



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

**Tropical Cyclone Forecast Programme
Report Dated 04TH November, 2023**

Time of Issue: 1230 UTC

Synoptic features (based on 0300 UTC analysis):

The cyclonic circulation over south Tamil Nadu & neighbourhood extending upto 5.8 km above mean sea level persists. It is likely to move west-northwestwards towards Southeast and adjoining Eastcentral Arabian Sea during next 3 days. Under its influence, a Low Pressure Area is likely to form over Eastcentral Arabian Sea around 08th November, 2023.

Dynamical and thermo-dynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	29-31°C over major parts of BoB, Andaman Sea, Gulf of Mannar, 26-28°C over parts of southwest BoB.	29-31°C over southeast, adjoining southwest and adjoining eastcentral AS, north AS, along and off south Gujarat, Maharashtra coasts, 26-28°C over central, adjoining north AS, southwest AS, along and off Kerala and Karnataka coasts. Less than 24 along and off Yemen-Oman coasts and adjoining sea areas.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	100-120 over eastcentral BoB adjoining southeast BoB. 80-100 over south Andaman Sea. 60-70 over most parts of BOB and north Andaman Sea adjoining south Andaman Sea. Less than 40 along Andhra Pradesh and Tamil Nadu coasts, adjoining sea areas, less than 20-30 over Gulf of Mannar and adjoining Comorin area, parts of southwest BoB.	60-90 over southeast, adjoining eastcentral and adjoining southwest AS, 50-60 over Gulf of Khambat, Less than 20 over eastcentral and adjoining southeast & north AS, along and off Kerala, Karnataka and south Maharashtra coasts, less than 10 over westcentral and southwest AS.
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	20-30 over along and off south Tamil Nadu coast, 20 over Gulf of Mannar, southwest BoB, northeast BoB.	20-30 over eastcentral AS, 10-20 over eastcentral AS along and off Maharashtra coast, Kerala coast, southeast AS, some parts of southwest and westcentral AS.
Low Level convergence (X10⁻⁵ s⁻¹)	5 over southwest BoB, along and off Sri Lanka coast, Gulf of	10 over close to south Kerala coast, - 5 over few parts of eastcentral AS.

	Mannar,	
Upper Level divergence (X10⁻⁵ s⁻¹)	5-10 over southwest and adjoining westcentral BoB, Gulf of Mannar. 5 over westcentral BoB. -5 over eastcentral BoB, adjoining north Andaman Sea.	5-10 over southeast and adjoining eastcentral AS, Comorin area, -5 to -10 over northeast and adjoining eastcentral BoB, -5 over westcentral and adjoining southwest AS.
Vertical Wind Shear (VWS knots)	5-15 over south BoB, Andaman Sea, 20 over southern part of central BoB, 25-40 over central BoB, 40-60 over north BoB.	5-15 over south AS, 20 over southern part of central AS, 25-50 over central AS, 50-70 over north AS.
Wind Shear Tendency (knots)	Decreasing tendency over Gulf of Mannar, off Tamil Nadu coast, southeast BoB adjoining to Andaman Sea, south Andaman Sea, increasing tendency over central and north BoB.	Decreasing tendency over southwest AS, increasing tendency over central & north of AS.
Upper tropospheric Ridge	Along 11°N over BoB	Along 11°N over AS.

Satellite observations based on INSAT imagery (0300 UTC):

Over the BoB & Andaman Sea:-

Scattered low and medium clouds with embedded intense to very intense convection lay over westcentral & southwest Bay of Bengal. Scattered low and medium clouds with embedded moderate to intense convection lay over eastcentral & southeast Bay of Bengal, south Andaman Sea and isolated weak to moderate convection lay over northwest Bay of Bengal, north Andaman Sea.

(a) Over the Arabian Sea:-

Scattered to broken low and medium clouds with embedded intense to very intense convection lay over eastcentral Arabian sea, off Karnataka coast, southeast Arabian sea, off Kerala coast, Lakshadweep islands area and comorin area. Scattered low and medium clouds with embedded moderate to intense convection lay over north parts of central Arabian Sea, rest of south Arabian Sea and isolated weak to moderate convection lay over north Arabian Sea.

(b) Convection outside India:-

Scattered Low And Medium Clouds With Embedded Moderate To Intense Convection lay Over Sri Lanka Palk Str Gulf Of Mannar Maldives South Pak Tibet China Yellow Sea East China Sea South Thailand Gulf Of Thailand Cambodia South Vietnam Sumatra Str Of Malacca Malaysia Borneo South China Sea Java Islands & Sea Celebes Islands & Sea Philippines Sulu Sea North Madagascar Mozambique Channel And Over Indian Ocean Bet Equator To Latitude 5.0N Longitude 50.0E To 100.0E And Bet Equator To Latitude 35.0S Long 40.0E To 70.0E.

M.J.O. Index:

MJO index is currently in Phase 2 with amplitude less than 1. It will remain in phase 2 for one day with amplitude less than 1. It will subsequently move to Phase 1 on 5th November with amplitude less than 1 and it remains in phase 1 on 6th November. It then moves to phase 7 on 7th November with amplitude less than 1 & will remain there till 11th Nov.

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	Bay of Bengal (BoB)	Arabian Sea (AS)
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IMD-GFS	No significant system.	Cyclonic Circulations over southeast AS on 6 th November. It moves westwards till 8 th Nov with no further intensification.
IMD-GEFS	No significant system.	No significant system.
IMD-WRF	No significant system.	Cyclonic Circulations over southeast and adjoining southwest AS on 6 th November.
NCMRWF-NCUM	No significant system.	Cyclonic Circulations over southeast and adjoining southwest AS on day3 (6 th November). It moves westwards till day 6 (9 th November) with no further intensification.
NCMRWF-NEPS	No significant system.	No significant system.
NCMRWF-UM (Regional)	No significant system.	No significant system.
ECMWF	No significant system.	Extended cycir over southeast AS on 6 th morning, Cycir on 7 th over southeast AS, moves northnorthwestwards and becomes LPA over eastcentral AS on 8 th November, it moves further northnorthwestwards with slight intensification.
NCEP-GFS	No significant system.	Cycir over southeast AS on 6 th , becomes LPA over eastcentral and adjoining westcentral AS on 7 th /8 th November, moving northwestwards and lay over westcentral AS on 8 th as LPA.
IMD-Genesis Potential Parameter	No potential zone over BoB for next 7 days.	Potential zone over southeast and adjoining eastcentral AS on day 3 (6 th Nov), over eastcentral AS on day 4 and day 5 (7 th and 8 th Nov)

Summary and conclusion:

1. For Bay of Bengal:

Most of the models are indicating that there will be no significant system over Bay of Bengal for the next seven days.

Probability of Cyclogenesis (formation of depression and above intensity systems) over 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

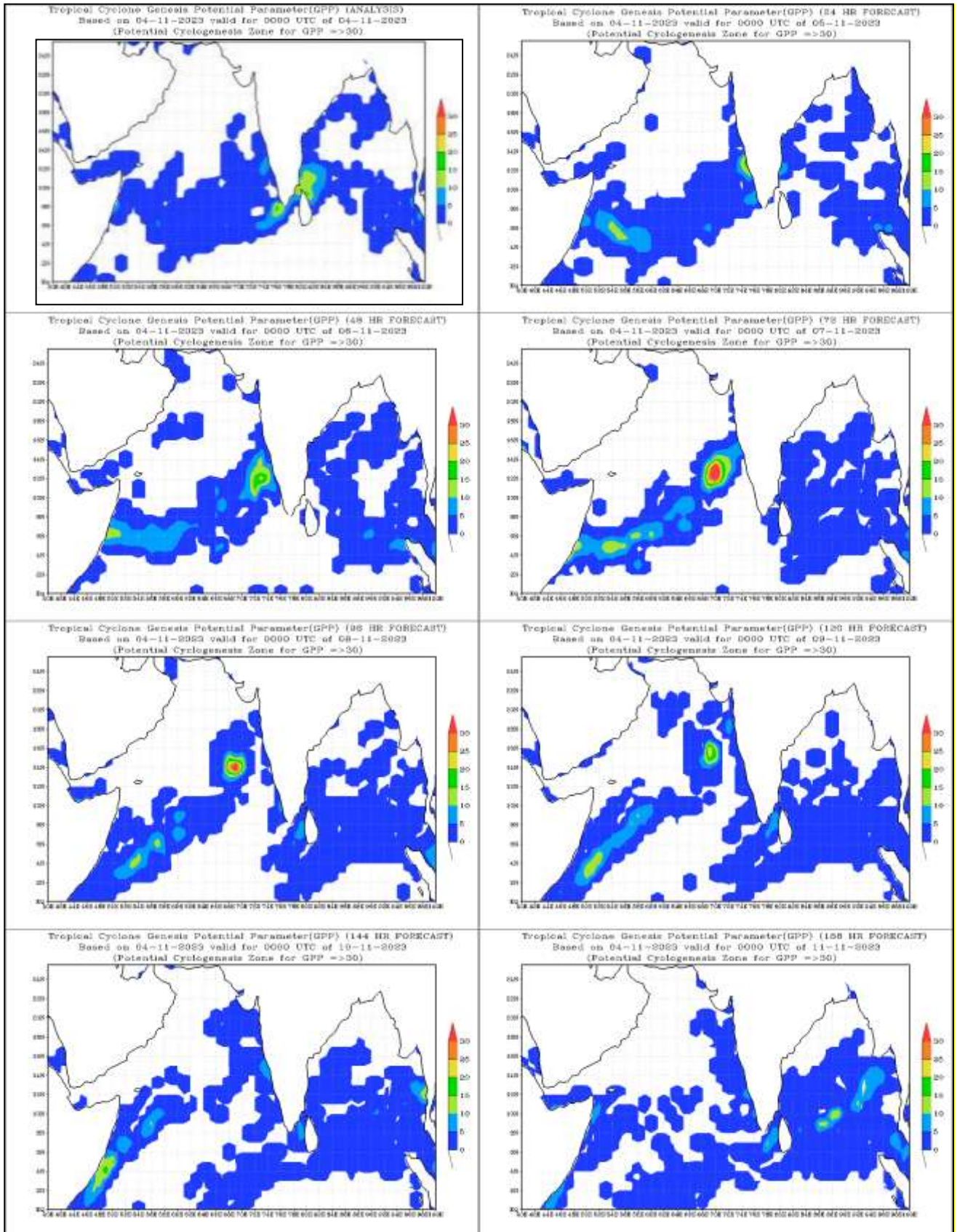
2. For the Arabian Sea:

IMD-GFS, IMD-WRF, NCUM-Global models indicate a cyclonic circulation over southeast Arabian Sea (AS) on 6th November having its westward movement without further intensification. ECMWF and NCEP-GFS models indicate a cyclonic circulation over southeast AS on 6th Nov having its northnorthwestwad movement and becoming LPA over eastcentral AS around 8th Nov. From the consensus, it is inferred that a cyclonic circulation over southeast AS on 6th will have northwestward movement and will become LPA around 8th Nov over eastcentral AS. No model is indicated for further intensification. Hence, the probability for cyclogenesis over AS for the next seven days is assigned as 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

IOP: Nil.

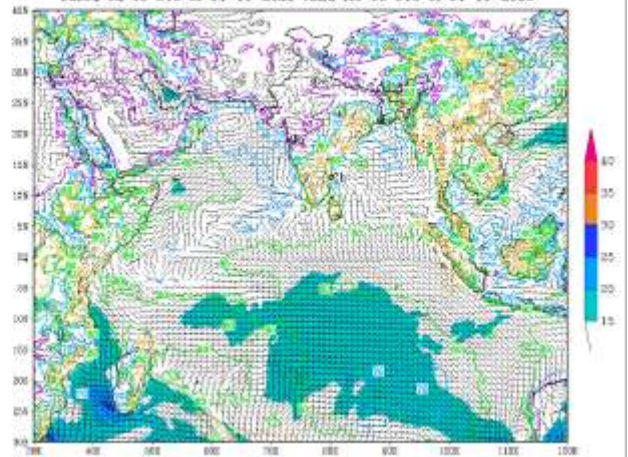


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 04-11-2023 valid for 00 UTC of 04-11-2023



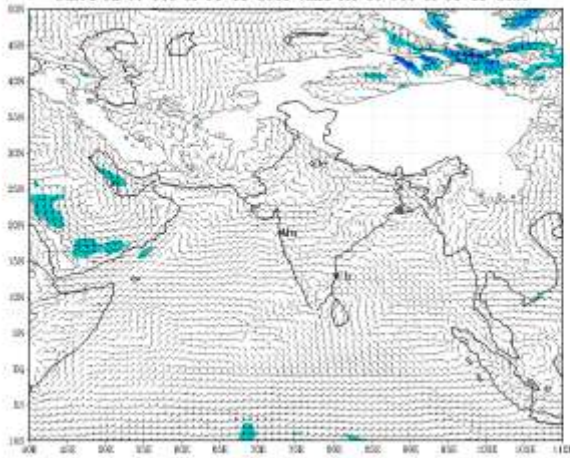
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IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (00 HR)
based on 00 UTC of 04-11-2023 valid for 00 UTC of 04-11-2023



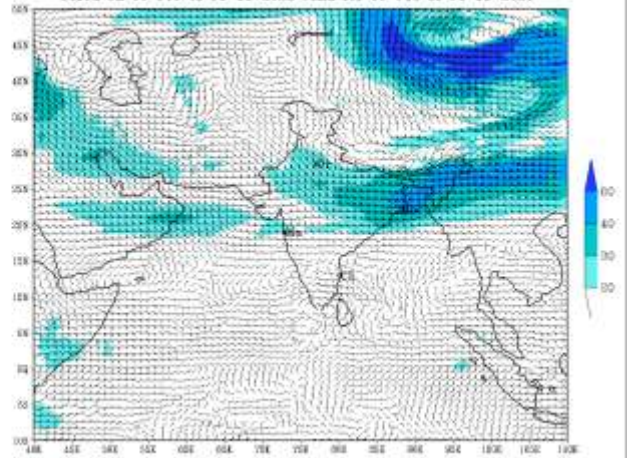
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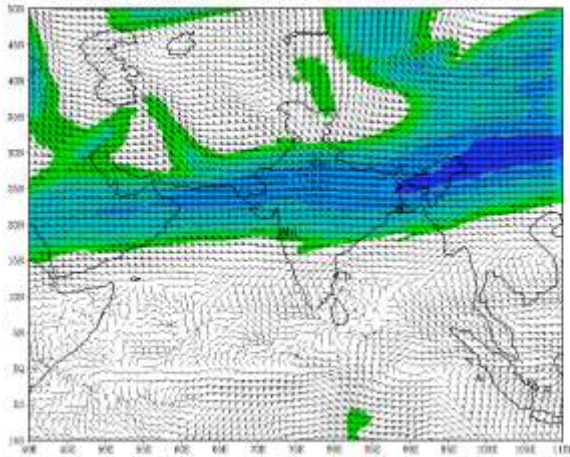
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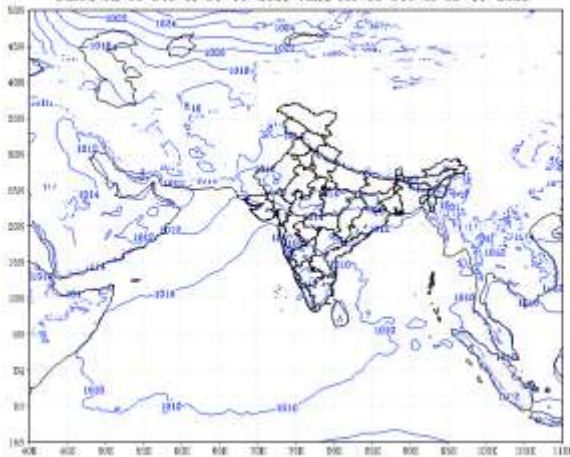
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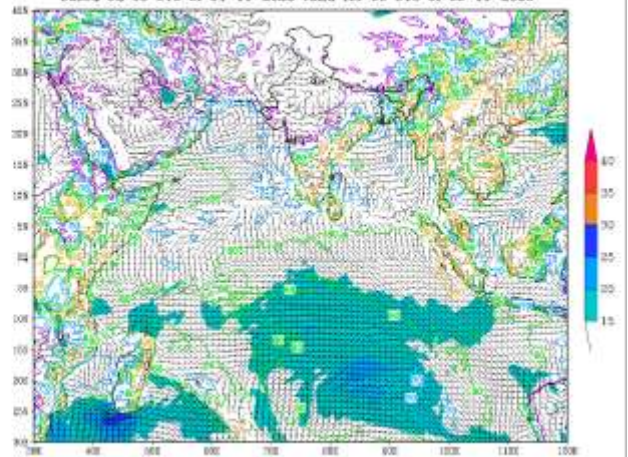
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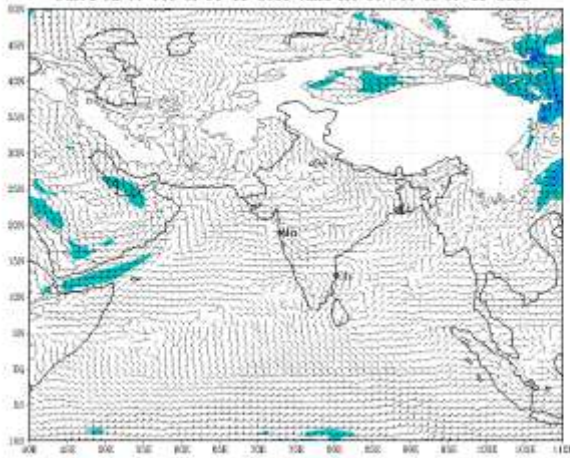
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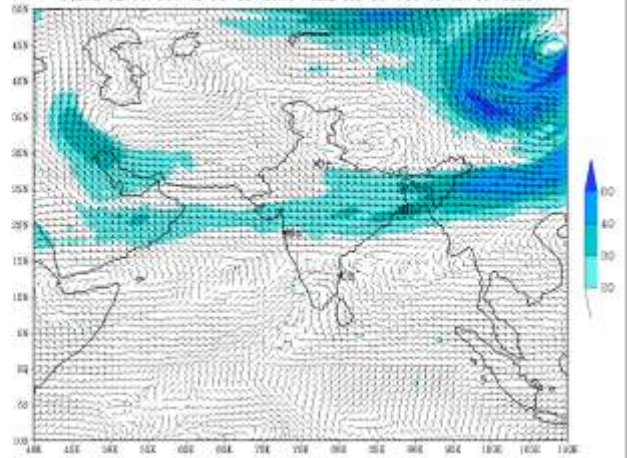
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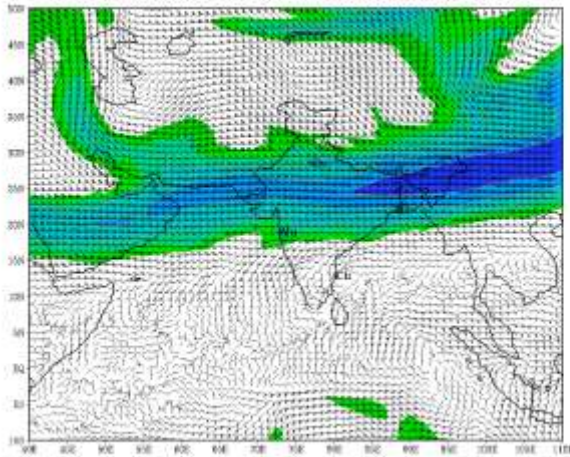
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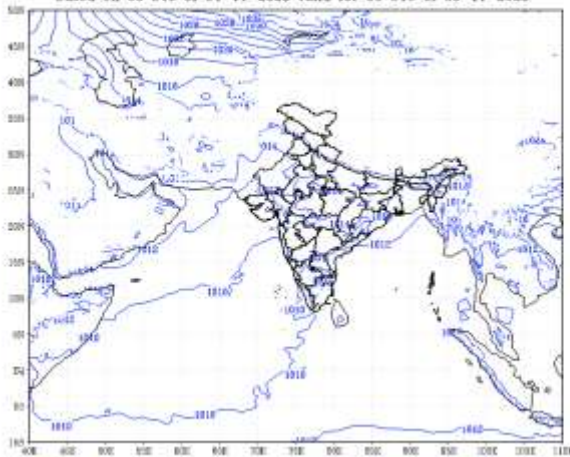
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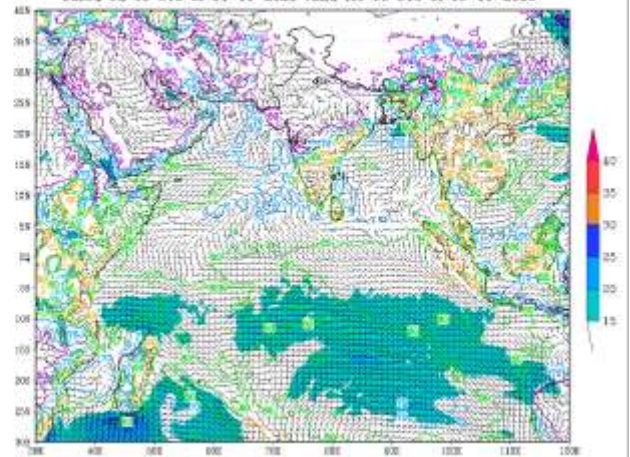
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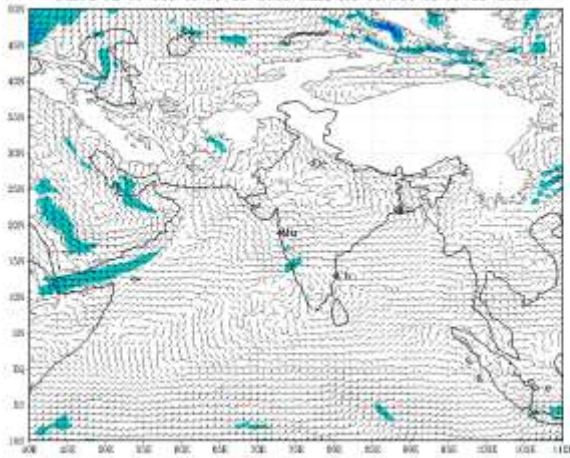
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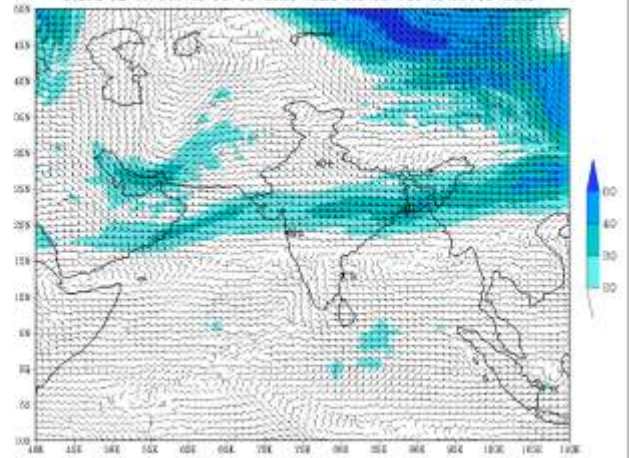
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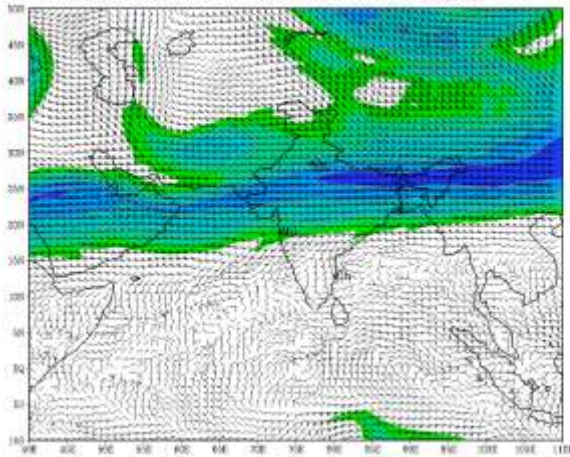
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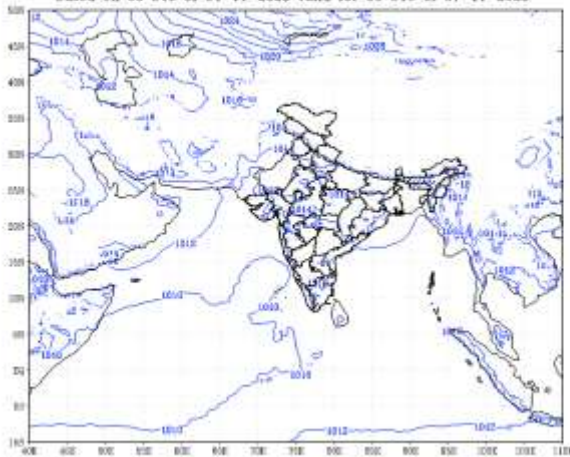
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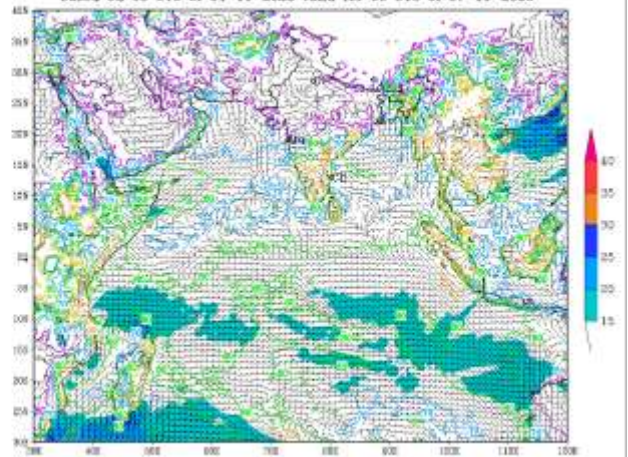
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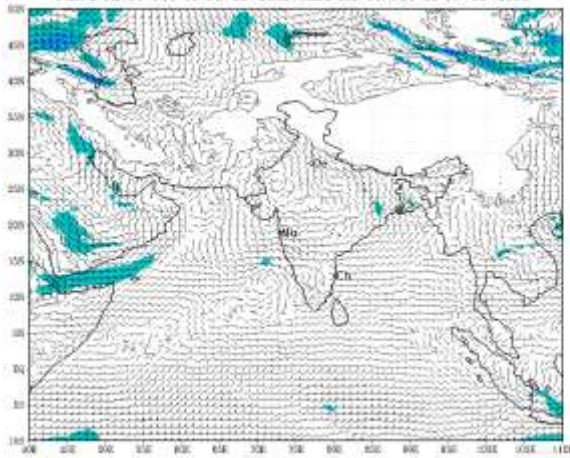
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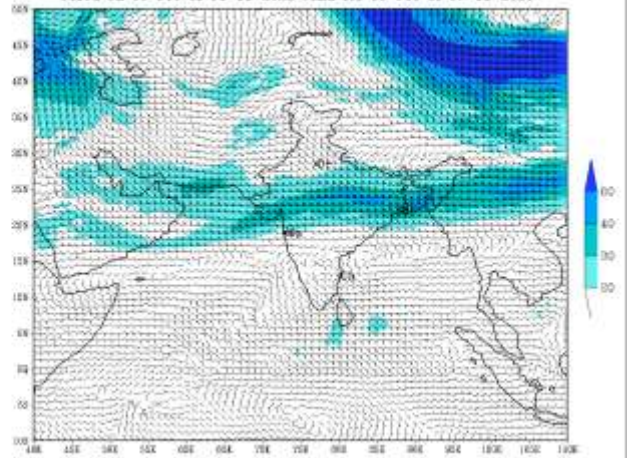
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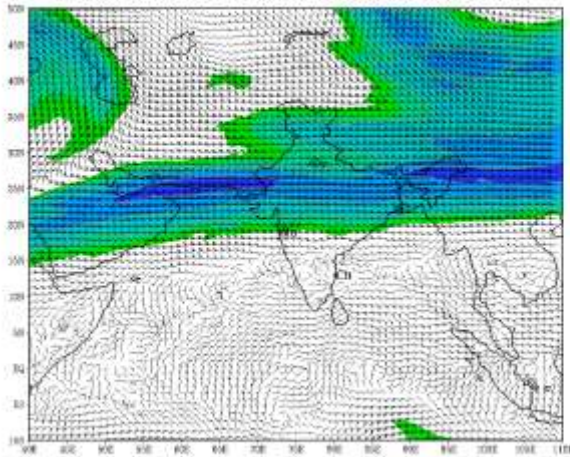
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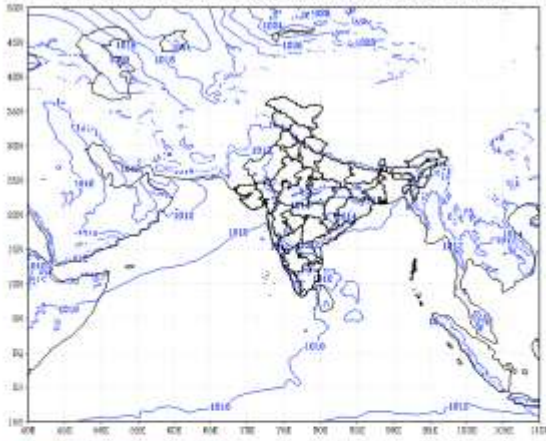
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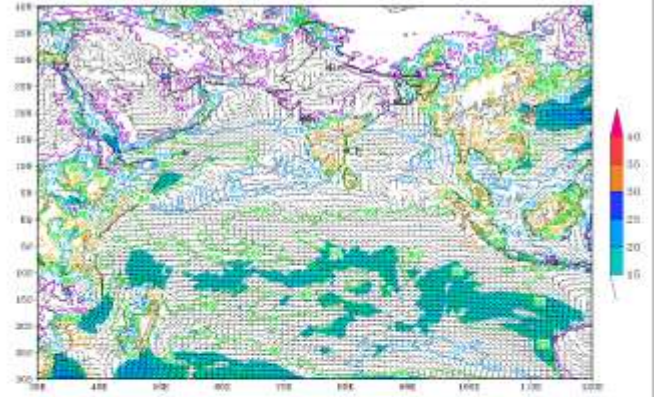
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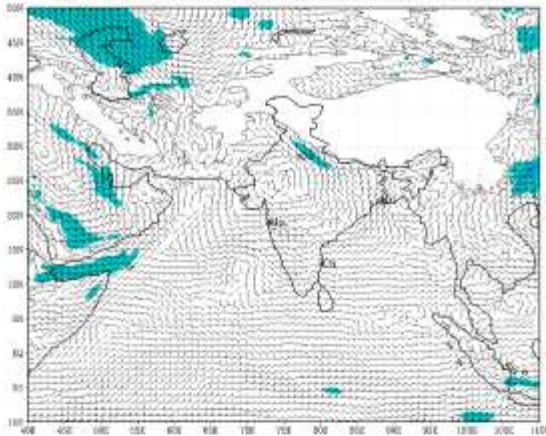
(Background uses air depth (potential) boundary)

IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (96 HR)
based on 00 UTC of 04-11-2023 valid for 00 UTC of 08-11-2023



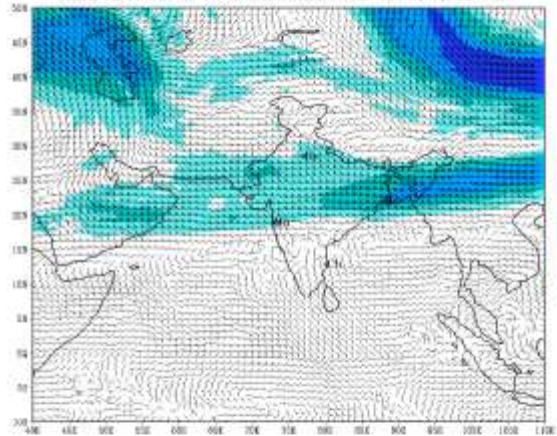
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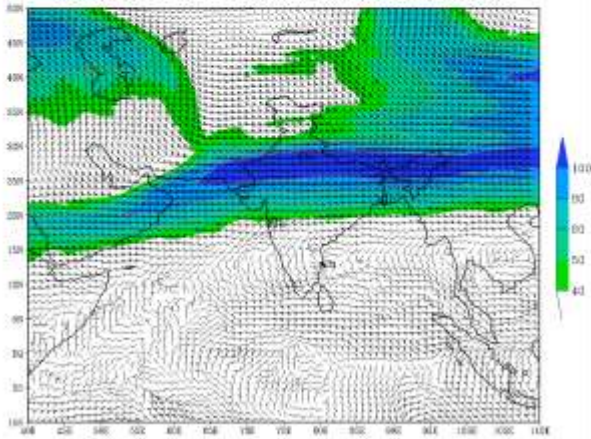
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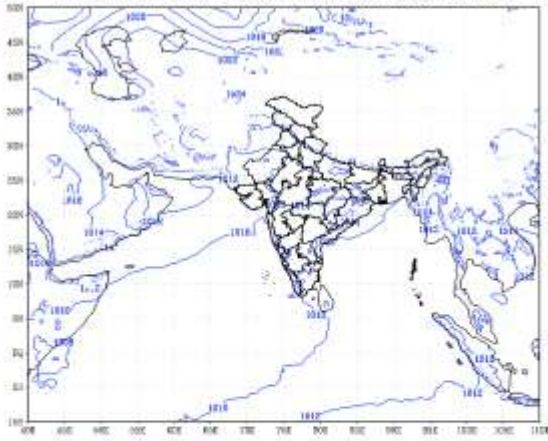
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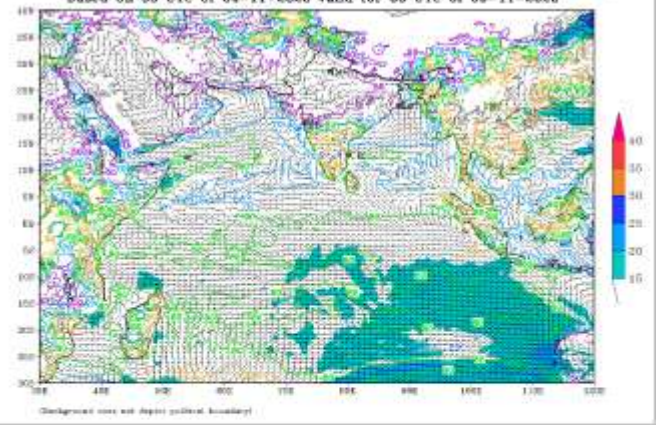


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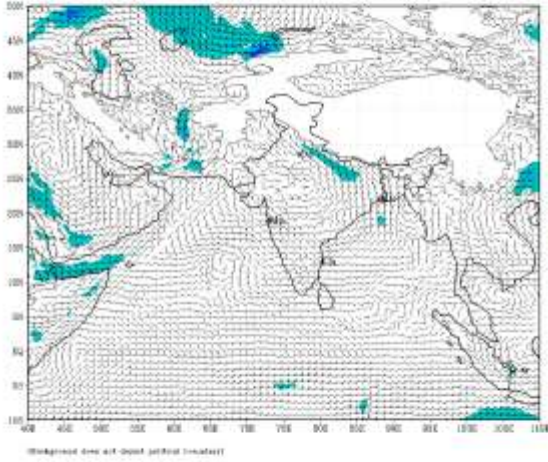
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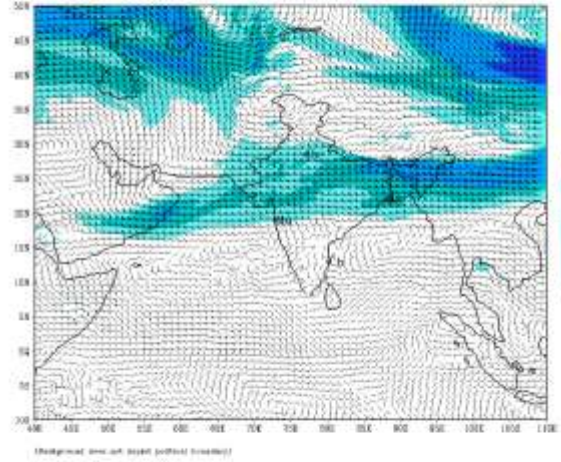
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (120 HR)
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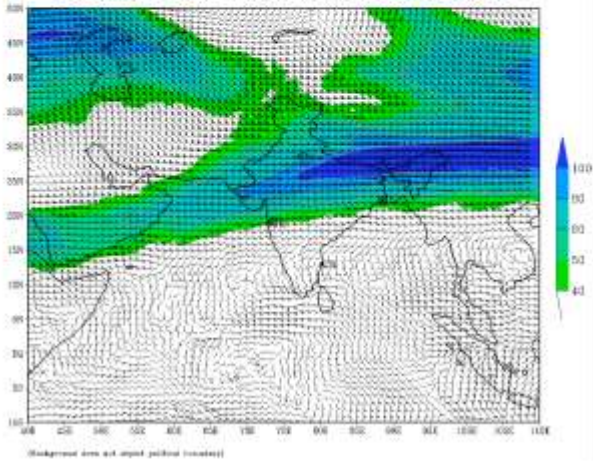
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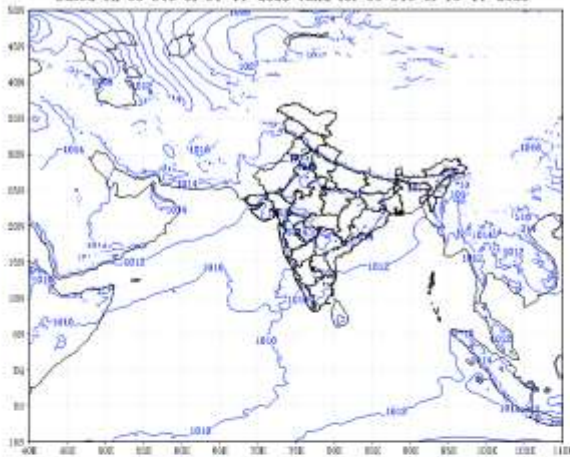
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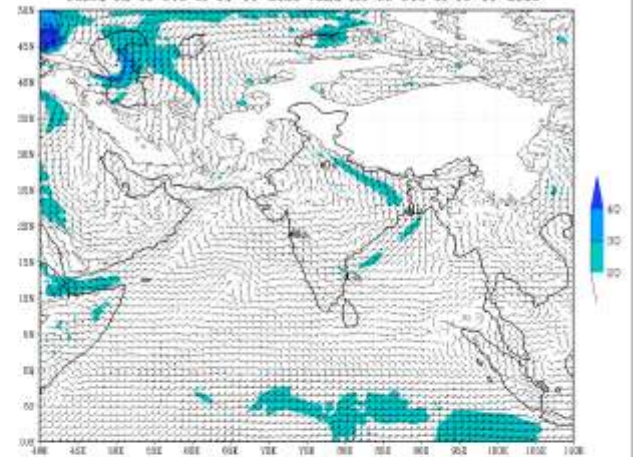


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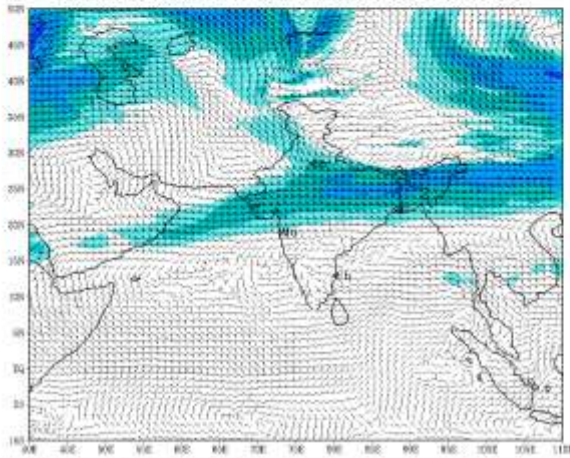
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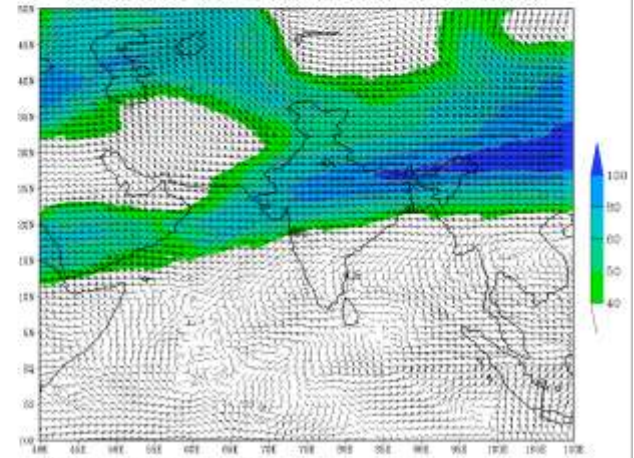
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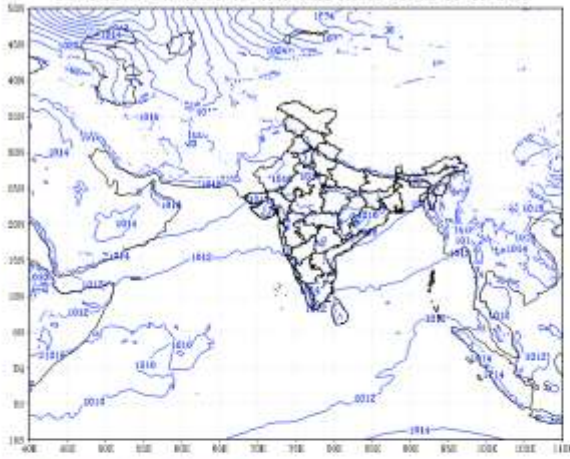
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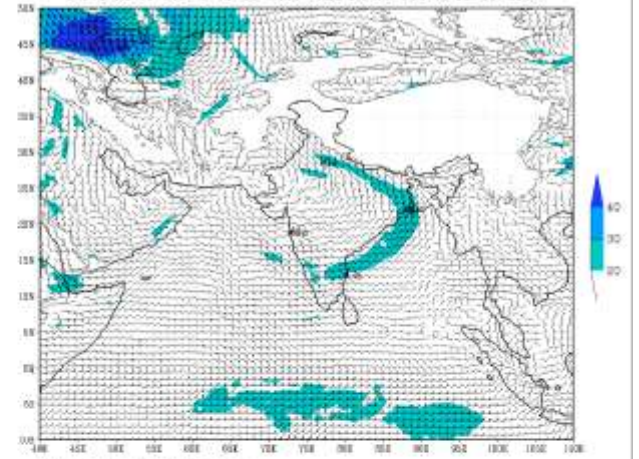
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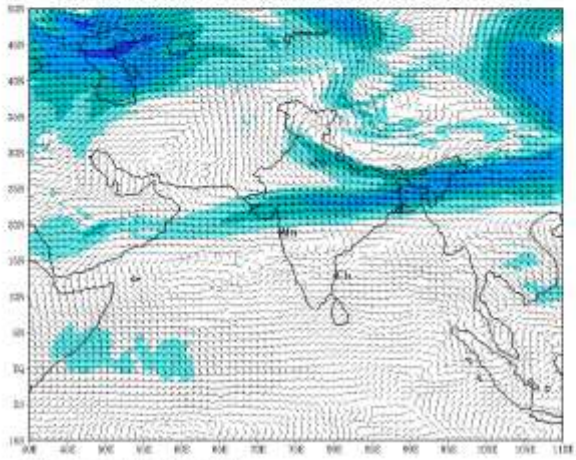
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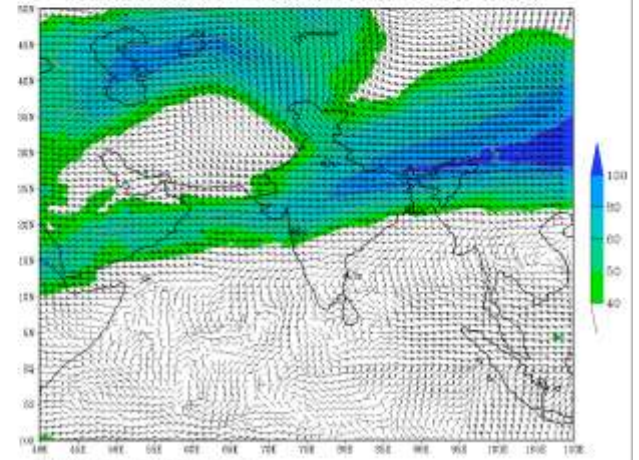
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(Background line with light blue color)

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