



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

Tropical Cyclone Forecast Programme
Report Dated 3rd November, 2022

Time of Issue: 1200 UTC

Synoptic features (based on 0600 UTC analysis):

- ❖ Yesterday's Cyclonic circulation over south Tamil Nadu & neighbourhood still persists and a trough runs from this system to Lakshadweep area in lower & middle tropospheric levels.
- ❖ A fresh cyclonic circulation lies over Southwest Bay of Bengal & neighbourhood in lower tropospheric levels.

Dynamical and thermo-dynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	About 29-31 °C over entire BoB	28-30 °C over north AS, along and off south Gujarat, Maharashtra coasts, southeast AS. 26-28 °C over central and southwest AS. Less than 24 °C off Oman & Somalia coast and adjoining parts of southwest and westcentral AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm ²	>100 KJ/cm ² over eastcentral BoB & south Andaman Sea, 70-80 KJ/cm ² over north BoB & westcentral BoB, north Andaman Sea, less than 40 KJ/cm ² off east coast of India & a small pocket over southwest BoB.	(a) 60-80 over southeast AS & adjoining eastcentral AS. (b) Less than 30 KJ/cm ² over remaining AS and also off west coast of India.
Cyclonic Relative vorticity (X10 ⁻⁶ s ⁻¹)	Positive vorticity of 30-40 over southwest BoB off southwest Sri Lanka coast and also off Tamil Nadu coast. Remaining area is having negative vorticity of -30 to -50.	Positive vorticity of 30-40 over southeast and adjoining southwest AS. Remaining area is having negative vorticity of -30 to -50.
Low Level convergence (X10 ⁻⁵ s ⁻¹)	About 05 over southwest BoB, westcentral BoB and Sri Lanka.	05 over southwest, eastcentral AS, off Yemen coast.

Upper Level divergence (X10⁻⁵ s⁻¹)	About 05-10 over southwest BoB and north BoB.	Positive zone 05 over parts of southeast AS, negative values are noticed along west coast and north AS.
Vertical Wind Shear (VWS knots)	Moderate 10-20 knots over major parts of south & central BoB. High values up to 30 over North BoB.	05-10 over major parts of south & adjoining central AS and high values up to 25 over north AS.
Wind Shear Tendency (knots)	Increasing over BoB from south to north.	Decreasing over northeast AS and southeast AS.
Upper tropospheric Ridge	Along 14.0°N over the BoB.	Along 20.0°N over the AS.
Trough in westerlies	88E upto 28 N	

Satellite observations based on INSAT imagery (0600 UTC):

(a) Over the BoB & Andaman Sea:-

Scattered to broken low/medium clouds with embedded intense to very intense convection lay over southwest BoB and Scattered to broken low/medium clouds with embedded intense convection over westcentral BoB off Andhra Pradesh coast, South Andaman Sea and weak to moderate convection over northwest Bay of Bengal

b) Over the Arabian Sea:-

Scattered low/medium clouds with isolate to moderate convection lay over southeast AS, off Kerala coast and Comorin area.

M.J.O. Index:

MJO index is currently in Phase 6 with amplitude greater than 1. It will continue in same phase for next 2 days. Thereafter, it would enter into phase 7 with gradually decreasing amplitude.

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

Nil

Input for FDP Cyclone based on 0000 UTC for the next 7 days

MODEL GUIDANCE	BoB	AS
IMD-GFS	The cycir over southwest BoB and off Sri Lanka coast persist over the region till 8 th November and will have northwest movement thereafter towards Tamil Nadu coast with slight intensification.	Cycir over southeast AS around 5 th /6 th to move westwards with no significant intensification
IMD-GEFS	No significant system	No significant system
GEFS Probablistic guidance	Not available	Not available

IMD WRF	The cycir over southwest BoB to persist and gradually move northwestward without any intensification.	Cycir over southeast AS on 5 th moving westwards with no significant intensification.
NCMRWF-NCUM	Cycir over southwest BOB to persist over the same region till 5 th Nov.	Low pressure over southeast AS on 6 th Nov. It is predicted to move nearly westwards and intensify into a depression on 8 th and to a deep depression over southwest AS on 9 th Nov., CS on 10 th , VSCS over southwest AS on 11 th Nov., it weaken further close to Somalia coast on 12 th .
NCMRWF-NEPS	No significant system over BoB	LPA over southeast AS on 7 th November moving westwards with further intensification and gradually weakens close to Somalia coast.
NCMRWF-UM (Regional)	The current Cycir over southwest BoB on 4 th is showing no intensification further.	Cycir over southeast AS on 5 th moving westwards
ECMWF	The current Cycir over southwest BoB is forecast to persist over same region i.e., over southwest BoB and off Sri Lanka is showing no intensification further.	Cycir over southeast AS on 5 th moving westwards with no intensification.
ECMWF ensemble	70-80% probability of cyclogenesis over southwest BoB off Sri Lanka & adjoining Tamil Nadu coasts during next 3-4 days.	20-30% probability of cyclogenesis over south AS around 8 th /9 th November
NCEP-GFS	The cycir over southwest BoB to persist over the same region and becomes LPA on 5 th Nov and shows its northwestward movement with gradual intensification becoming depression on 8 th over southwest BoB, CS on 9 th , SCs on 10 th , reaching central Andhra Pradesh coast on 11 th /0300 UTC Nov. as a SCS near 17.5N/81E between Machilipatnam and Kakinada.	The cyclonic circulation over southeast AS becomes LPA on 11 th Nov and shows its westward movement.
IMD MME	Available during cyclonic disturbance period only	Available during cyclonic disturbance period only
IMD HWRF	Available during cyclonic disturbance period only	Available during cyclonic disturbance period only
IMD-Genesis Potential Parameter	A potential zone over southeastBoB on 6 th , moving northwestwards during 7 th to 9 th November towards westcentral BoB	No significant zone.

Summary and conclusion:

Most of the models are indicating the cyclonic circulation (cycir) over southwest BoB to persist during next 5-7 days with northwestward movement. IMD GFS, GEFS, NCUM & ECMWF are not indicating any intensification. However NCEP (GFS) is indicating development of a low pressure area over southwest BoB around 5th, moving northwestwards and intensifying into a depression on 8th. It is also indicating further intensification upto severe cyclonic storm and crossing over central Andhra Pradesh coast around 11th/0300 UTC. ECMWF ensemble is indicating 70-80% probability of cyclogenesis over southwest BoB off Sri Lanka & adjoining Tamil Nadu coasts during next 3-4 days.

1. For the Bay of Bengal:

In view of all the above, it is inferred that there is probability of formation of low pressure area over southwest BoB around 6th with low probability of it's intensification into depression over southwest BoB around 9th. Hence low probability of cyclogenesis is assigned to day 7.

2. For the Arabian Sea:

No cyclogenesis is predicted over Arabian Sea during next 7 days. However, movement of cycir over Tamil Nadu need to be critically monitored.

Probability of cyclogenesis (formation of depression and above intensity systems) over the BAY OF BENGAL of Bengal and Andaman 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	LOW

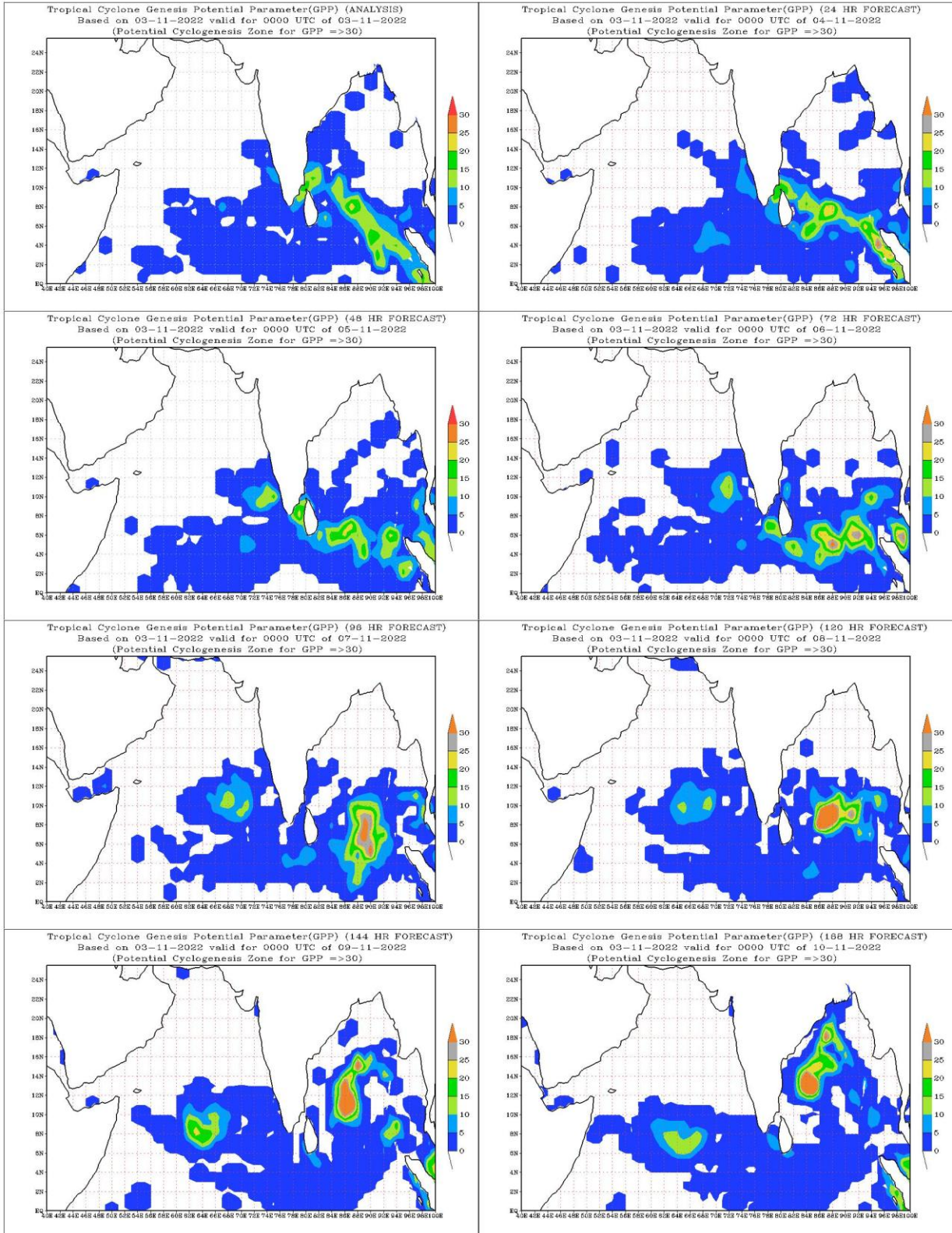
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

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

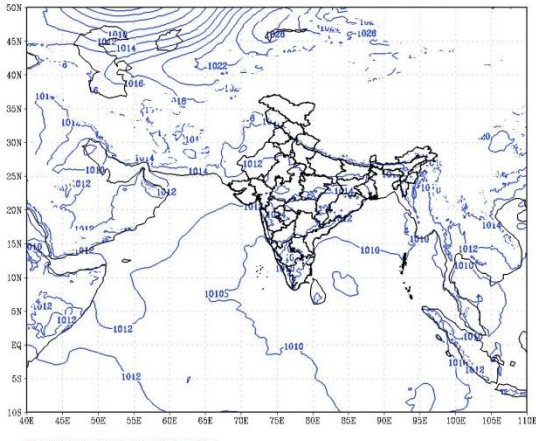
Advisory:

Nil

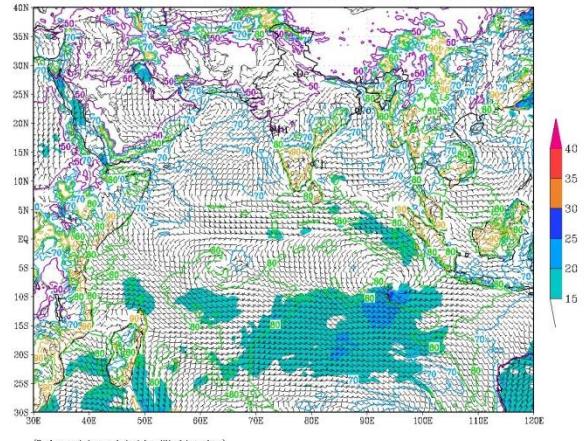
IOP: Tamil Nadu, Kerala and Sri Lanka during next 3-4 days.



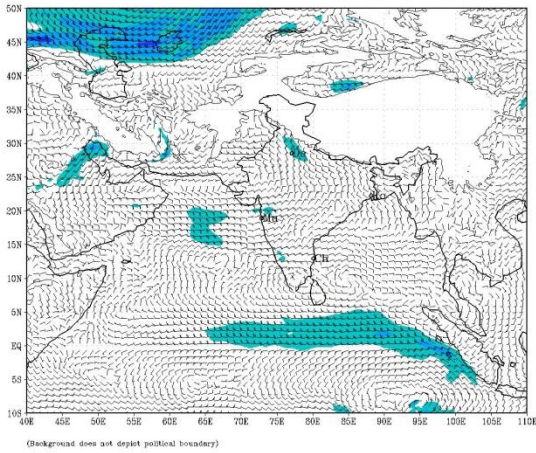
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based on 00 UTC of 03-11-2022 valid for 00 UTC of 03-11-2022



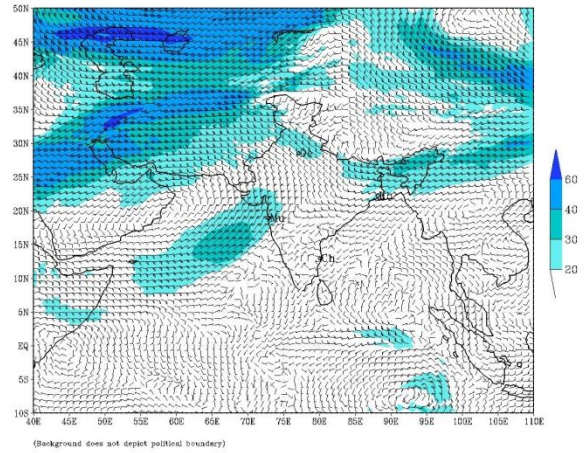
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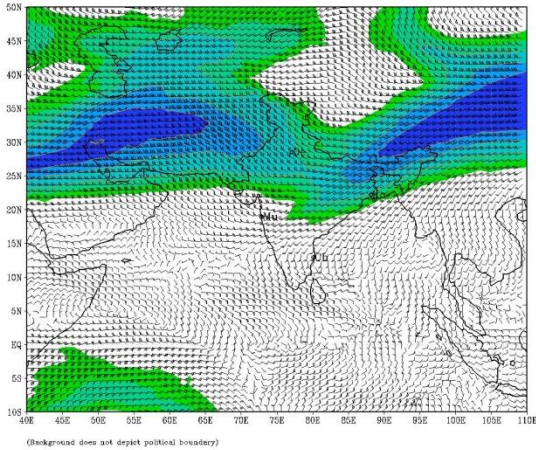
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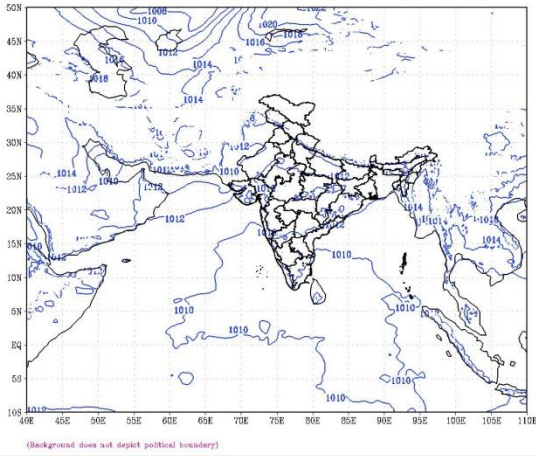
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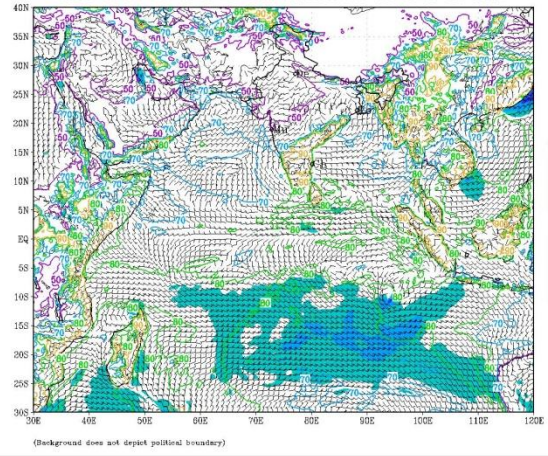
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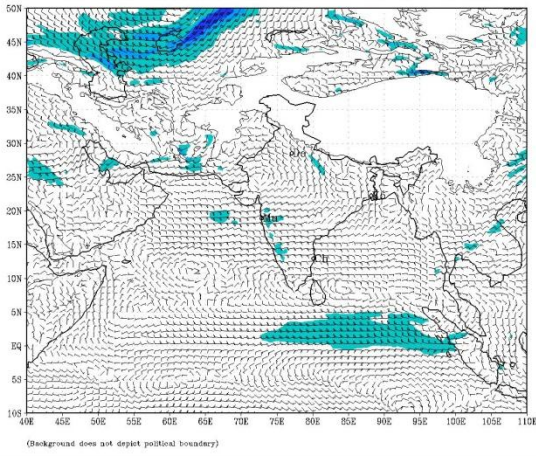
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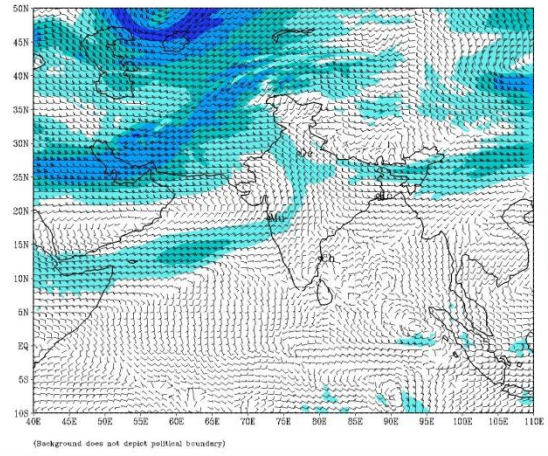
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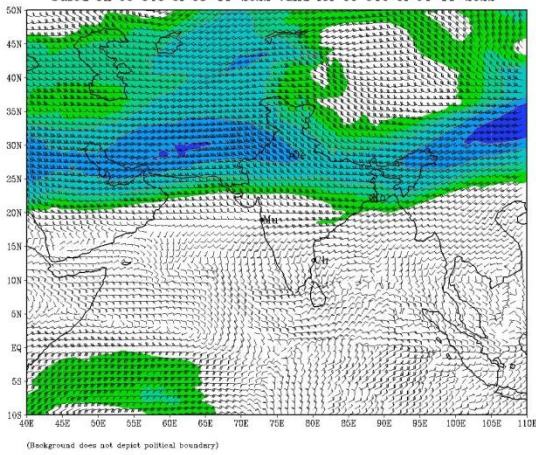
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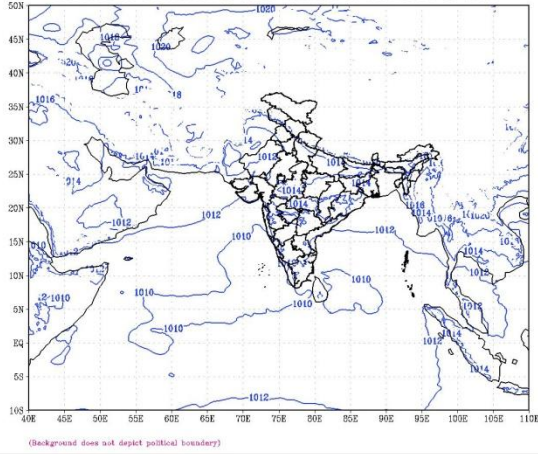
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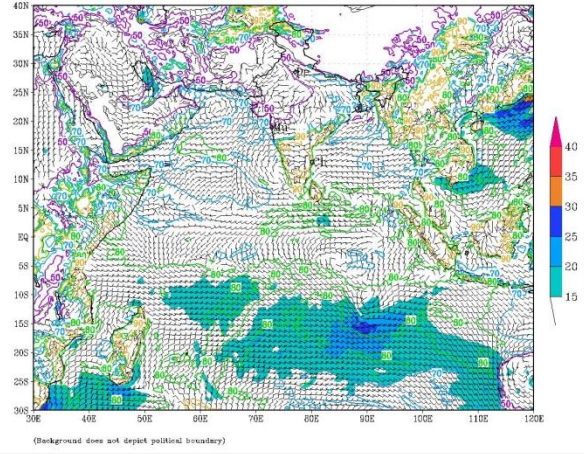
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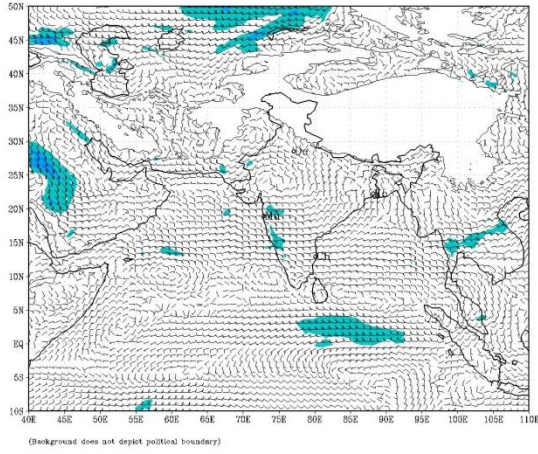
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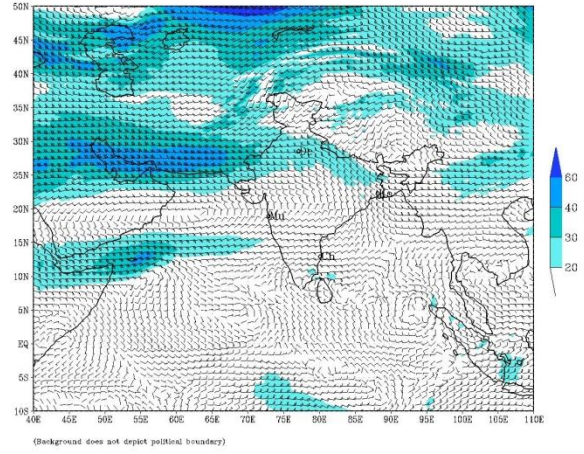
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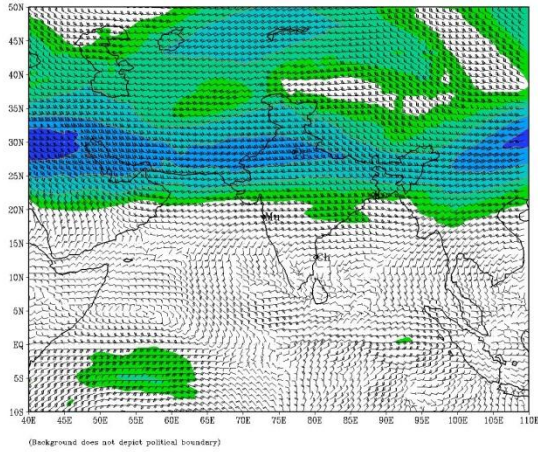
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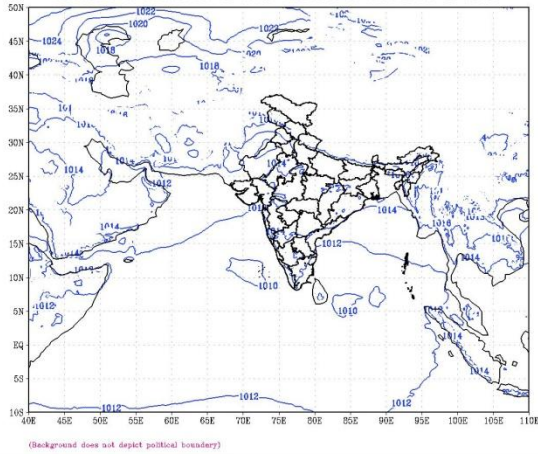
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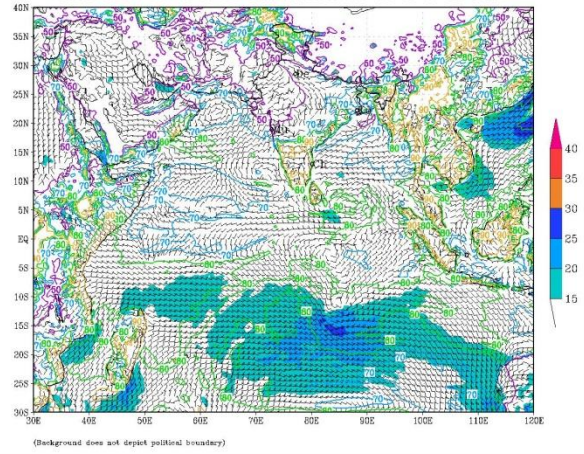
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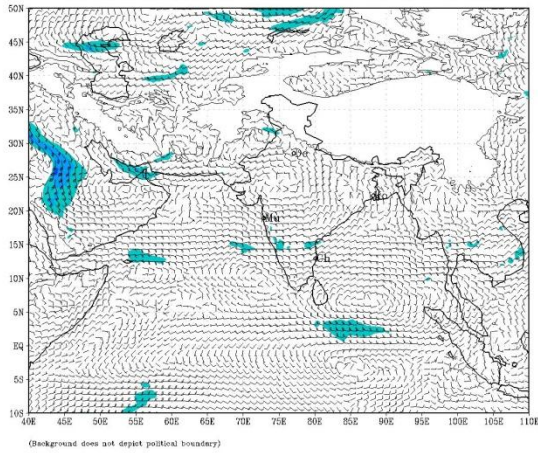
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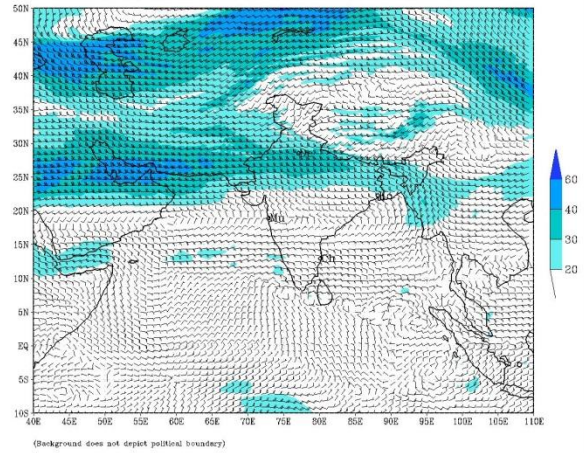
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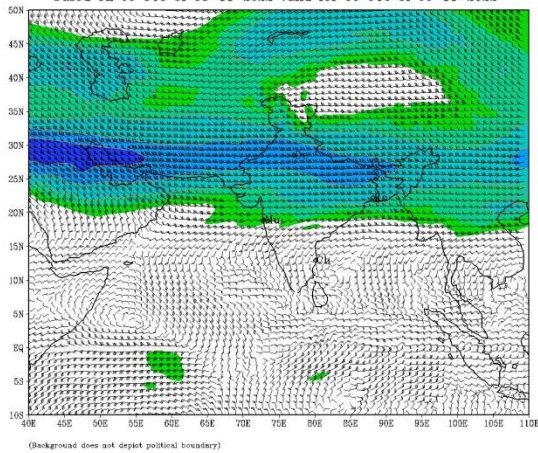
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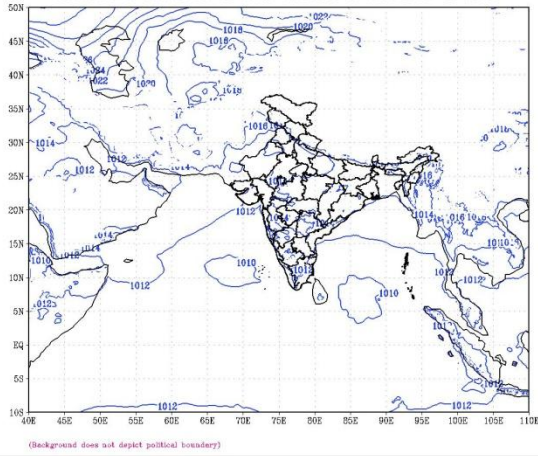
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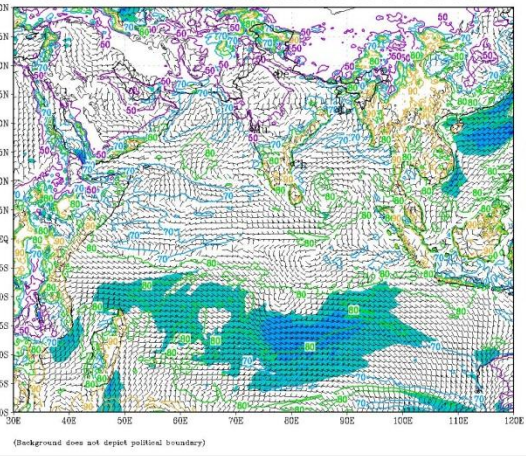
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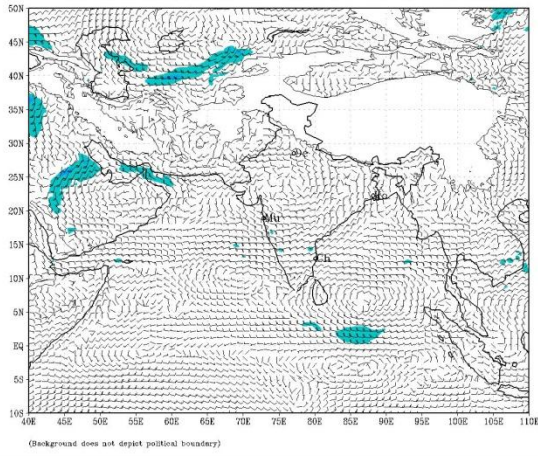
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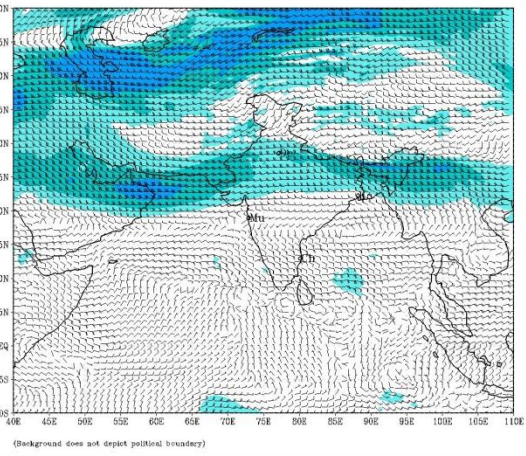
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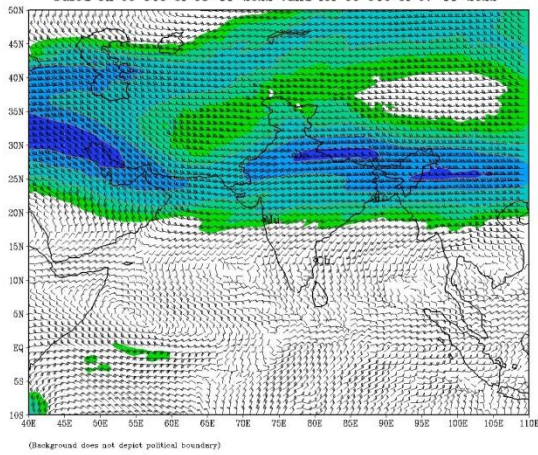
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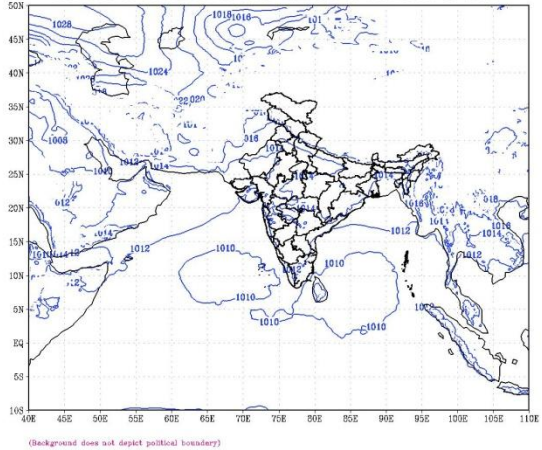
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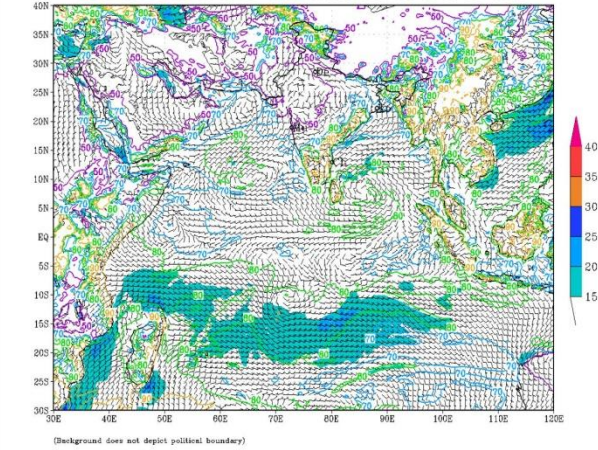
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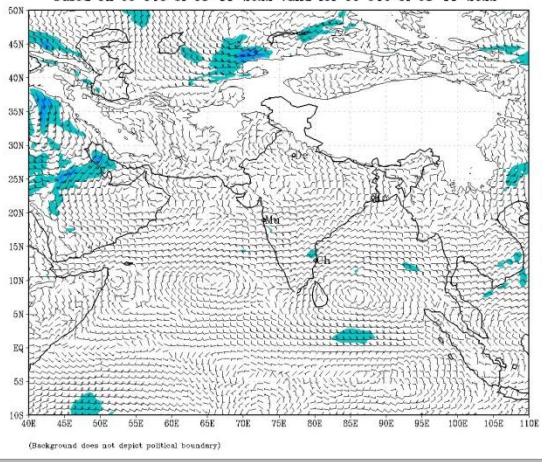
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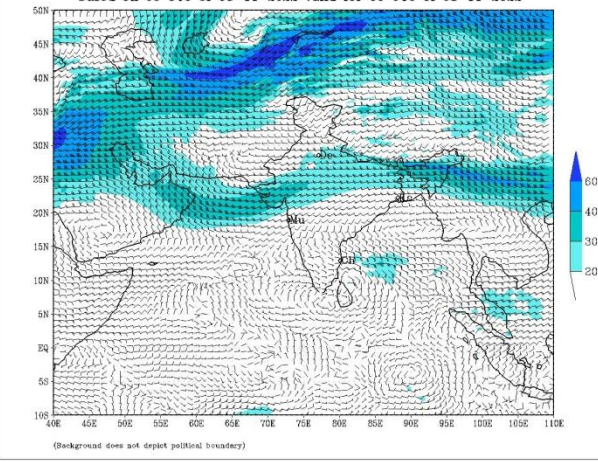
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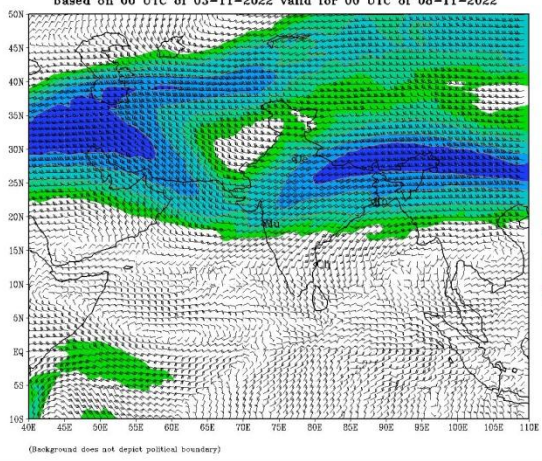
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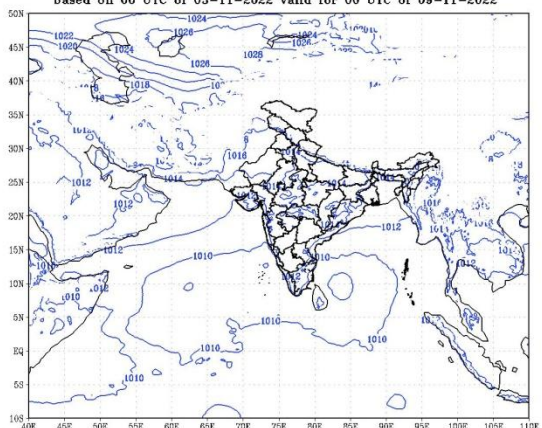
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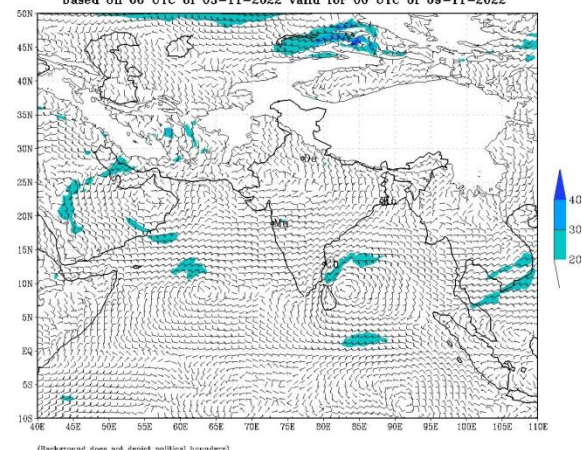
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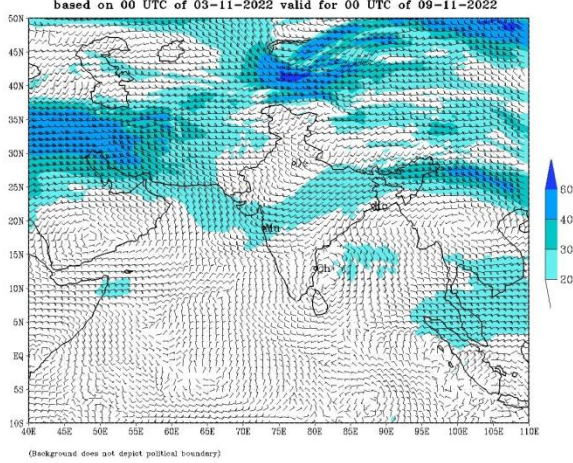
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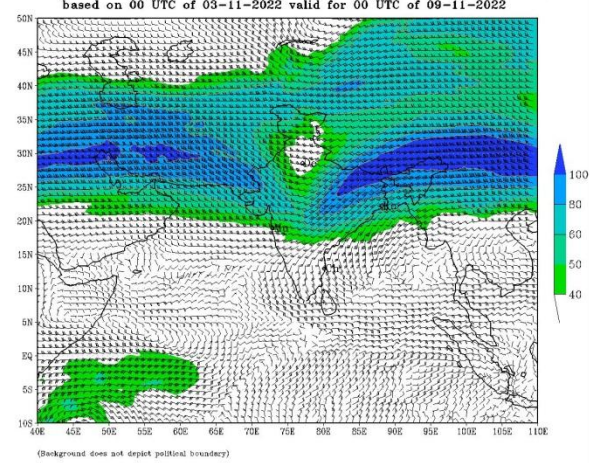
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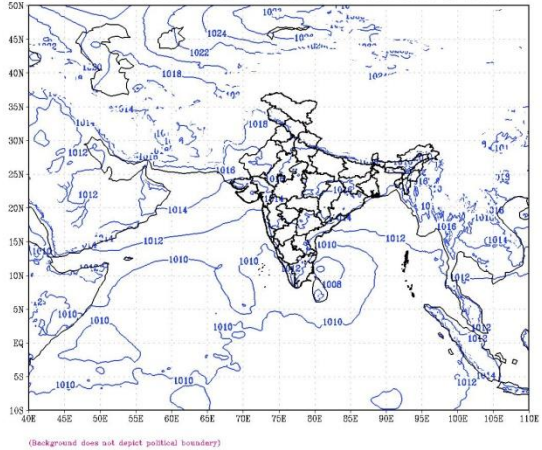
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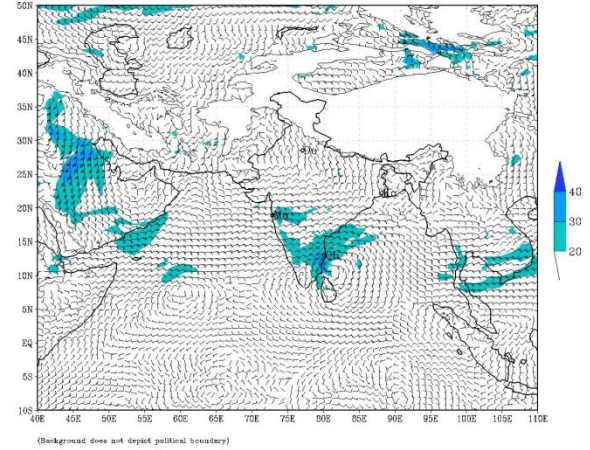
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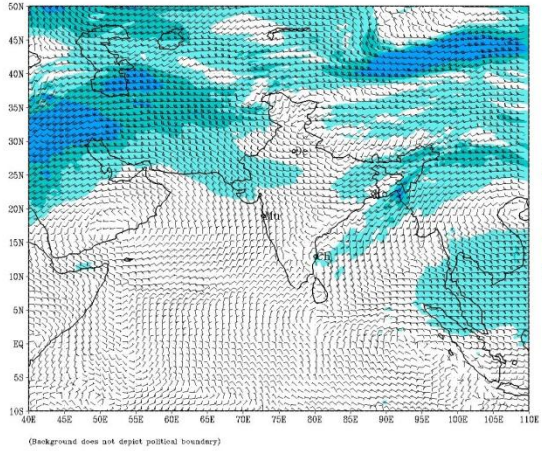
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