



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

Tropical Cyclone Forecast Programme
Report Dated 7th November, 2022

Time of Issue: 1200 UTC

Synoptic features (based on 0600 UTC analysis):

- ❖ A Low Pressure area is likely to form over southwest Bay of Bengal off Sri Lanka coast around 09th November, 2022. It is very likely to move northwestwards towards Tamilnadu-Puducherry coasts with possible slight intensification during subsequent 48 hours.

Dynamical and thermo-dynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	About 28-30°C over major parts of BoB and 24-28°C over some parts of southwest BoB and Comorin area.	29-31°C over north AS, along and off south Gujarat, Maharashtra coasts and southeast AS. 26-28°C over remaining parts of AS with less than 24°C off Oman & Somalia coast and adjoining parts of southwest and westcentral AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm ²	>110 kJ/cm ² over eastcentral BoB & south Andaman Sea, 70-80 kJ/cm ² over north BoB & westcentral BoB, southwest BoB, north Andaman Sea, less than 40 kJ/cm ² off Andhra Pradesh and Tamil Nadu coasts and adjoining sea area & less than 30 over a small pocket over southwest BoB & Comorin Area.	(a) 60-70 over southeast AS & adjoining eastcentral AS. (b) Less than 30 kJ/cm ² over remaining AS and also off west coast of India.
Cyclonic Relative vorticity (X10 ⁻⁶ s ⁻¹)	Positive vorticity of 40-60 over southwest BoB & adjoining EIO and also over some parts of southeast BoB & south Andaman Sea.	Positive vorticity of 30-40 over central parts of south AS, northern parts of north AS and some parts of central AS.
Low Level convergence (X10 ⁵ s ⁻¹)	About 05 over Gulf of Thailand, 05 over southwest BoB off Tamil Nadu coast and 05 over southwest BoB and adjoining EIO.	05 over small pockets over southwest AS.

Upper divergence (X10⁻⁵ s⁻¹)	05-10 over Andaman Sea & adjoining Gulf of Thailand. 05-10 over southwest BoB & adjoining EIO.	Positive zone 05 over eastcentral, southeast AS, off westcoast, 05 over some pockets of westcentral AS.
Vertical Wind Shear (VWS knots)	Moderate 10-20 knots over south & adjoining central BoB. 25-30 over north BoB and adjoining central BoB.	10-20 over south & adjoining central AS. 25-30 over north AS and adjoining central AS.
Wind Shear Tendency (knots)	Decreasing over south BoB and adjoining EIO, another zone over south Andaman Sea & adjoining Gulf of Thailand.	Decreasing over central AS and adjoining southeast AS, another zone over western parts of southwest AS.
Upper tropospheric Ridge	Along 11.0°N over the BoB.	Along 15.0°N over the AS.
Trough in westerlies	Along 82° E upto 30° N	

Satellite observations based on INSAT imagery (0600 UTC):

(a) Over the BoB & Andaman Sea:-

Scattered to broken low/medium clouds with embedded intense to very intense convection lay over Andaman Sea and adjoining south Thailand. Scattered low/medium clouds with embedded moderate to intense convection lay over southwest BoB.

(b) Over the Arabian Sea:-

Scattered low/medium clouds with embedded moderate to intense convection lay over south AS, Lakshadweep area and Comorin area. Isolated weak to moderate convection lay over north and east AS.

M.J.O. Index:

MJO index is currently in Phase 7 with amplitude greater than 1. It will continue in same phase with gradually decreasing amplitude during next 7 days.

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	BoB	AS
IMD-GFS	A cyclonic circulation (cycir) over southeast BoB on 7 th moving westwards gradually. It is predicted to lie over southwest BoB on 9 th & 10 th . A fresh cycir over south Andaman Sea & adjoining Equatorial Indian Ocean (EIO) on 13 th with west-northwestwards movement till 16 th .	No significant cycir during forecast period.
IMD-GEFS	A cyclonic circulation (cycir) over southeast BoB on 7 th moving westwards gradually. It is predicted to lie over southwest BoB on 9 th & 10 th . A fresh cycir over south Andaman Sea & adjoining Equatorial Indian Ocean (EIO) on 13 th with west-northwestwards movement till 16 th .	No significant cycir during forecast period.

GEFS Probabilistic guidance	Available during cyclone	Available during cyclone
IMD WRF	An extended cyclonic circulation (cycir) over south BoB on 7 th moving nearly westwards till 10 th , LPA over southwest BoB off North Sri Lanka coast on 10 th .	No significant system
NCMRWF-NCUM	A cycir over southwest BoB on 7 th & 8 th , extended circulation/trough over southwest BoB on 10 th , LPA over southwest BoB close to North Tamil Nadu on 11 th & 12 th , LPA over southern peninsular region on 13 th , over Kerala on 14 th and over southeast AS on 15 th . Fresh cycir over south Andaman Sea on 14 th , to move west-northwestwards, lay over southeast BoB on 16 th , southwest BoB on 17 th .	LPA over southeast AS on 15 th to move westwards and intensify into a depression southeast & adjoining eastcentral AS on 17 th .
NCMRWF-NEPS	A cycir over southwest BoB on 7 th to move gradually westwards and lay over southwest BoB & adjoining Comorin till as a trough on 10 th . Further guidance not available.	No significant system over AS
NCMRWF-UM (Regional)	A cycir over southwest BoB on 7 th . Further guidance not available.	No significant system over AS.
ECMWF	Cycir over southeast BoB on 7 th Nov, over southeast & adjoining southwest and then will move northwestward and will be over southwest and adjoining southeast BoB on 8 th Nov morning. It will continue to move in the same direction becoming an LPA over southwest BoB on 10 th Nov., extended low over southwest BoB on 11 th , LPA over southwest BoB off Tamil Nadu coast on 12 th , crossing coast thereafter. A fresh cycir over south Andaman Sea & adjoining Equatorial Indian Ocean (EIO) on 13 th with west-northwestwards movement till 17 th .	A cycir over southeast AS on 13 th , becoming LPA on 14 th and moving westwards thereafter.
ECMWF ensemble	40-50% probability of cyclogenesis over southwest Bay of Bengal during 9 th /10 th Nov, will have initial northwards movement followed by westwards movement towards Tamil Nadu coast.	30-40 % probability of cyclogenesis over southeast AS during 14 th -15 with system likely to move nearly west-northwestwards.
NCEP-GFS	The cycir over southeast BoB on 7 th Nov to move west-northwestwards and lie as an LPA over southwest BoB on 10 th , LPA over southwest BoB on 11 th and 12 th . Extended circulation over southwest BoB and adjoining southeast AS on 13 th & 14 th .	LPA over southeast AS on 14 th moving westwards as LPA till 18 th Nov.
IMD MME	The cycir over southwest BoB as on 7 th Nov. To become an LPA on 9 th , move west-northwestwards and reach Tamil Nadu coast as well marked low pressure area/depression on 13 th .	No significant system.
IMD HWRF	Available during cyclonic disturbance period only	Available during cyclonic disturbance period only.

IMD-Genesis Potential Parameter	A potential zone over eastcentral BoB on 9 th . It is predicted to move west-southwestwards and lay over southwest BoB off North Sri Lanka coast on 11 th .	No significant zone.
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Summary and conclusion:

Most of the models are indicating the circulation over southwest BoB to persist till 8th. Some models like NCEP GFS, ECMWF, ECMWF ensemble and NCUM are indicating development of low pressure area over southwest BoB during 8th to 10th Nov. There is consensus among various models w.r.t northwestward movement of the system towards Tamil Nadu coast. Now consensus has emerged wrt intensification of the system also. IMD GFS, GEFS, IMD MME and WRF are not indicating any significant intensification. However, NCEP (GFS), ECMWF, NCUM and ECMWF-EPS are indicating slight intensification of the system upto depression around 10th/ 11th Nov.

1. For the Bay of Bengal:

In view of all the above, it is inferred that

- A low pressure area is likely to form over southwest BoB around 9th November with low probability of it's intensification into a depression over southwest BoB around 11th. Hence low probability of cyclogenesis (formation of depression) is assigned to day 5.
- There is also likelihood of development of a fresh cyclonic circulation over south Andaman Sea/ southeast BoB around 13th Nov.

2. For the Arabian Sea:

No cyclogenesis is predicted over Arabian Sea during next 7 days.

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	LOW	LOW	LOW	NIL

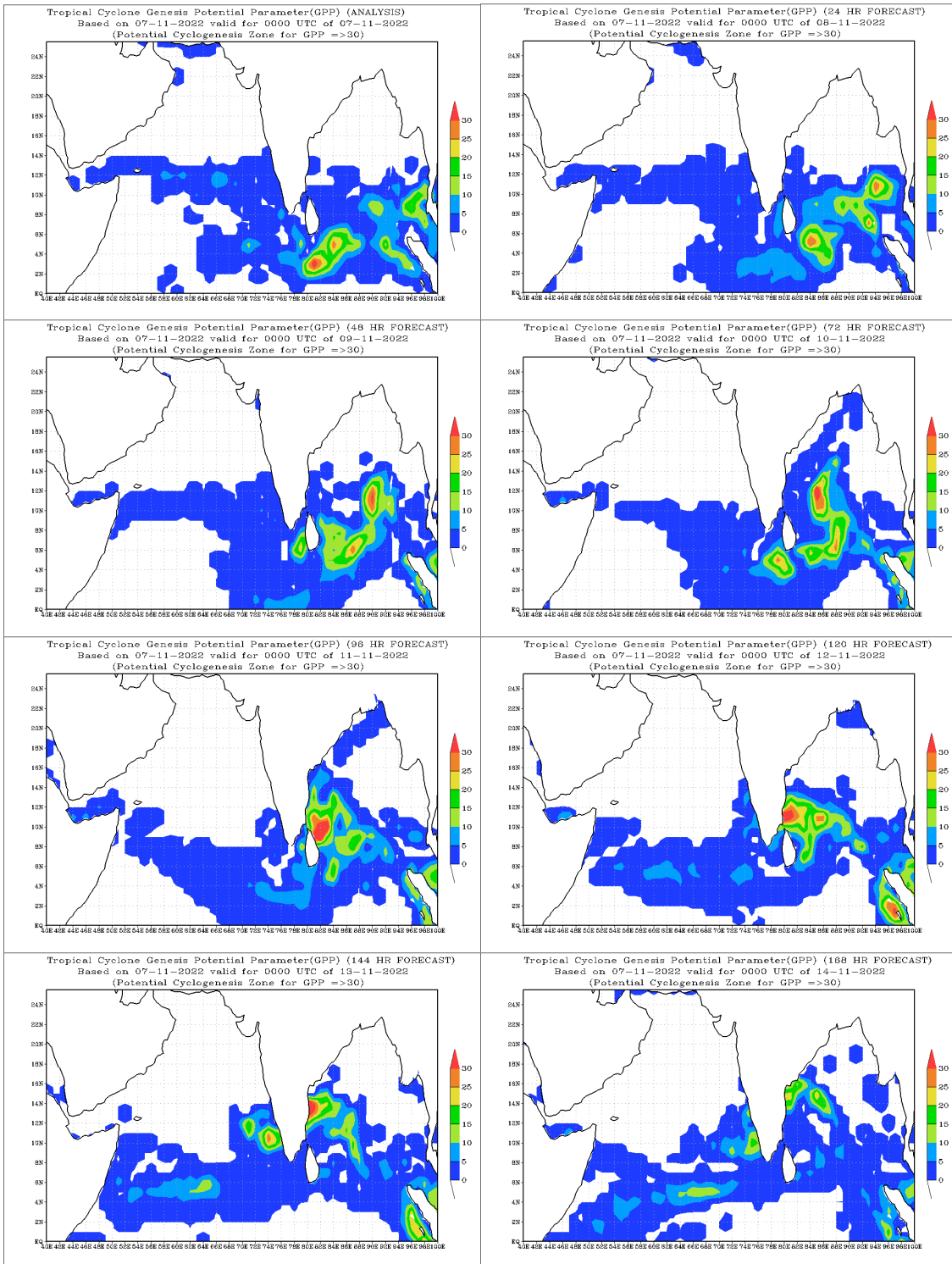
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

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

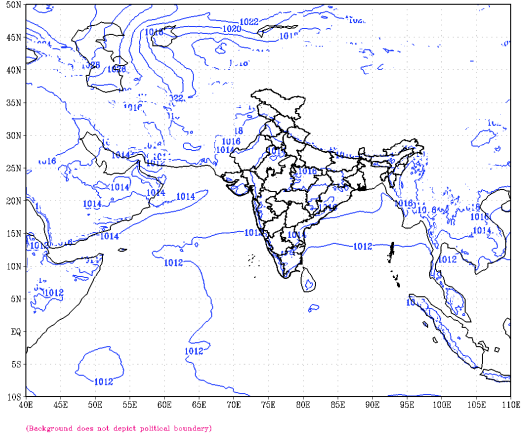
Advisory:

Nil

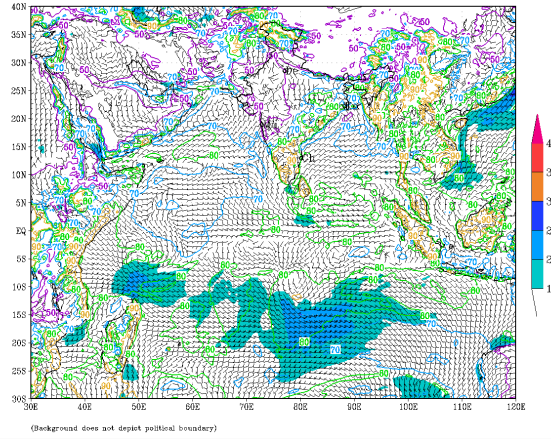
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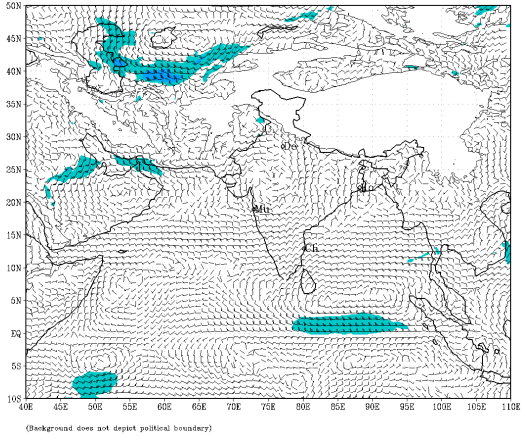
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based on 00 UTC of 07-11-2022 valid for 00 UTC of 07-11-2022



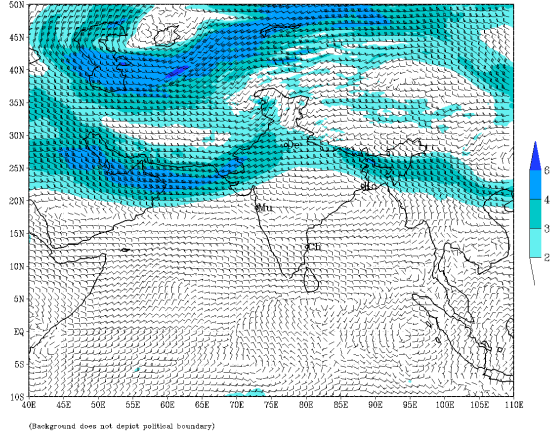
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (00 HR)
based on 00 UTC of 07-11-2022 valid for 00 UTC of 07-11-2022



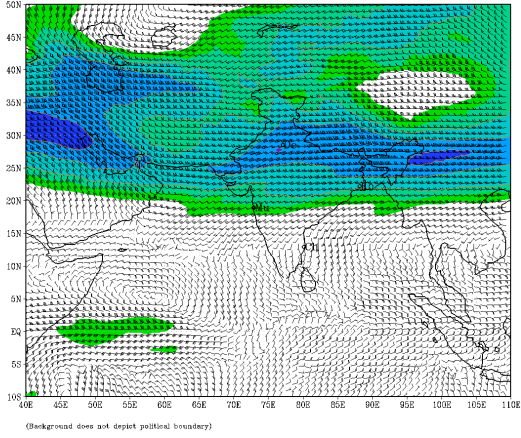
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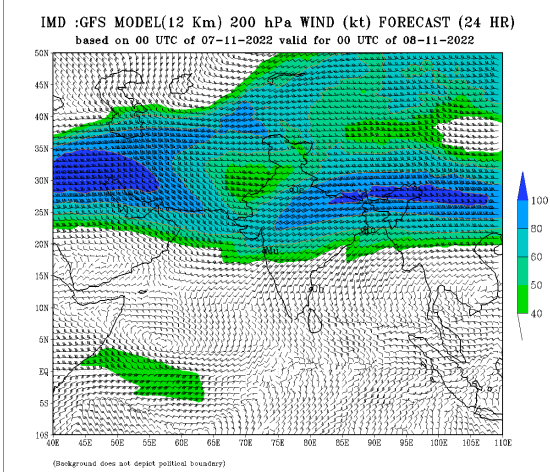
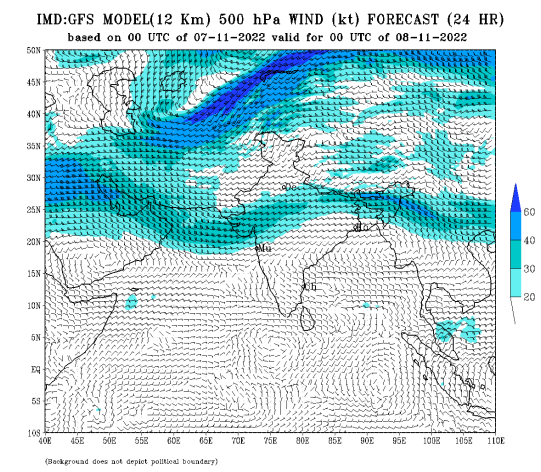
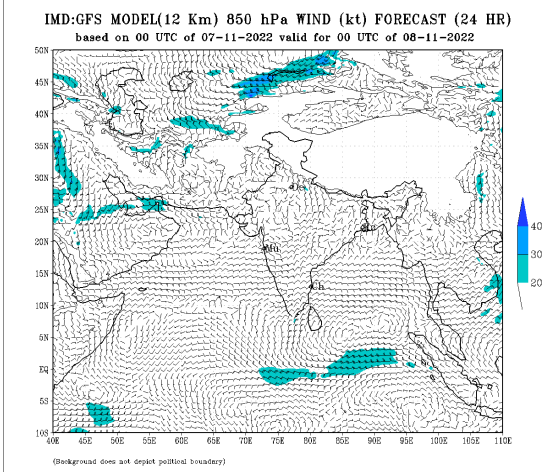
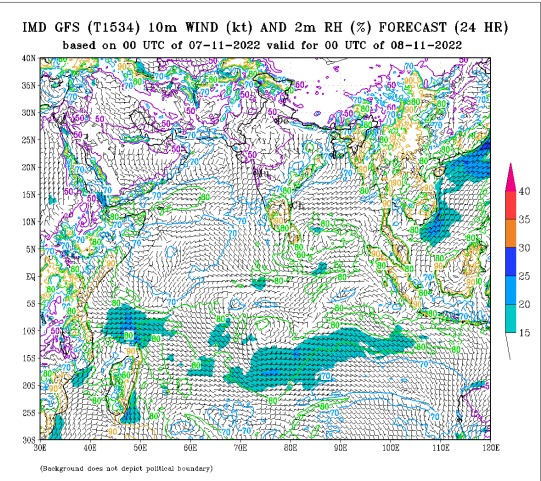
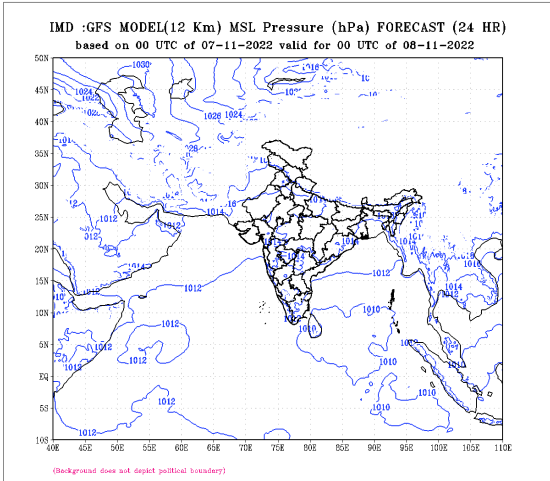


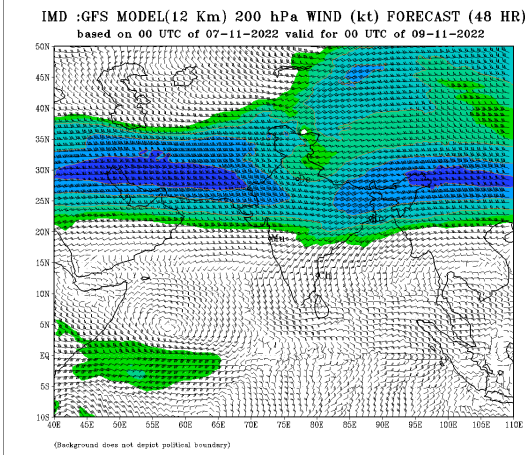
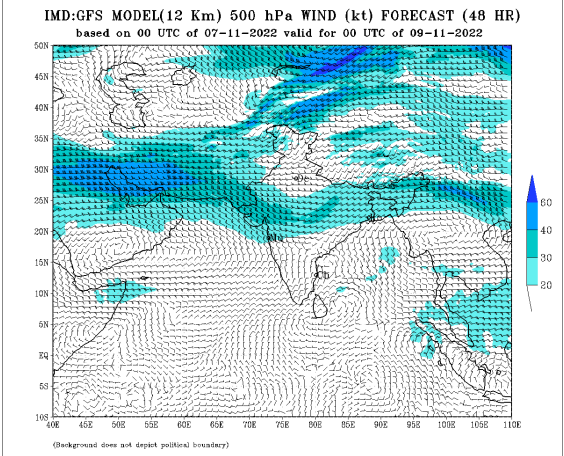
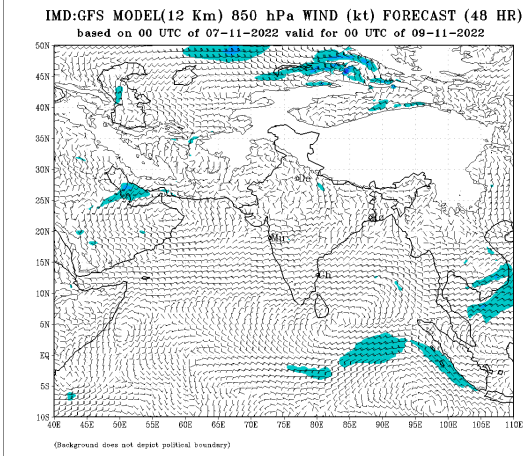
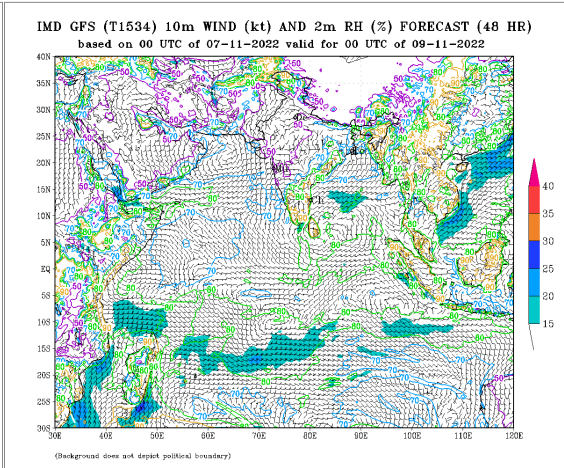
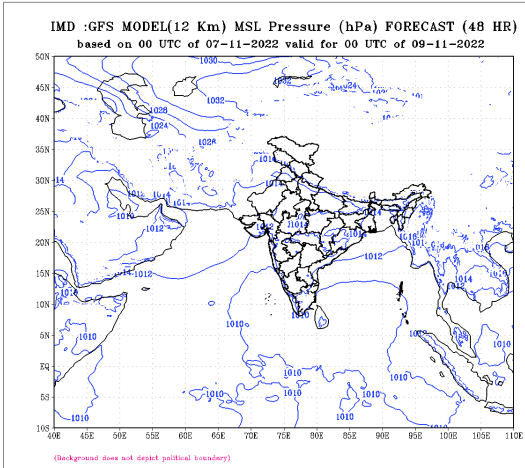
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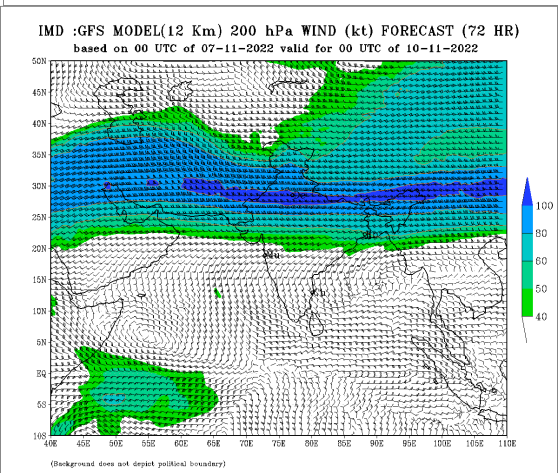
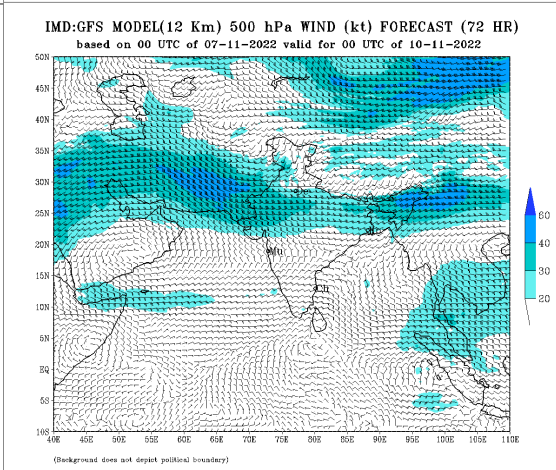
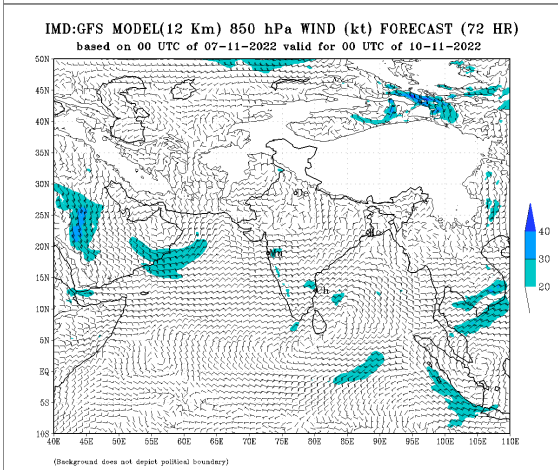
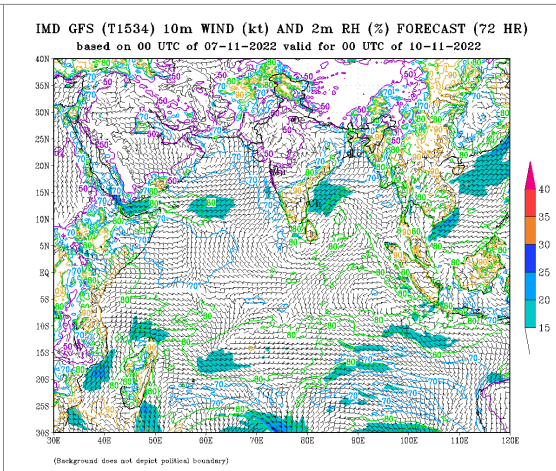
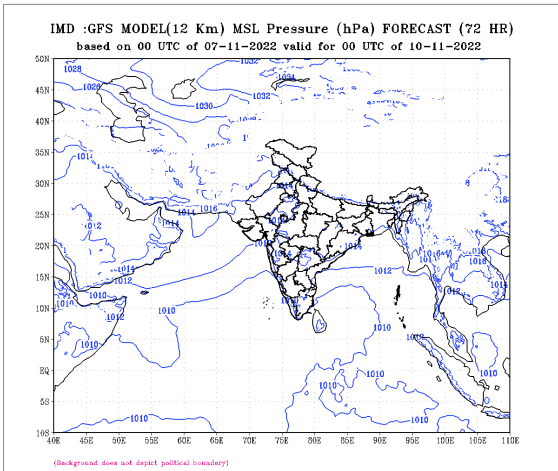


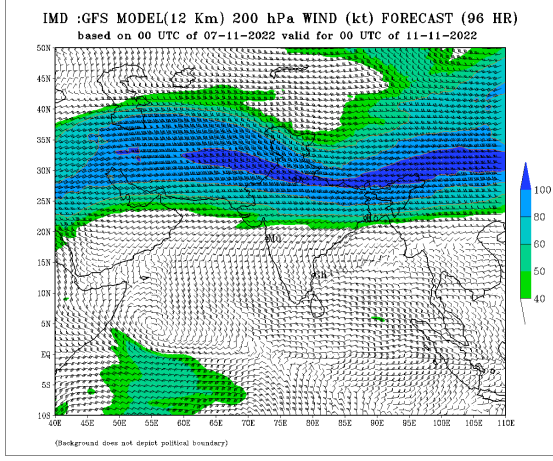
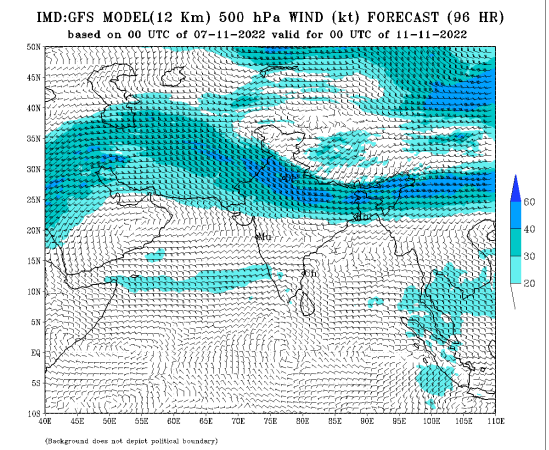
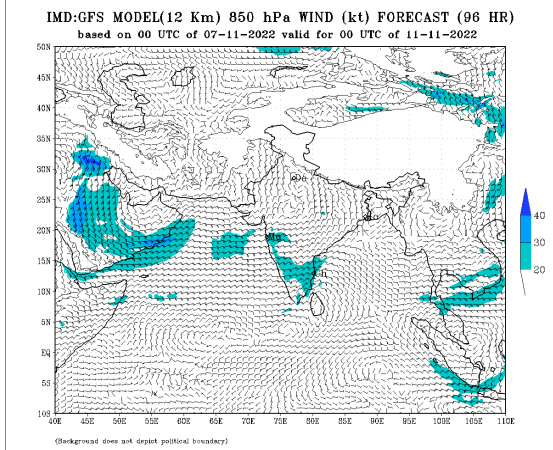
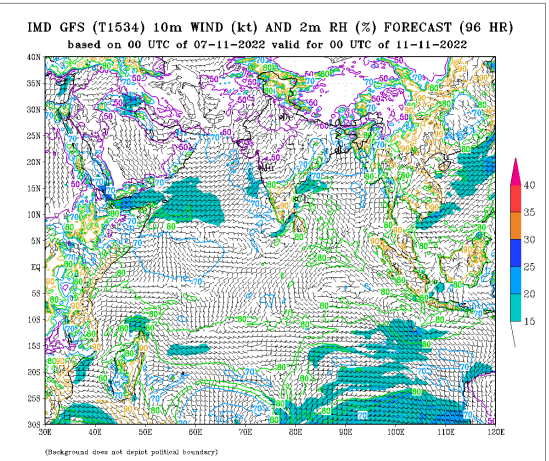
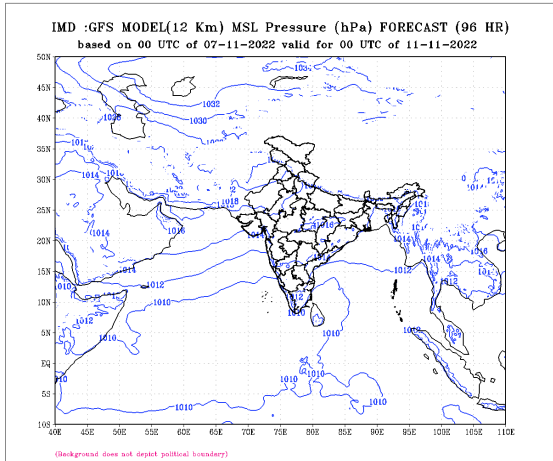
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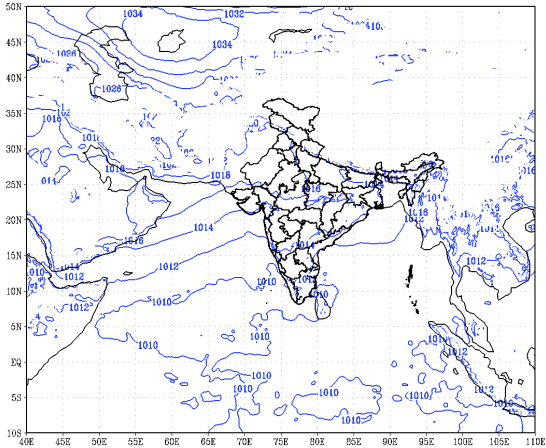






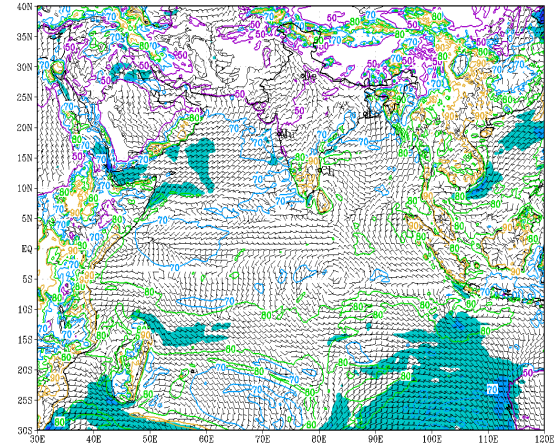


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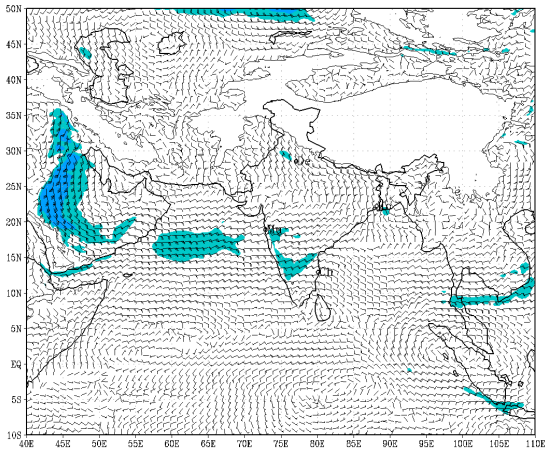
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IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (120 HR)
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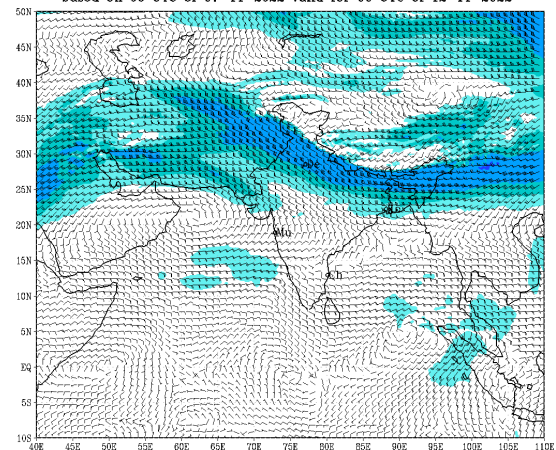
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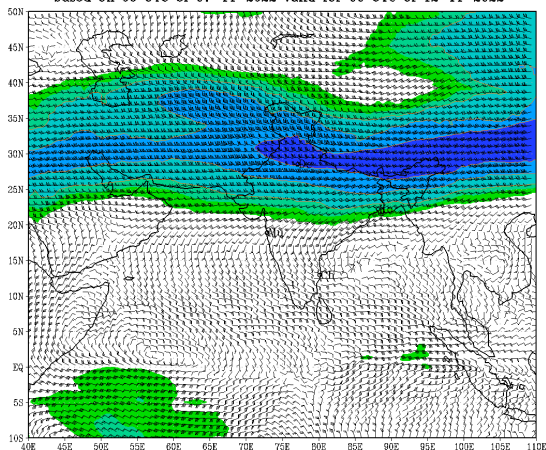
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IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (120 HR)
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IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (120 HR)
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