



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

Tropical Cyclone Forecast Programme  
Report Dated 18<sup>th</sup> December 2022

Time of Issue: 1000 UTC

**Synoptic features (based on 0600 UTC analysis):**

- ❖ Yesterday's well marked low pressure area over westcentral Arabian Sea persisted over the same region at 0600 UTC/1130 hours IST of today, the 18<sup>th</sup> December. It is very likely to move west-southwestwards and weaken slowly over the same region.
- ❖ Yesterday's Low Pressure Area over Southeast Bay of Bengal & adjoining East Equatorial Indian Ocean moved westwards and lay over central parts of South Bay of Bengal & adjoining East Equatorial Indian Ocean at 0600 UTC of today, the 18<sup>th</sup> December, 2022. It is likely to move slowly west-northwestwards slowly towards Sri Lanka coast during next 3 days.

**Dynamical and thermo-dynamical features**

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	28-29°C over entire BoB except southern parts of southwest BoB and Gulf of Mannar where the same is 26-28.	26-27°C over Eastcentral and southeast and adjoining southwest AS, 26-27 over Westcentral and southwest AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm <sup>2</sup>	90-100 over eastcentral BoB, 90-100 over south Andaman Sea, southeast BoB adjoining Equatorial Indian Ocean (EIO). Less than 40 along the Andhra Pradesh and Tamil Nadu coasts, Gulf of Mannar, western parts of southwest BoB.	70-90 over southeast and adjoining eastcentral and adjoining southwest AS, and less than 40 over remaining AS and also off west coast of India, Comorin area.
Cyclonic Relative vorticity (X10 <sup>-6</sup> s <sup>-1</sup> )	30-50 over southeast and adjoining EIO.	50-100 over westcentral AS and less than 25 near OMAN coast.
Low Level convergence (X10 <sup>-5</sup> s <sup>-1</sup> )	5-10 over southeast BoB and adjoining EIO and adjoining southwest BoB. 5-20 over SW BoB along and off Sri Lanka coast.	5 near off Oman coast.
Upper Level divergence (X10 <sup>-5</sup> s <sup>-1</sup> )	5-10 over southeast BoB and adjoining EIO. 20-30 over SW BoB off Sri Lanka coast.	5-10 northwest near Oman coast.
Vertical Wind Shear (VWS knots)	5-10 over south BoB and 10 over the Andaman Sea.	15-20 over westcentral AS.

<b>Wind Shear Tendency (knots)</b>	Decreasing over southeast BoB and adjoining EIO and over eastcentral BoB.	Decreasing around system.
<b>Upper tropospheric Ridge</b>	Along 15.0°N over the BoB.	Along 15.0°N over the AS.
<b>Trough in westerlies</b>	No significant trough	

**Satellite observations based on INSAT imagery (0600 UTC):**

**a) Over the BoB & Andaman Sea: -**

The associated scattered to broken low and medium clouds with embedded intense to very intense convection lay over south Bay of Bengal and southeast Andaman Sea. The associated scattered low and medium clouds with embedded isolated weak to moderate convection lay over central Bay of Bengal and north Andaman Sea.

**b) Over the Arabian Sea: -**

The associated scattered to broken low and medium clouds with embedded intense to very intense convection over central parts of westcentral AS. The associated scattered low and medium clouds with embedded weak to moderate convection lay over rest central AS and Comorin Area.

**M.J.O. Index:**

The Madden Julian Oscillation (MJO) Index is currently in Phase 2 with amplitude less than 1. It will remain in same phase for next two days with increasing in amplitude. Thereafter, it will move to phase 3.

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

NIL

**Model guidance based on 0000 UTC for the next 7 days**

<b>MODEL GUIDANCE</b>	<b>Bay of Bengal (BoB)</b>	<b>Arabian Sea (AS)</b>
<b>IMD-GFS</b>	A low-pressure area over south Bay of Bengal and adjoining East Equatorial Indian Ocean at 0000 UTC of 21 <sup>st</sup> Dec. It is likely to move west-northwestwards slowly towards Sri Lanka coast and become less marked on 23th Dec. morning.	No significant system
<b>IMD-GEFS</b>	No significant system	No significant system
<b>GEFS Probabilistic guidance</b>	-	-
<b>IMD WRF</b>	No significant system.	No significant system
<b>NCMRWF-NCUM</b>	A low pressure area over South Bay of Bengal & adjoining East Equatorial Indian Ocean on 21 <sup>st</sup> Dec. It is predicted to move west-northwestwards slowly towards Sri Lanka coast and persist over same region till 0000 UTC of 22 <sup>nd</sup> Dec.	No significant system

<b>NCMRWF-NEPS</b>	-	No significant system
<b>NCMRWF-UM (Regional)</b>	A low-pressure area over South Bay and adjoining East Equatorial Indian Ocean at 0000 UTC of 21 <sup>st</sup> Dec. It is predicted to move west- northwestwards slowly towards Sri Lanka coast.	No significant system
<b>ECMWF</b>	The Low-pressure area over south Bay and adjoining East Equatorial Indian Ocean persists and move west-northwestwards towards Sri Lanka coast. around 22 <sup>nd</sup> Dec.	No significant system
<b>ECMWF ensemble</b>	No significant system	No significant system
<b>NCEP-GFS</b>	No significant system	No significant system
<b>IMD MME</b>	The Low-pressure area over south Bay and adjoining Equatorial Indian Ocean which persist and move west-northwestwards towards Sri Lanka coast.	No significant system
<b>IMD HWRP</b>	No guidance	No guidance
<b>IMD-Genesis Potential Parameter</b>	No significant system	No Significant area

**Summary and conclusion:**

- ❖ All of the models are indicating no significant system over Arabian Sea for next five days.
- ❖ Most of the models are indicating that the low-pressure area over south Bay of Bengal and adjoining Equatorial Indian Ocean persists and it is likely to move nearly west-northwestwards slowly towards Sri Lanka coast around 21<sup>st</sup> Dec.

**In view of all the above, it is inferred that**

**1. For the Bay of Bengal:**

The Low-Pressure Area over central parts of South Bay of Bengal & adjoining East Equatorial Indian Ocean is likely to move west-northwestwards slowly towards Sri Lanka coast during next 3 days.

**2. For Arabian Sea:**

The well marked low pressure area over westcentral Arabian Sea is very likely to move west-southwestwards and weaken slowly over the same region.

**Probability of cyclogenesis (formation of depression and above intensity systems) over the BAY OF BENGAL of Bengal and Andaman Sea during next 168 hours**

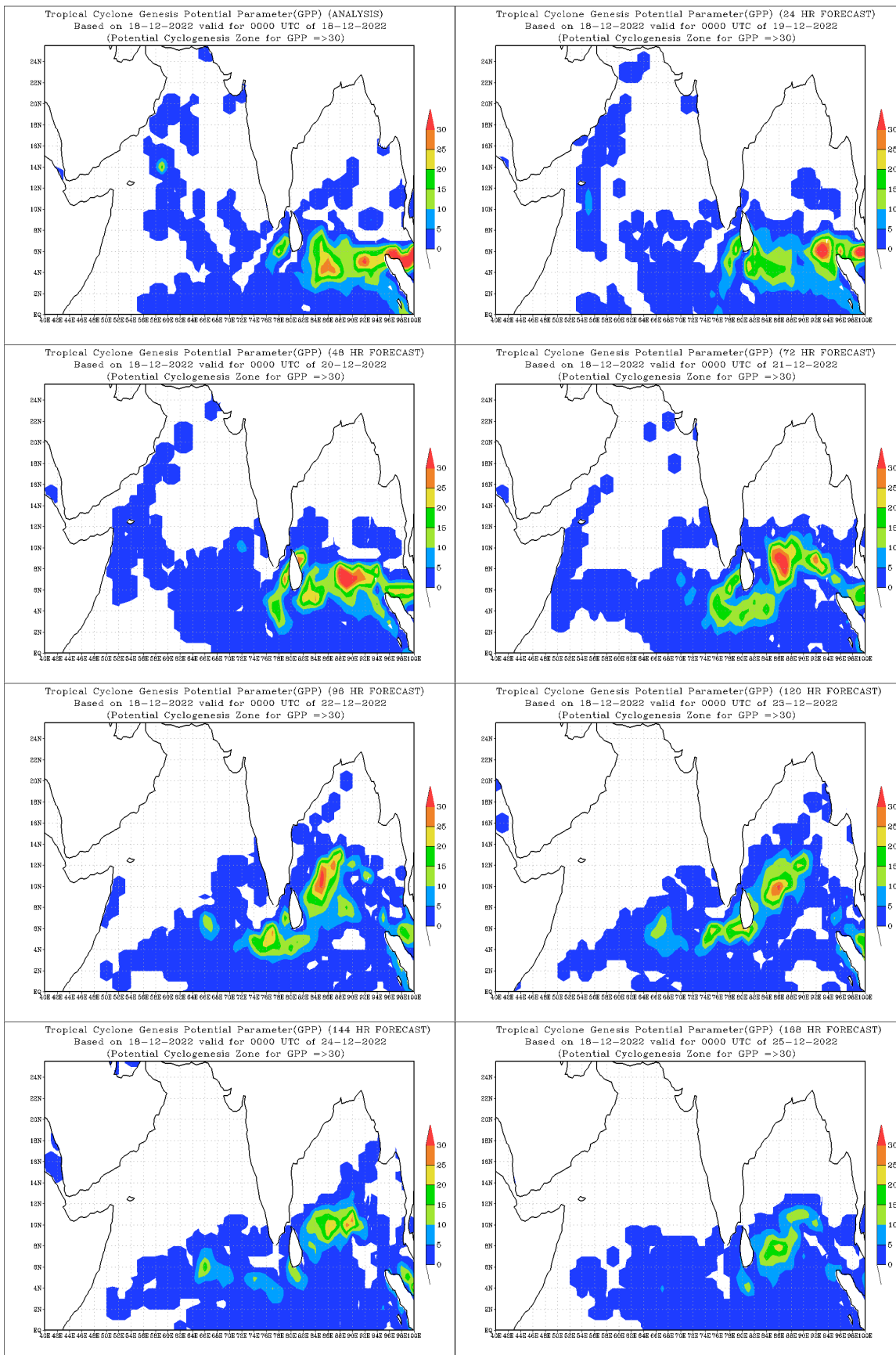
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

**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

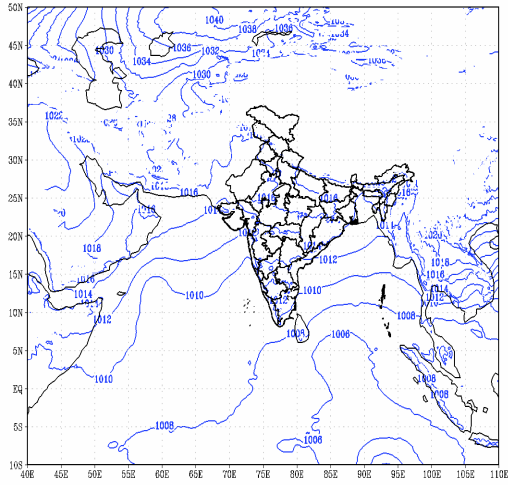
**Advisory: The movement of low pressure area over central parts of south Bay of Bengal need to be monitored.**

**IOP: NIL**

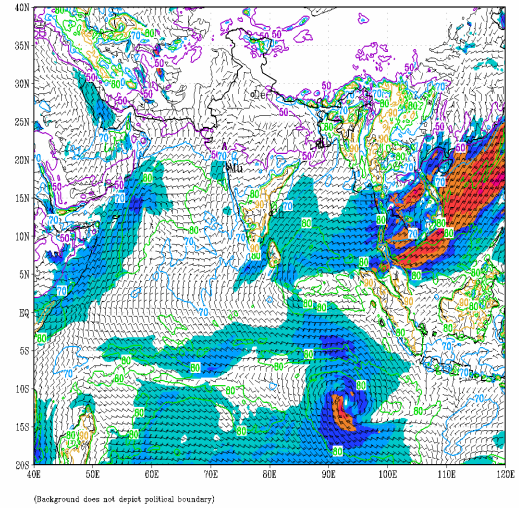




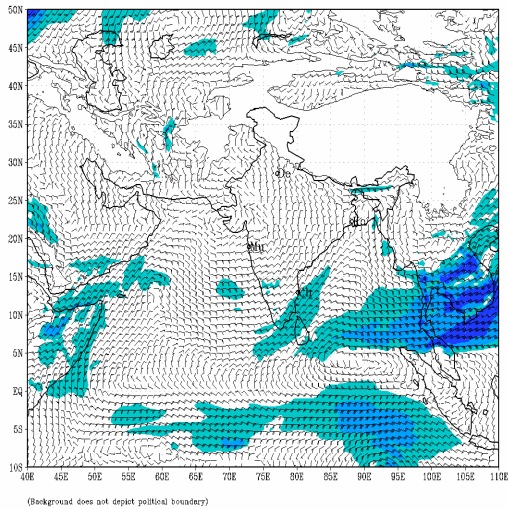
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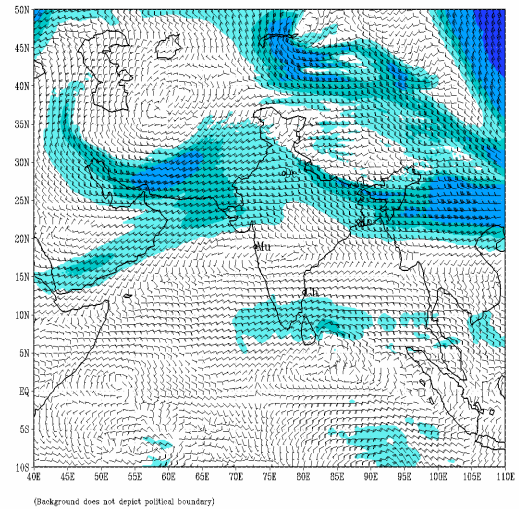
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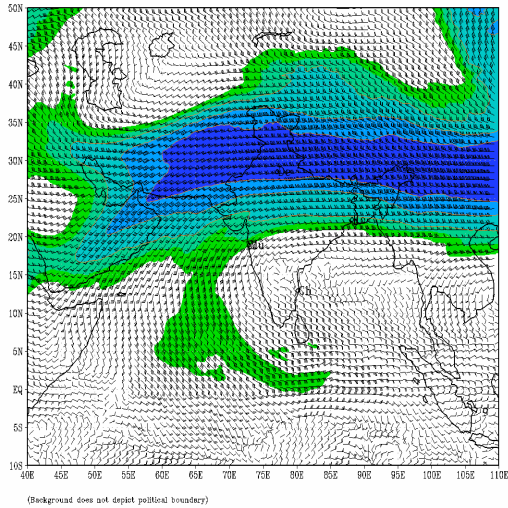
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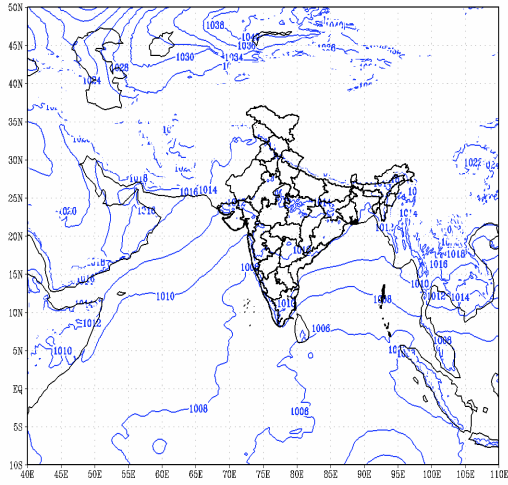
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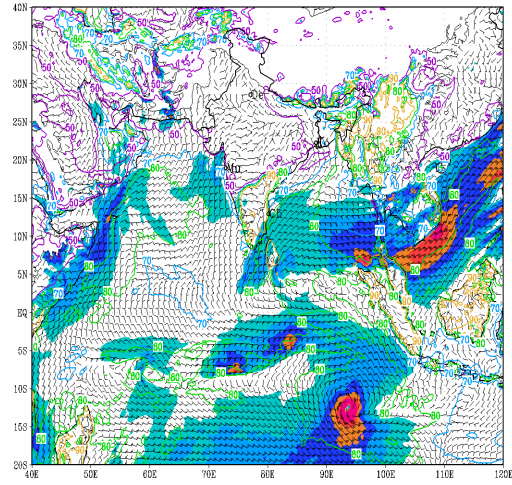


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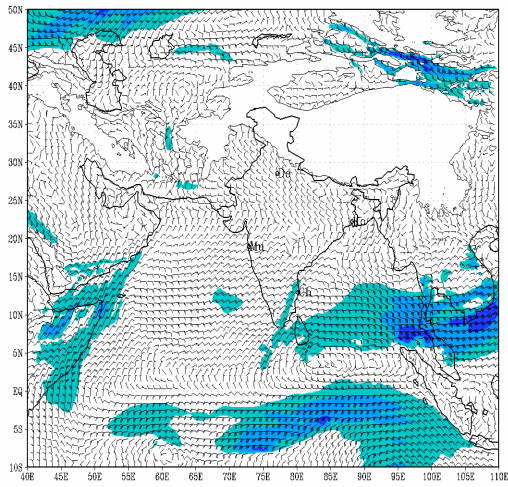
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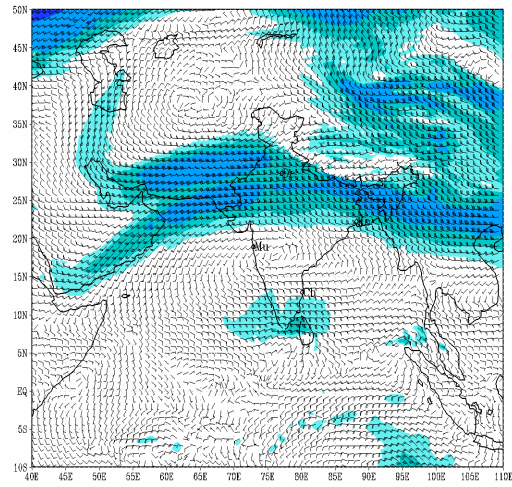
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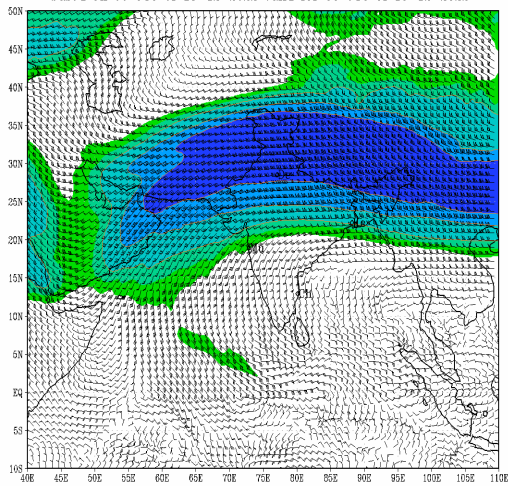
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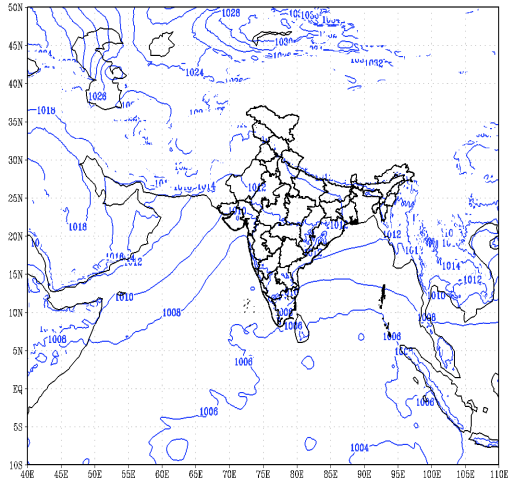
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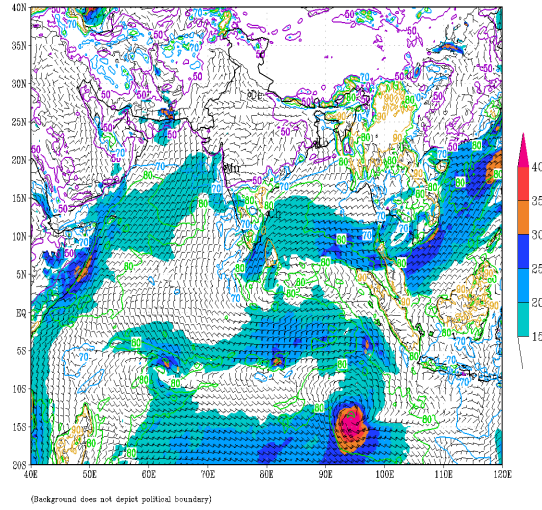
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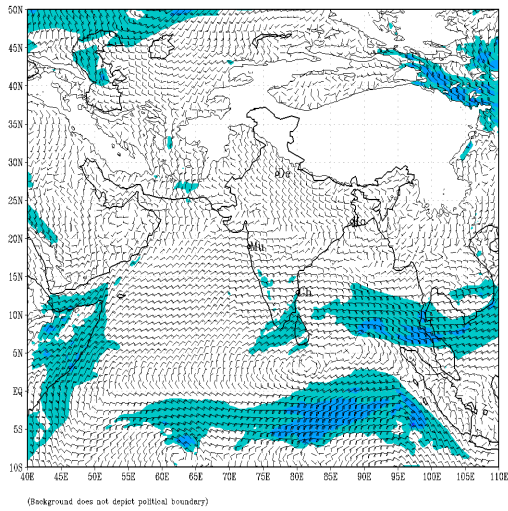
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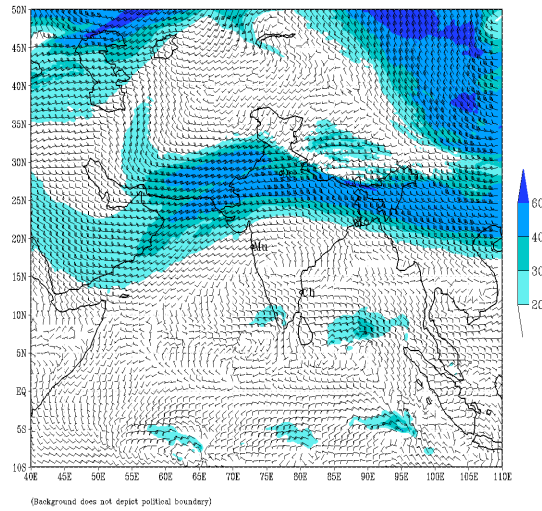
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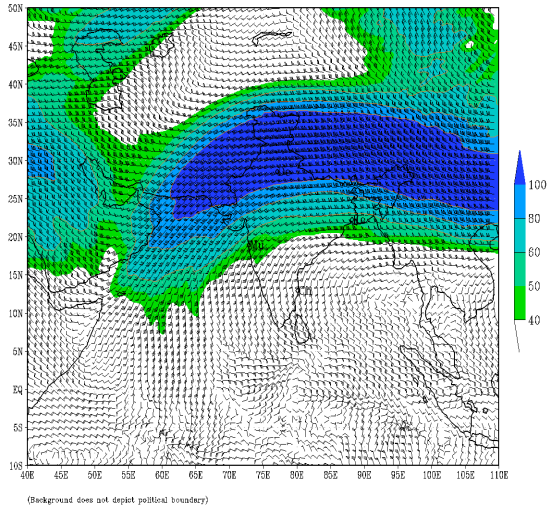
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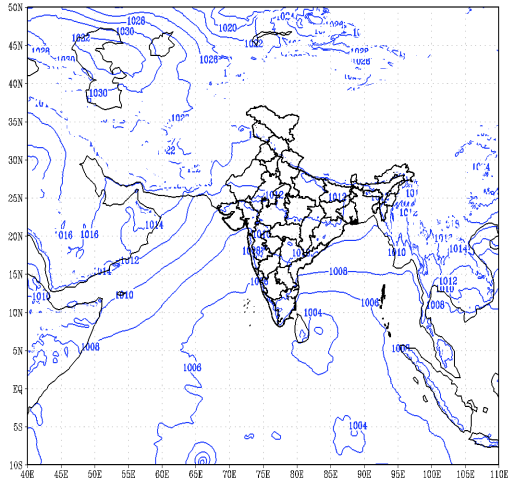


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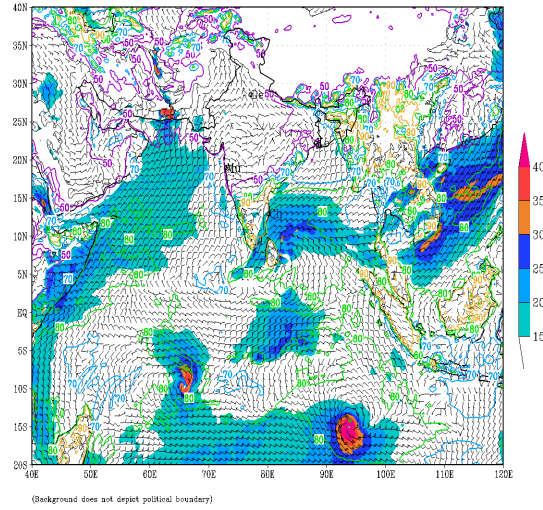




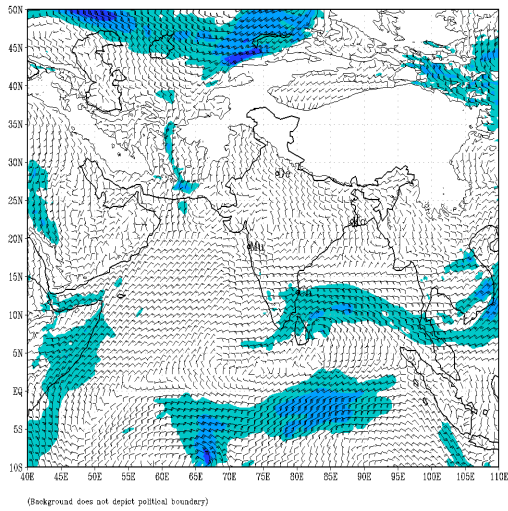
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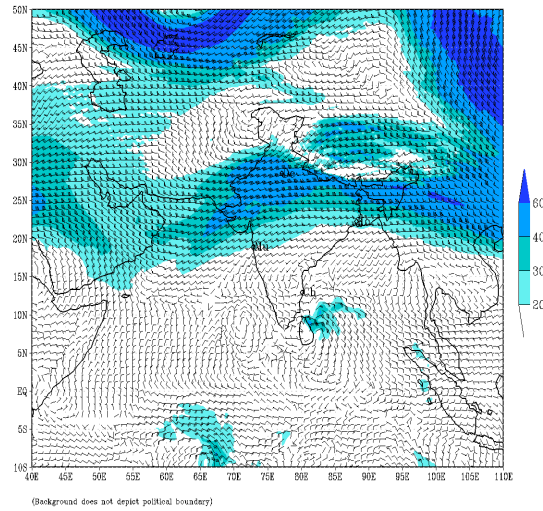
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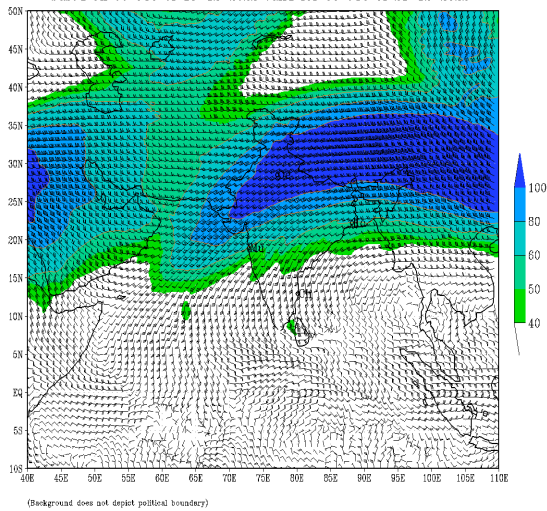
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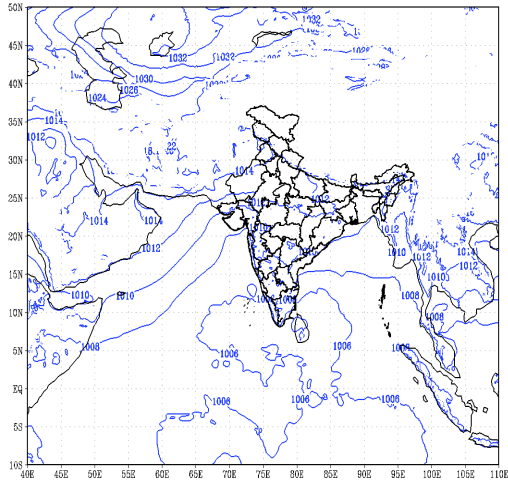
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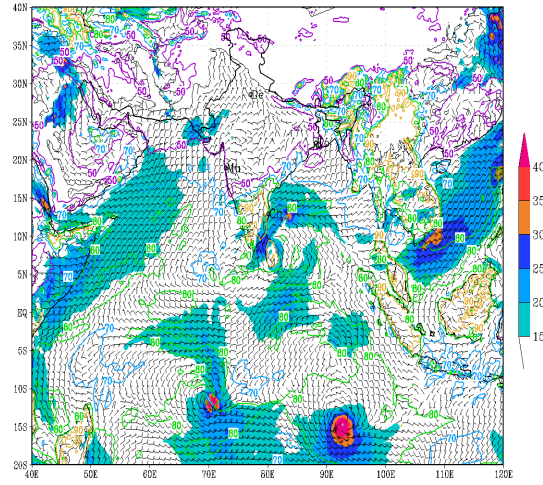


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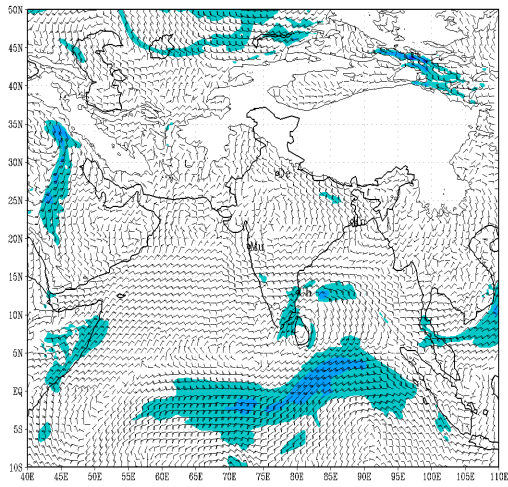
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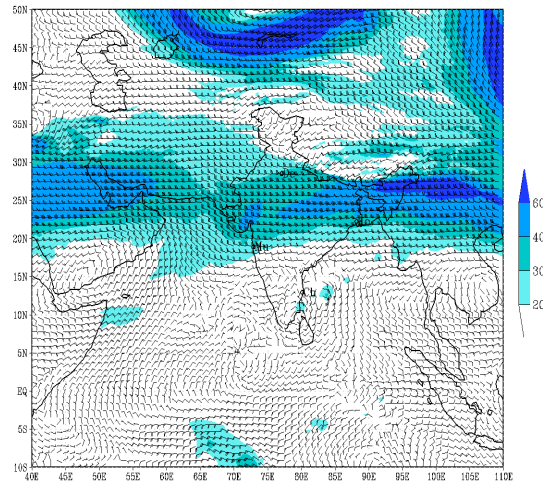
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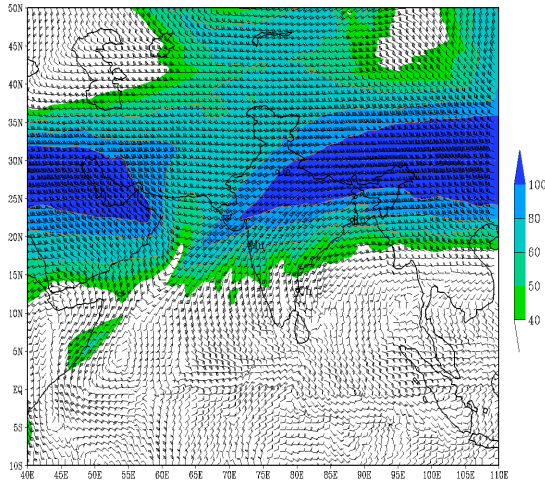
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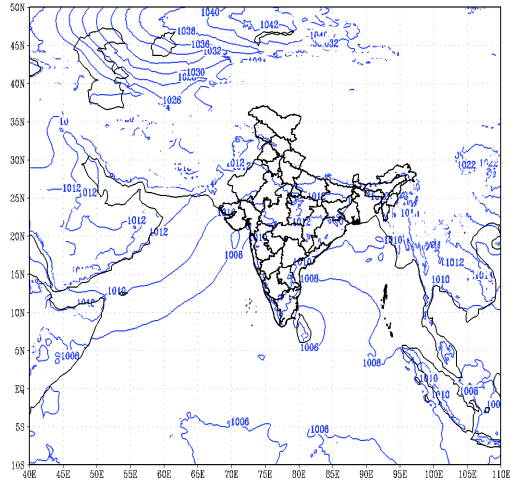
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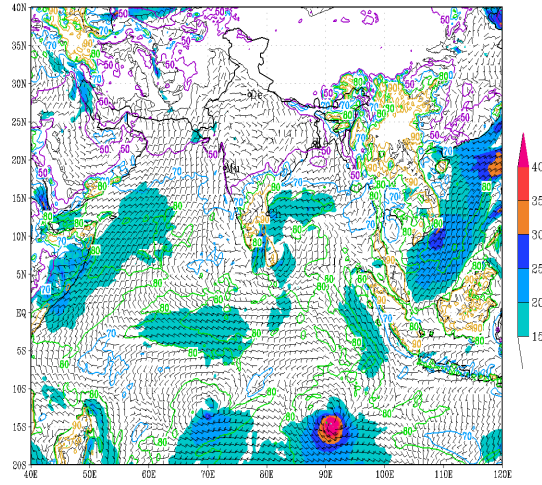


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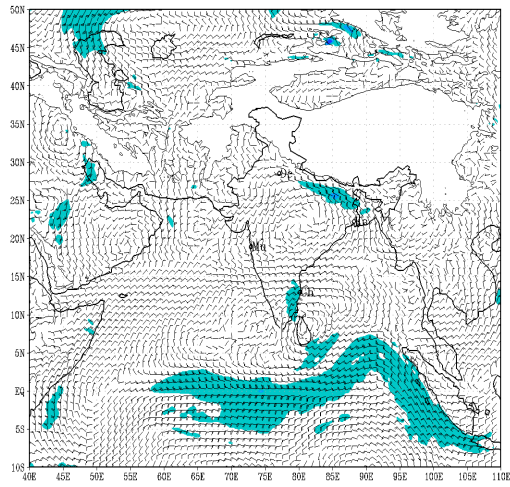
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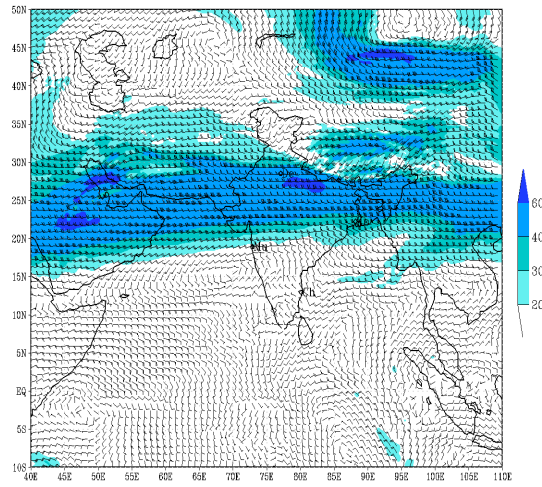
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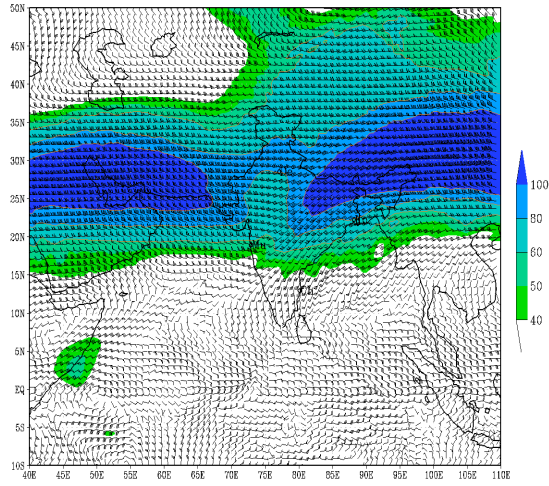
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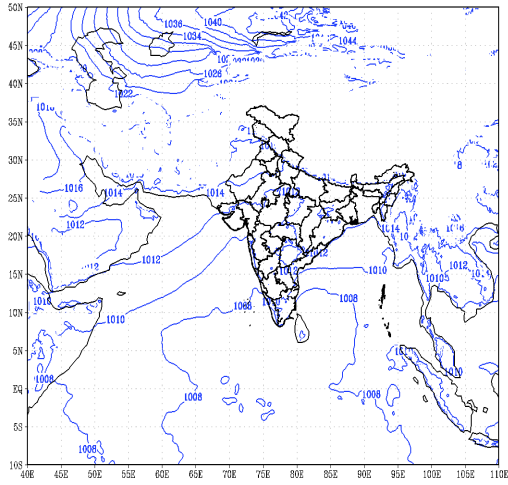
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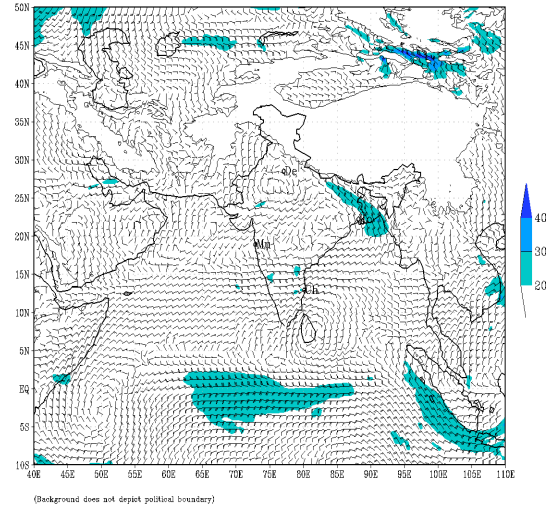


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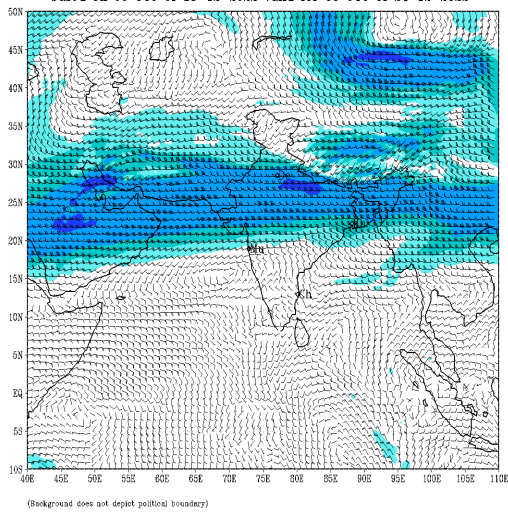
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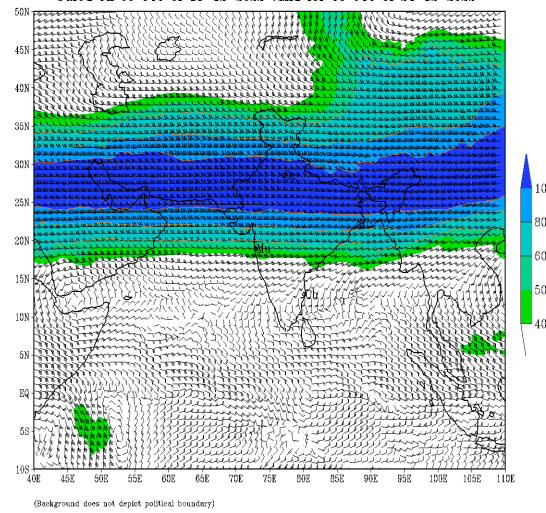
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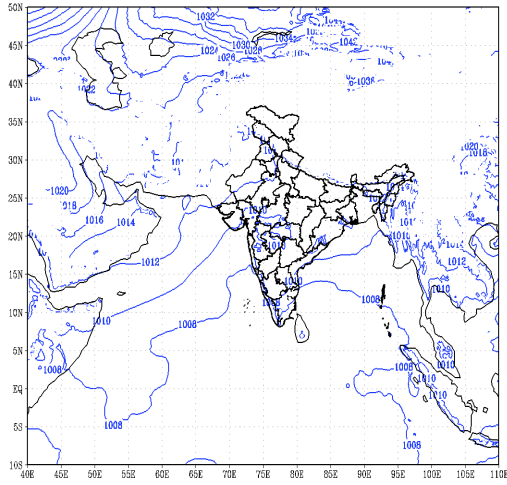


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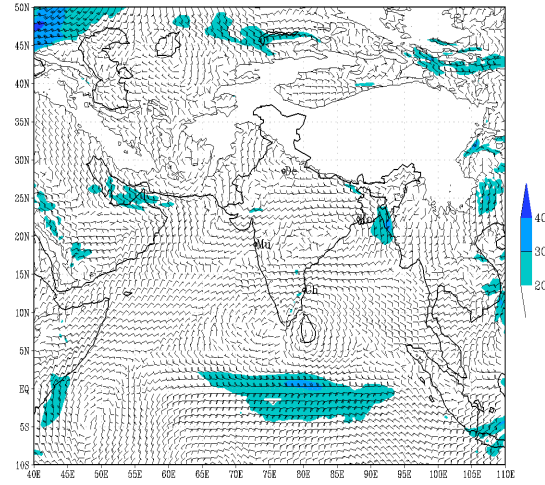


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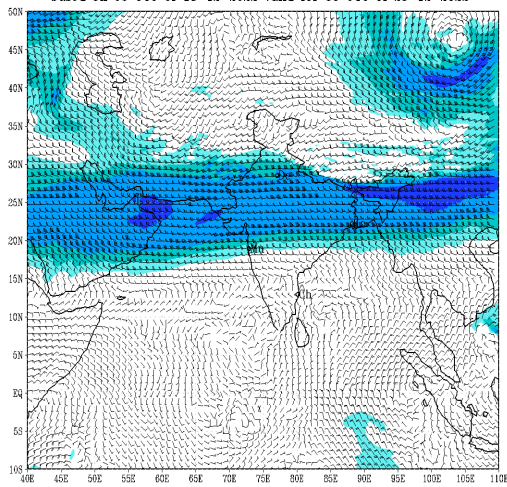
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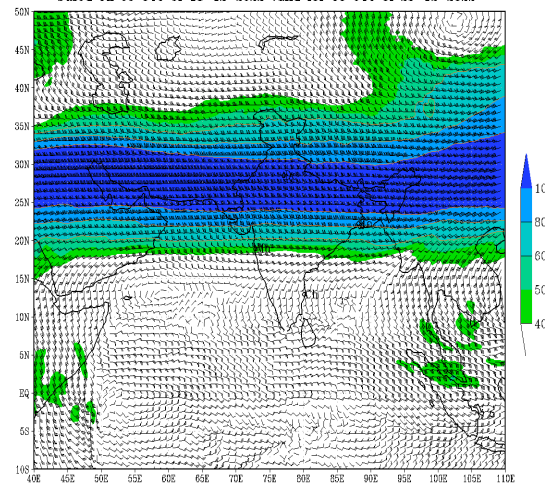
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