



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

FDP (Cyclone) NOC Report Dated 17th October, 2021

Time of Issue: 1200 UTC

Synoptic features (based on 0900 UTC analysis):

- ❖ Yesterday's low pressure area over north coastal Andhra Pradesh & neighbourhood lay over north Telangana and neighbourhood at 0300 UTC of today, the 17th October and persisted over the same region at 0900 UTC. The associated cyclonic circulation extended upto 5.8 km above mean sea level tilting southwestwards with height.
- ❖ An east-west trough between 1.5 km & 5.8 km above mean sea level extended from Gulf of Martaban to the cyclonic circulation associated with the above Low Pressure Area over north Telangana across eastcentral Bay of Bengal (BoB) at 0300 UTC. It persisted over the same region at 0900 UTC.
- ❖ Yesterday's low pressure area over southeast Arabian Sea (AS) and adjoining Kerala lay as a trough of low at mean sea level extending from south Interior Karnataka to south Tamilnadu at 0300 UTC. It persisted over the same region at 0900 UTC.
- ❖ The east-west trough across south peninsular India extended roughly along Lat. 15°N at 5.8 km above mean sea level became less marked at 0300 UTC.

Dynamical and thermodynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	29-30°C over major parts of BoB	28-29°C over the AS outside southwest & adjoining west-central AS where it is 26-27°C
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	70-80 over most parts and 110-120 over a small patch over northwest BoB off Odisha coast.	60-70 over southeast & east-central AS. Less than 50 over north, west-central & southwest AS and along & off Oman – Yemen coasts.
Relative vorticity (X10⁻⁶s⁻¹)	a) 60-80 over central and adjoining north BoB extending from Myanmar to Odisha coast. b) 50-60 over southwest BoB off Tamil Nadu coast and Palk Strait region. c) A small zone of positive vorticity (40-50) over Gulf of Martaban, east-central BoB	a) Two small pockets of 30-40 over central parts of central and south AS. b) 20-30 over southeast AS & adjoining Kerala coast and Comorin area

	and adjoining Myanmar coast	
Low Level convergence ($\times 10^{-5} \text{ s}^{-1}$)	a) An extended zone of 15-20 over east-central BoB and Gulf of Martaban. b) 5-10 over south Odisha coast and 5-10 over central India c) 5-10 over southeast BoB off south Tamil Nadu coast	a) 5 over southwest AS
Upper Level divergence ($\times 10^{-5} \text{ s}^{-1}$)	Extended zone of positive value ranging between 5 & 10 over entire BoB	a) 5-10 over southeast AS off Kerala-Karnataka coasts b) 5-10 over northeast AS off south Gujarat coast c) 5 over central parts of south AS
Vertical Wind Shear (VWS Knots)	a) Moderate (10-20) over north and adjoining central BoB with extension upto central India b) High over south and adjoining central BoB	a) Low to moderate (10-20) over most parts of central AS. b) High over south and north AS.
Wind Shear Tendency (knots)	a) Increasing tendency over entire BoB. b) Decreasing over north Andaman Sea.	a) Increasing over southeast AS b) Decreasing over northwest and adjoining west-central AS
Upper tropospheric Ridge	Around 25°N to the north of the BoB	Not well defined owing to the presence of a deep mid-latitude trough reaching upto 22°N .

Satellite observations based on INSAT imagery (0900 UTC):

Convection associated with the cyclonic disturbance:

At 0900 UTC, scattered low to medium clouds with embedded moderate to intense convection lay over north Vidarbha and neighbourhood in association with the low pressure area over the region.

Bay of Bengal & Andaman Sea:-

At 0900 UTC, scattered to broken low to medium clouds with embedded intense to very intense convection lay over BoB to the north of latitude 11.0°N , Arakan coast, Gulf of Mannar, Tenasserim coast and Andaman Sea. Scattered low and medium clouds with embedded isolated moderate to intense convection lay over rest BoB.

Arabian Sea:-

At 0900 UTC, scattered low and medium clouds with embedded moderate to intense convection lay over southeast and adjoining eastcentral AS. Scattered low and medium clouds with embedded weak to moderate convection lay over southeast AS and adjoining Comorin.

M.J.O. Index:

MJO index is in Phase 4 with much subdued amplitude (close to zero). It is likely to propagate westwards to Phase 1, moving across Phases 3 & 2 with gradual increasing trend in amplitude during next 7 days. Thus, the Phase of MJO would support convective activity over NIO during next 7 days.

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

No Storm or Depression prevails over South China Sea & South Indian Ocean as on today.

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

Model	BoB	AS
IMD-GFS	No fresh genesis predicted.	No fresh genesis predicted.
IMD-GEFS	No fresh genesis predicted.	No fresh genesis predicted.
IMD-WRF	No fresh genesis predicted.	No fresh genesis predicted.
NCMRWF-NCUM	No fresh genesis predicted.	No fresh genesis predicted.
NCMRWF-NEPS	No fresh genesis predicted.	No fresh genesis predicted.
NCMRWF-UM (Regional)	No fresh genesis predicted.	No fresh genesis predicted.
ECMWF	No fresh genesis predicted.	A feeble LPA over southeast AS off north Kerala coast on 23 rd Oct.
ECMWF-EPS	Shows 30-40% strike probability for West Bengal coast on 20 th .	Shows NIL probability
NCEP-GFS	LPA over Gangetic West Bengal and adjoining northwest BoB on 18 th , eastward shift on 19 th and weakening on 20 th	No fresh genesis predicted.
IMD-GPP	Much extended Potential zone stretching from Gulf of Martaban to northwest BoB across east-central BoB on 17 th , over northwest BoB off West Bengal coast on 18 th & and Nil on the remaining days	No potential zone.

GPP- Genesis Potential Parameter based on Dynamical Statistical model developed by IMD.

Summary and Conclusion:

Most of the models are indicating that there may not be any significant Low pressure system development taking place over the north Indian Ocean during the next 7 days.

It may thus be concluded that,

Fresh cyclogenesis over the north Indian Ocean is un-likely during the forecast period.

Probability of cyclogenesis (formation of depression and above intensity systems) over the Bay 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	NIL

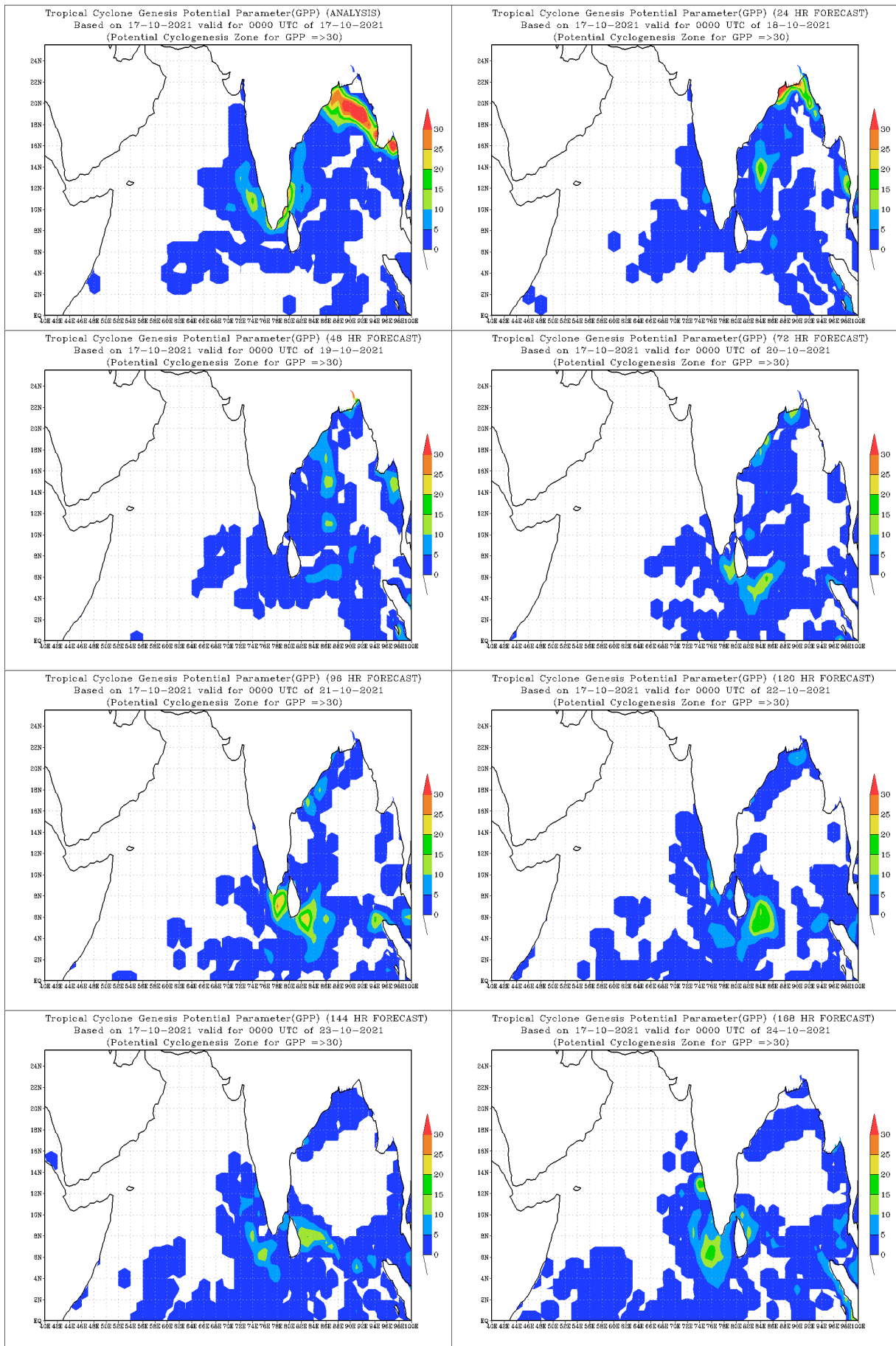
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

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

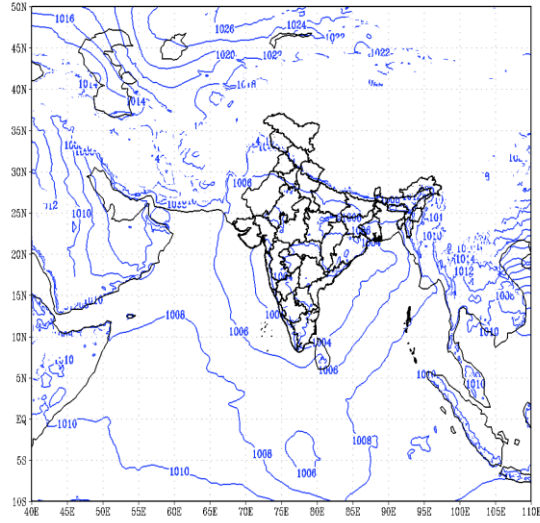
Advisory:

Watch has to be maintained w.r.t. any possible development of a short-lived Low Pressure area over northwest Bay of Bengal and adjoining West Bengal coast around 18th October 2021.

IOP is suggested for West Bengal and north Odisha coasts on 18th & 19th October 2021.

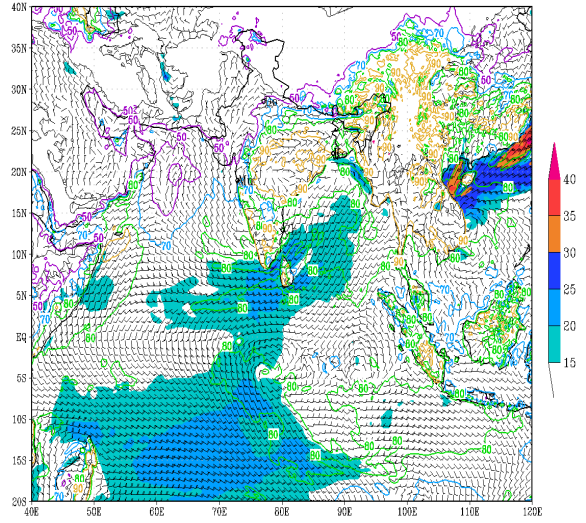


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 17-10-2021 valid for 00 UTC of 17-10-2021



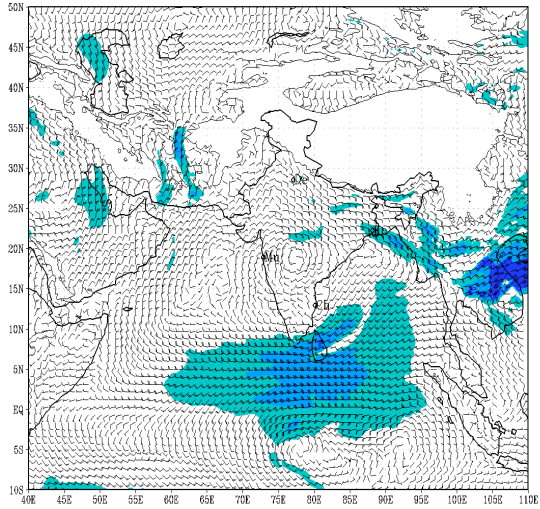
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IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (00 HR)
based on 00 UTC of 17-10-2021 valid for 00 UTC of 17-10-2021



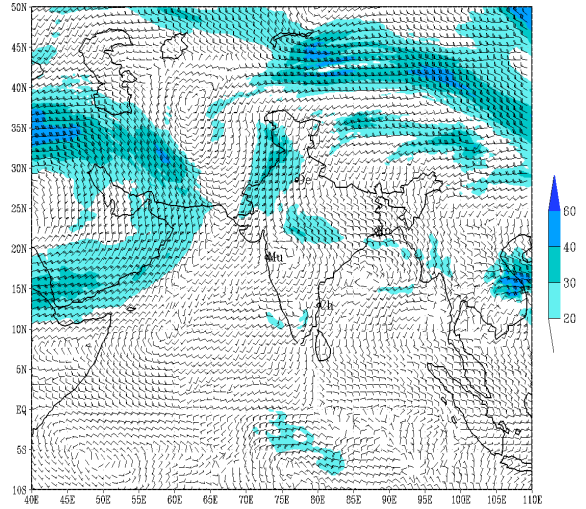
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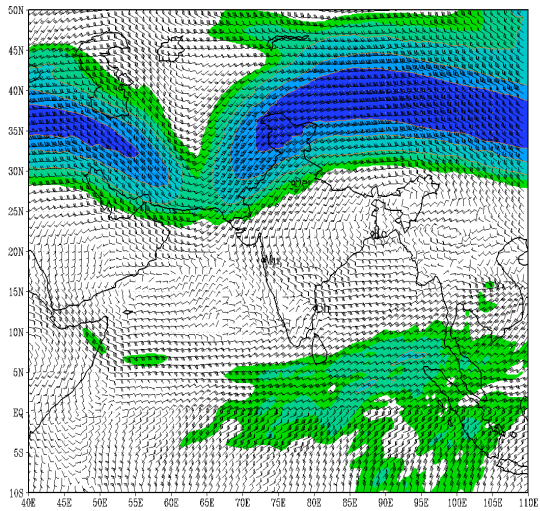
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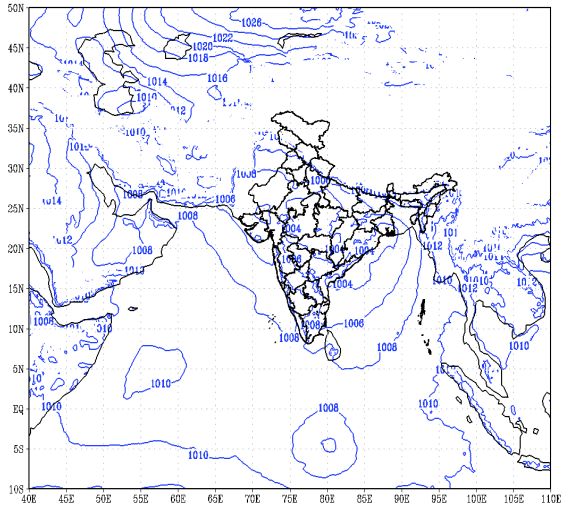
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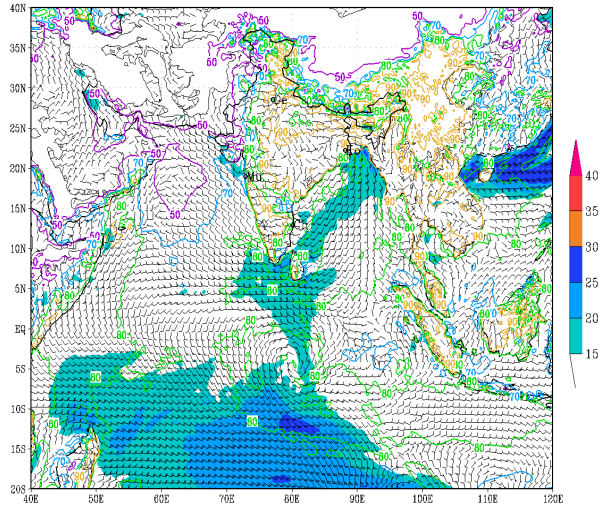
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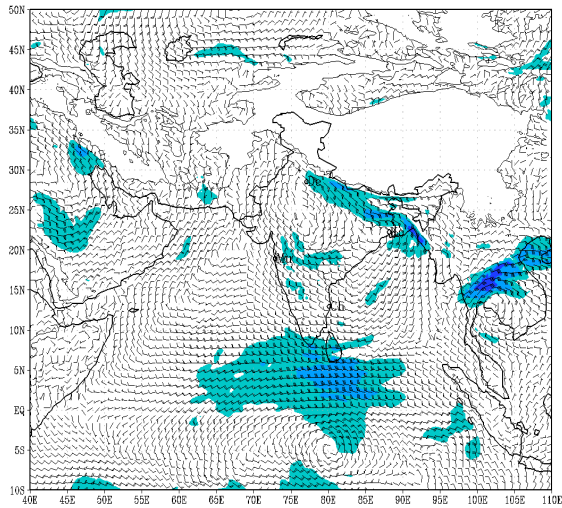
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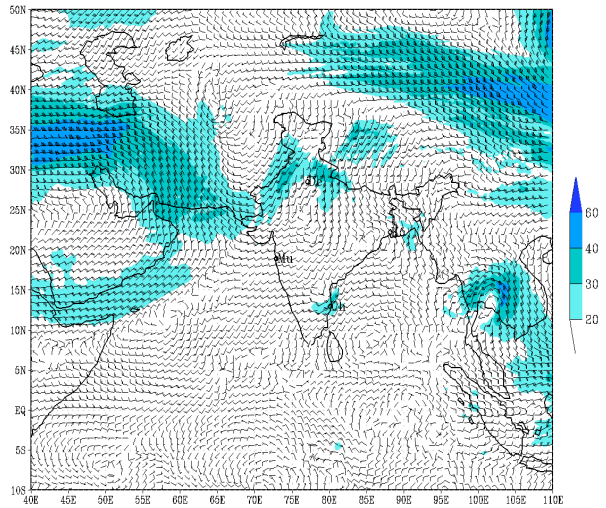
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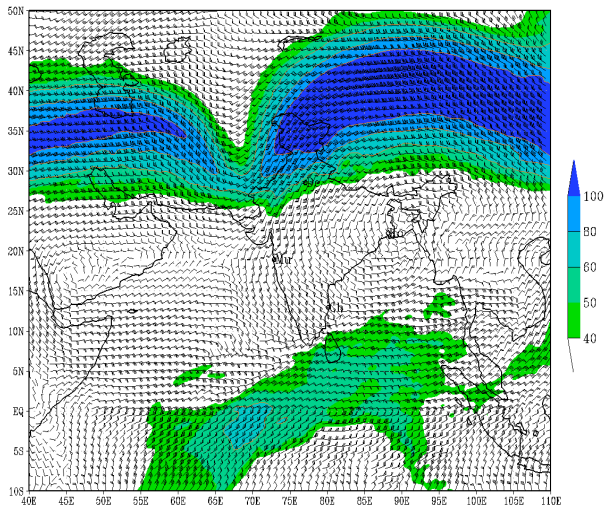
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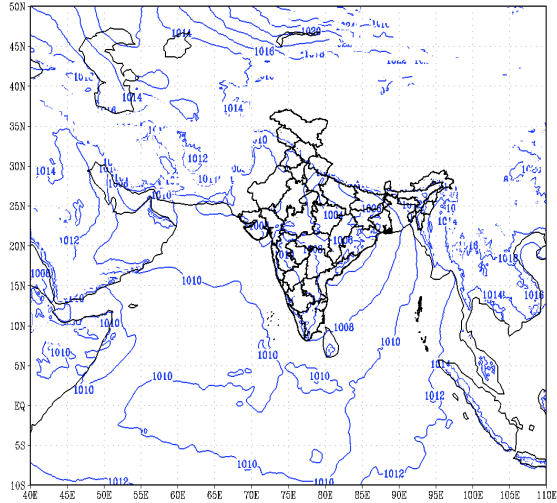
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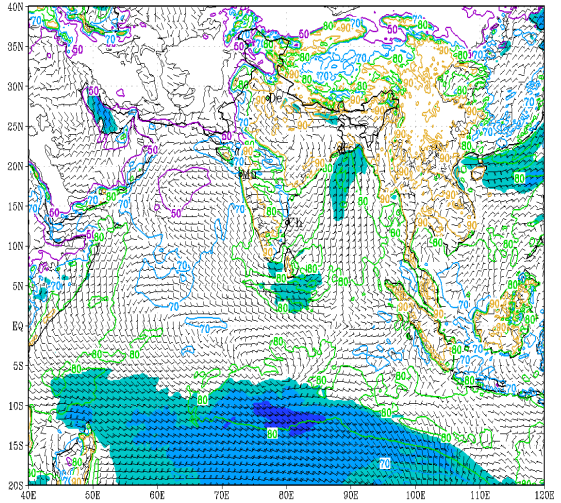
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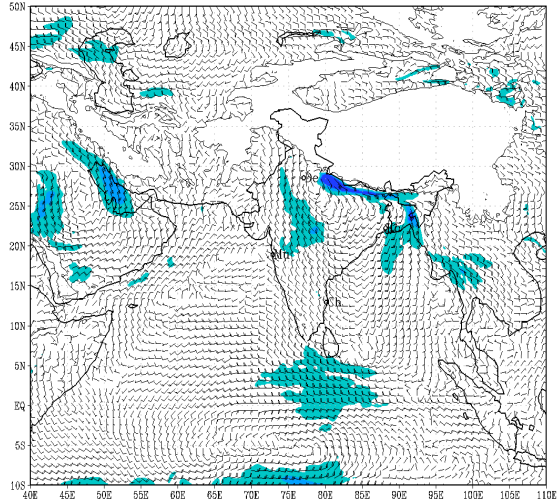
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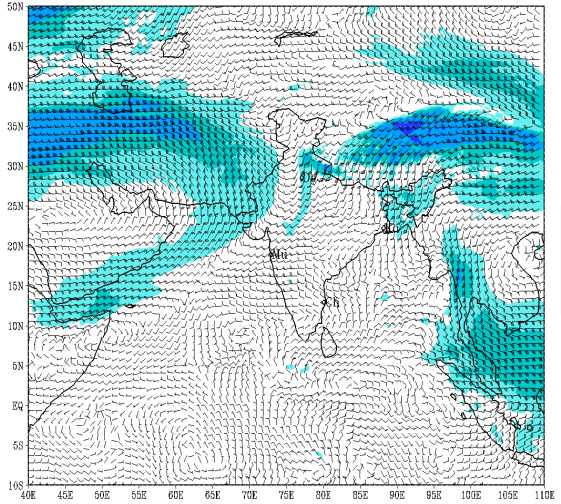
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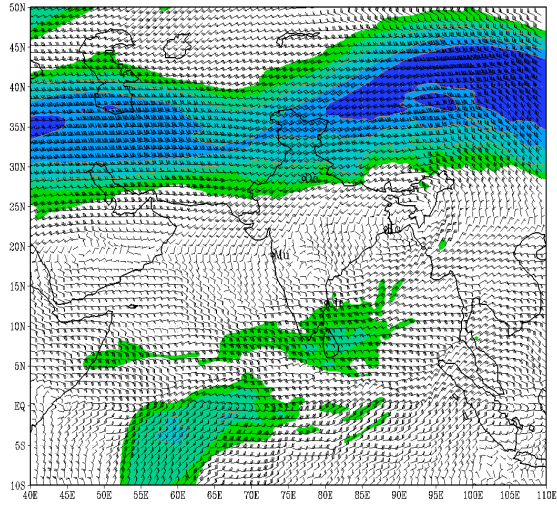
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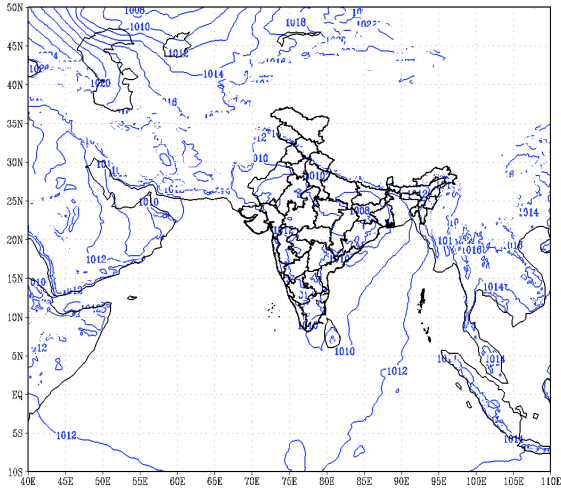
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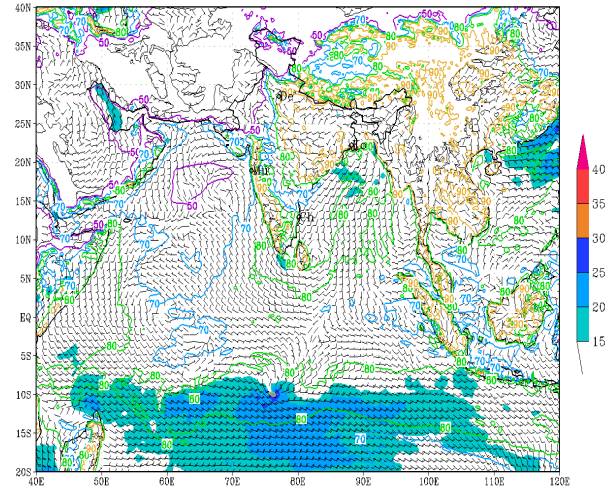
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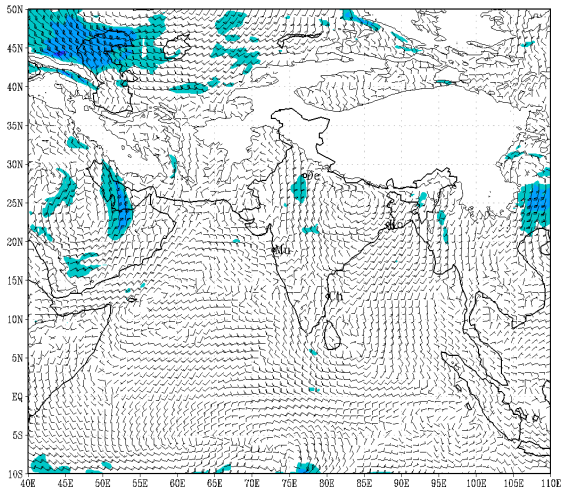
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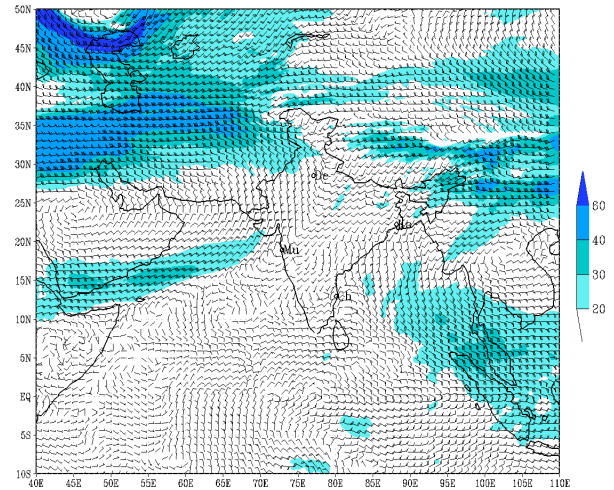
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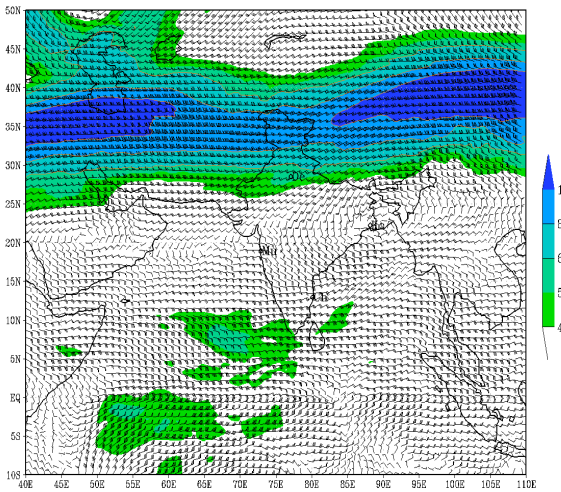
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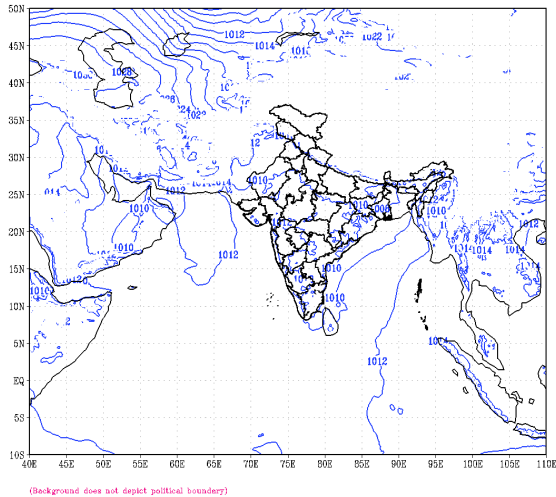
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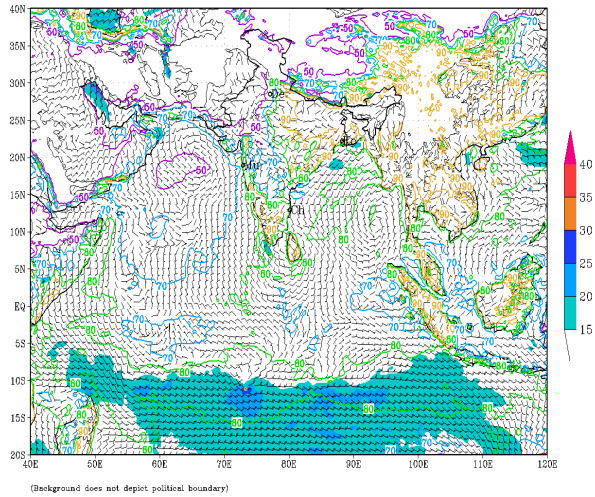


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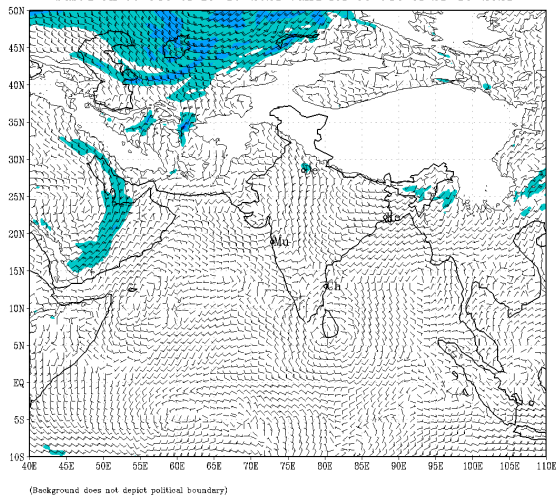
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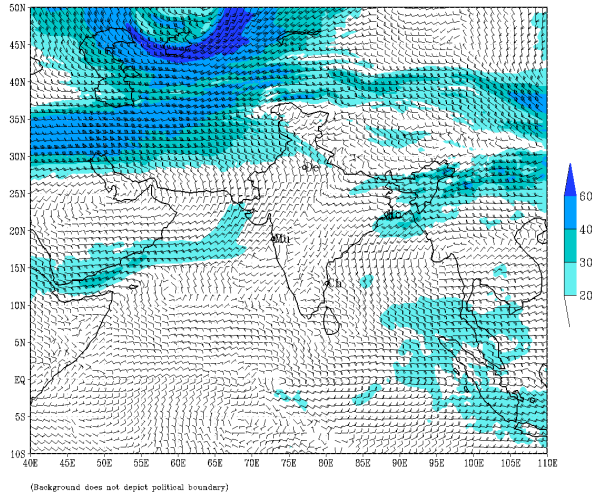
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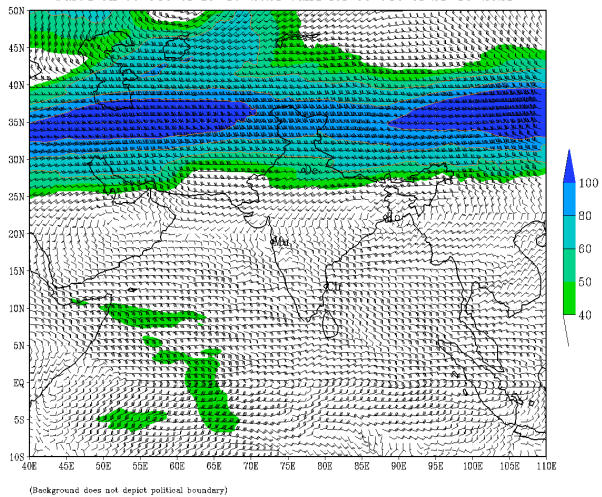
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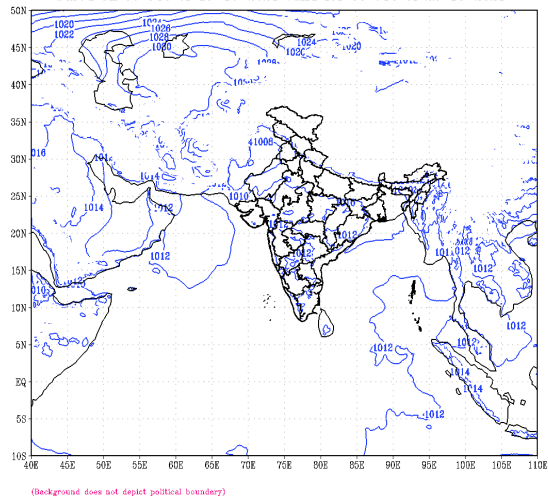
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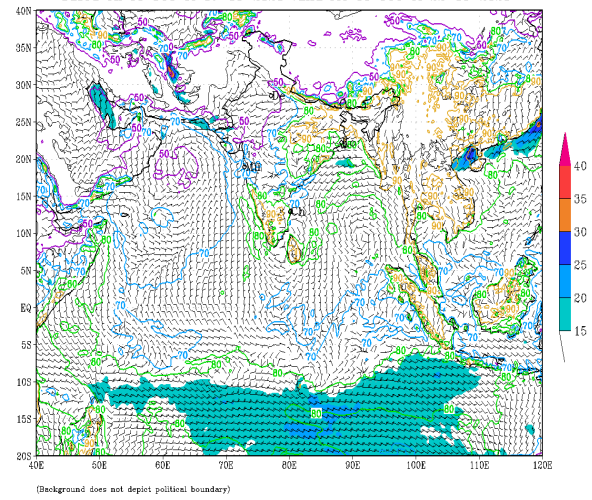
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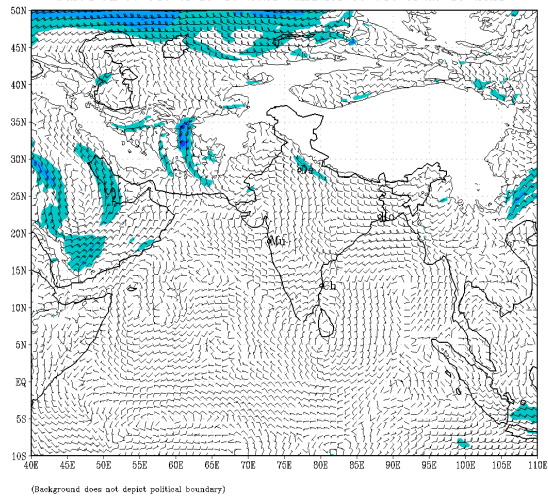
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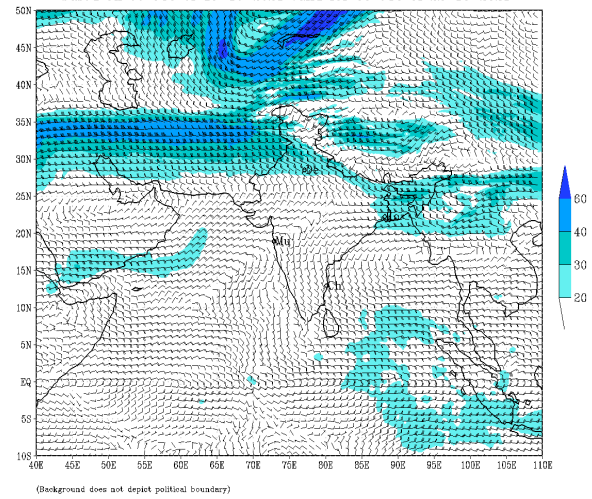
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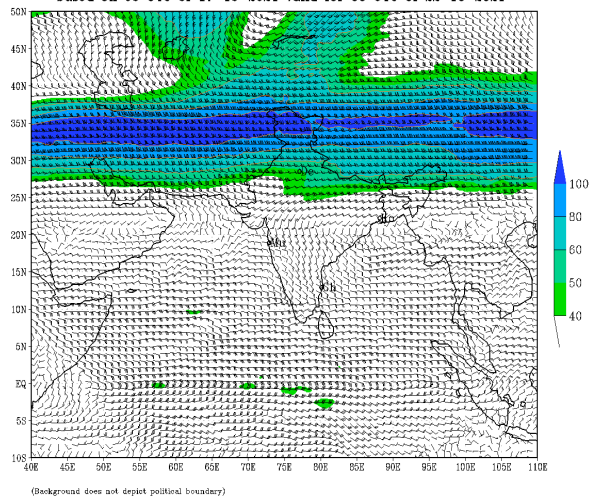
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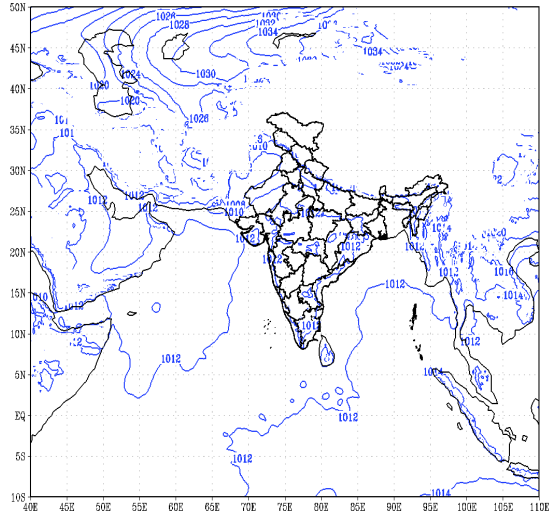
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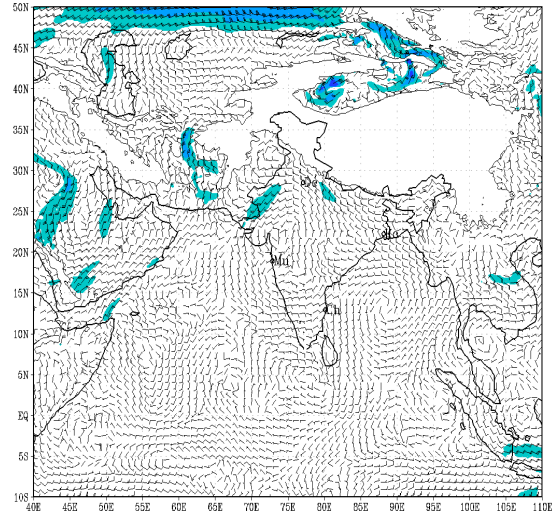


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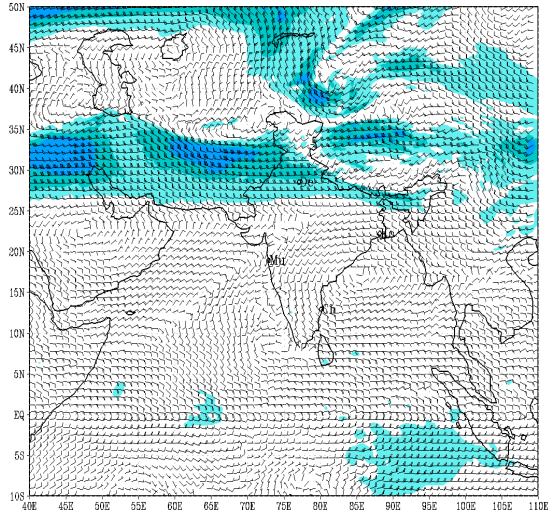
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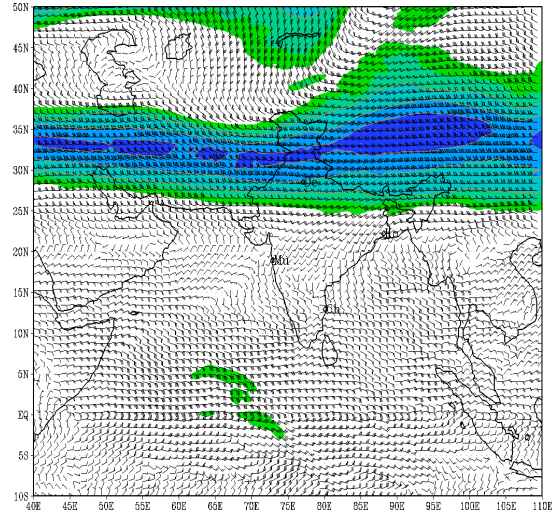
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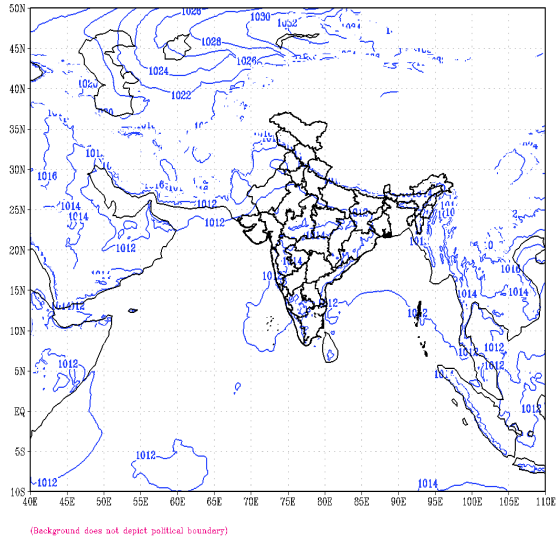
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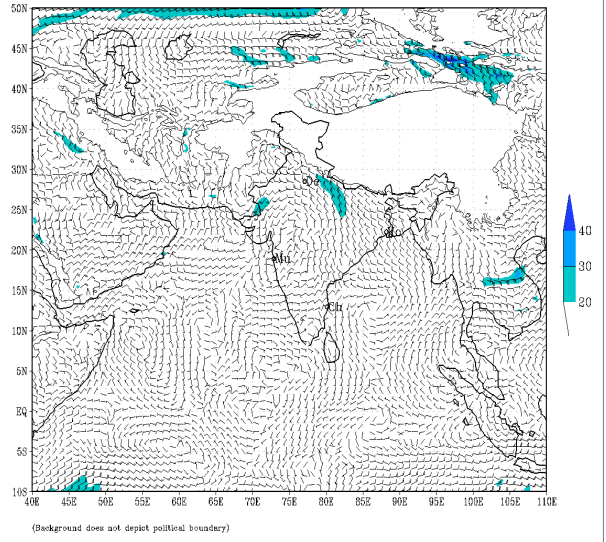


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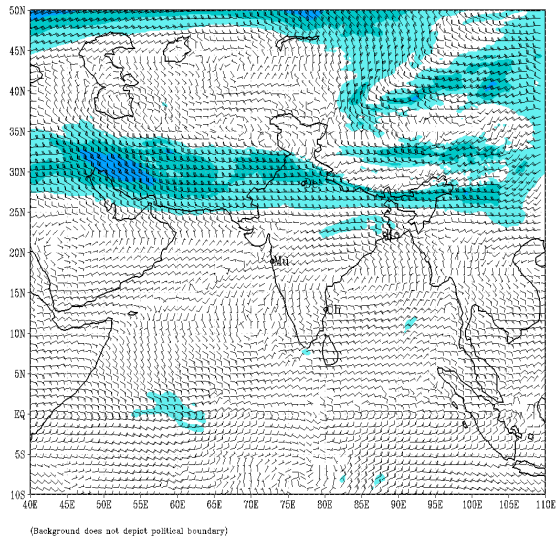
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IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
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