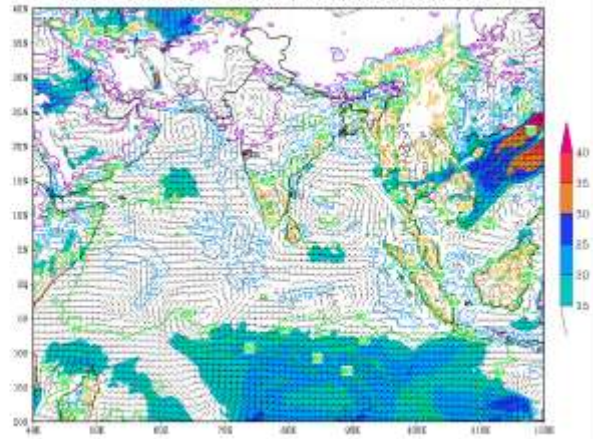


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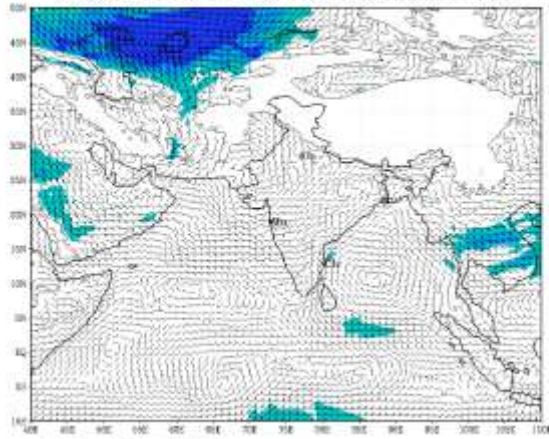
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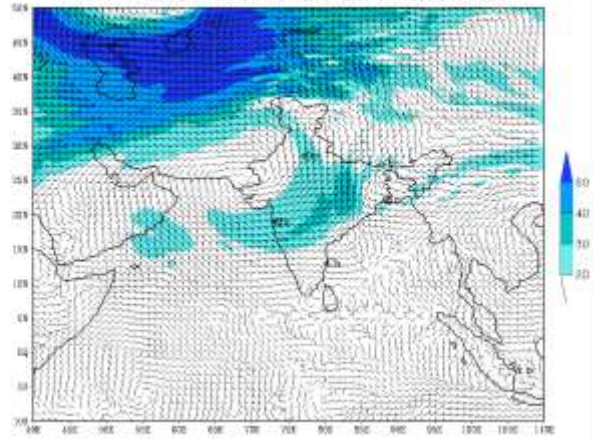
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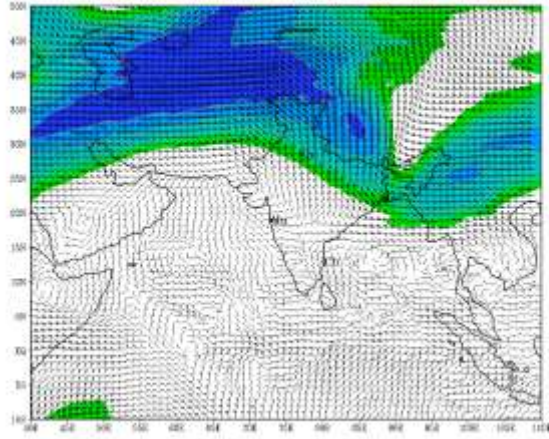
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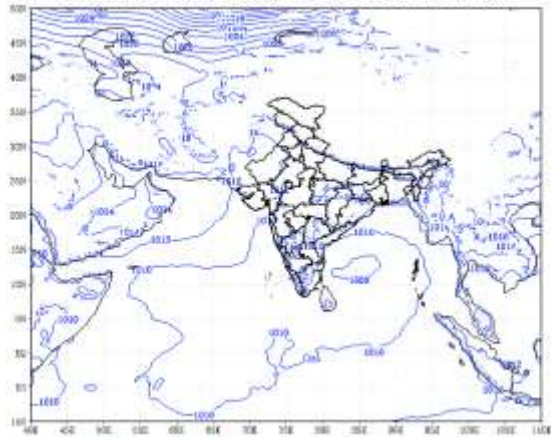
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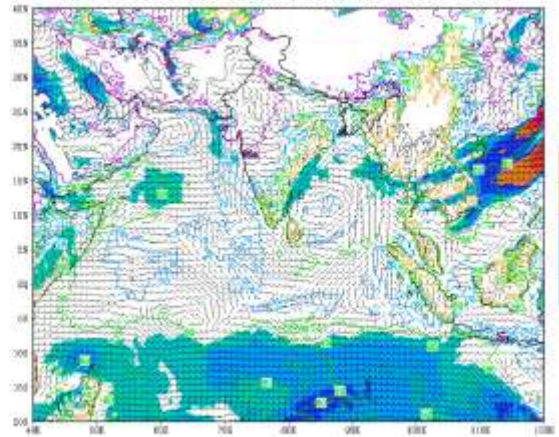


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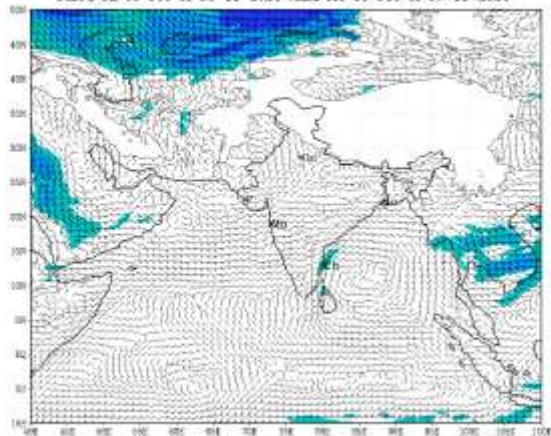
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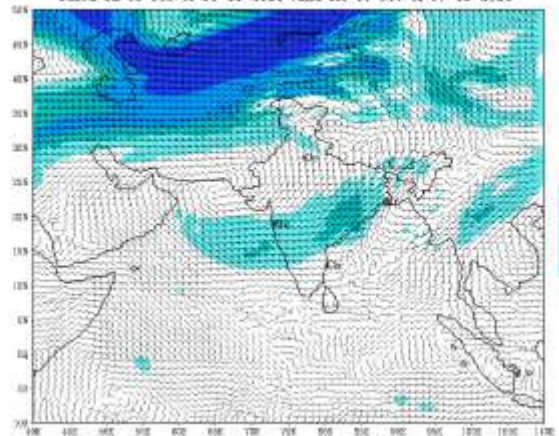
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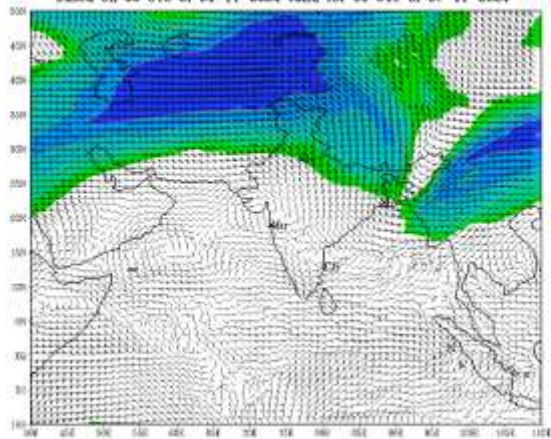
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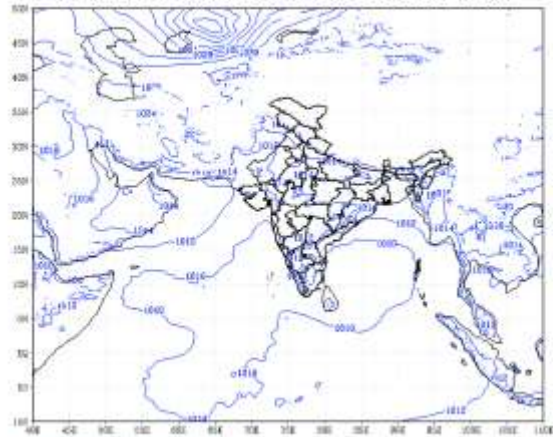
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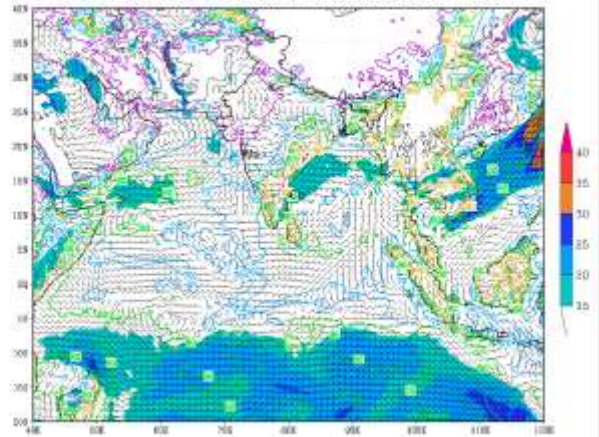
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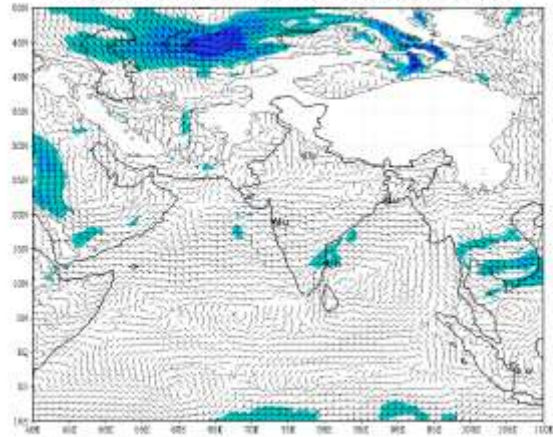
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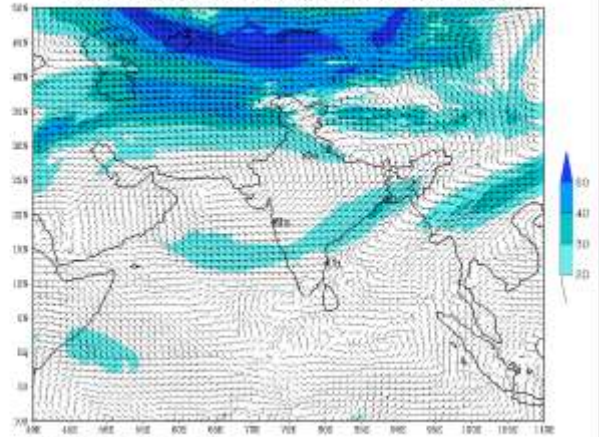
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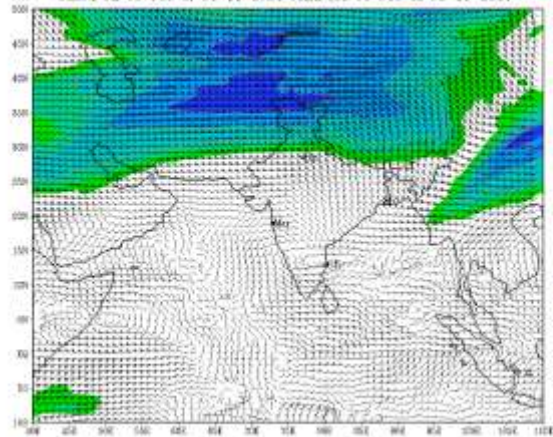
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