



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

**Tropical Cyclone Forecast Programme
Report Dated 13th November 2024**

Time of Issue: 1100 UTC

Synoptic features (based on 0300 UTC analysis):

- Yesterday's low pressure area over southwest & adjoining westcentral Bay of Bengal off north Tamil Nadu & adjoining south Andhra Pradesh coasts has become less marked at 0300 UTC of today, the 13th November, 2024. However, the associated upper air cyclonic circulation now lay over southwest Bay of Bengal off north Tamil Nadu and extended upto 0.9 km above mean sea level.
- Yesterday's upper air cyclonic circulation over southeast Arabian sea and adjoining Kerala coast now lay over southeast Arabian Sea off Kerala coast between 1.5 & 3.1 km above mean sea level at 0300 UTC of today, the 13th November, 2024.

Environmental Features:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	➤ 28-29°C over entire BoB.	➤ 26-28°C over western parts of westcentral & southwest AS off Somalia, Yemen coasts. ➤ 29-31°C over rest of AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	➤ 160-180 over north & eastcentral BoB & 100-140 over south Andaman Sea and north, southeast BoB & adjoining EIO. ➤ 40-60 over remaining parts of BoB	➤ 100-110 over southeast AS & adjoining EIO. ➤ <40 over westcentral & southwest AS off Oman, Yemen & Somalia coasts. ➤ 60-80 over rest of the Arabian Sea.
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	➤ 30-40 over southwest BoB & Gulf of Mannar on Sri Lanka/Tamil Nadu coast.	20-30 over some parts of westcentral AS and off Somalia coast. 10-20 over Lakshadweep island area off Kerala coast.
Low Level convergence (X10⁻⁵ s⁻¹)	➤ 5-10 over southwest & adjoining westcentral BoB off Tamil Nadu/Sri Lanka coasts.	-
Upper-Level divergence (X10⁻⁵ s⁻¹)	➤ 5-20 over southwest & adjoining westcentral BoB on Tamil Nadu/Sri Lanka coasts.	--
Vertical Wind Shear (VWS knots)	➤ High over north BoB. ➤ Low-Moderate over rest of	➤ High over north AS. ➤ Low-Moderate over rest of

Low: 05-10 knots Moderate: 10-20 knots High: >20 knots	BoB.	AS.
Wind Shear Tendency (knots)	Decreasing over south & western parts of BoB and Andaman islands area.	Increasing over north & central AS.
Upper tropospheric Ridge	At 18 ⁰ N.	At 18 ⁰ 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 westcentral & south Bay of Bengal. Scattered low and medium clouds with embedded moderate to intense convection lay over rest Bay of Bengal & Andaman Sea.

b) Over the Arabian Sea:

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

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection over Palk strait, Gulf of Mannar, north Tibet China, Vietnam, Sumatra, Strait of Malacca, Malaysia, Borneo, south China sea, Java Islands & sea, Celebes islands & sea, Philippines, Taiwan, east China sea, Yellow sea and over Indian Ocean between latitude 5.0⁰ N to 20.0⁰ S long 40.0⁰ E to 115.0⁰ E.

M.J.O. Index:

Madden Julian Oscillation (MJO) index is currently in Phase 2 with an amplitude less than 1. It will be in same phase during next 1 day. Thereafter it will slowly move to phase 3 with amplitude less than 1, it will remain in the same phase till 19th with amplitude less than 1.

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

Vortex (Toraji) over South China Sea (area F05) centered near 20.4N / 115.9E. Intensity T2.0/2.5. Maximum sustained winds 28-33 kts. Associated scattered to broken low & medium clouds with embedded intense to very intense convection over area between latitude 17.0N to 25.0N and longitude 113.0E to 120.0E.

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 a Cyclonic Circulation over southwest BoB north of Sri Lanka, close to Tamil Nadu coast as of today 13 th November. It will have westward movement and less marked thereafter.	No Significant circulation over AS.
IMD-GEFS	No Significant circulation over BoB.	No Significant circulation over AS.

IMD-WRF	IMD-WRF model indicates a Cyclonic Circulation over southwest BoB north of Sri Lanka, close to Tamil Nadu coast as of today 13 th November. It will have westward movement and less marked thereafter.	Extended Cyclonic Circulation over southeast AS and adjoining Lakshadweep area on 15 th Nov.
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	ECMWF model indicates a Cyclonic Circulation over southwest BoB north of Sri Lanka, close to Tamil Nadu coast as of today 13 th November. It will have westward movement and less marked thereafter.	No Significant circulation over AS.
NCEP-GFS	IMD-GFS model indicates a Cyclonic Circulation over southwest BoB north of Sri Lanka, close to Tamil Nadu coast as of today 13 th November. It will have westward movement and less marked thereafter.	No Significant circulation over AS.

Summary:

(a) Bay of Bengal:

Models like IMD-GFS, IMD-WRF, IMD-GEFS, ECMWF, and NCEP-GFS are indicating a cyclonic circulation over the southwest Bay of Bengal north of Sri Lanka coast & close to Tamil Nadu coast as of today the 13th of November. All the models are also indicating its west-northwestward movement towards Tamil Nadu coast till 13th November without further 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:

Yesterday's low pressure area over southwest & adjoining westcentral Bay of Bengal off north Tamil Nadu & adjoining south Andhra Pradesh coasts has become less marked at 0300 UTC of today, the 13th November, 2024. However, the associated upper air cyclonic circulation now lay over southwest Bay of Bengal off north Tamil Nadu and extended upto 0.9 km above mean sea level.

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

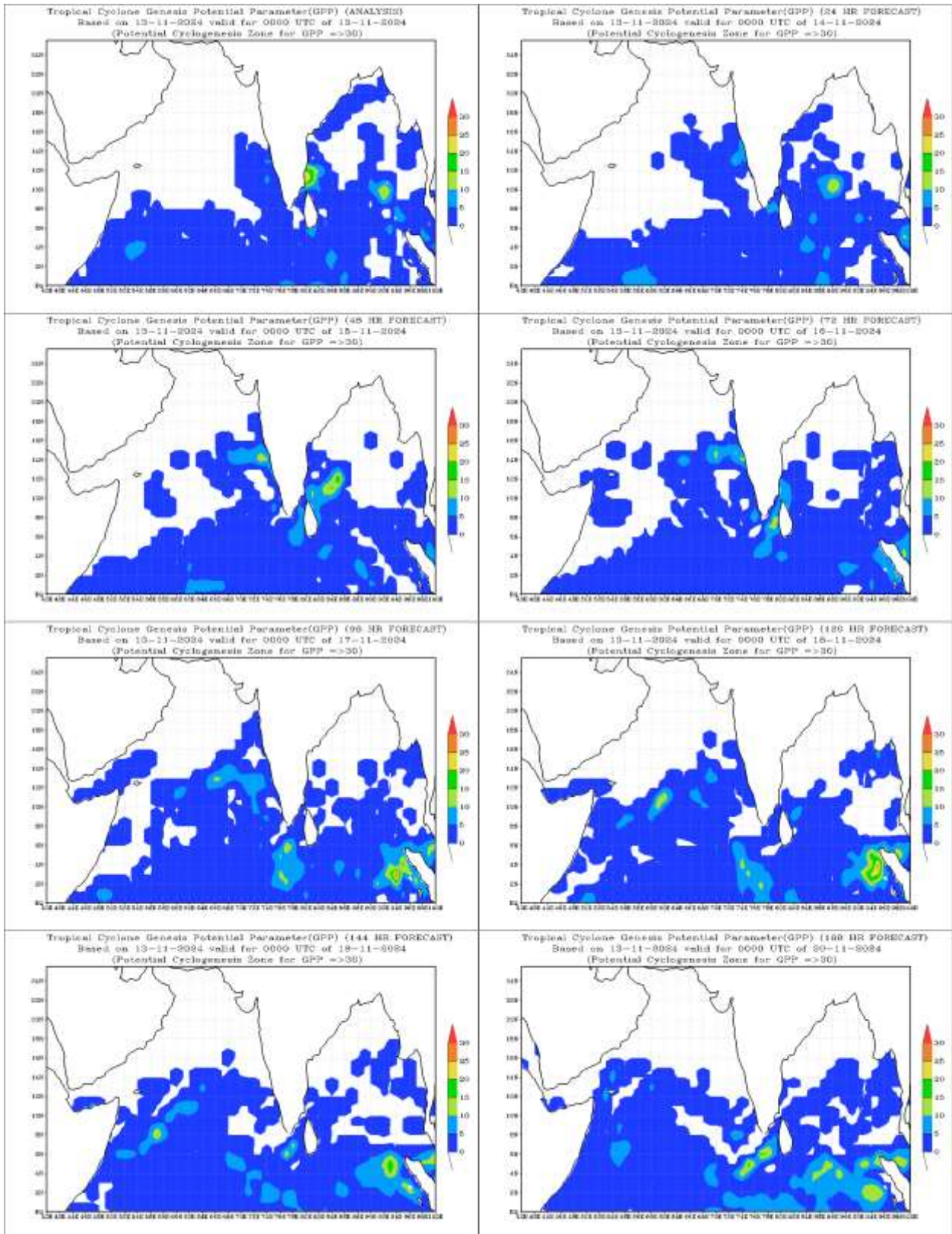
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

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

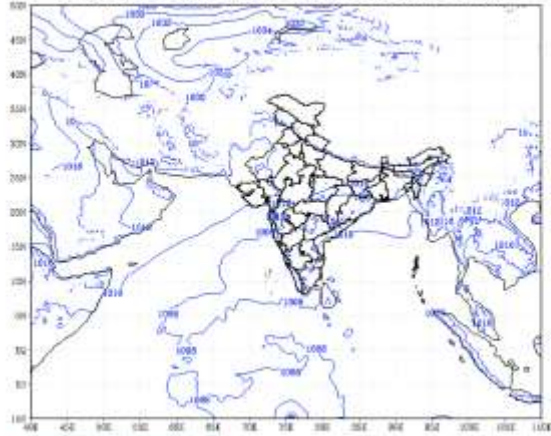
“-“indicates genesis has already occurred.

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

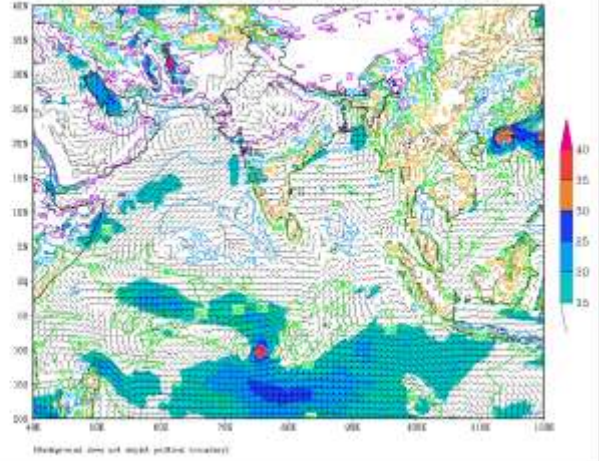
Intense Observation Period (IOP): NIL



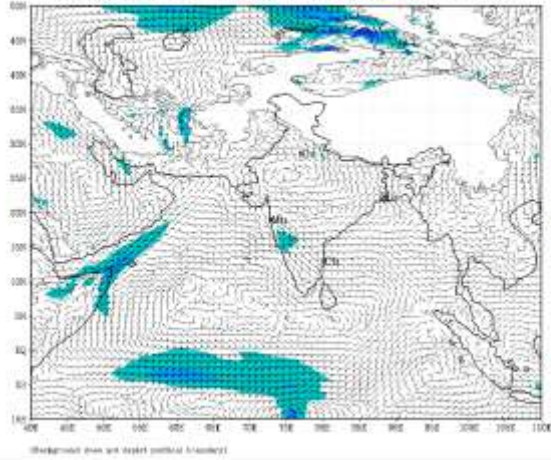
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)
based on 00 UTC of 13-11-2024 valid for 00 UTC of 14-11-2024



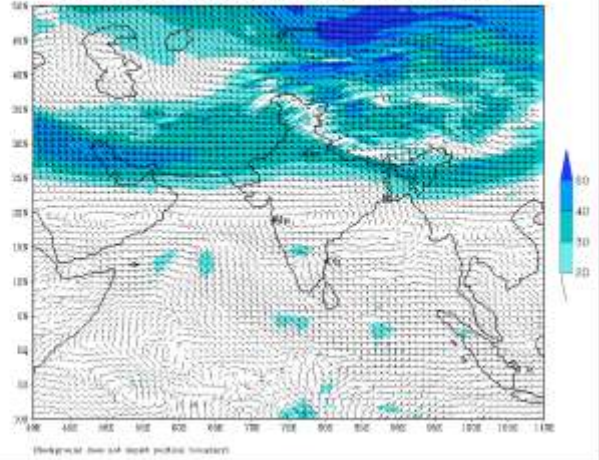
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (24 HR)
based on 00 UTC of 13-11-2024 valid for 00 UTC of 14-11-2024



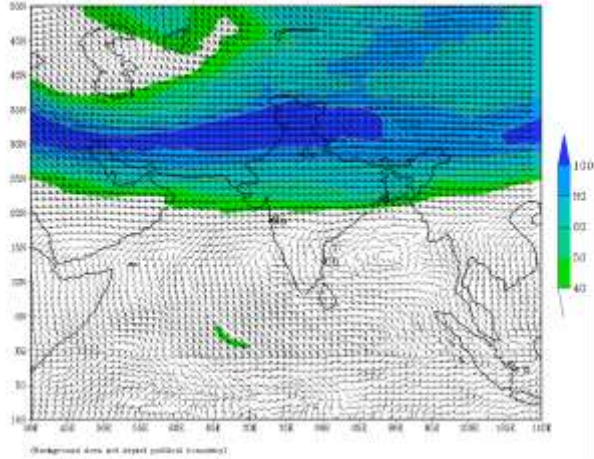
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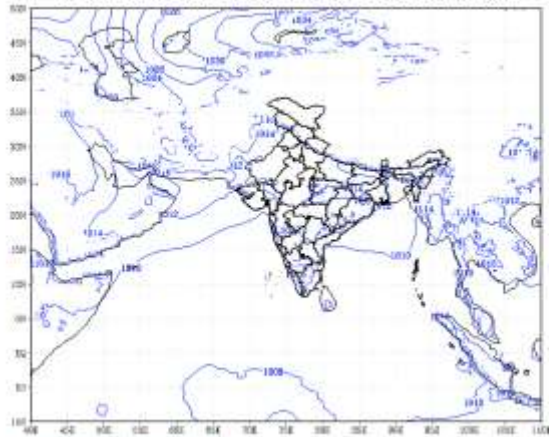
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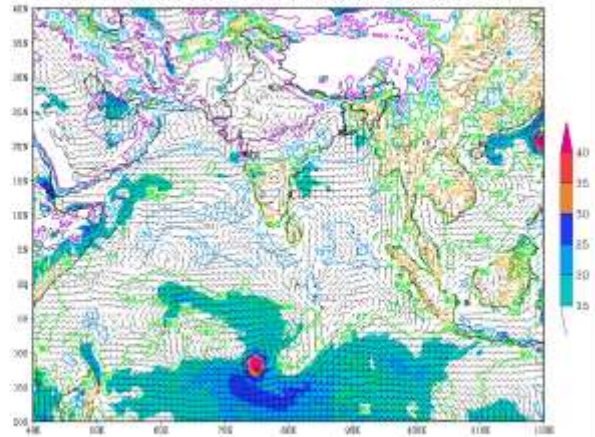


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)
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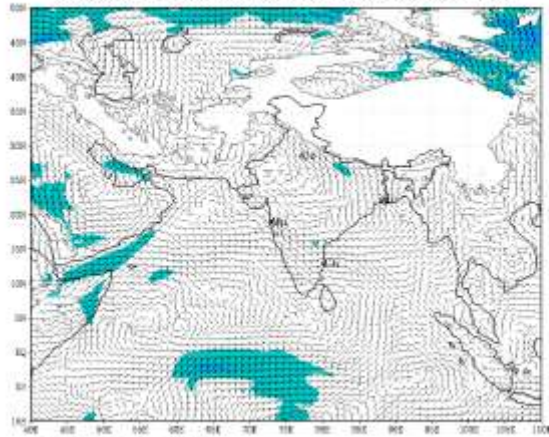
(Background Area not depict political boundary)

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (48 HR)
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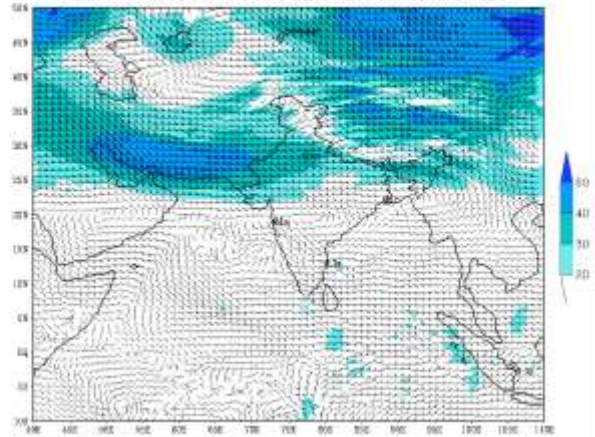
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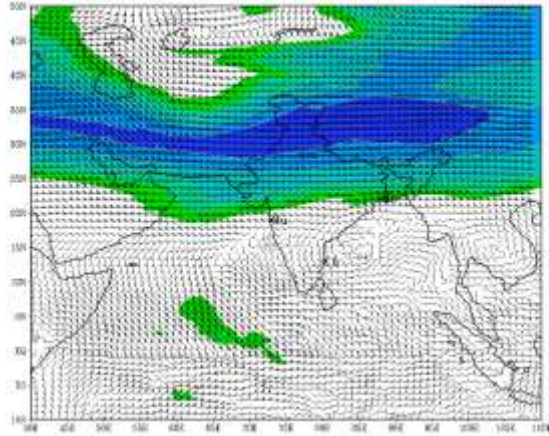
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IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 13-11-2024 valid for 00 UTC of 15-11-2024



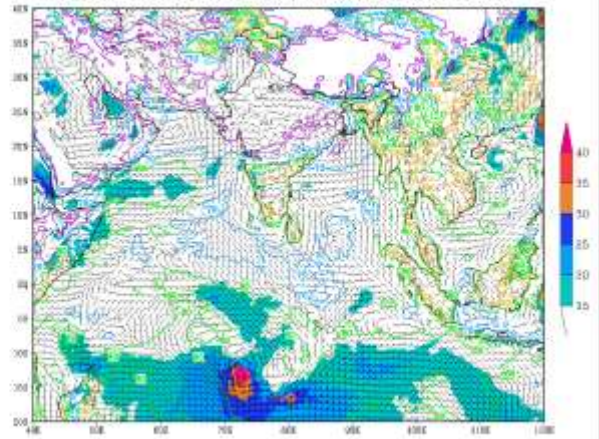
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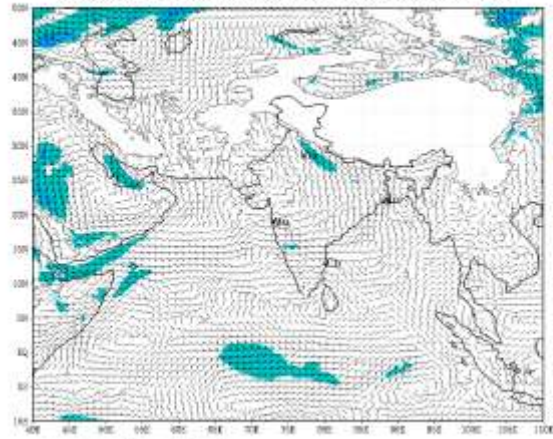
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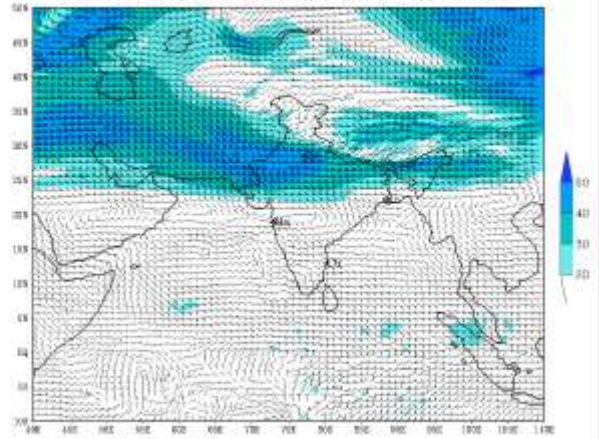
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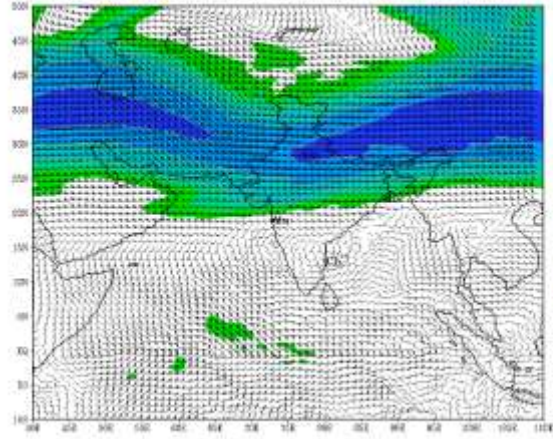
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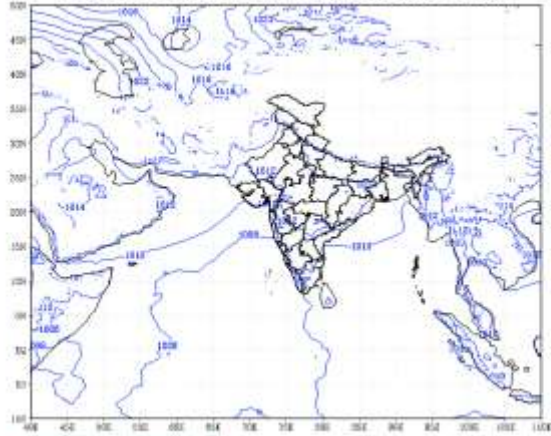
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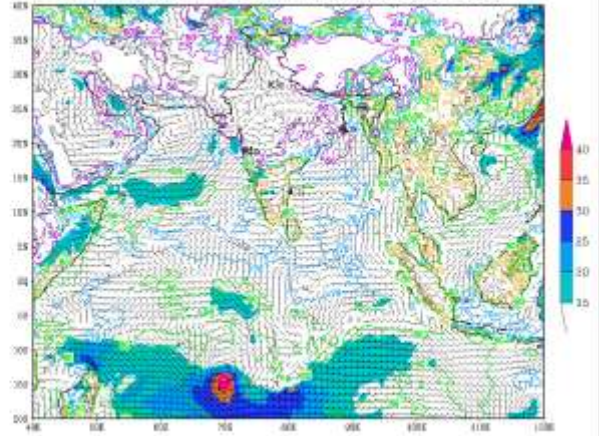
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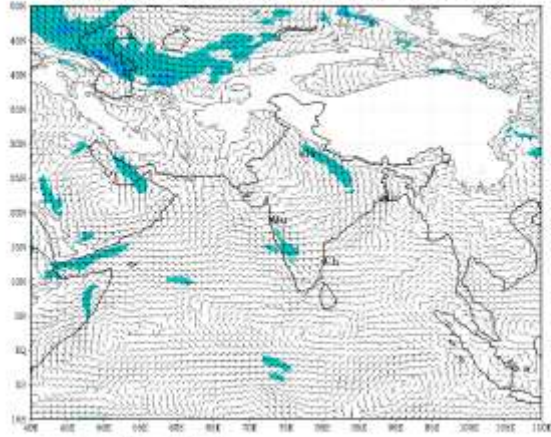
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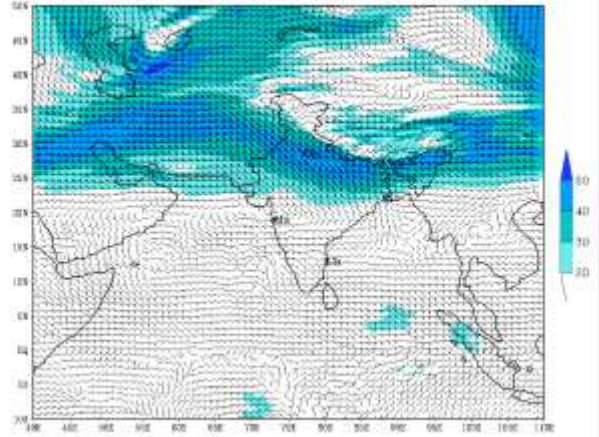
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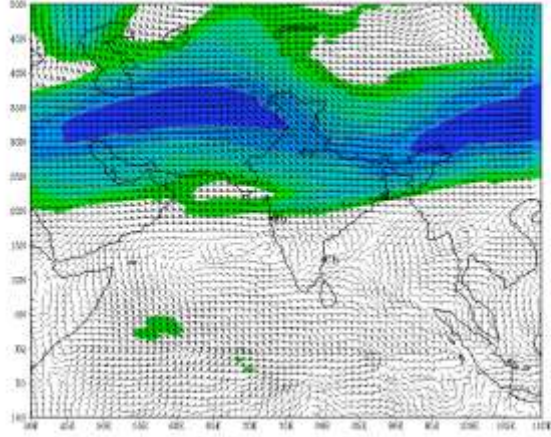
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