



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

**Tropical Cyclone Forecast Programme
Report Dated 08TH November, 2023**

Time of Issue: 1200 UTC

Synoptic features (based on 0300 UTC analysis):

- Under the influence of yesterday's cyclonic circulation over southeast and adjoining eastcentral Arabian Sea, a low pressure is formed over eastcentral Arabian Sea at 0000 UTC. It persisted over the same region at 0300 UTC of today, the 08th November 2023. Associated cyclonic circulation extending upto 3.1 km above mean sea level persists. It is likely to move nearly westwards and become less marked over the same region during next 24 hours.
- A cyclonic circulation lies over comorin area and extends upto 1.5 km above mean sea level.

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 & Somalia 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. 60-80 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 ($\times 10^{-6} \text{s}^{-1}$) | Around 30 over northeast BoB along and off Bangladesh coast. 10-20 over south BoB. | 30-40 over parts of southeast AS and southwest AS, around 30 over parts of northwest AS, 10-20 over parts of southwest and westcentral AS. |
| Low Level convergence ($\times 10^{-5} \text{s}^{-1}$) | Elongated zone of 5-10 over southwest and adjoining EIO. | 5 over parts of southeast and central AS. |
| Upper Level divergence ($\times 10^{-5} \text{s}^{-1}$) | Elongated zone of 20 over EIO and adjoining south BoB. | 5 over southeast and eastcentral AS, -5 over parts of southwest AS. |
| Vertical Wind Shear (VWS knots) Low: 05-10 knots Moderate: 10-20 knots High: >20 knots | 5-15 over south and adjoining central BoB, Andaman Sea, 20 over northern parts of central BoB adjoining to south BoB. High (>20 knots) over remaining parts of BoB. | 5-15 over south AS, 20 central AS adjoining to south AS, High over (>20 knots) over remaining parts of AS. |
| Wind Shear Tendency (knots) | Decreasing over central & north BoB. Increasing over southwest BoB. | Increasing over central and north AS. Decreasing over southeast & north AS. Decreasing over south AS. |
| Upper tropospheric Ridge | Along 14°N over BoB. | Along 14°N over AS. |

Satellite observations based on INSAT imagery (0300 UTC):

(a) Over the BoB & Andaman Sea:-

Scattered low and medium clouds with embedded intense to very intense convection lay over south Bay of Bengal. Scattered low and medium clouds with embedded moderate to intense convection lay over westcentral Bay of Bengal adjoining Andhra Pradesh coast & Andaman Sea.

(b) Over the Arabian Sea:-

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

(c) Convection outside India:-

Scattered Low & Medium Clouds With Embedded Moderate To Intense Convection lay over Sri Lanka, Palk Str, Gulf Of Mannar, Maldives, Pak, Tibet, China, East China Sea, Myanmar, Thailand, Gulf Of Thailand, Cambodia, Vietnam, Hainan, Sumatra, Str Of Malacca, Malaysia, Borneo, South China Sea, Java Sea, Celebes Sea, Philippines, Sulu Sea, Madagascar And Over Indian Ocean Between Latitude 5.0N To 10.0S Longitude 40.0E To 110.0E And Bet Latitude 10.0S To 25.0S Longitude 50.0E To 70.0E .

M.J.O. Index:

MJO index is currently in Phase 6 with amplitude less than 1 & it will remain there for next 3 days. It will move to phase 7 with amplitude less than 1 on 12th November & it will remain there till 13th. But its amplitude will be greater than 1 on 13th. It will be in phase 8 on 14th with amplitude greater than 1.

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) |
|--|---|---|
| IMD-GFS | No significant system. | LPA over eastcentral AS on day 1, it moves westward and lay over eastcentral and adjoining westcentral AS on day 2 without further intensification, less marked thereafter. |
| IMD-GEFS | No significant system. | LPA over eastcentral AS on day 1, it moves westward and lay over eastcentral and adjoining westcentral AS on day 2 without further intensification, less marked thereafter. |
| IMD-WRF | No significant system. | Cycir/LPA over eastcentral AS on day 1, it moves westward and lay over eastcentral and adjoining westcentral AS on day 2 as a cycir, less marked thereafter. |
| NCMRWF-NCUM | No significant system. | LPA over eastcentral AS on day 1, it moves westward and become less marked thereafter. |
| NCMRWF-NEPS | No significant system. | No significant system. |
| NCMRWF-UM (Regional) | No significant system. | No significant system. |
| ECMWF | No significant system. | - |
| NCEP-GFS | No significant system. | LPA over eastcentral AS on day 1, it moves westward and become less marked thereafter. |
| IMD-Genesis Potential Parameter | A potential zone over south Andaman Sea on day 6 and over southeast and adjoining eastcentral BoB on day 7. | No potential zone over AS for next 7 days. |

Summary and conclusion:

1. For Bay of Bengal:

As per model guidance, no significant cyclonic disturbance is likely over the Bay of Bengal during 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:

Most of the models are indicating low pressure area (LPA) over eastcentral Arabian Sea as on today, the 8th Nov 2023, having its westward movement. Models are also indicating that

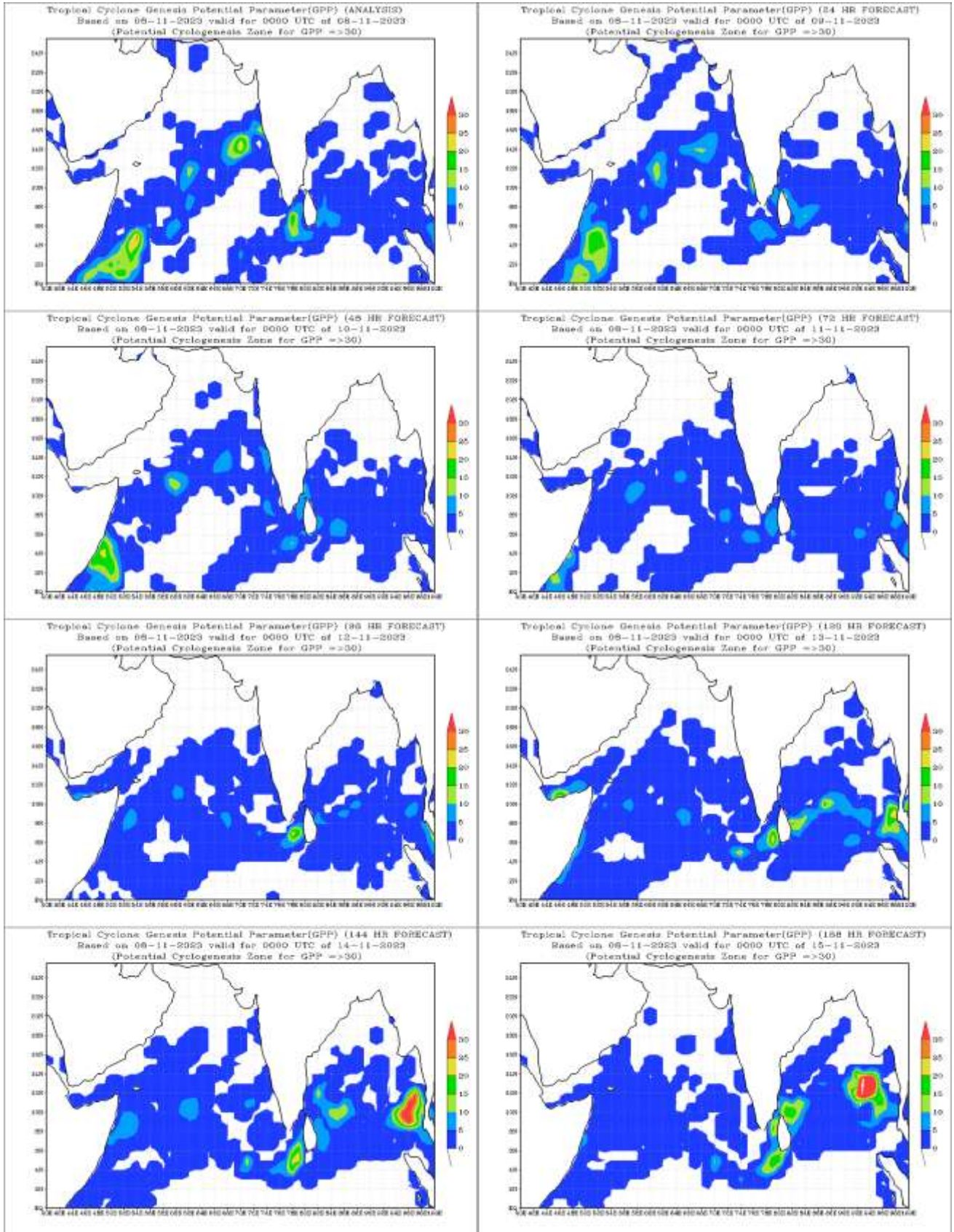
it will become less marked over eastcentral and adjoining westcentral Arabian Sea by 9th November 2023.

From the consensus on the significant system, it is inferred that under the influence of yesterday's cyclonic circulation over southeast and adjoining eastcentral Arabian Sea, a low pressure area has formed over eastcentral Arabian Sea as on today, the 08th November 2023. It is likely to move nearly westwards and become less marked over the same region during next 24 hours.

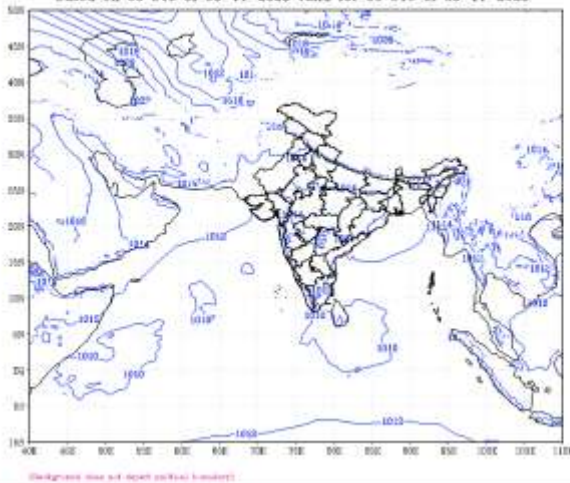
Probability of Cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

| 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 |

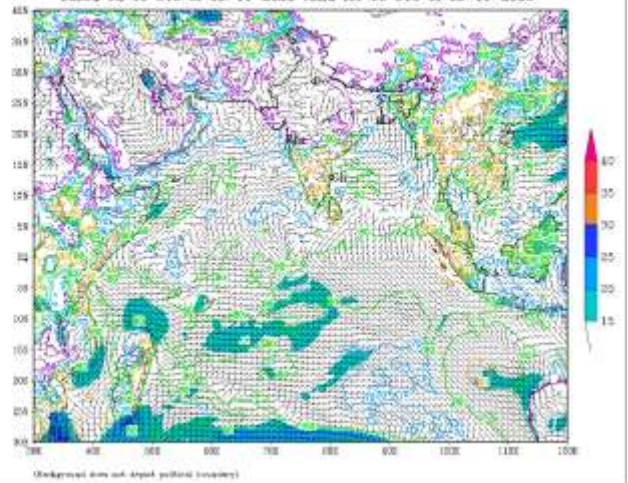
IOP: Nil.



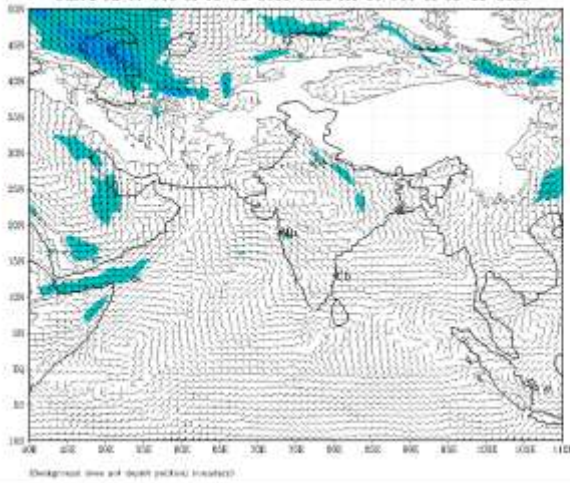
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
 based on 00 UTC of 08-11-2023 valid for 00 UTC of 08-11-2023



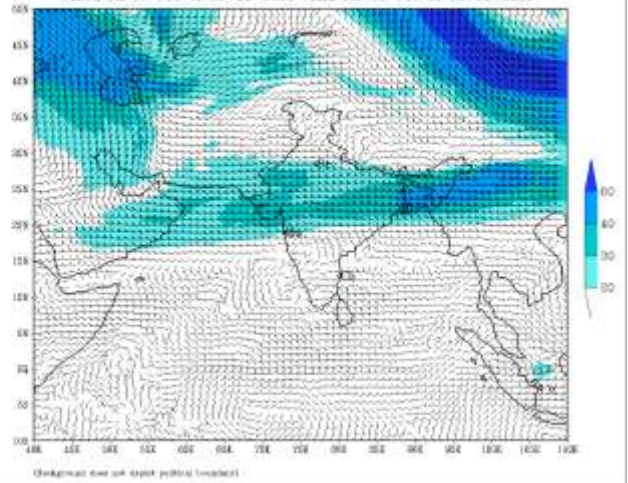
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (00 HR)
 based on 00 UTC of 08-11-2023 valid for 00 UTC of 08-11-2023



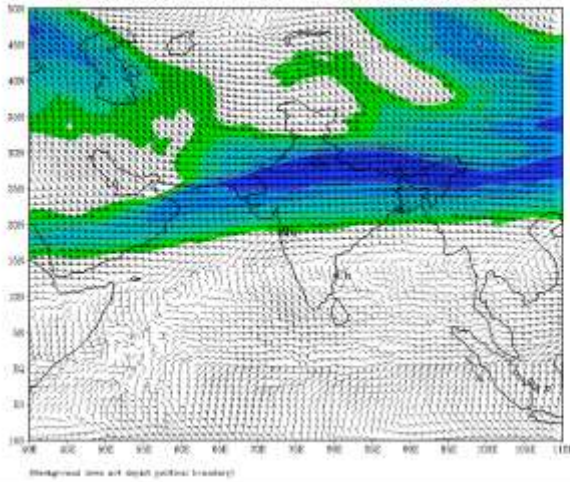
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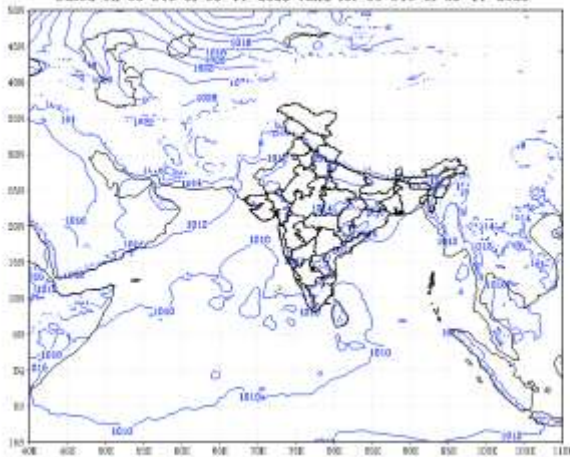
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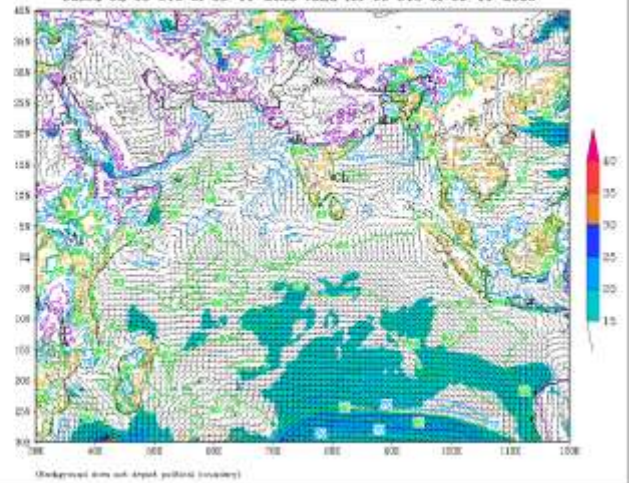
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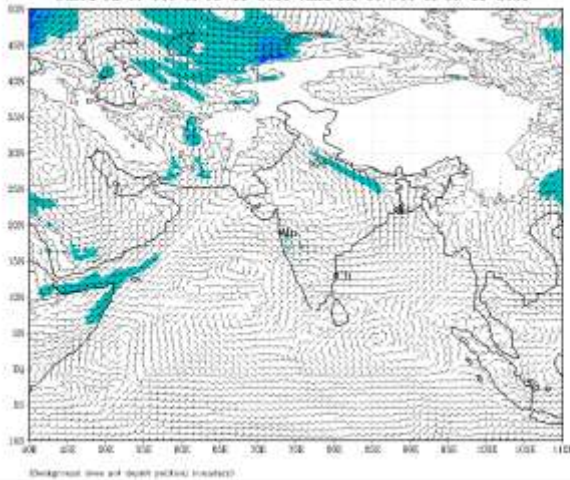
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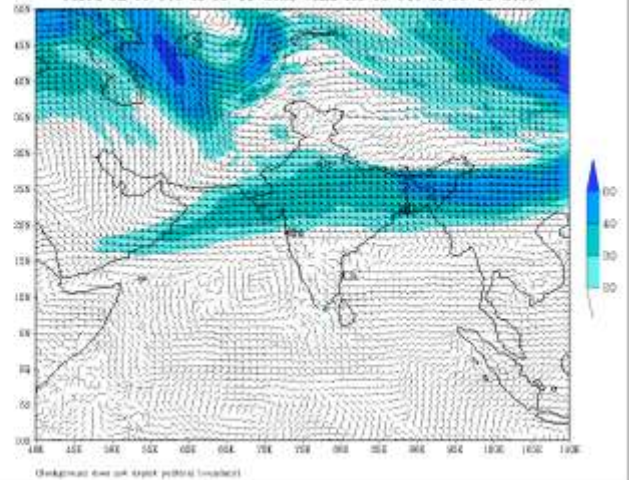
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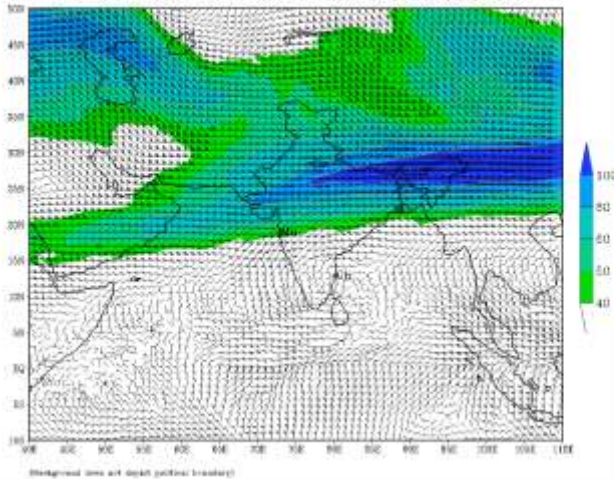
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IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (24 HR)
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IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (24 HR)
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IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)
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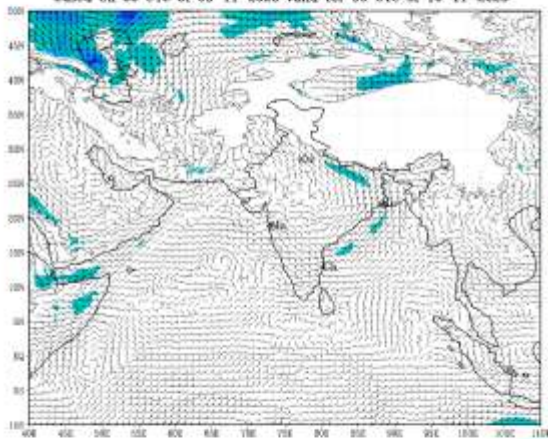
(Background over sea level political boundary)

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based on 00 UTC of 08-11-2023 valid for 00 UTC of 10-11-2023



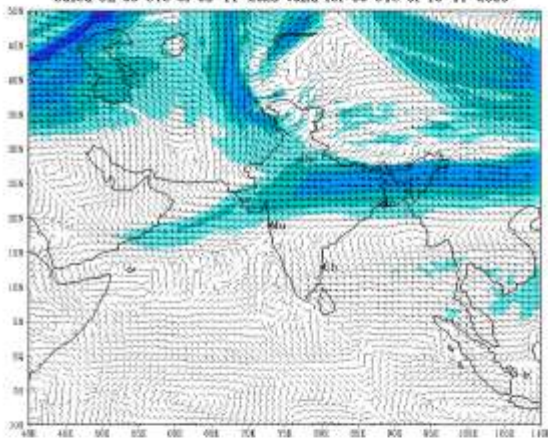
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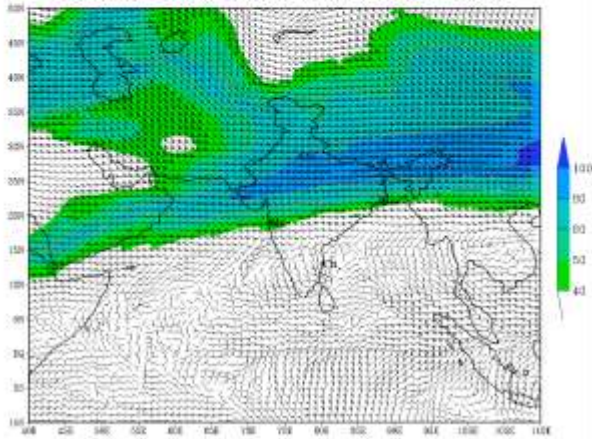
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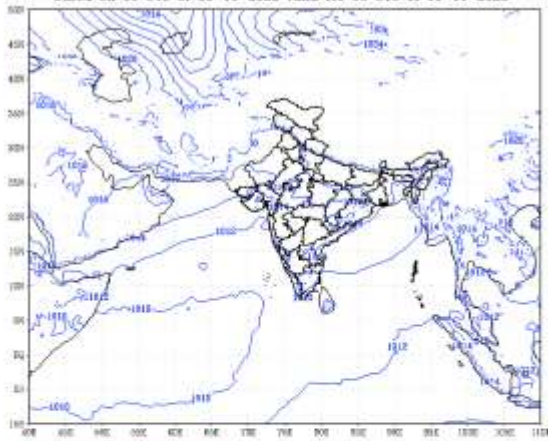
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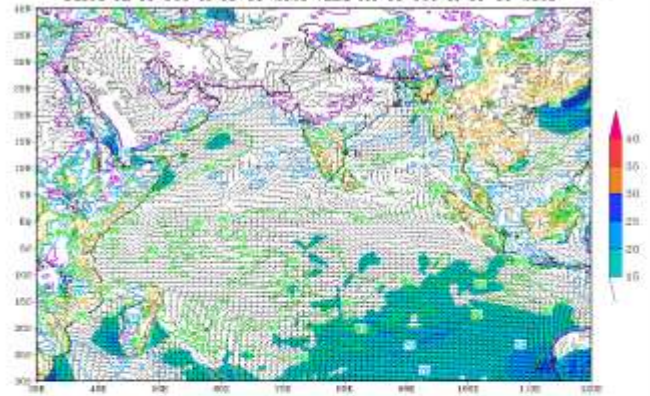
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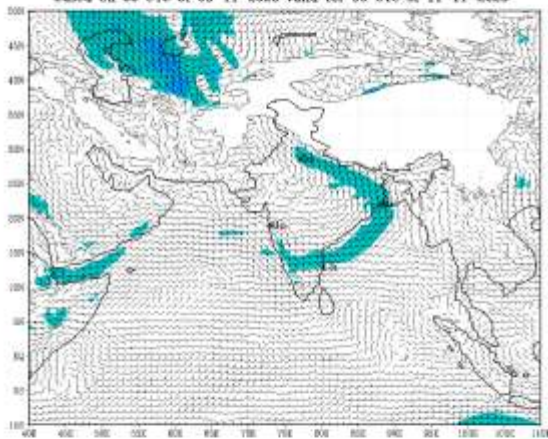
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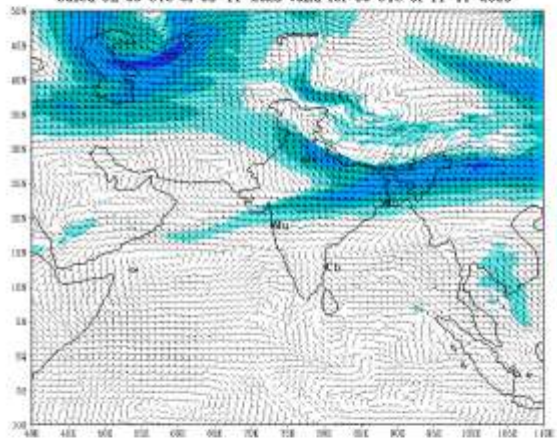
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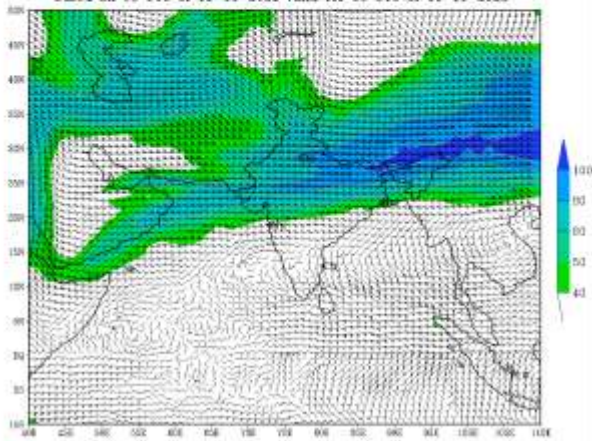
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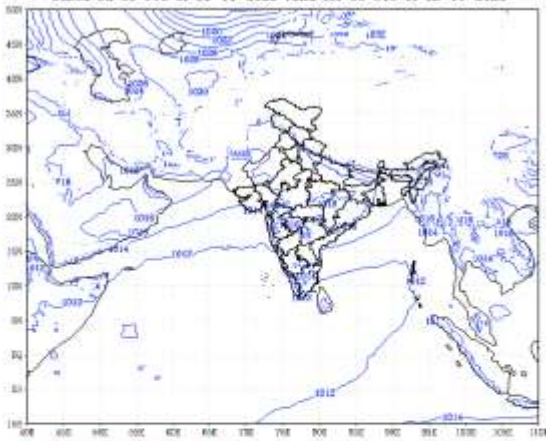
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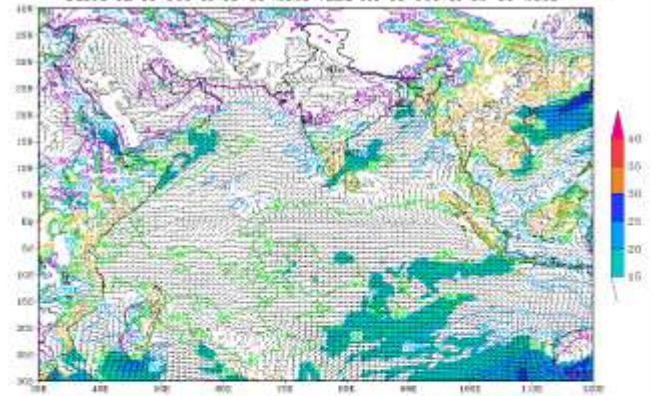
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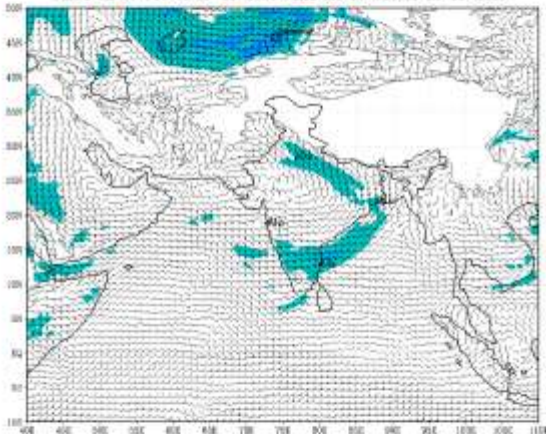
(Background over sea depicts political boundary)

IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (96 HR)
based on 00 UTC of 08-11-2023 valid for 00 UTC of 12-11-2023



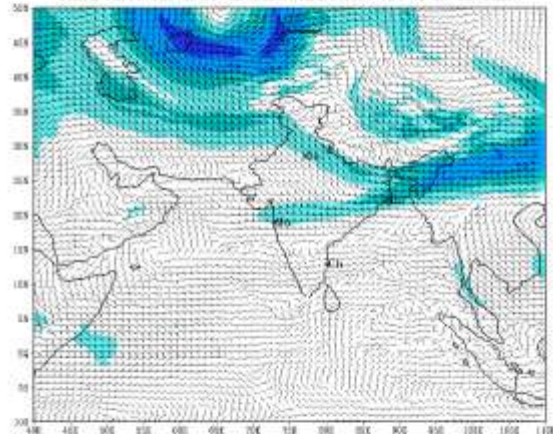
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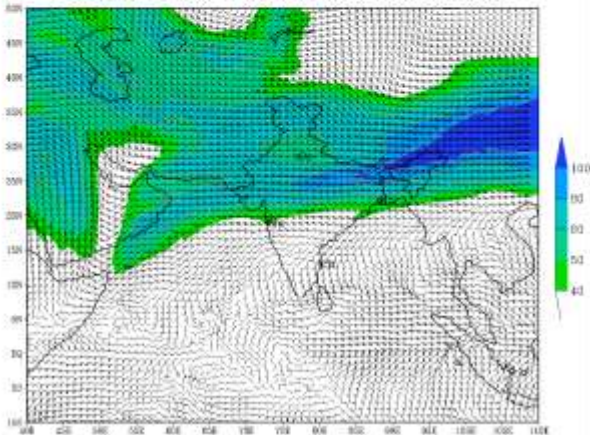
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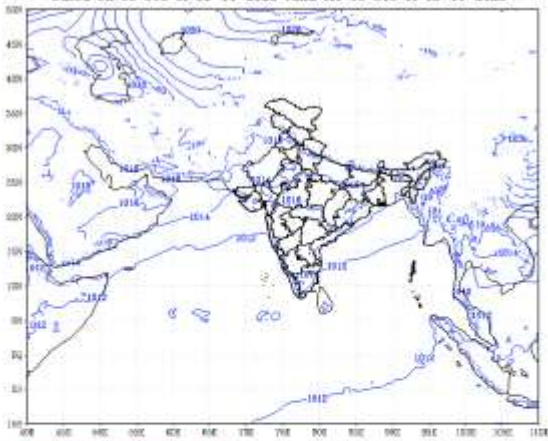
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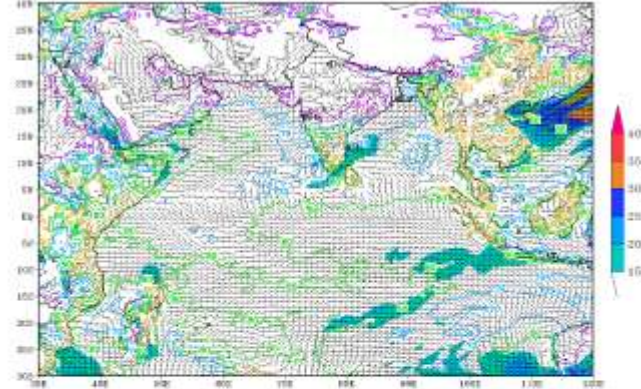
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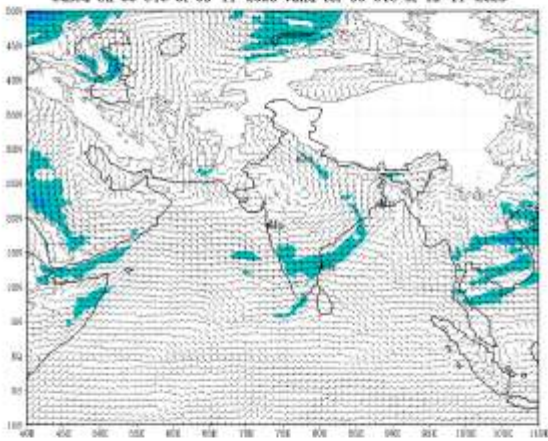
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IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (120 HR)
based on 00 UTC of 08-11-2023 valid for 00 UTC of 13-11-2023



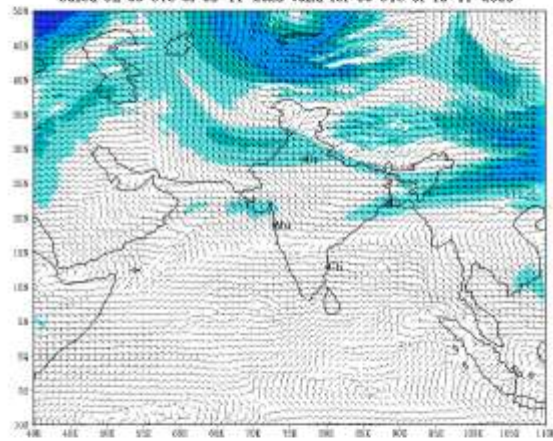
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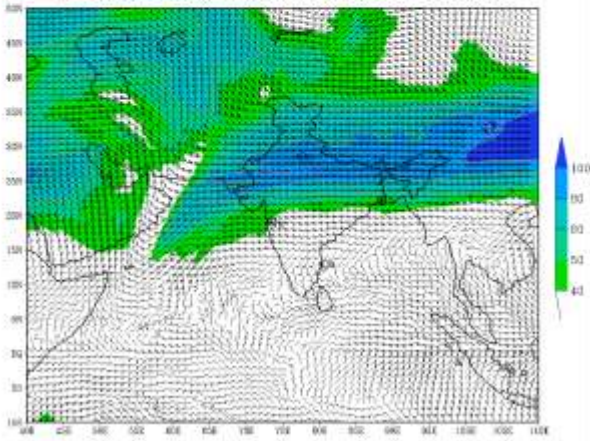
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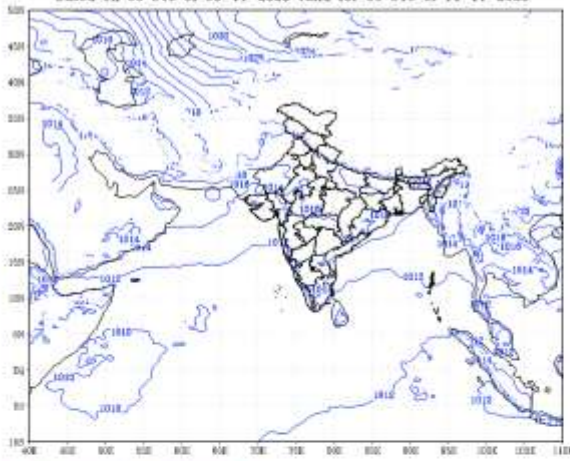
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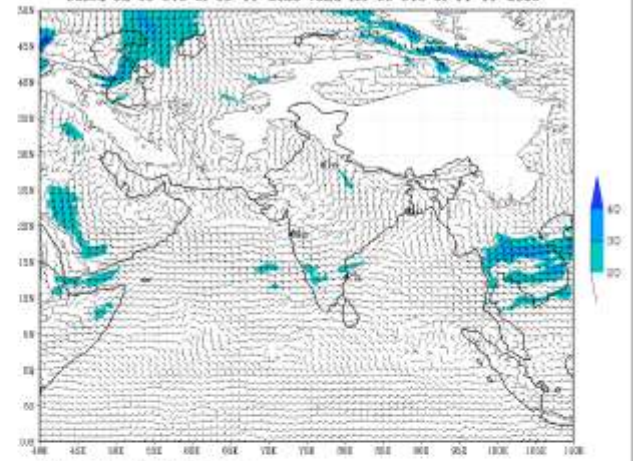
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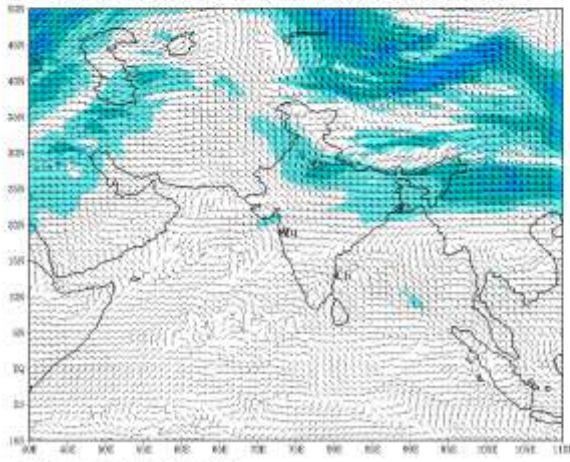
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 based on 00 UTC of 08-11-2023 valid for 00 UTC of 14-11-2023



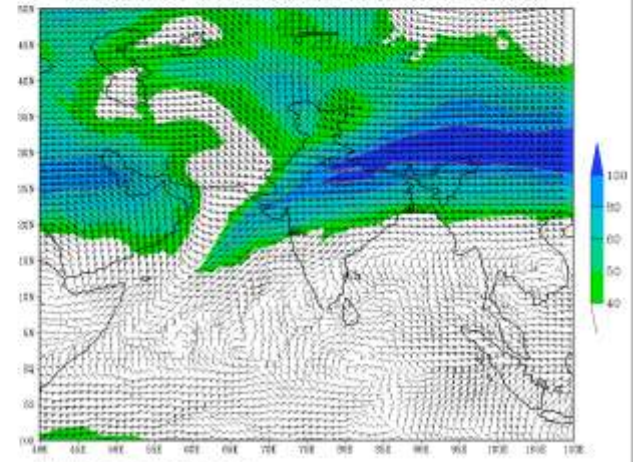
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 based on 00 UTC of 08-11-2023 valid for 00 UTC of 14-11-2023



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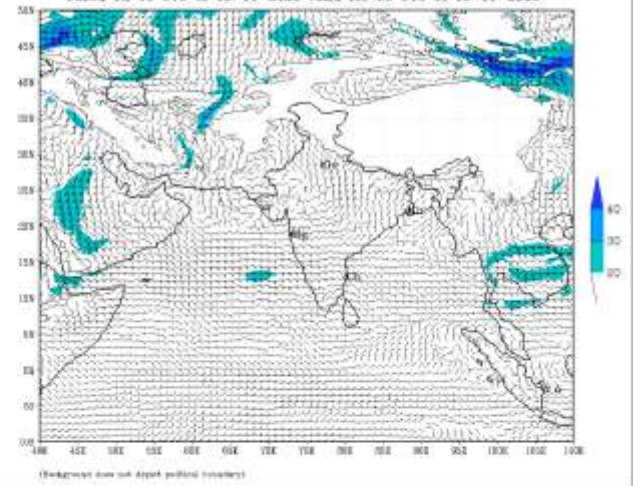


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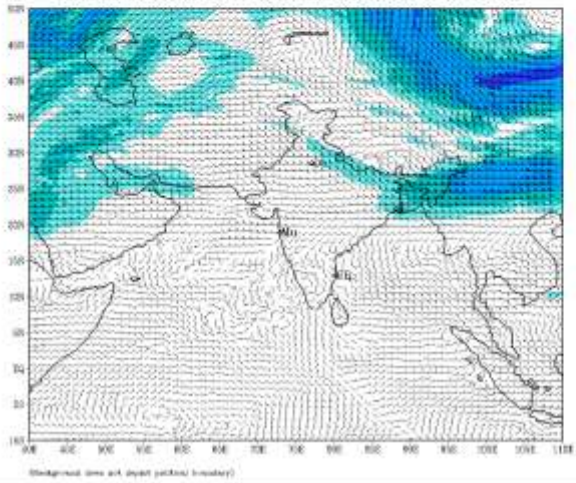
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based on 00 UTC of 08-11-2023 valid for 00 UTC of 15-11-2023



IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 08-11-2023 valid for 00 UTC of 15-11-2023



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