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

Tropical Cyclone Forecast Programme
Report Dated 11th November 2024

Time of Issue: 1300 UTC

Synoptic features (based on 0900 UTC analysis):

Under the influence of the upper air cyclonic circulation over southwest Bay of Bengal, a low pressure area has formed over the same region at 1430 hrs IST of today, the 11th Nov 2024. The associated cyclonic circulation extends upto 5.8 km above mean sea level tilting southwestwards with height. It is likely to move slowly nearly westwards towards Tamil Nadu/Sri Lanka coasts during next 2-days.

Environmental Features:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) ºC	➢ 28-30°C over the entire BoB.	➢ 26-28ºC over southwest AS & adjoining westcentral AS off Somalia, Yemen coasts. ➢ 29-30°C over rest of AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm^2	➢ 160-180 over north Andaman sea, eastcentral BoB & 100-140 over north, southeast BoB & adjoining EIO and south Andaman sea. ➢ 40-60 over remaining parts of BoB	➢ 100-110 over central parts of south AS & EIO. ➢ <40 over westcentral & southwest AS off Oman, Yemen & Somalia coasts. ➢ 60-80 over rest of the Arabian Sea.
Cyclonic Relative vorticity (X10^{-6}s^{-1})	➢ 30-40 over westcentral and southwest BoB off Sri Lanka/Tamil Nadu coast with west-east orientation.	20-30 over southwest AS off Somalia coast.
Low Level convergence (X10^{-5} s^{-1})	➢ 5 over westcentral & adjoining southwest BoB.	_
Upper-Level divergence (X10^{-5} s^{-1})	➢ 05-10 over westcentral & adjoining southwest BoB off Andhra Pradesh/Tamil Nadu coasts.	5-10 over parts of southwest AS off Somalia coast.
Vertical Wind Shear (VWS knots) **Low: 05-10 knots** **Moderate: 10-20 knots** **High: >20 knots**	➢ High over north & extreme south BoB. ➢ Low-Moderate over rest of BoB.	➢ High over north & adjoining eastcentral AS. ➢ Low-Moderate over rest of AS.
Wind Shear Tendency (knots)	Decreasing over west & south BoB.	Decreasing over western parts of AS.
Upper tropospheric Ridge	At 20^0 N.	At 18^0 N.

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 westcentral Bay of Bengal and moderate to intense convection lay over rest Bay of Bengal & Andaman sea.

b) Over the Arabian Sea:

Scattered low and medium clouds with embedded moderate to intense convection lay over southwest Arabian sea and isolated weak to moderate convection lay over southeast Arabian sea.

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection lay over northeast Pakistan, north Tibet China, Thailand, gulf of Thailand, Sumatra, Strait of Malacca, Malaysia, Borneo, south China sea, Java islands & sea, Celebes islands & sea, Philippines and over Indian Ocean between latitude 5.0^0 N to 20.0^0 S long 50.0^0 E to 120.0^0 E.

M.J.O. Index:

Madden Julian Oscillation (MJO) index is currently in Phase 1 with an amplitude less than 1. It will be in same phase during next 1 day. Thereafter it will slowly move to phase 2 with amplitude close to 1, it will remain in the same phase till 18th with amplitude greater than 1.

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

Vortex (Yinxing) over South China Sea (area f05) centered near 17.0^0 N / 111.0^0 E. Intensity T2.5/3.0 (.) Maximum sustained winds 34-47 kts. Associated broken low & medium clouds with embedded intense to very intense convection over area between latitude 16.0^0 N to 20.0^0 N long 109.0^0 E to 113.0^0 E.

NWP Guidance for FDP Cyclone based on 0000 UTC for the next 7 days:

MODEL GUIDANCE	Bay of Bengal (BoB)	Arabian Sea (AS)
IMD-GFS	IMD-GFS model indicates a Cyclonic Circulation over southwest BoB as of today 11th November. It will have west-northwestward movement till 13th November towards Tamil Nadu coast without intensification.	No Significant circulation over AS.
IMD-GEFS	IMD-GEFS model indicates a Cyclonic Circulation over southwest BoB off Sri Lanka coast as of today 11th November. It will have west-northwestward movement till 12th November towards Tamil Nadu coast without intensification.	No Significant circulation over AS.

IMD-WRF	IMD-WRF model indicates a Cyclonic Circulation over southwest BoB as of today 11th November. It will have west-northwestward movement till 13th November towards Tamil Nadu coast without intensification.	Extended Cyclonic Circulation over Lakshadweep area and adjoining southeast AS on 14th Nov.
NCMRWF-NCUM(G)	NCMRWF model indicates a Cyclonic Circulation over southwest BoB off Sri Lanka coast as of today 11th November. It will have west-northwestward movement till 12th November towards Tamil Nadu coast without intensification.	No Significant circulation over AS.
NCMRWF-NCUM(R)	NCMRWF-regional model indicates an extended Cyclonic Circulation over southwest BoB as of today 11th November. It will have west-northwestward movement till 12th November towards Tamil Nadu coast without intensification.	No Significant circulation over AS for the next three days.
NCMRWF-NEPS	NCMRWF model indicates a Cyclonic Circulation over southwest BoB off Sri Lanka coast as of today 11th November. It will have west-northwestward movement till 12th November towards Tamil Nadu coast without intensification.	No Significant circulation over AS.
ECMWF	ECMWF model indicates a Cyclonic Circulation over southwest BoB as of today 11th November. It will have west-northwestward movement till 13th November towards Tamil Nadu coast without intensification.	No Significant circulation over AS.
NCEP-GFS	IMD-GFS model indicates a Cyclonic Circulation over southwest BoB off Sri Lanka coast as of today 11th November. It will have west-northwestward movement till 12th November towards Tamil Nadu coast without intensification.	No Significant circulation over AS.

Summary:

(a) Bay of Bengal:

Most of the models like IMD-GFS, IMD-WRF, IMD-GEFS, NCUM-Global, NCUM-Regional, NCMRWF-NEPS, ECMWF, and NCEP-GFS are indicating a cyclonic circulation over the southwest Bay of Bengal off Sri Lanka coast as of today the 11th of November. All the models are also indicating its west-northwestward movement towards Tamil Nadu coast till 13th November without further intensification.

(b) Arabian Sea

Most of the models are indicating no significant cyclonic circulation over Arabian Sea for the next seven days.

Inference:

Considering various environmental conditions and model guidance, it is inferred that:

Under the influence of the cyclonic circulation over southwest Bay of Bengal, low pressure area has formed over the same region at 1430 hrs IST of today, the 11th Nov 2024. The associated cyclonic circulation extends upto 5.8 km above mean sea level tilting southwestwards with height. It is likely to move slowly nearly westwards towards Tamil Nadu/Sri Lanka coasts during next 2-days.

No fresh cyclogenesis is likely over the Bay of Bengal & Arabian Sea for the next seven days.

Probability of cyclogenesis (formation of depression and above intensity systems) over the Bay of Bengal 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

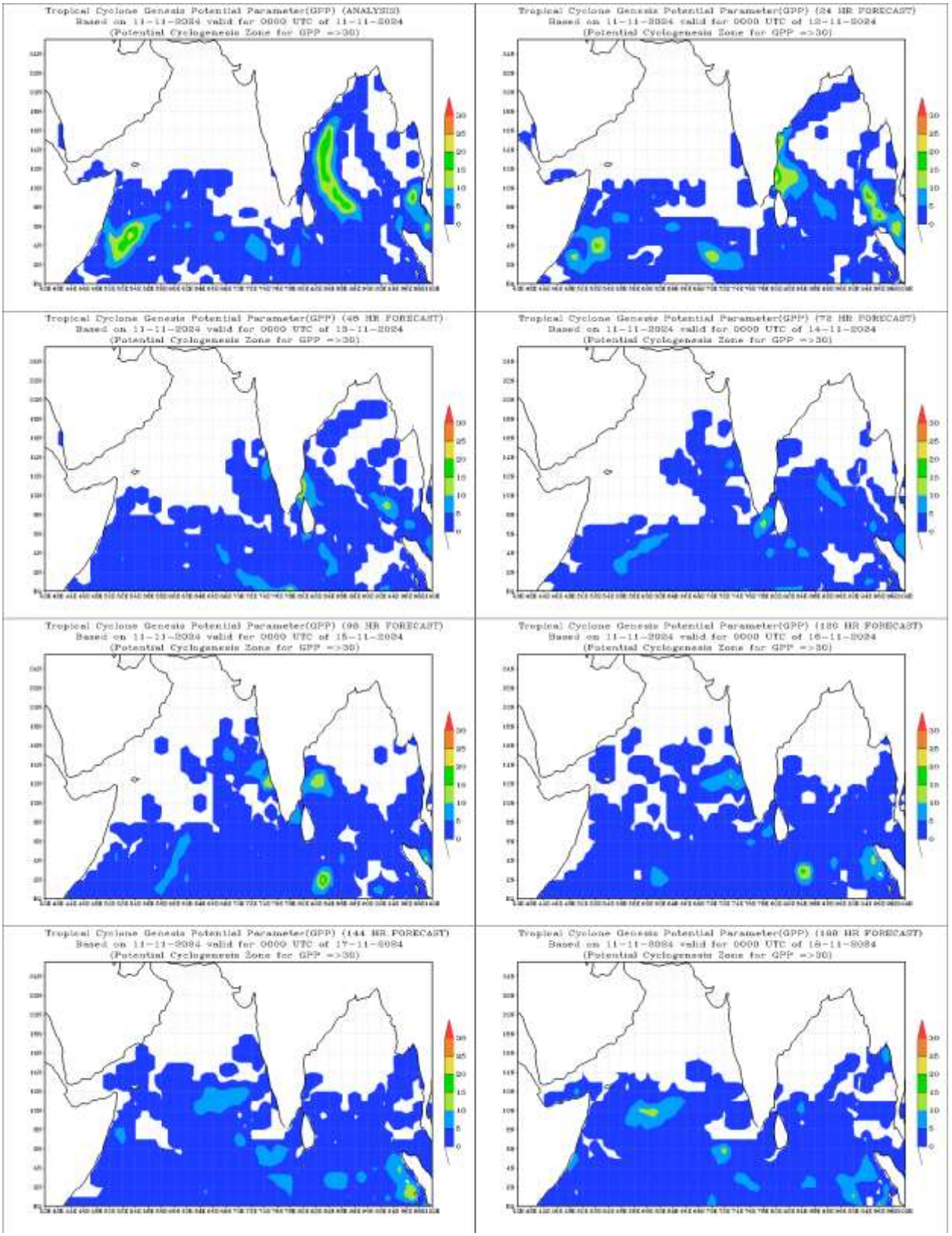
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

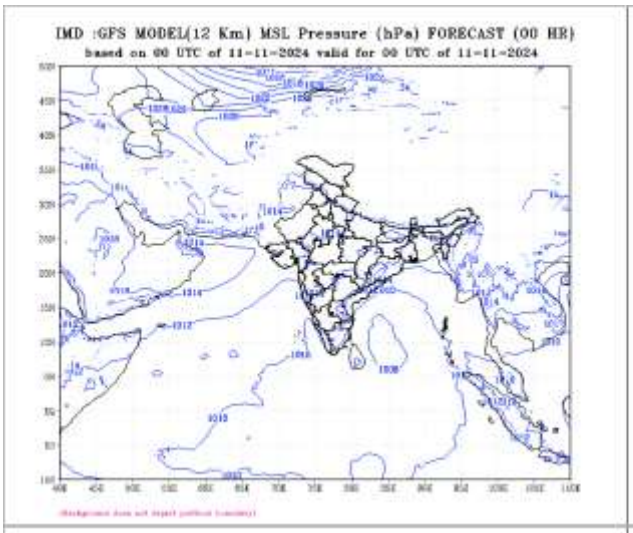
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

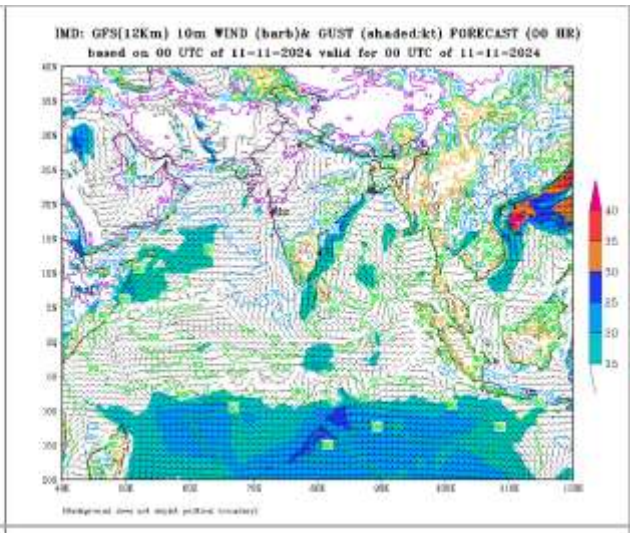
"-"indicates genesis has already occurred.
Probability is indicated as NIL for 0%, LOW for 1-33%, MOD for 34-67% and High for 68-100%.

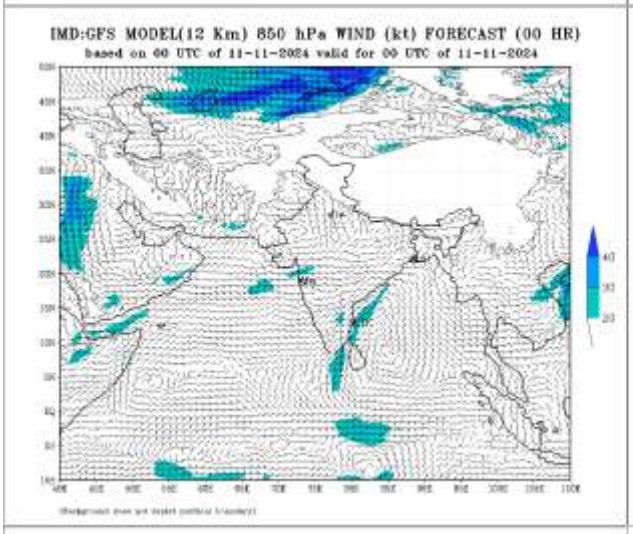
Intense Observation Period (IOP): NIL

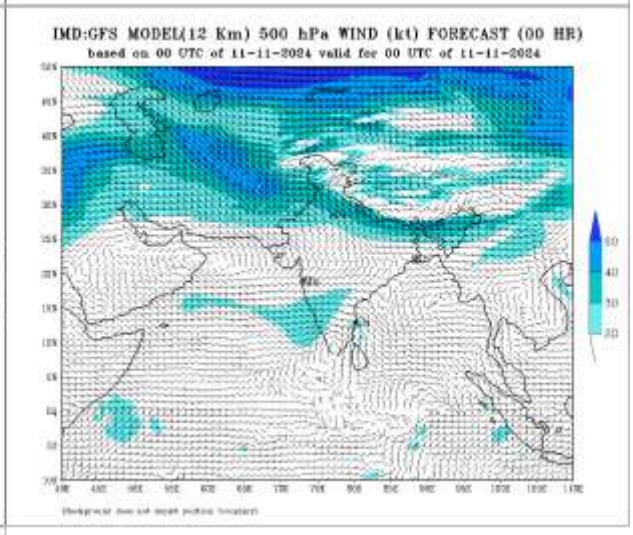
ANNEXURE

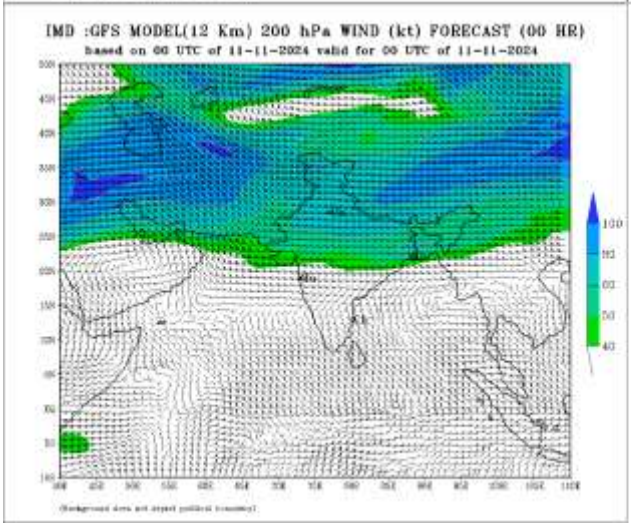

Tropical Cyclone Genesis Potential Parameter(GPP) (ANALYSIS)
Based on 11-11-2024 valid for 0000 UTC of 11-11-2024
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (24 HR FORECAST)
Based on 11-11-2024 valid for 0000 UTC of 12-11-2024
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (48 HR FORECAST)
Based on 11-11-2024 valid for 0000 UTC of 13-11-2024
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (72 HR FORECAST)
Based on 11-11-2024 valid for 0000 UTC of 14-11-2024
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (96 HR FORECAST)
Based on 11-11-2024 valid for 0000 UTC of 15-11-2024
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (120 HR FORECAST)
Based on 11-11-2024 valid for 0000 UTC of 16-11-2024
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (144 HR FORECAST)
Based on 11-11-2024 valid for 0000 UTC of 17-11-2024
(Potential Cyclogenesis Zone for GPP =>30)
Tropical Cyclone Genesis Potential Parameter(GPP) (168 HR FORECAST)
Based on 11-11-2024 valid for 0000 UTC of 18-11-2024
(Potential Cyclogenesis Zone for GPP =>30)

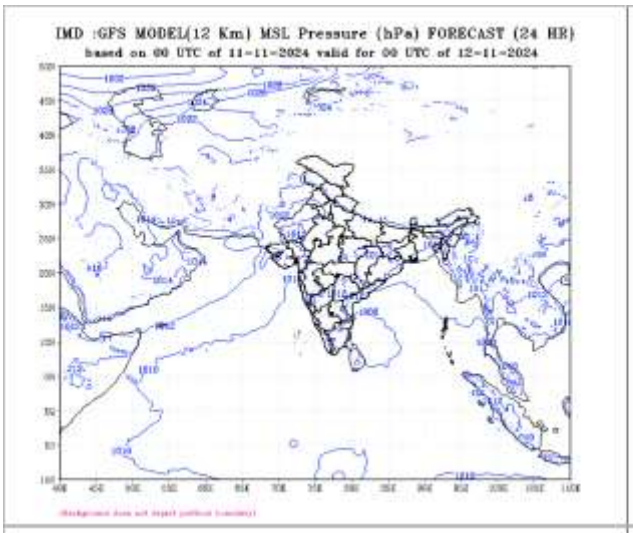

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 11-11-2024

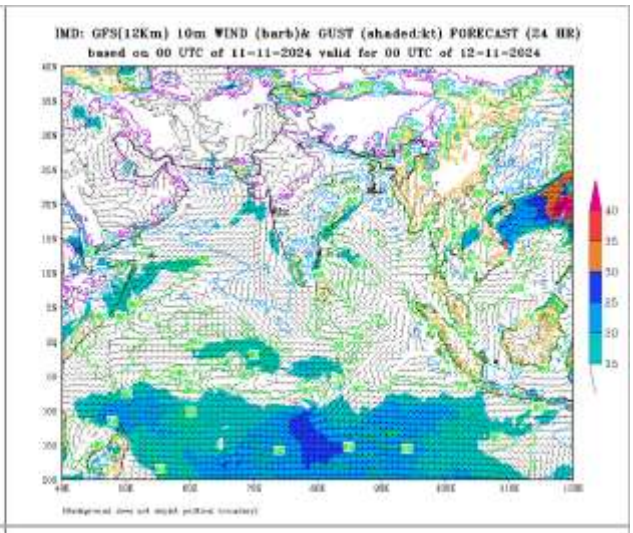

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (00 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 11-11-2024

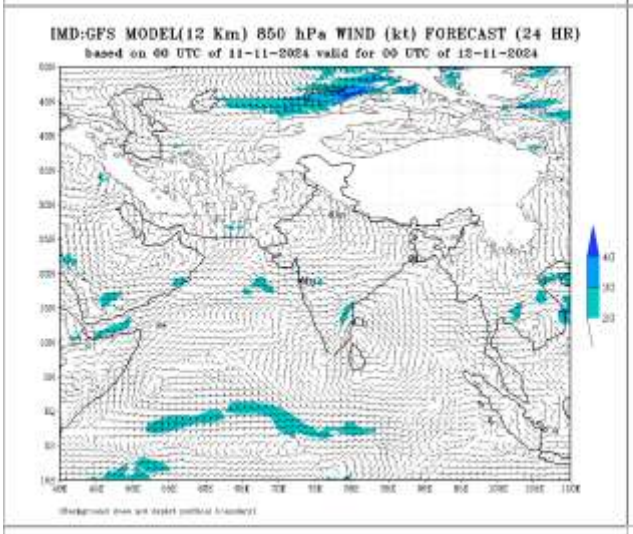

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (00 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 11-11-2024

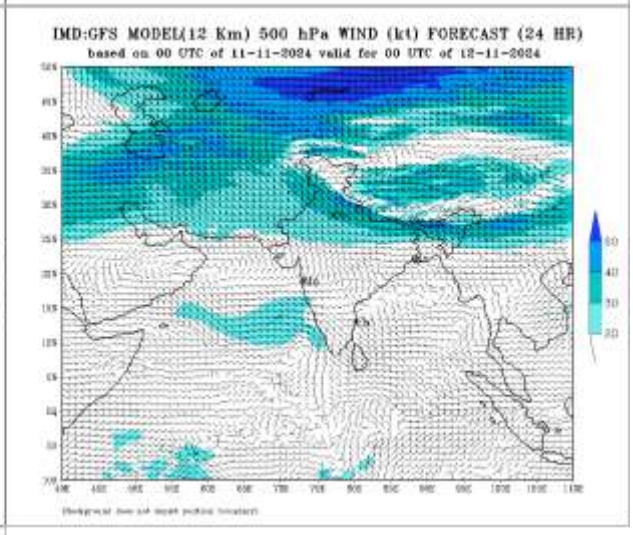

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (00 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 11-11-2024

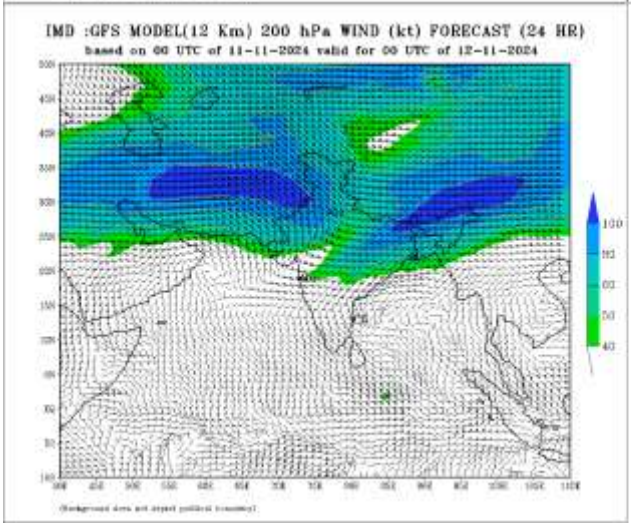

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (00 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 11-11-2024

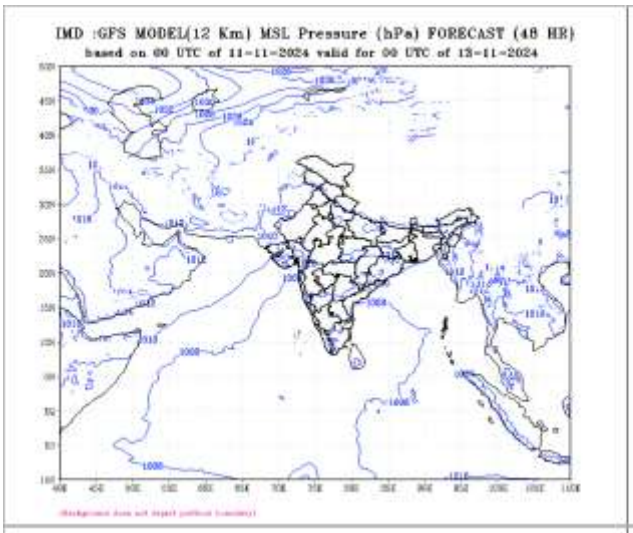

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 12-11-2024

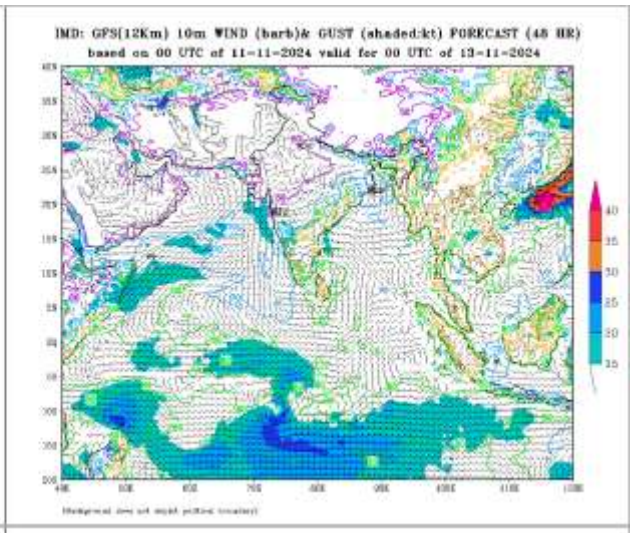

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (24 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 12-11-2024

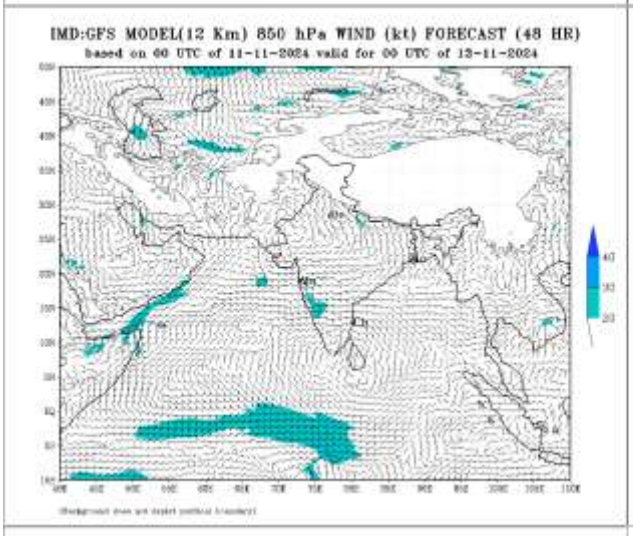

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 12-11-2024

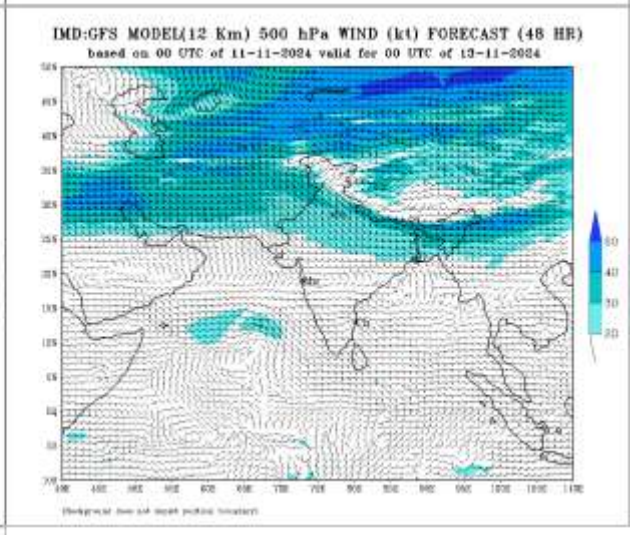

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 12-11-2024

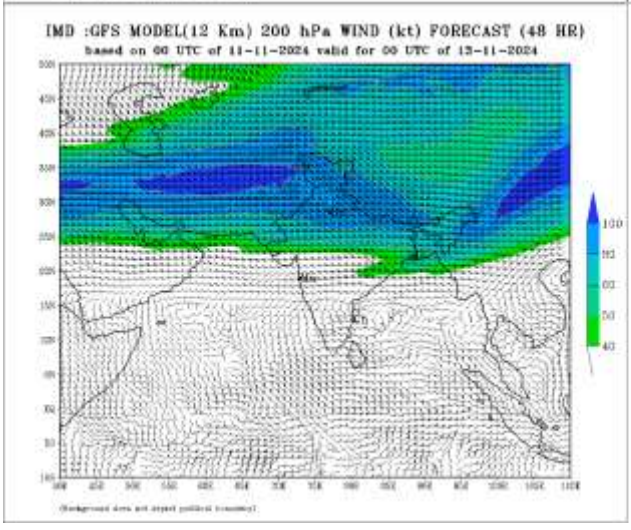

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 12-11-2024

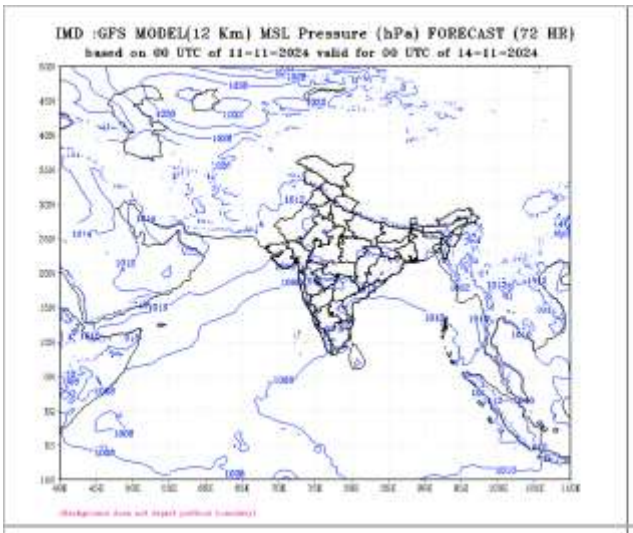

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 13-11-2024

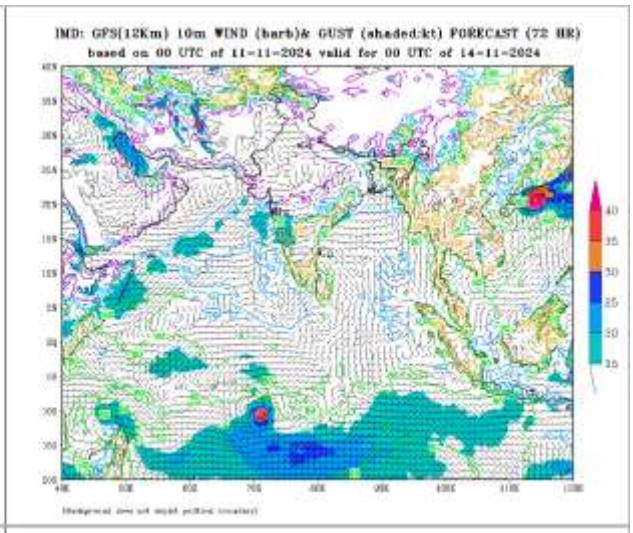

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (48 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 13-11-2024

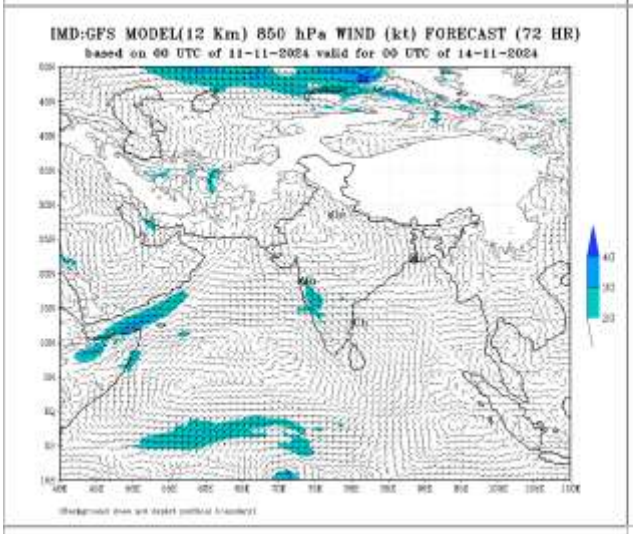

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 13-11-2024

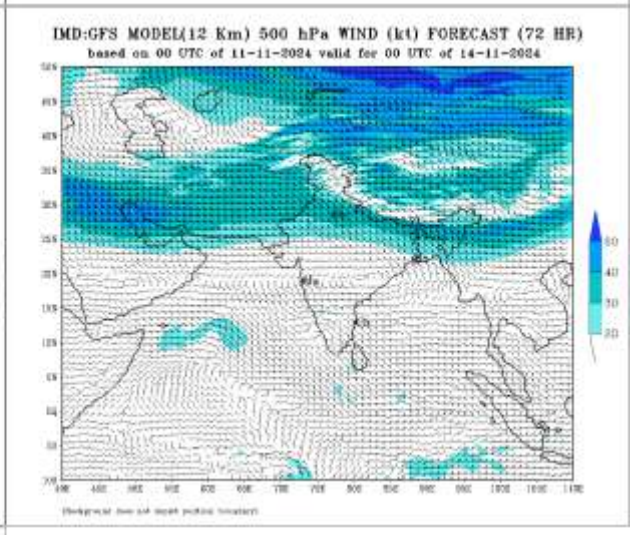

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 13-11-2024

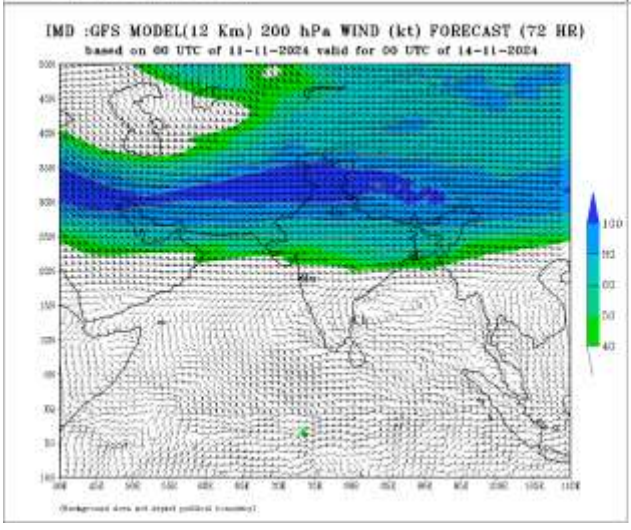

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 13-11-2024

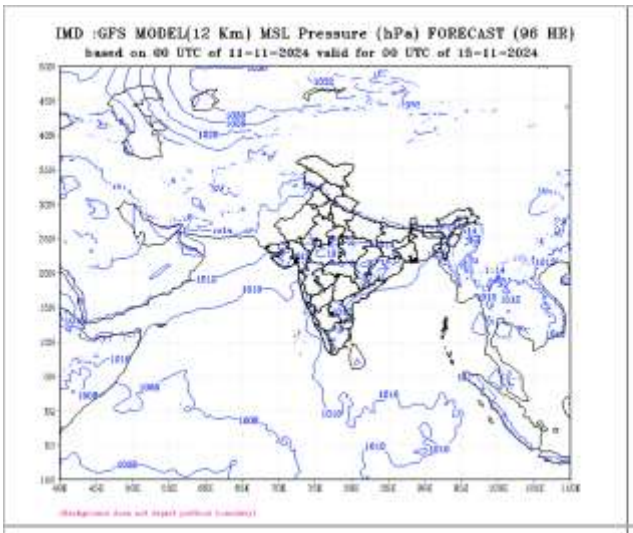

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (72 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 14-11-2024

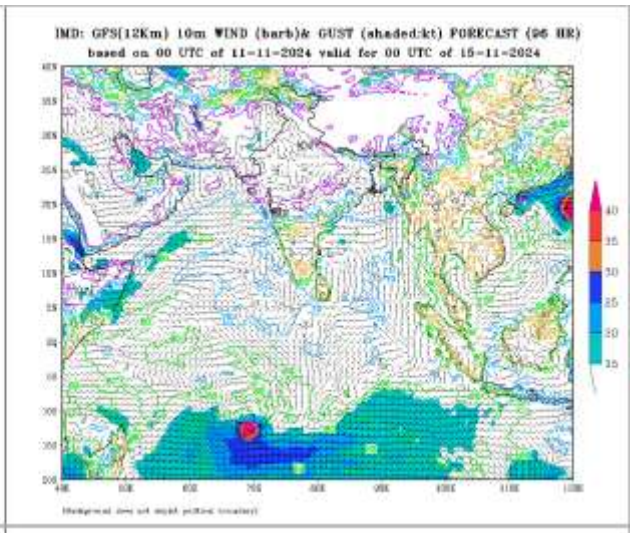

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (72 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 14-11-2024

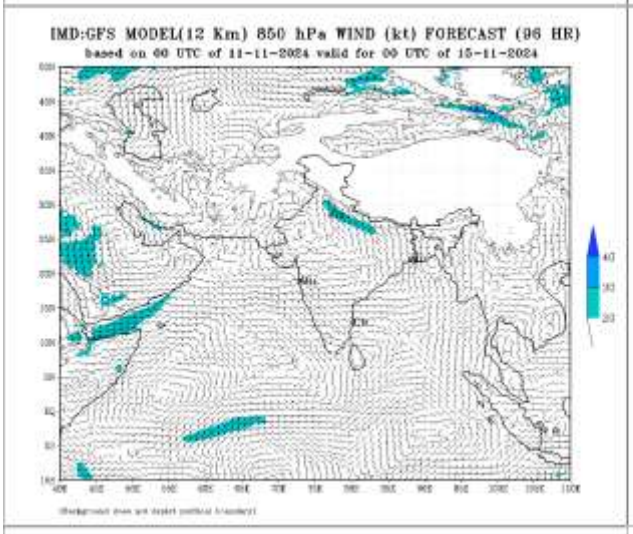

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 14-11-2024

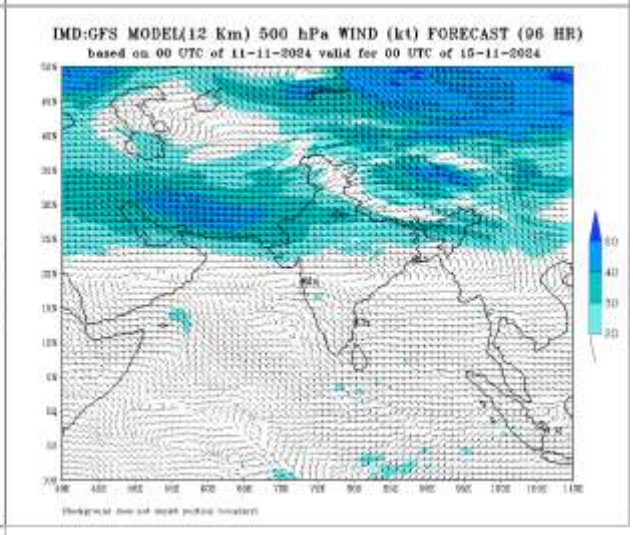

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 14-11-2024

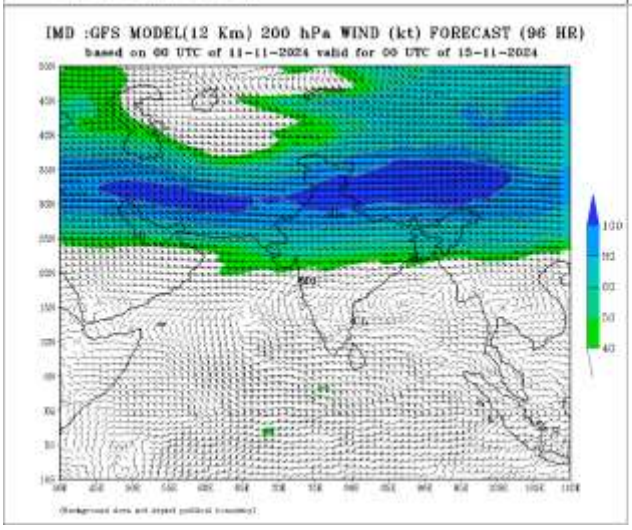

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 14-11-2024

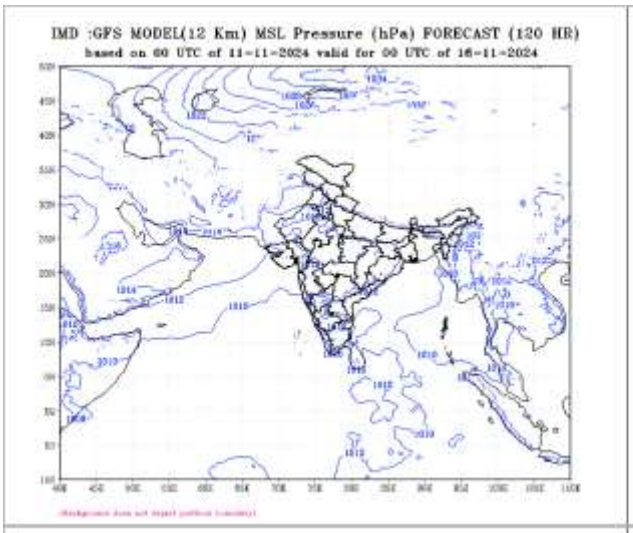

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (96 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 15-11-2024

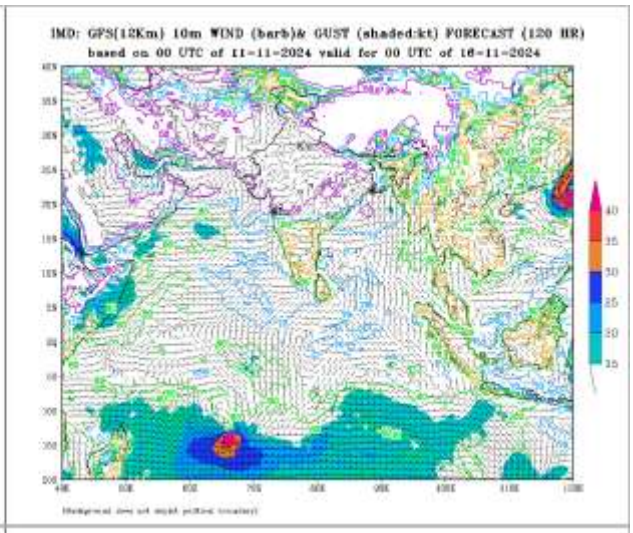

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (96 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 15-11-2024

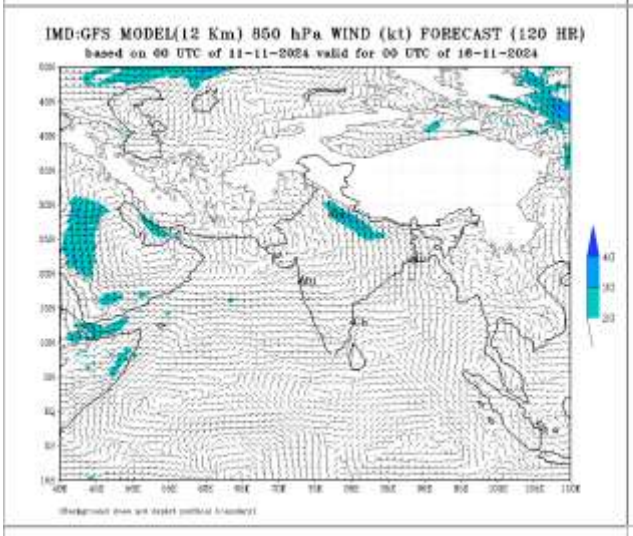

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 15-11-2024

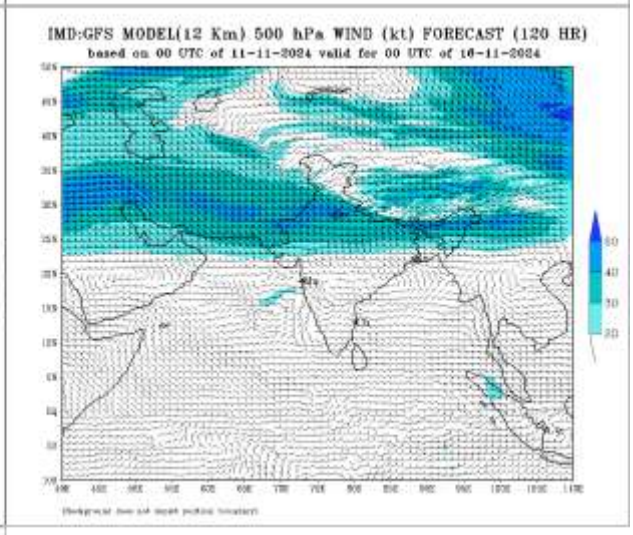

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 15-11-2024

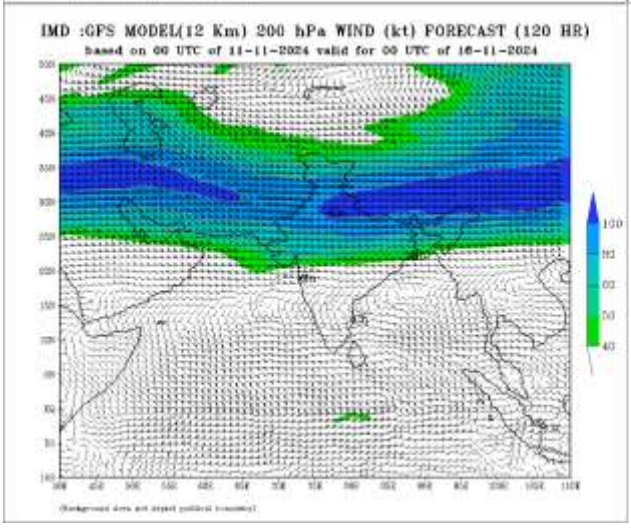

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 15-11-2024

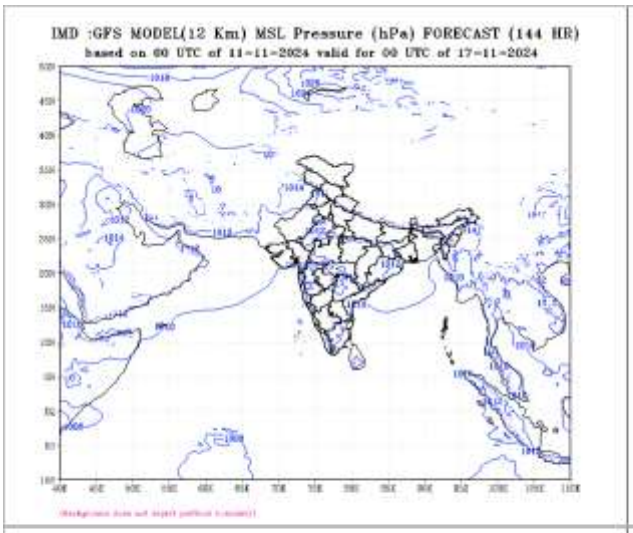

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (120 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 16-11-2024

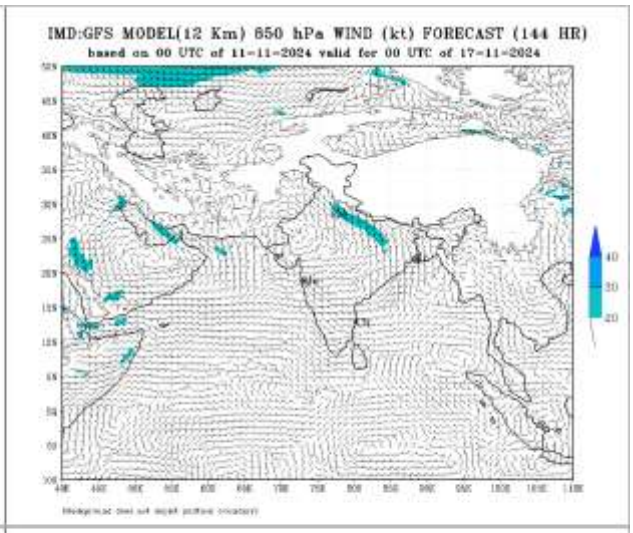

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (120 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 16-11-2024

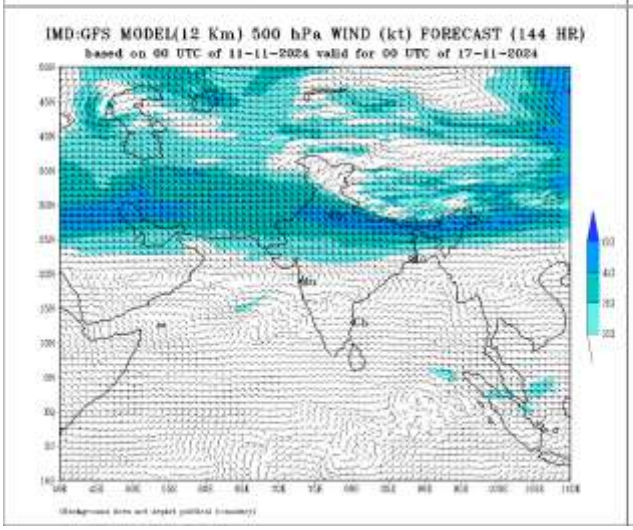

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (120 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 16-11-2024

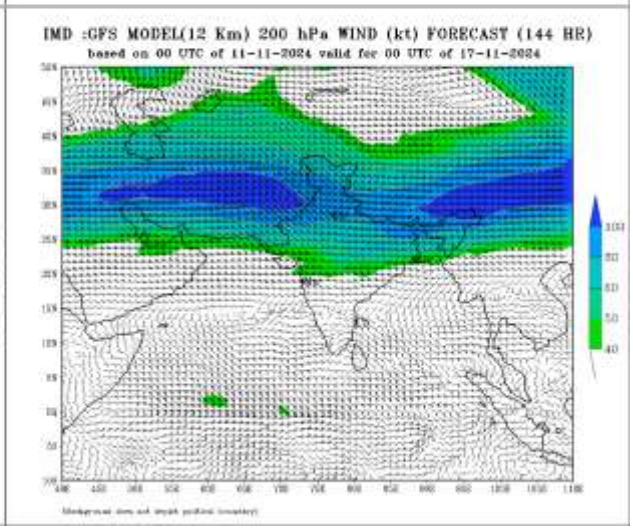

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (120 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 16-11-2024

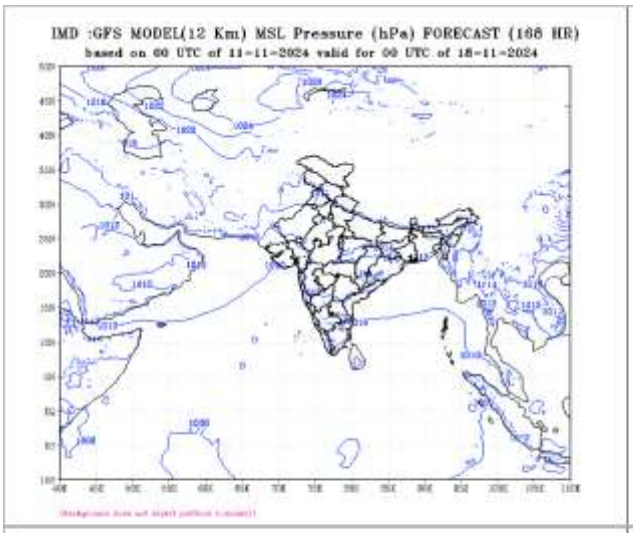

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (120 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 16-11-2024

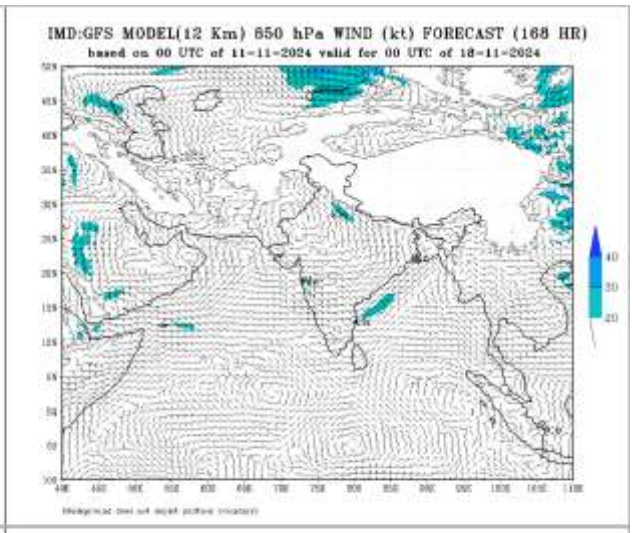

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (144 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 17-11-2024

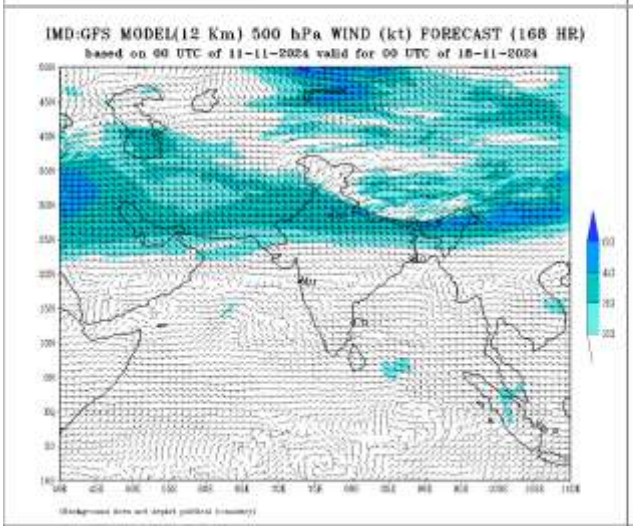

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 17-11-2024

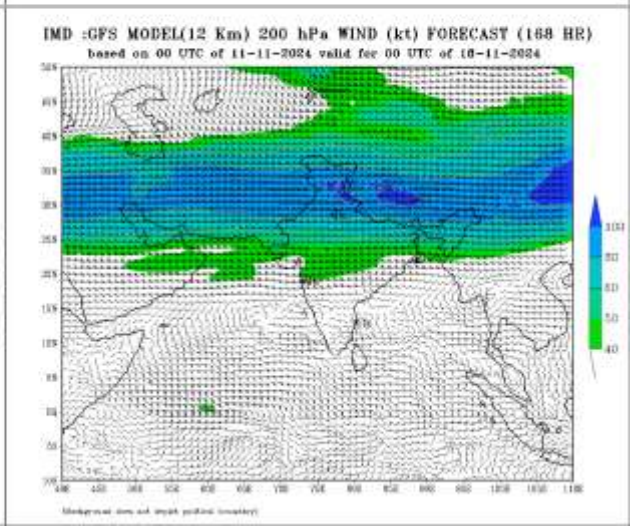

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 17-11-2024


IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 17-11-2024


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (168 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 18-11-2024


IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 18-11-2024


IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 18-11-2024


IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (168 HR)
based on 00 UTC of 11-11-2024 valid for 00 UTC of 18-11-2024