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

Tropical Cyclone Forecast Programme
Report Dated 01st November, 2023

Time of Issue: 1200 UTC

Synoptic features (based on 0300 UTC analysis):

- The upper air cyclonic circulation over Southwest Arabian Sea extending upto 3.1 km above mean sea level persists.

- The upper air cyclonic circulation over northeast Arabian Sea and adjoining north Konkan-Gujarat coasts between 3.1 km & 4.5 km above mean sea level has become less marked.

Dynamical and thermo-dynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) ⁰C	29-30°C over major parts of BoB, Andaman Sea, Gulf of Mannar, 26-28°C over parts of southwest BoB.	29-30°C over southeast and adjoining eastcentral AS, northeast AS, along and off south Gujarat, Maharashtra coasts, 26-28°C over central, adjoining north 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/cm^2	100-120 over eastcentral BoB adjoining southeast BoB. 80-100 over south Andaman Sea. 50-60 over most parts of BOB and north 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.	60-80 over southeast, adjoining eastcentral and adjoining southwest AS, 60-80 over few parts of southeast AS. 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^{-6}s^{-1})	10-20 over south and central BoB, 20-30 over few parts of southeast BoB.	10-30 over southwest AS close to Somalia coast, eastcentral and adjoining northeast AS.
Low Level convergence (X10^{-5} s^{-1})	5-10 over south Andaman Sea and adjoining southeast BoB, 5 over north Andaman Sea, westcentral BoB, Gulf of Mannar.	5-10 over southwest AS, -5 over north AS.

Upper Level divergence (X10⁻⁵ s⁻¹)	5-10 over southeast and adjoining southwest BoB, adjoining eastcentral BoB & Andaman Sea.	-5 over southeast and adjoining southwest AS, 5-10 over southwest AS.
Vertical Wind Shear (VWS knots)	5-15 over south BoB, 20 over north parts of south BoB, 30-40 over central BoB, 50-60 over north BoB.	5-15 over south AS, 20 over north parts of south AS, 30-50 over central AS, 60-70 over north AS.
Wind Shear Tendency (knots)	Decreasing tendency over south BoB, Gulf of Mannar & south Andaman Sea. Increasing over central, north BoB, north Andaman Sea.	Decreasing tendency over south AS. Increasing tendency over the central and north AS.
Upper tropospheric Ridge	Along 15°N over BoB	Along 12°N over AS.

Satellite observations based on INSAT imagery (0300 UTC):

(a) Over the BoB & Andaman Sea:-
Scattered to broken low and medium clouds with embedded intense to very intense convection lay over eastcentral and southeast Bay of Bengal, Andaman Sea. Scattered low and medium clouds with embedded moderate to intense convection lay over rest Bay of of the Bengal.

(b) Over the Arabian Sea:-
Scattered low and medium clouds with embedded moderate to intense convection lay over south and adjoining eastcentral Arabian Sea, Lakshadweep islands area and comorin area.

(c) Convection outside India:-
Scattered low and medium clouds with embedded moderate to intense convection lay over Sri Lanka Maldives Nepal Tibet china Thailand gulf of Thailand south Vietnam Sumatra str of Malacca Malaysia Borneo south china sea java sea Philippines Madagascar Mozambique channel and over Indian ocean between Equator to latitude 5.0N longitude 50.0E to 100.0E and between equator to latitude 35.0S longitude 40.E to 60.0E.

M.J.O. Index:
MJO index is currently in Phase 1 with amplitude greater than 1. It will remain in phase 1 for next five days but with amplitude less than 1. Later, it will be in Phase 8 with amplitude less than 1 on day 7 i.e., 7th November.

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.	No significant system.
IMD-GEFS	No significant system.	No significant system.
IMD-WRF	No significant system.	No significant system.
NCMRWF-NCUM	No significant system.	No significant system.
NCMRWF-NEPS	No significant system.	No significant system.
NCMRWF-UM (Regional)	No significant system.	No significant system.
ECMWF	No significant system.	No significant system.
NCEP-GFS	No significant system.	No significant system.

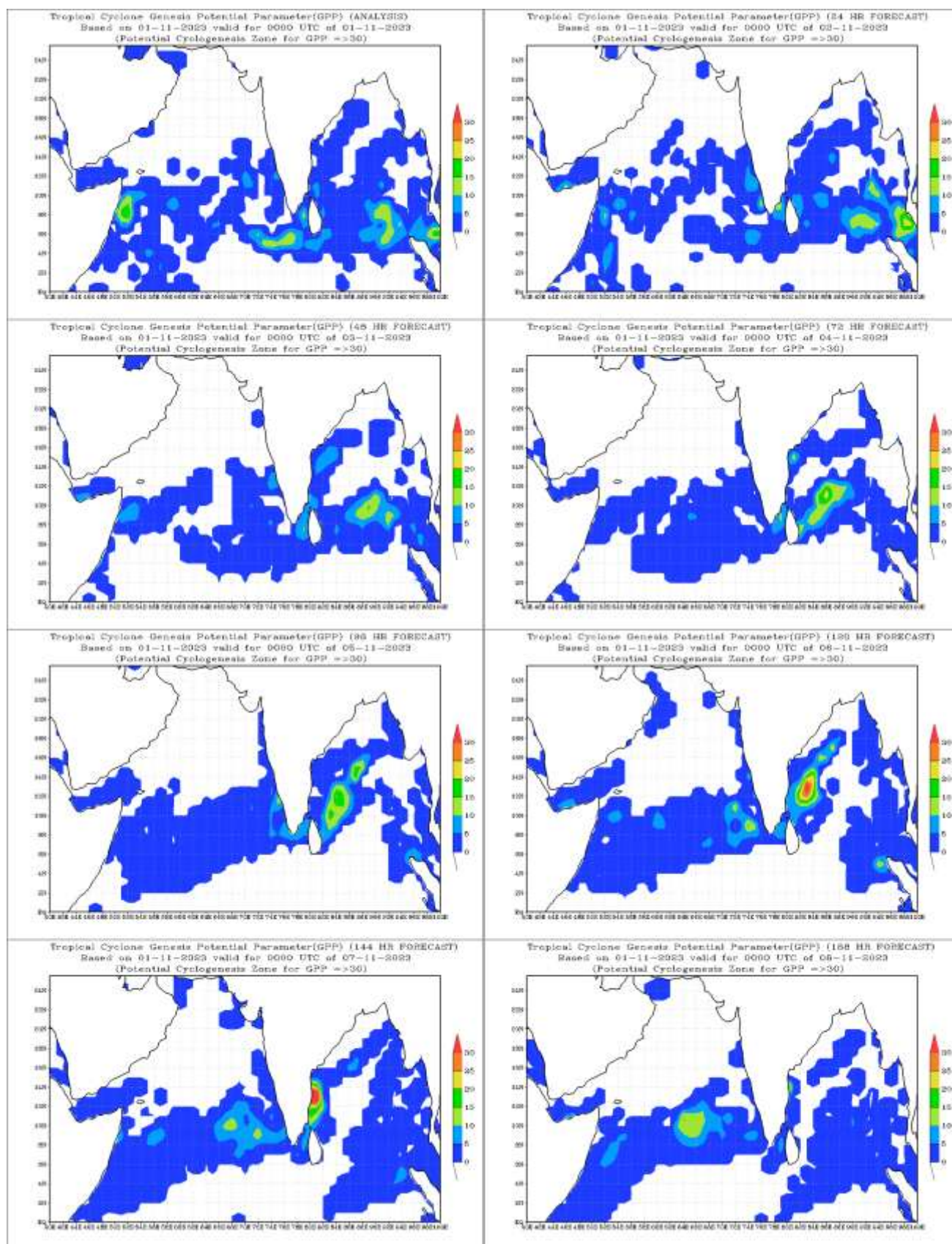| IMD-Genesis Potential Parameter	Potential zone over westcentral and adjoining southwest BoB on day 5 i.e., 5th November, it will lay over along and off south Andhra Pradesh coast on day 6 i.e., 6th Nov.	No potential zone over Arabian Sea for next 7 days.

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:

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

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**.**

Annexure

Tropical Cyclone Genesis Potential Parameter(GPP) forecast charts based on 01-11-2023, valid for 0000 UTC of 01-11-2023 through 08-11-2023 (Potential Cyclogenesis Zone for GPP =>30).

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based on 00 UTC of 01-11-2023 valid for 00 UTC of 01-11-2023
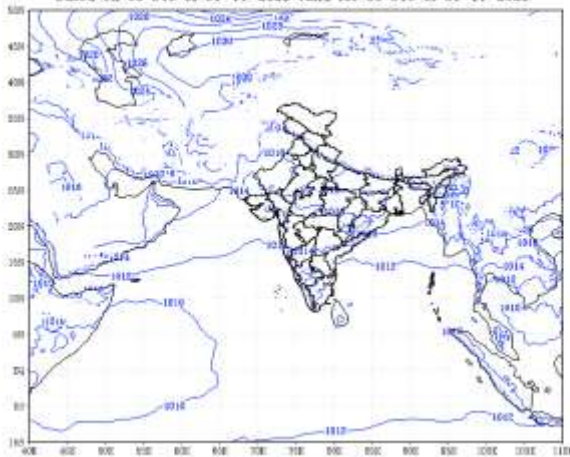
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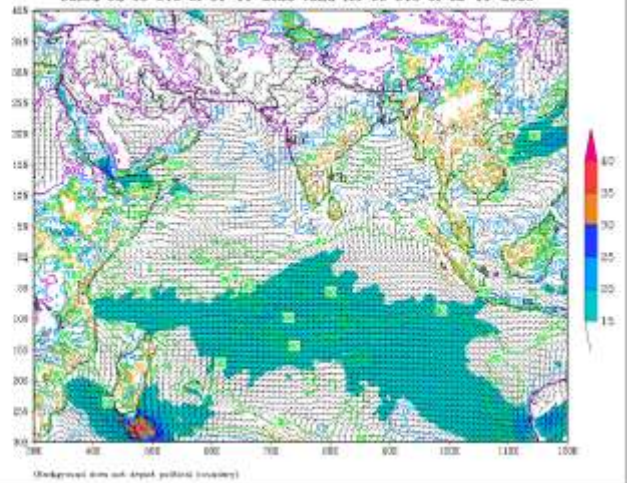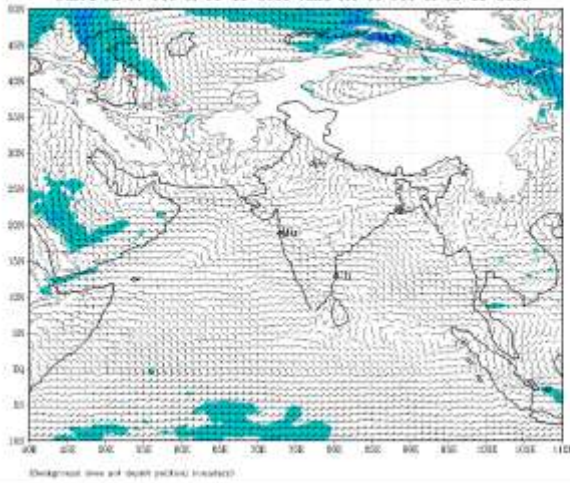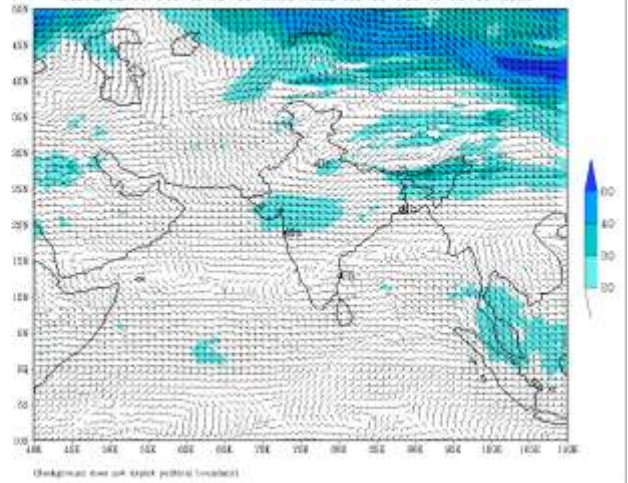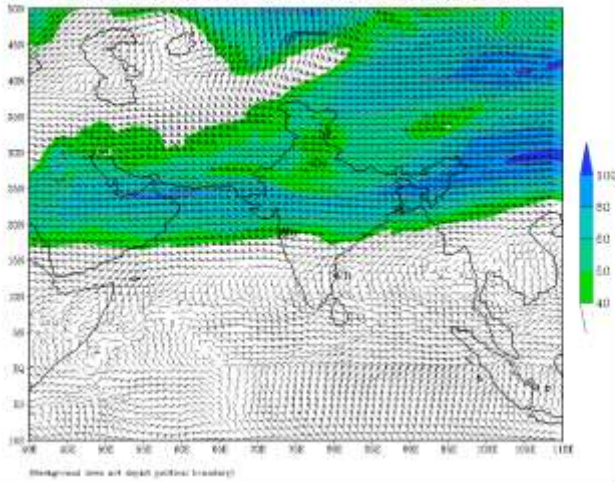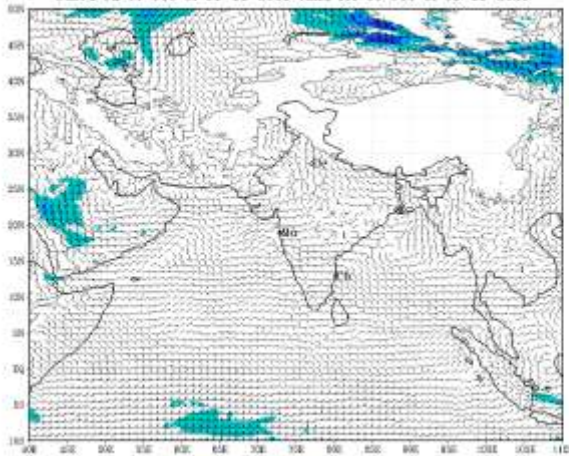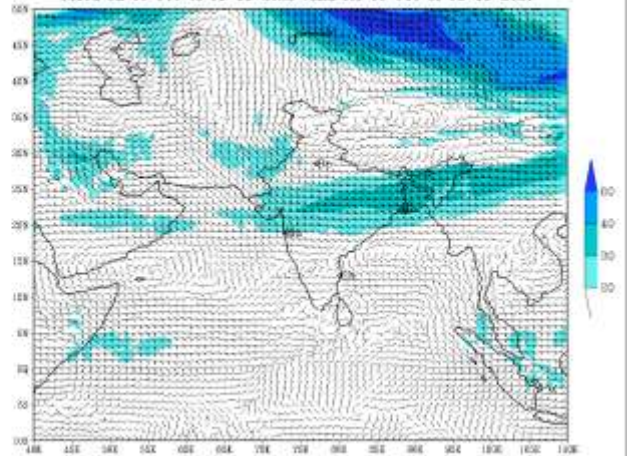based on 00 UTC of 01-11-2023 valid for 00 UTC of 01-11-2023
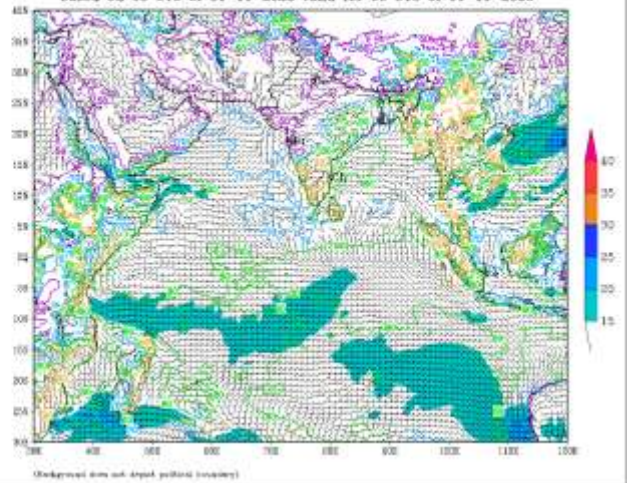
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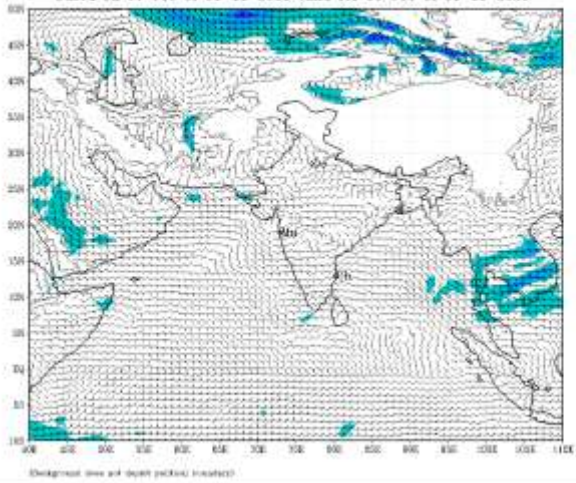
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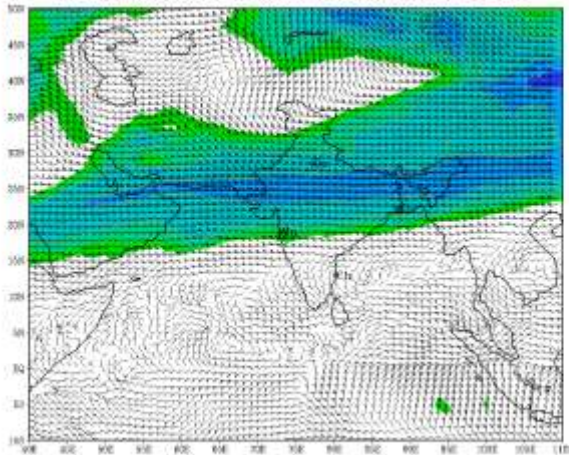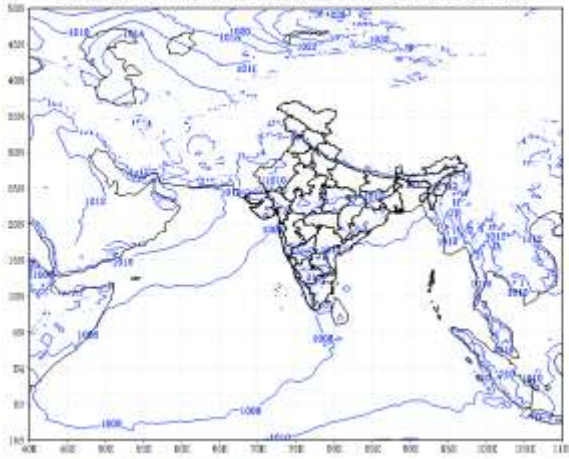based on 00 UTC of 01-11-2023 valid for 00 UTC of 01-11-2023
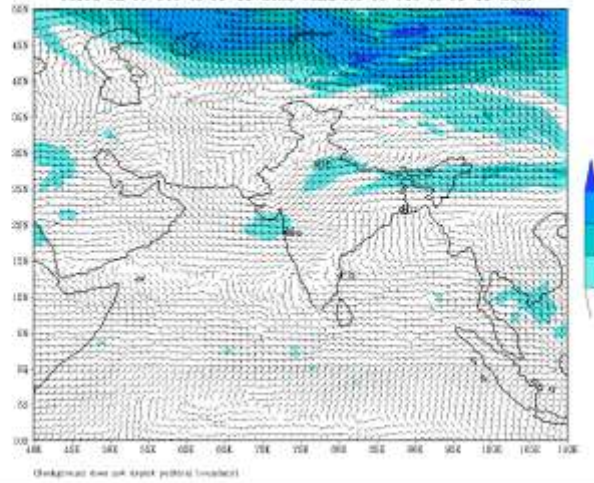
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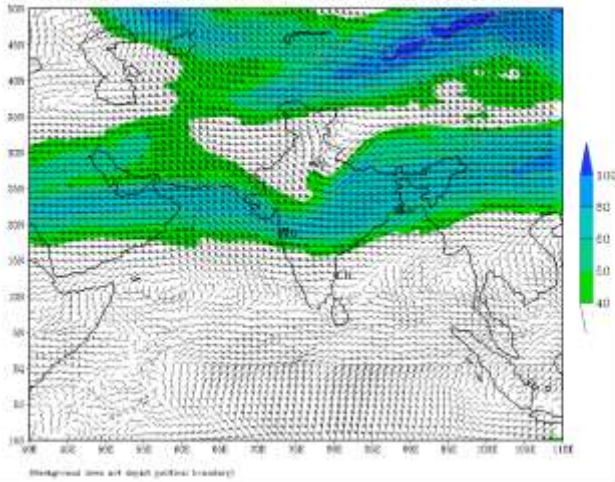
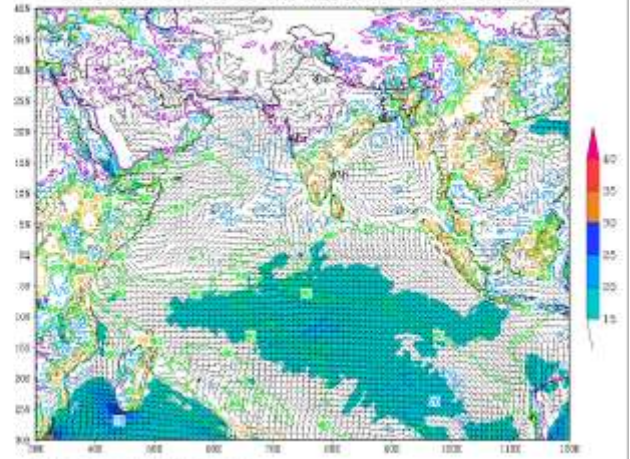**IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)**
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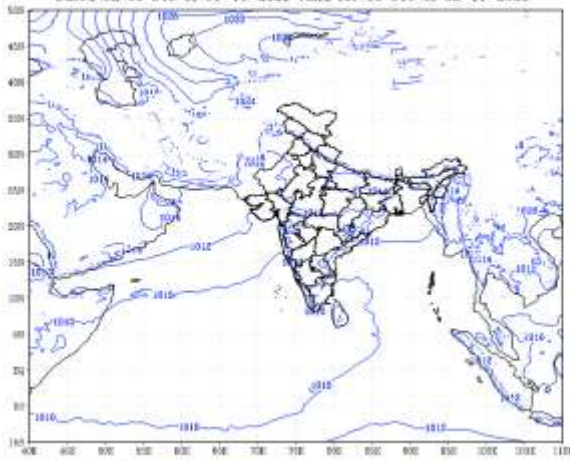
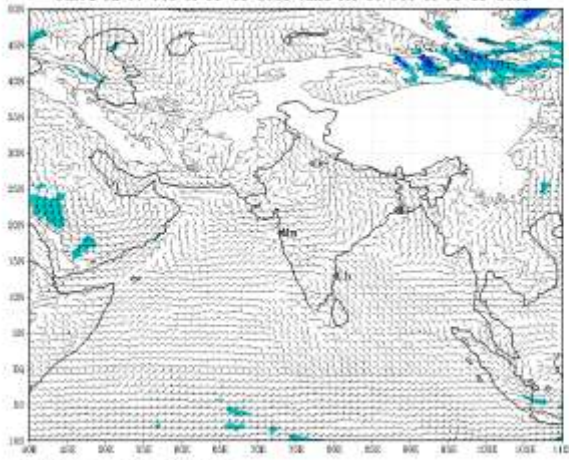**IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (24 HR)**
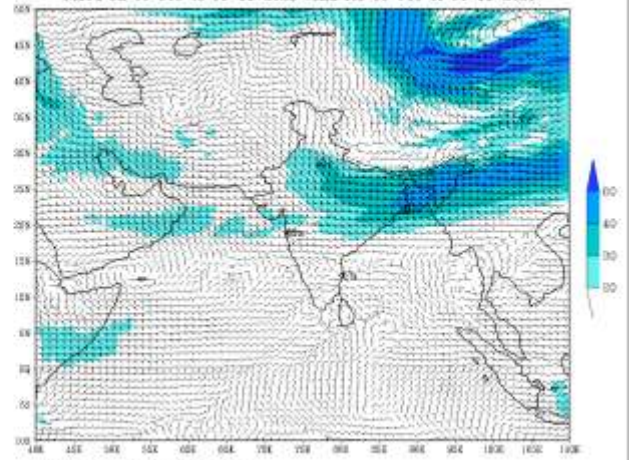based on 00 UTC of 01-11-2023 valid for 00 UTC of 02-11-2023

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 02-11-2023

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 02-11-2023

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based on 00 UTC of 01-11-2023 valid for 00 UTC of 02-11-2023

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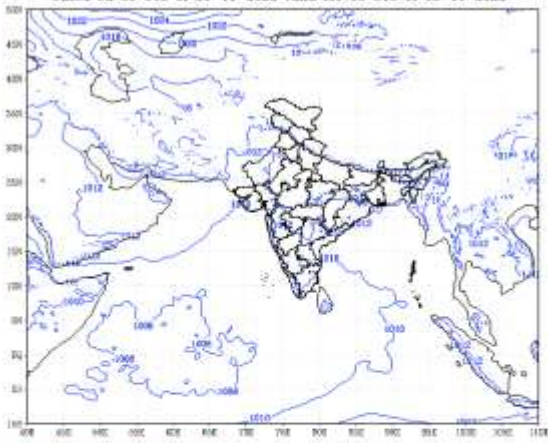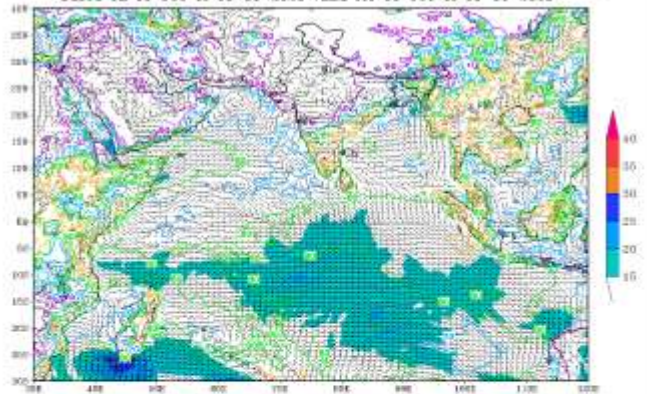**IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)**
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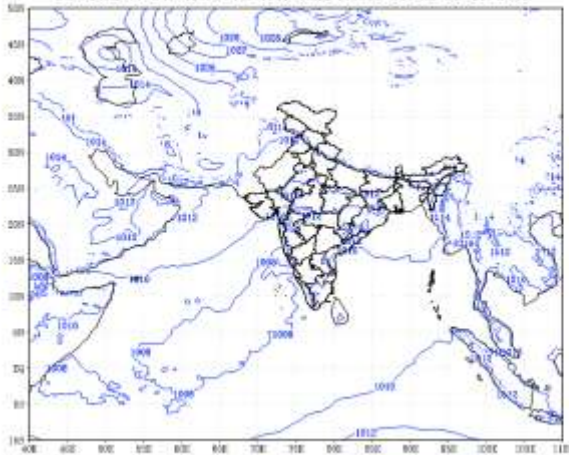
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (48 HR)
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based on 00 UTC of 01-11-2023 valid for 00 UTC of 03-11-2023

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 03-11-2023

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 03-11-2023

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IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (72 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 04-11-2023

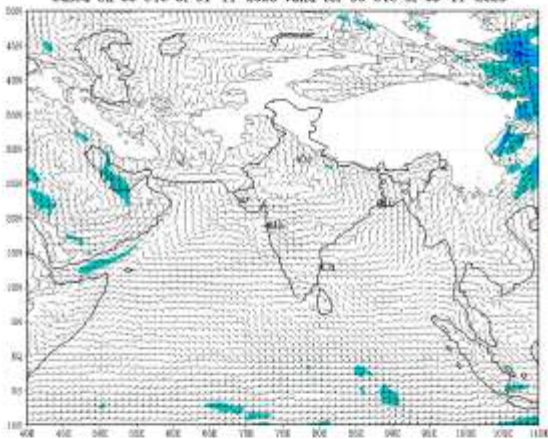**IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (72 HR)**
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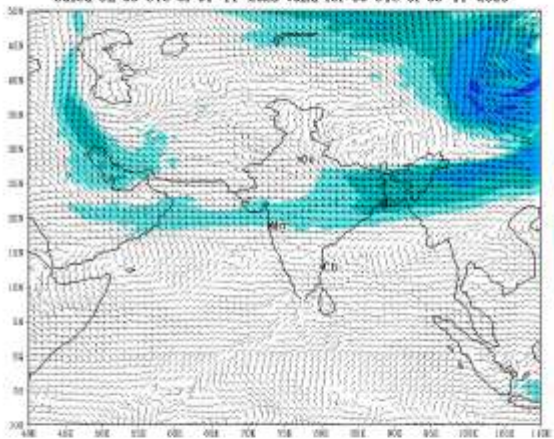**IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (72 HR)**
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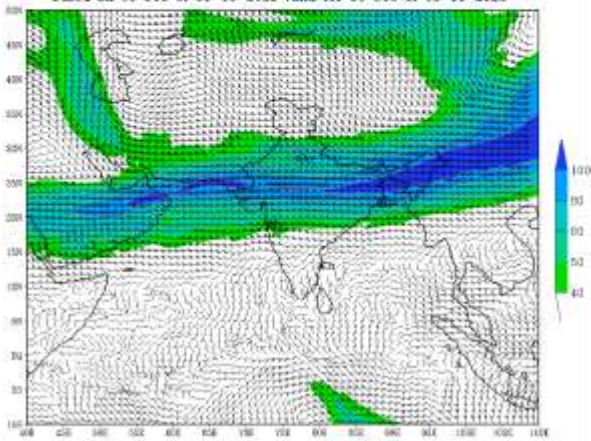**IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (72 HR)**
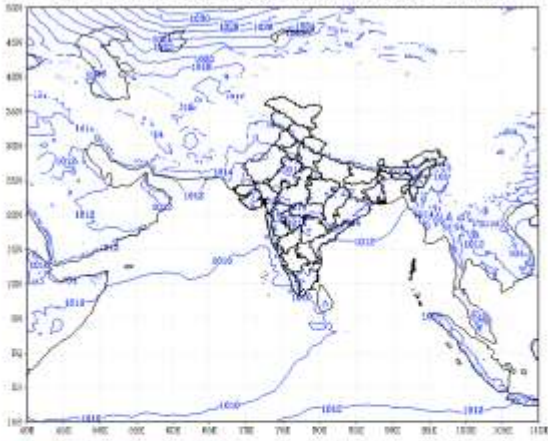based on 00 UTC of 01-11-2023 valid for 00 UTC of 04-11-2023

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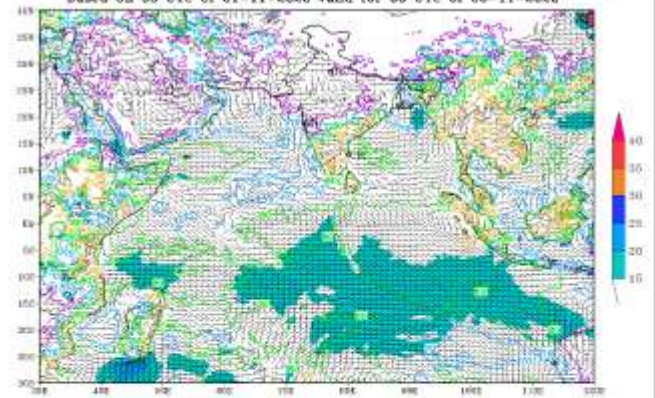
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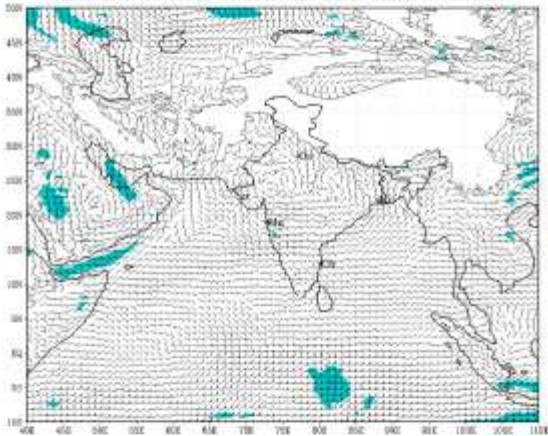based on 00 UTC of 01-11-2023 valid for 00 UTC of 05-11-2023

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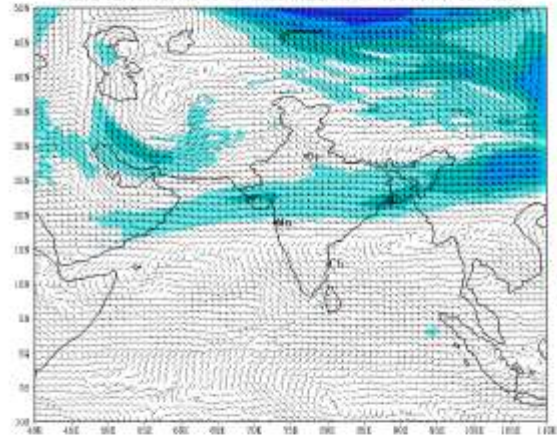IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 05-11-2023

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 05-11-2023

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 05-11-2023

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (120 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 06-11-2023

IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (120 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 06-11-2023

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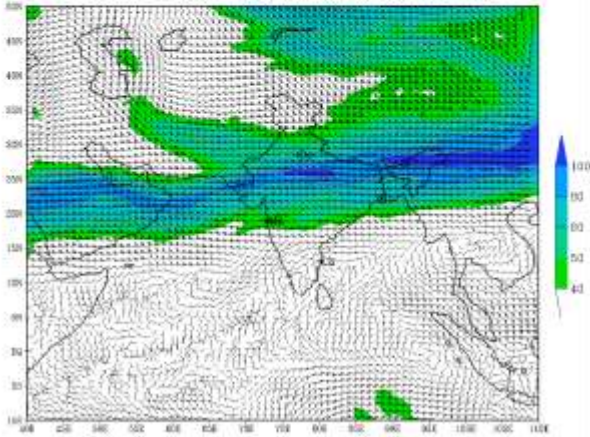based on 00 UTC of 01-11-2023 valid for 00 UTC of 06-11-2023

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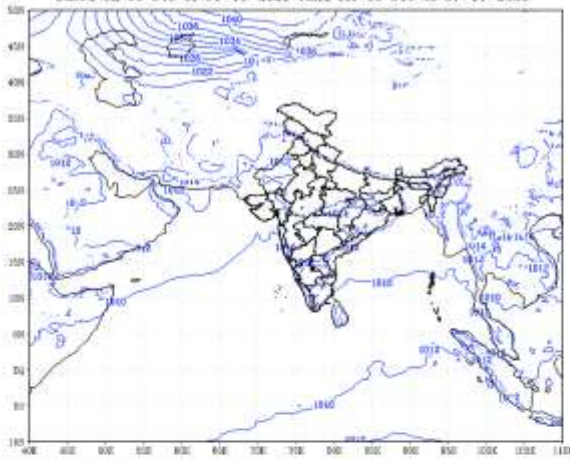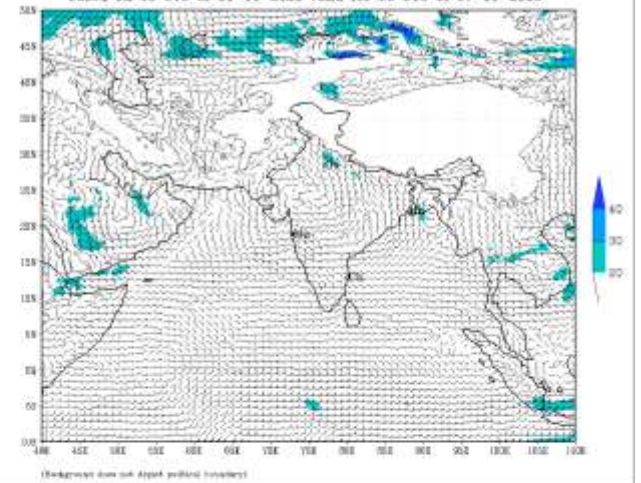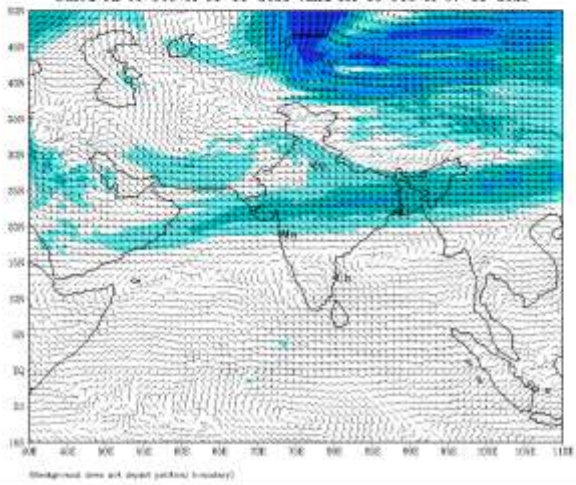based on 00 UTC of 01-11-2023 valid for 00 UTC of 06-11-2023

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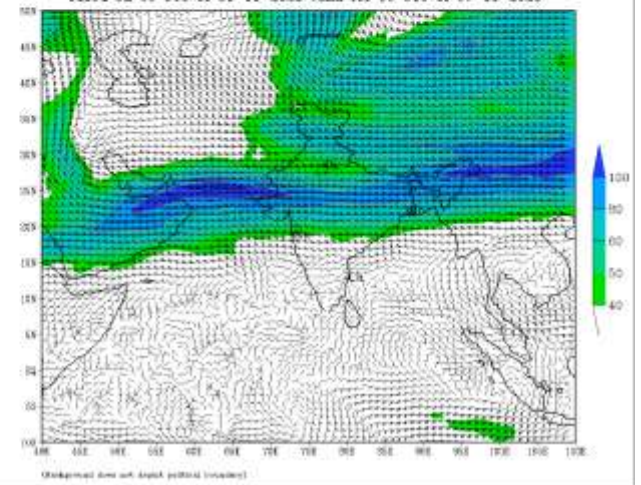based on 00 UTC of 01-11-2023 valid for 00 UTC of 07-11-2023

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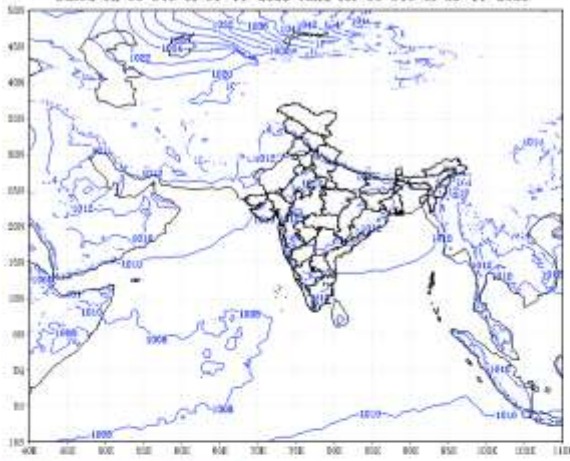based on 00 UTC of 01-11-2023 valid for 00 UTC of 07-11-2023

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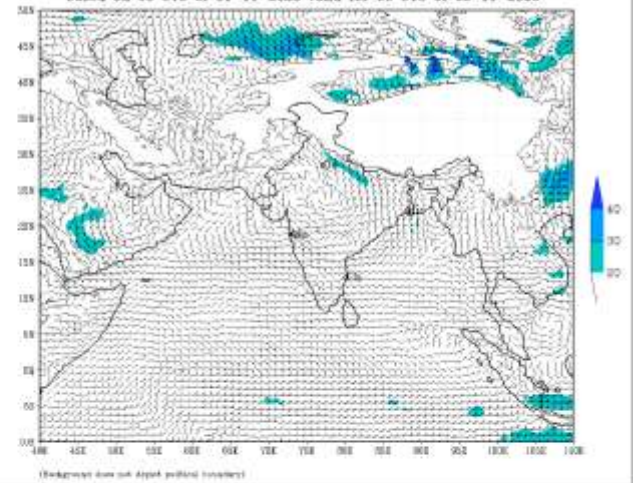based on 00 UTC of 01-11-2023 valid for 00 UTC of 07-11-2023

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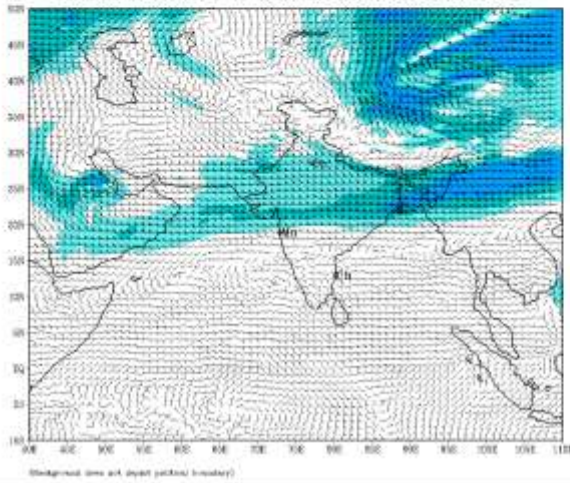based on 00 UTC of 01-11-2023 valid for 00 UTC of 07-11-2023

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (168 HR)
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based on 00 UTC of 01-11-2023 valid for 00 UTC of 08-11-2023

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 08-11-2023

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 01-11-2023 valid for 00 UTC of 08-11-2023