



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

**Tropical Cyclone Forecast Programme
Report Dated 6th November, 2022**

Time of Issue: 1200 UTC

Synoptic features (based on 0600 UTC analysis):

- ❖ Yesterday's cyclonic circulation over southeast Bay of Bengal & adjoining south Andaman Sea lay over southeast & adjoining Equatorial Indian Ocean (EIO) at 0300 UTC. Under its influence a Low Pressure Area (LPA) is likely to form over southwest Bay of Bengal off Sri Lanka coast around 09th November, 2022. It is very likely to move northwestwards towards Tamilnadu-Puducherry coasts with possible slight intensification during subsequent 48 hours.
- ❖ Yesterday's cyclonic circulation over Kerala coast & adjoining southeast Arabian Sea moved westwards and became less marked over southeast and adjoining southwest AS at 0300 UTC.

Dynamical and thermo-dynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	About 28-30°C over major parts of BoB and 24-28°C over some parts of southwest BoB and Comorin area.	29-31°C over north AS, along and off south Gujarat, Maharashtra coasts and southeast AS. 26-28°C over remaining parts of AS with less than 24°C off Oman & Somalia coast and adjoining parts of southwest and westcentral AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	>110 KJ/cm ² over eastcentral BoB & south Andaman Sea, 70-80 KJ/cm ² over north BoB & westcentral BoB, southwest BoB, north Andaman Sea, less than 40 KJ/cm ² off south Andhra Pradesh and Tamil Nadu coasts & less than 30 over a small pocket over southwest BoB & Comorin Area.	(a) 60-70 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 (X10⁻⁶s⁻¹)	Positive vorticity of 40-60 over southwest BoB & adjoining EIO and also over some parts of southeast BoB & south Andaman Sea.	Positive vorticity of 30-40 over central parts of south AS.

Low Level convergence ($\times 10^{-5} \text{ s}^{-1}$)	About 05 over Gulf of Thailand, 05 over southwest BoB off tamil nadu coast and 05-10 over southwest BoB and adjoining EIO.	05 over off north Kerala coast and 05 over small pockets over southeast AS and another over southwest AS.
Upper Level divergence ($\times 10^{-5} \text{ s}^{-1}$)	10-20 over south Andaman Sea & adjoining Gulf of Thailand. 05-10 over southwest BoB & adjoining EIO.	Positive zone 05 over southeast and another over westcentral AS.
Vertical Wind Shear (VWS knots)	Moderate 10-20 knots over south & adjoining central BoB.	10-20 over south & adjoining central AS.
Wind Shear Tendency (knots)	Decreasing over southwest BoB and adjoining EIO, another zone over south Andaman Sea & adjoining Gulf of Thailand.	Decreasing over eastcentral AS and another zone over westcentral AS.
Upper tropospheric Ridge	Along 12.0°N over the BoB.	Along 15.0°N over the AS.
Trough in westerlies	Along 82°E upto 30°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 Andaman Sea and adjoining south Thailand. Scattered low/medium clouds with embedded moderate to intense convection lay over south BoB.

(b) Over the Arabian Sea:-

Scattered low/medium clouds with embedded moderate to intense convection lay over southeast AS, Lakshadweep area and Comorin area. Scattered low/medium clouds with embedded weak to moderate convection lay over north AS.

M.J.O. Index:

MJO index is currently in Phase 7 with amplitude greater than 1. It will continue in same phase with gradually decreasing amplitude during next 7 days.

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	A cyclonic circulation (cycir) over southeast BoB on 6 th moving west-northwestwards gradually, becoming an extend low on 10 th , LPA over southwest BoB on 11 th & 12 th and becoming less marked on 13 th . Another cycir over southeast BoB on 13 th with northwestwards movement and marginal intensification.	No significant cycir during forecast period.

IMD-GEFS	A cyclonic circulation (cycir) over southeast BoB on 6 th moving west-northwestwards gradually, becoming an extend low on 10 th , LPA over southwest BoB on 11 th & 12 th and becoming less marked on 13 th . Another cycir over southeast BoB on 13 th .	No significant cycir during forecast period.
GEFS Probablistic guidance	Available during cyclone	Available during cyclone
IMD WRF	A cyclonic circulation (cycir) over southeast BoB on 6 th moving west-northwestwards gradually till 10 th .	No significant system
NCMRWF-NCUM	A cycir over southwest BoB on 6 th to move west-northwestwards and lie as an LPA over southwest BoB near Sri Lanka Tamil Nadu coasts on 10 th Nov and cross Tamil Nadu coast on 12 th Nov as an LPA.	No significant system
NCMRWF-NEPS	A cycir over southwest BoB on 6 th to move west-northwestwards and lie as an LPA over southwest BoB near Sri Lanka Tamil Nadu coasts on 10 th Nov and cross Tamil Nadu coast on 12 th Nov as an LPA.	No significant system over AS
NCMRWF-UM (Regional)	A cycir over southwest BoB on 6 th to move west-northwestwards and lie as an LPA over southwest BoB near Sri Lanka Tamil Nadu coasts on 10 th Nov and cross Tamil Nadu coast on 12 th Nov as an LPA.	No significant system over AS.
ECMWF	The cycir over southeast BoB on 6 th Nov will remain over same region till 7 th Nov and then will move northwestward and will be over southwest and adjoining southeast BoB on 8 th Nov morning. It will continue to move in the same direction becoming an LPA over southwest BoB on 9 th Nov. Well marled low pressure area/depression over southwest BoB on 10 th Nov. becoming LPA over southwest BoB on 11 th Nov.. It is predicted to move towards Tamil nadu coast as an LPA on 12 th , becoming less marked thereafter.	No significant system.
ECMWF ensemble	50-60% probability of cyclogenesis over southwest Bay of Bengal during 8 th /9 th Nov, will have westward movement towards Tamil Nadu coast with further intensification.	No significant probability.
NCEP-GFS	The cycir over southeast BoB on 6 th Nov to move west-northwestwards and lie as an LPA over southwest BoB on 10 th , well marked low pressure area/depression over southwest BoB close to Tamil Nadu coast on 11 th and crossing over Tamil Nadu on 12 th as an LPA.	No significant system
IMD MME	The cycir over southeast BoB as on 7 th Nov will becomes LPA on 9 th Nov over the southeast and adjoining southwest BoB. It is predicted to move northwestward movement with gradual intensification	No significant system.

	upto well marked low pressure area/depression. It will become depression on 11 th over southwest BoB. Moving northwestward, it would cross North Tamil Nadu coast on 12 th Nov as an LPA.	
IMD HWRF	Available during cyclonic disturbance period only	Available during cyclonic disturbance period only.
IMD-Genesis Potential Parameter	A potential zone over southwest BoB and adjoining EIO on 6 th . Potential zone over southwest BoB on 9 th , over southwest & adjoining westcentral BoB on 10 th , westcentral BoB on 11 th & 12 th near to Tamil Nadu coast.	No significant zone.

Summary and conclusion:

Most of the models are indicating development of low pressure area over southwest BoB during 8th to 10th Nov. There is consensus among various models w.r.t northwestward movement of the system towards Tamil Nadu coast. Now consensus has emerged wrt intensification of the system also. IMD GFS, GEFS, WRF, NCUM, NEPS are not indicating any significant intensification. However, NCEP (GFS) and ECMWF-EPS are indicating slight intensification of the system upto depression around 10th/ 11th Nov.

1. For the Bay of Bengal:

In view of all the above, it is inferred that a low pressure area is likely to form over southwest BoB around 9th November with low probability of it's intensification into a depression over southwest BoB around 11th. Hence low probability of cyclogenesis (formation of depression) is assigned to day 5. There is also likelihood of development of a fresh cyclonic circulation over southeast BoB around 13th Nov.

2. For the Arabian Sea:

No cyclogenesis is predicted over Arabian Sea during next 7 days.

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	LOW	LOW	NIL

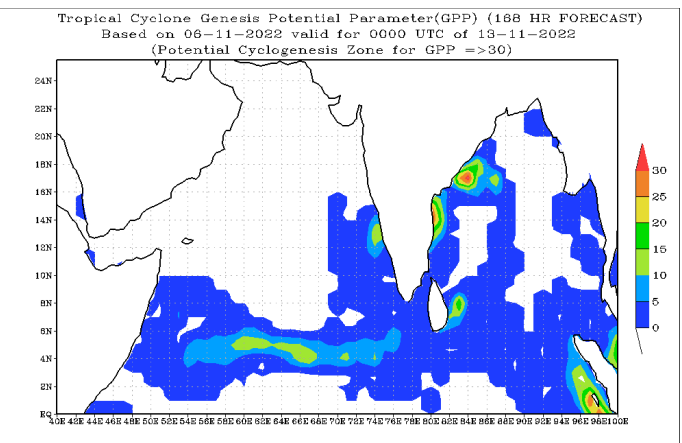
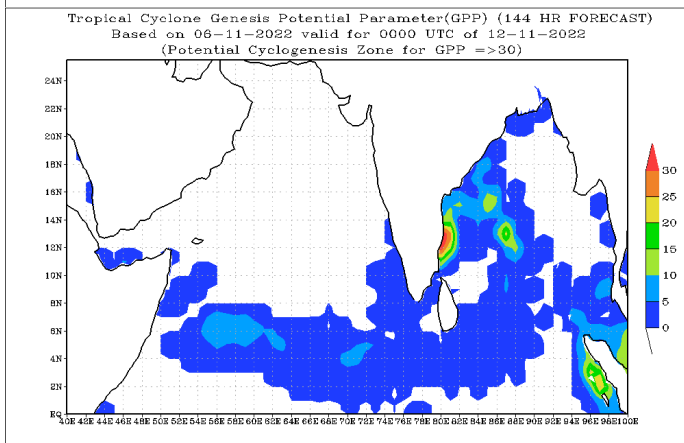
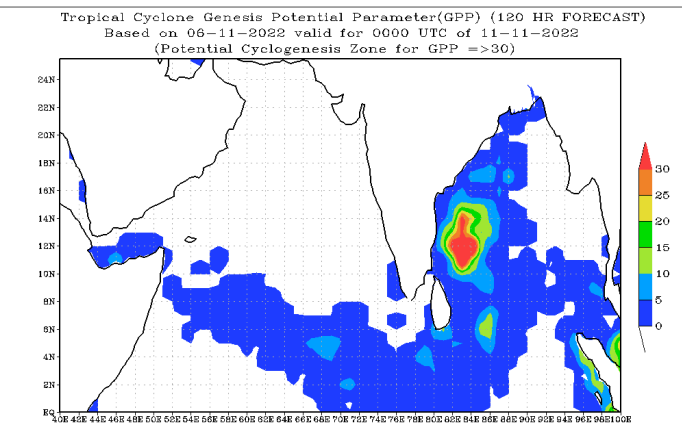
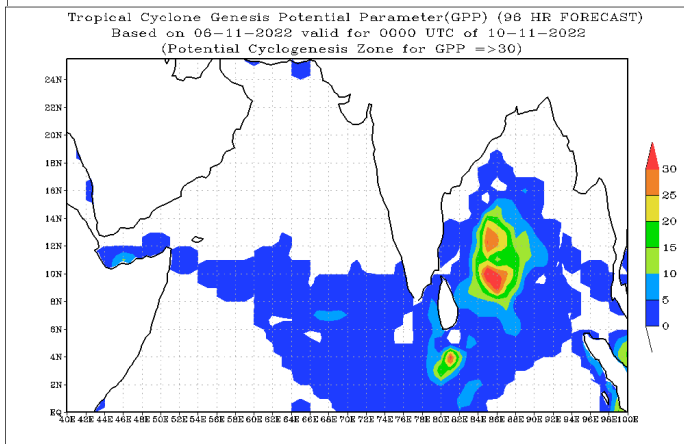
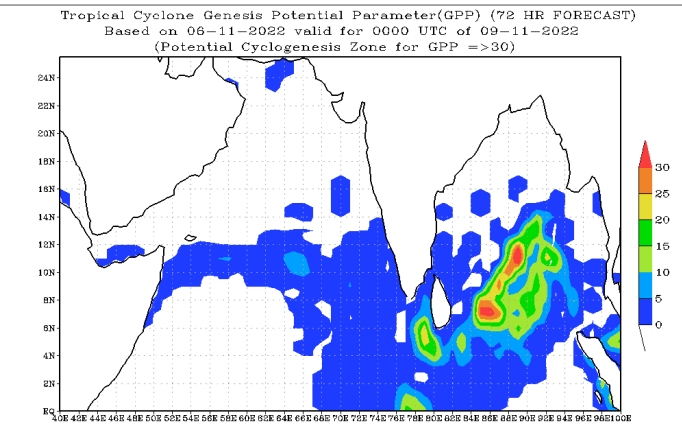
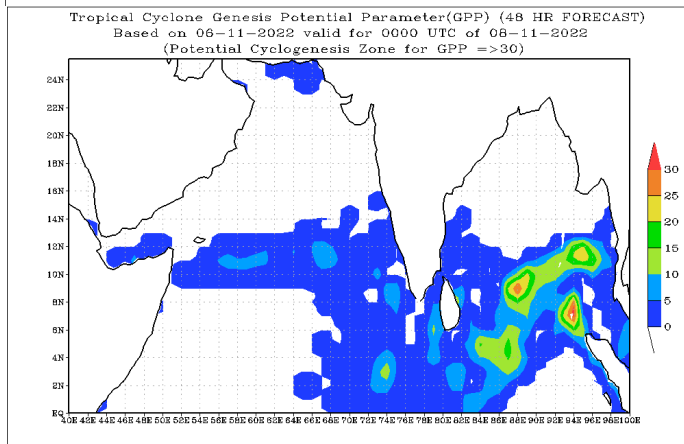
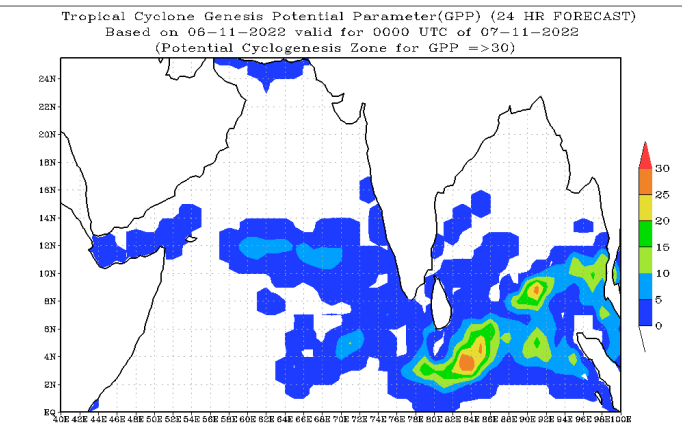
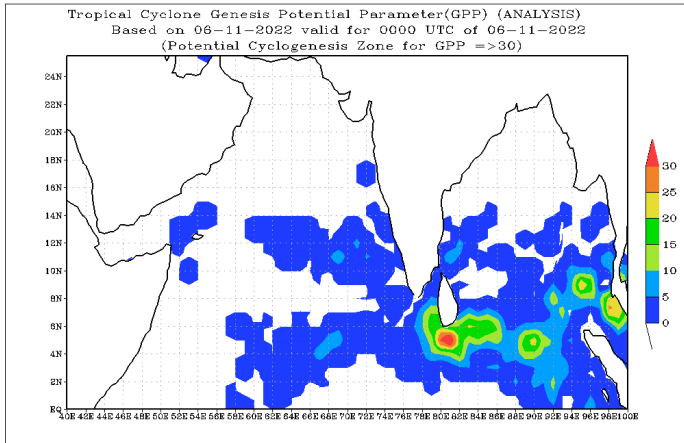
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

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

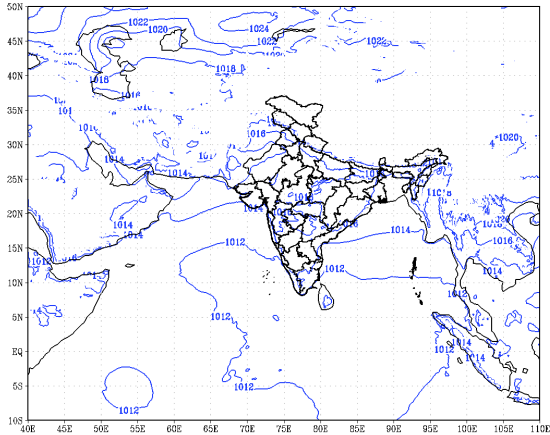
Advisory:

Nil

IOP: NIL

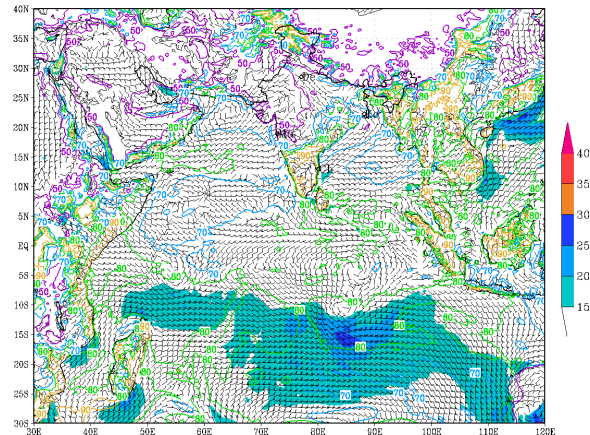


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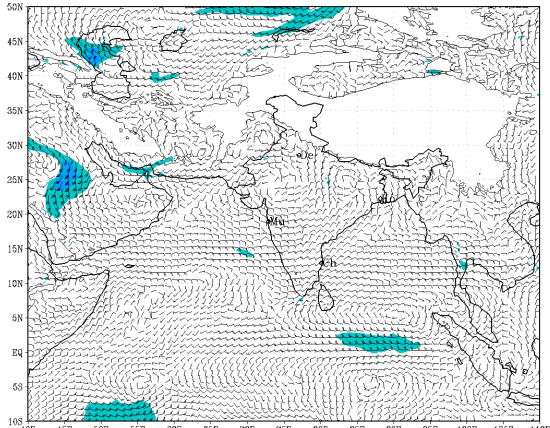
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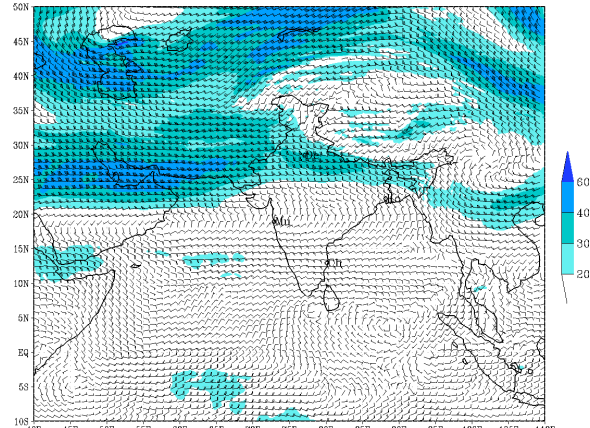
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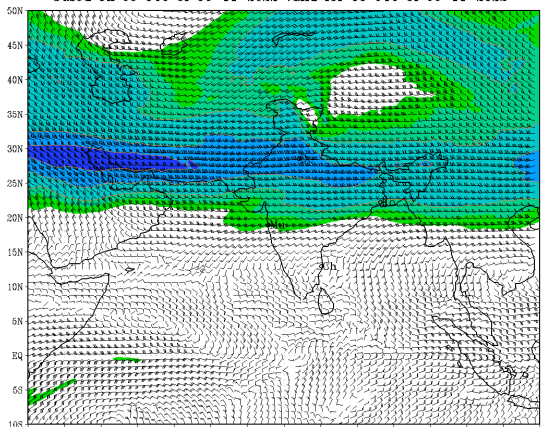
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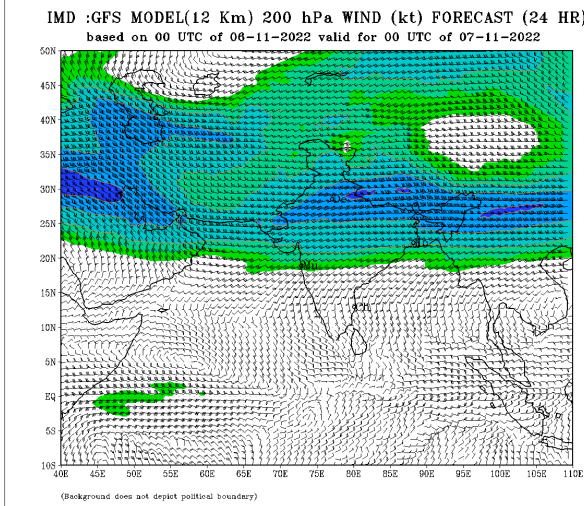
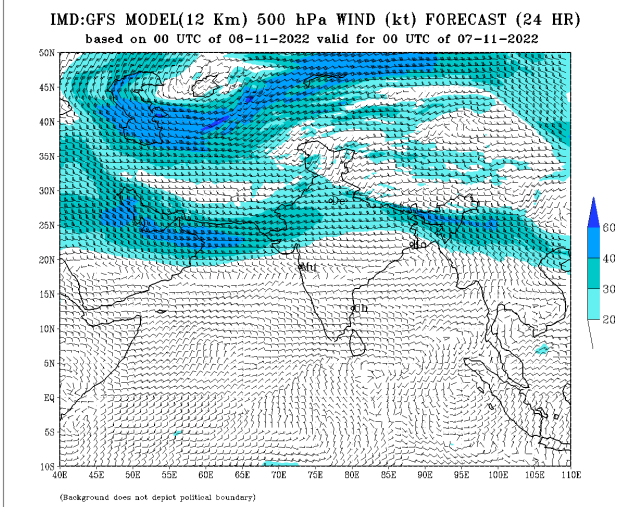
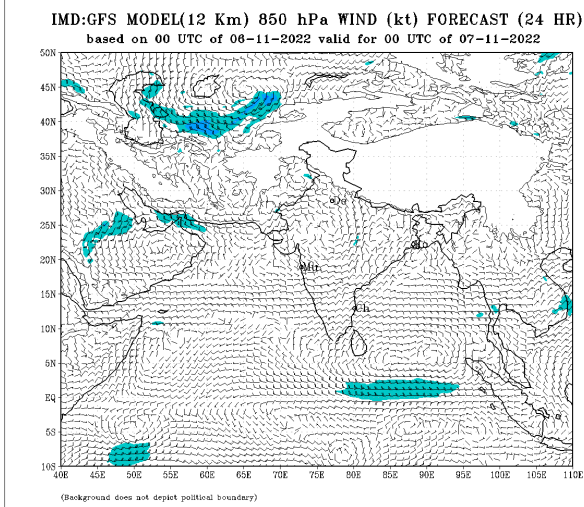
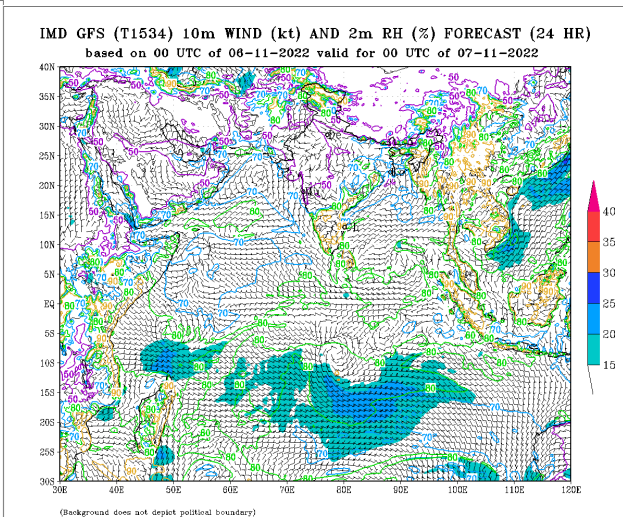
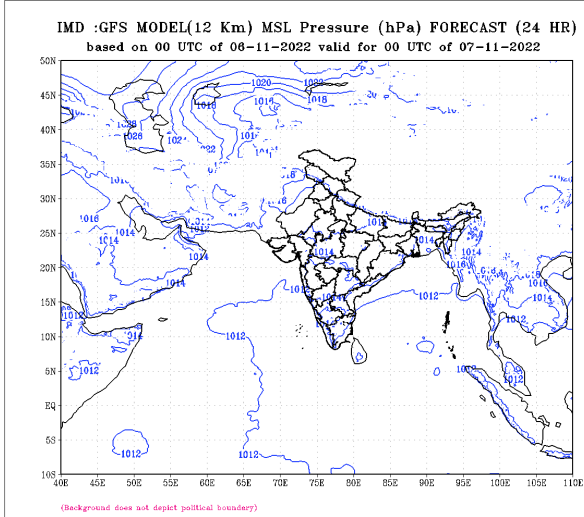


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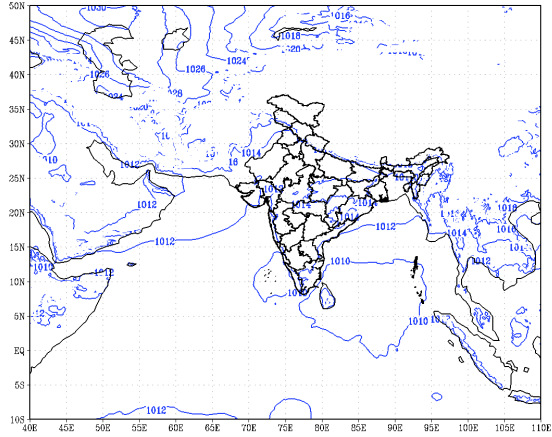
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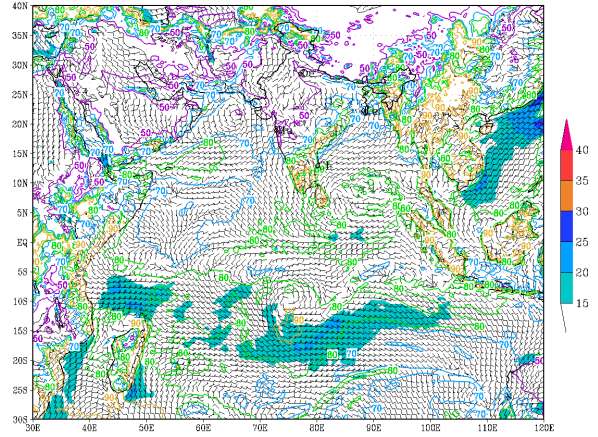


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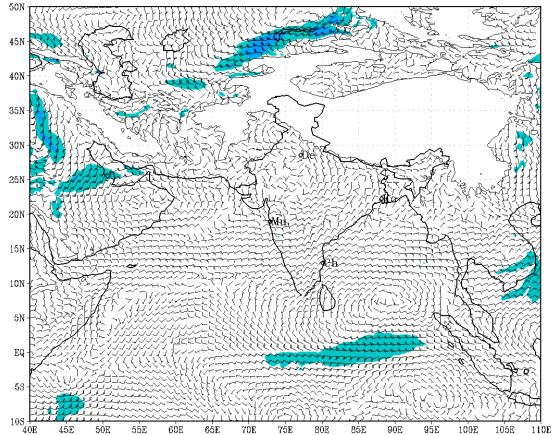
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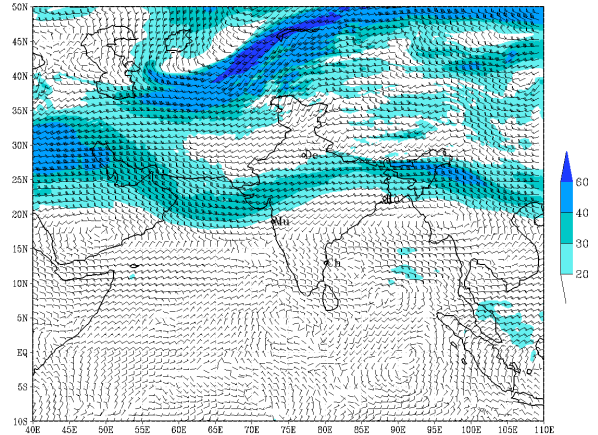
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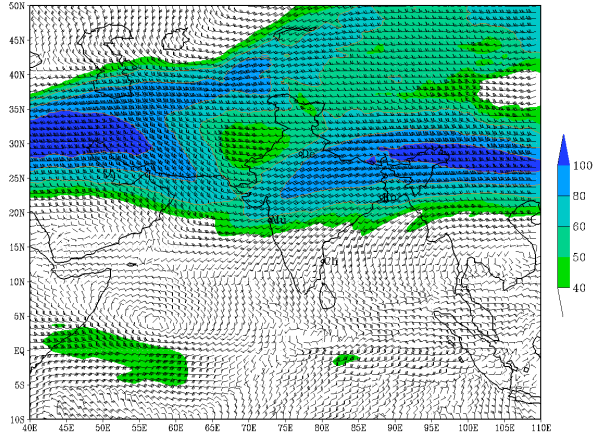
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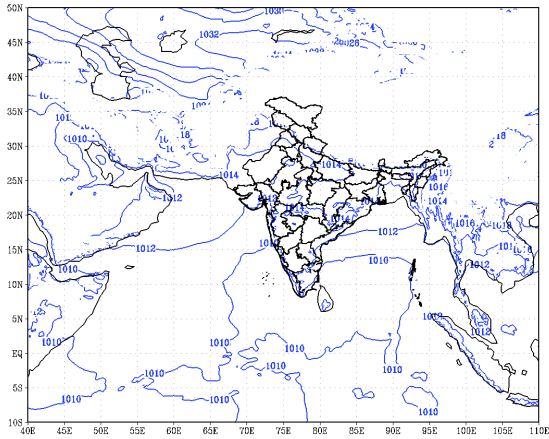
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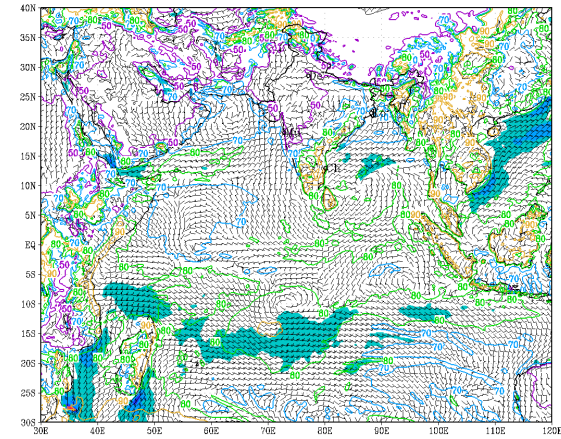
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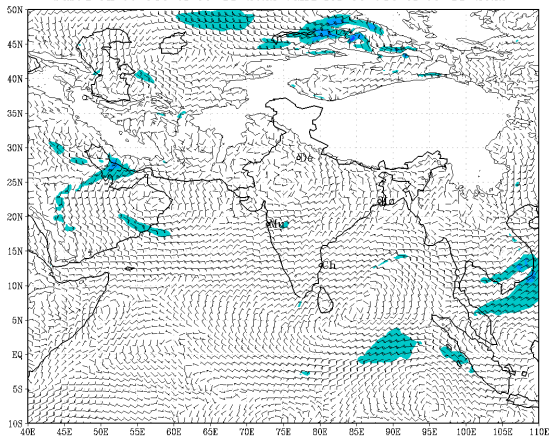
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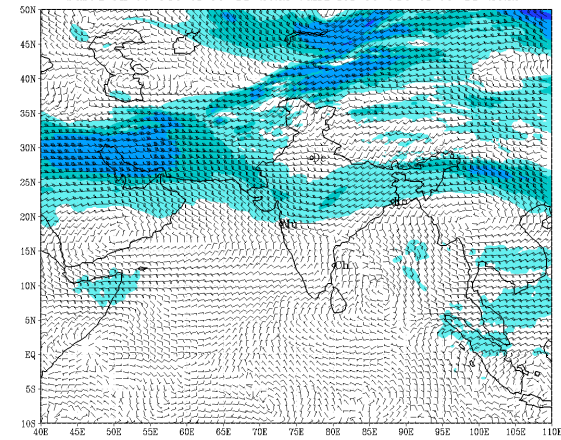
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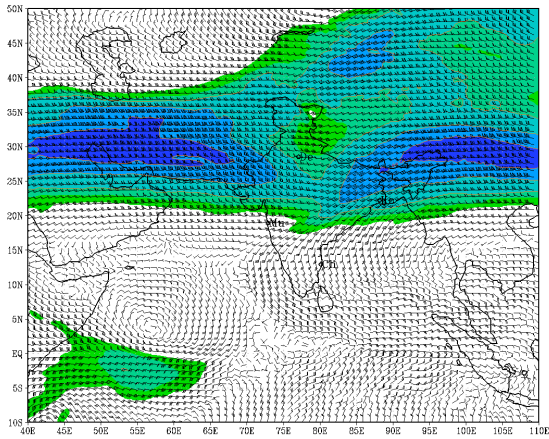
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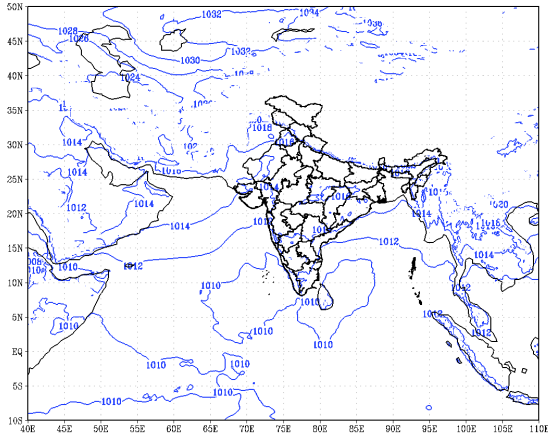
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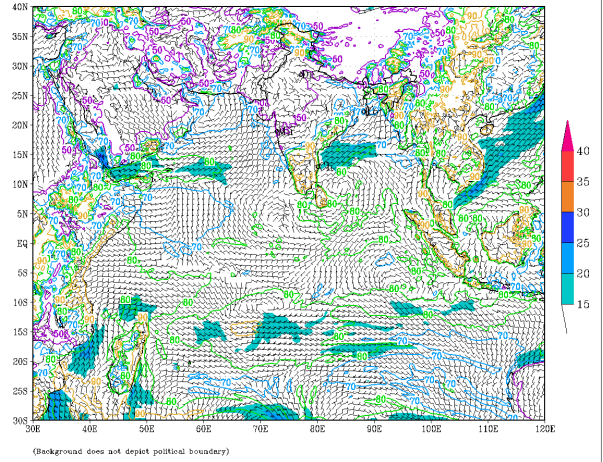


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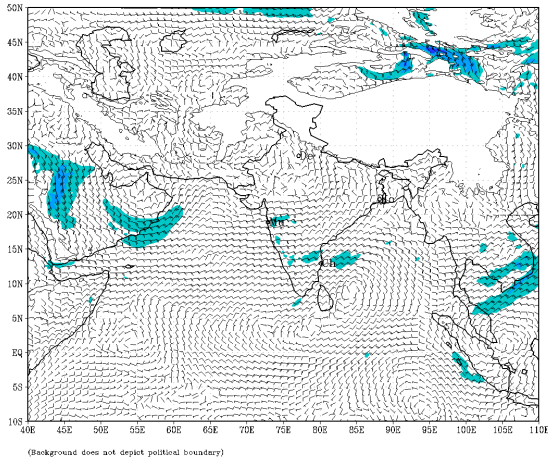
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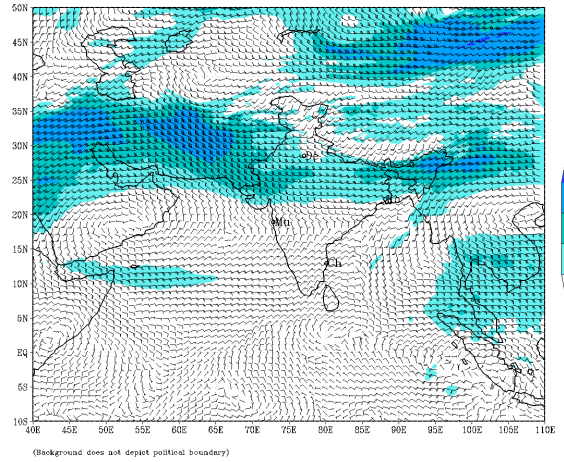
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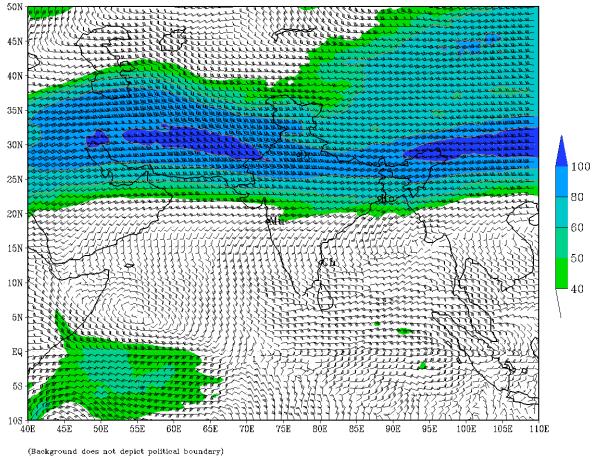
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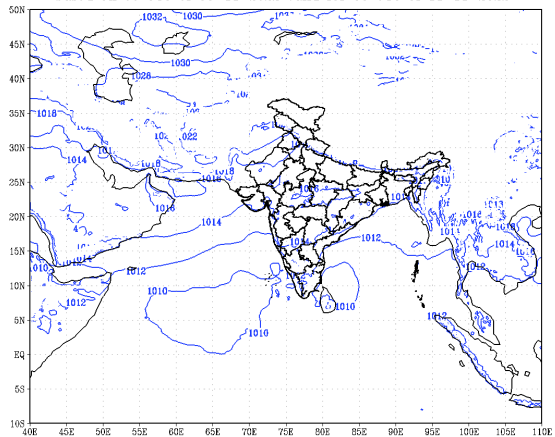
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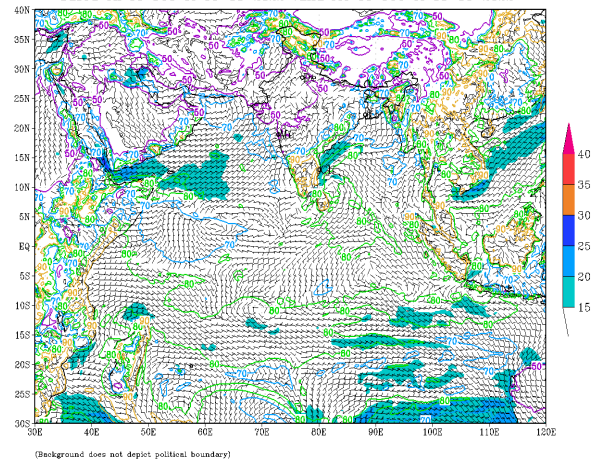
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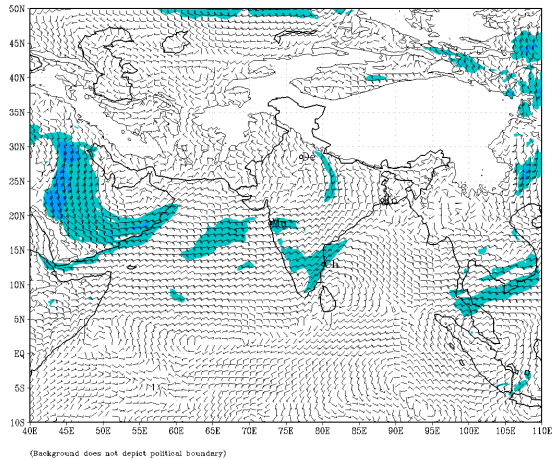
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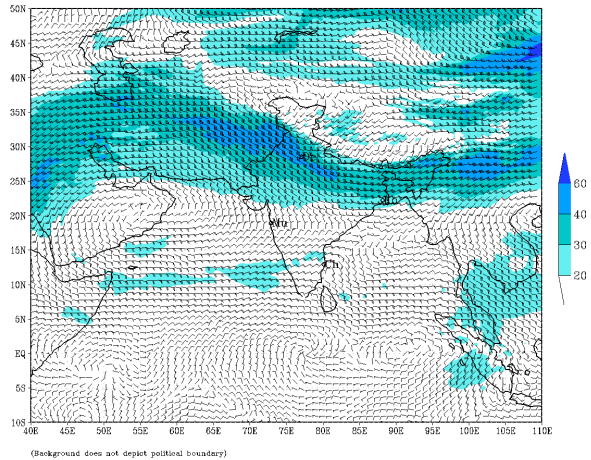
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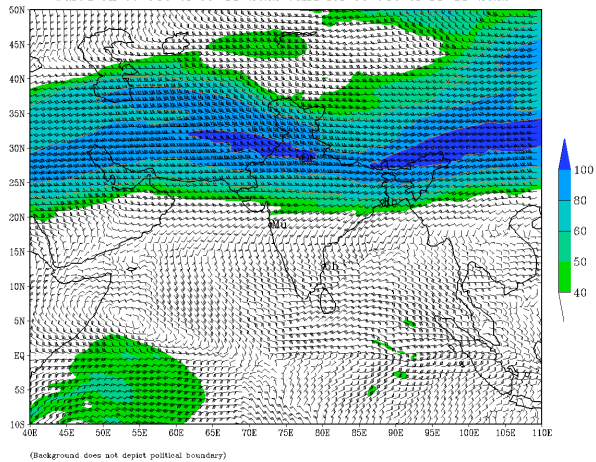
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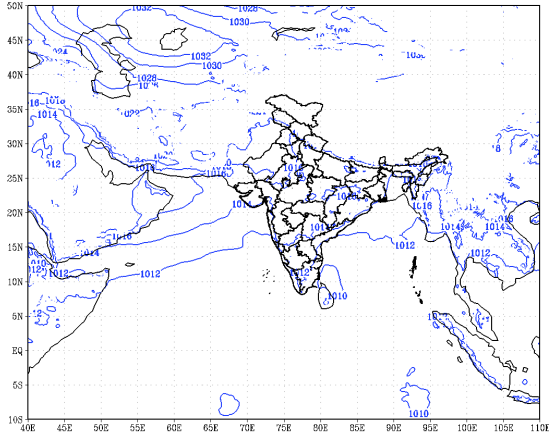
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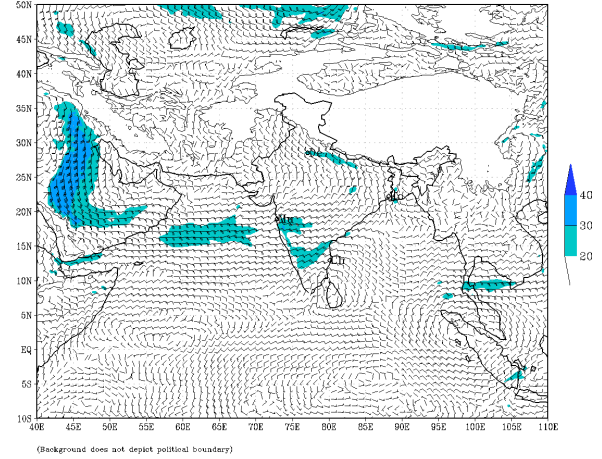
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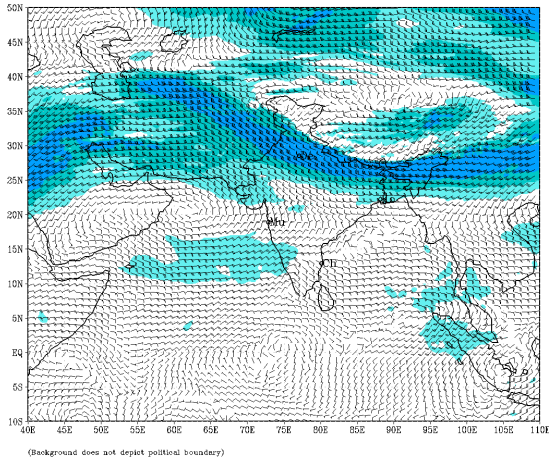
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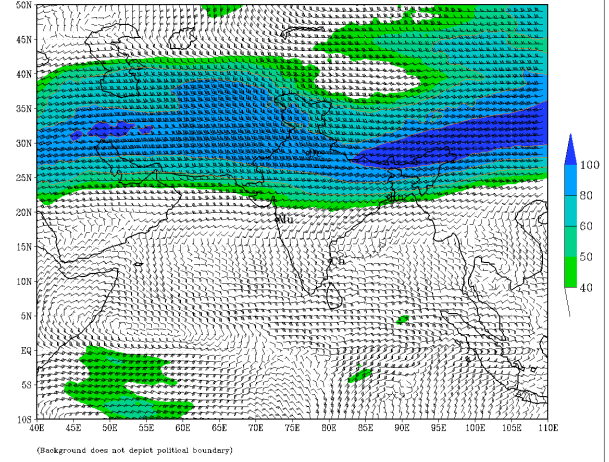
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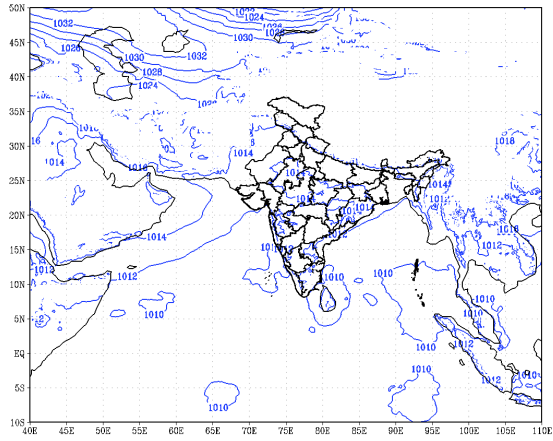
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based on 00 UTC of 06-11-2022 valid for 00 UTC of 12-11-2022



IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (144 HR)
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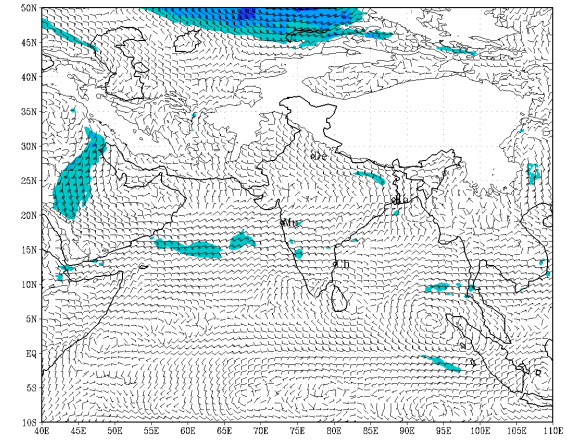


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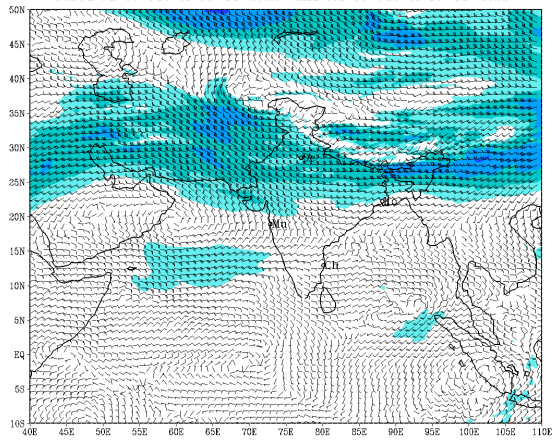
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IMD :GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (168 HR)
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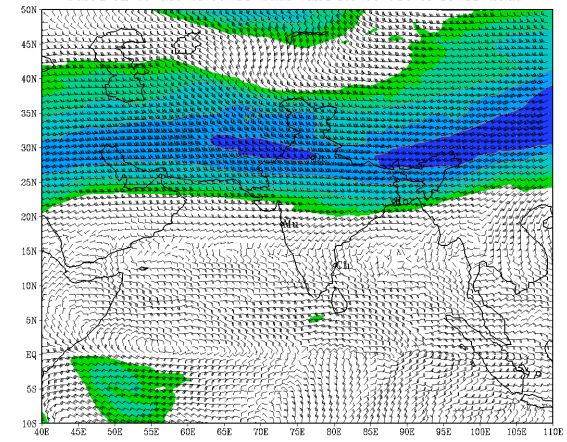
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IMD :GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
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based on 00 UTC of 06-11-2022 valid for 00 UTC of 13-11-2022



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