



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

**Tropical Cyclone Forecast Programme
Report Dated 09th November 2024**

Time of Issue: 1100 UTC

Synoptic features (based on 0300 UTC analysis):

- Yesterday's cyclonic circulation over southwest Bay of Bengal extending upto 3.6 km above mean sea level persisted over the same area at 0300 UTC of today, the 09th of November, 2024. Under its influence, a low-pressure area is likely to form over the same area during the next 36 hrs. It is likely to move slowly nearly westwards towards the Tamil Nadu/Sri Lanka coasts during the subsequent 2-days.
- Yesterday's cyclonic circulation over southeast Arabian Sea & adjoining Lakshadweep area now lies over central parts of south Arabian Sea at 3.1 km above mean sea level at 0300 UTC of today, the 09th of November, 2024.

Environmental Features:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	➤ 28-30°C over the entire BoB.	➤ 26-28°C over east AS ➤ 29-30°C over the west AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	➤ 160-180 over most parts of east BoB & 100-120 over adjoining parts of BoB ➤ 40-60 over remaining parts of BoB	➤ 90-100 over southeast AS and adjoining southwest AS & EIO. ➤ <40 over westcentral & southwest AS off Oman & Somalia coasts. ➤ 60-70 over rest of the Arabian Sea.
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	➤ 30-40 over southwest BoB off Sri Lanka coasts ➤ 30-40 over parts of eastcentral BoB off Myanmar coast and adjoining north Andaman Islands .	30-40 over southwest AS
Low Level convergence (X10⁻⁵ s⁻¹)	➤ 5-10 over eastcentral BoB & adjoining Andaman Sea and Andaman Islands area. ➤ 5-10 over Sri Lanka & adjoining southwest BoB.	5-10 over south AS
Upper-Level divergence (X10⁻⁵ s⁻¹)	10-20 over eastcentral BoB off Myanmar coast. 5-10 over southwest BoB and Sri Lanka.	5-10 over parts of southwest AS.

Vertical Wind Shear (VWS knots) Low: 05-10 knots Moderate: 10-20 knots High: >20 knots	➤ High over north, central BoB and north Andaman Sea. ➤ Low to Moderate over rest of BoB.	➤ High over North AS ➤ Low to Moderate over remaining AS.
Wind Shear Tendency (knots)	Decreasing eastcentral BoB, north Andaman Sea and increasing over remaining BoB.	Decreasing over Lakshadweep area and increasing over the rest of AS
Upper tropospheric Ridge	At 14 ⁰ N.	At 17 ⁰ N.

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 the South Bay of Bengal, eastcentral Bay of Bengal, Andaman Sea and Gulf of Martaban. Scattered low and medium clouds with embedded weak to moderate convection lay over westcentral Bay of Bengal.

b) Over the Arabian Sea:

Scattered low and medium clouds with embedded intense to very intense convection lay over South Arabian Sea and moderate to intense convection lay over Westcentral Arabian Sea, Maldives & Comorian Area.

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection lay over Sri Lanka, Palk strait, Gulf of Mannar, Maldives, China, Myanmar, Thailand, Gulf of Thailand, Sumatra, Strait of Malacca, Malaysia, Borneo, south China sea, Java Islands & sea, Celebes Islands & sea, Philippines, east China sea, Yellow sea and over Indian Ocean between latitude 5.0⁰ N to 20.0⁰ S longitude 50.0⁰ E to 100.0⁰ E.

M.J.O. Index:

Madden Julian Oscillation (MJO) index is currently in Phase 1 with an amplitude greater than 1. It will move to phase 2 by 10th Nov and remain there till 12th Nov with decreasing amplitude. It will then enter into phase 3 on 13th Nov with an amplitude less than 1.

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

Vortex (Yinxing) over South China Sea (Area 50) centered near 18.8N / 114.6E. Intensity T5.0/5.5. Maximum sustained wind is 90-119 knots. Associated broken low and medium clouds with embedded intense to very intense convection lay over area between Latitude 16.0 N to 23.0 N, Longitude 113.0 E to 118.0 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 Cyclonic Circulation over southwest BoB as of today 09 th November. It will remain over the same region till 10 th November and then it will have west-northwestward movement towards Sri Lanka-Tamil Nadu coast till 13 th November without intensification.	No Significant circulation over AS.
IMD-GEFS	IMD-GEFS model indicates Cyclonic Circulation over southwest BoB as on today 09 th November, it will have west-northwestward movement towards Sri Lanka-Tamil Nadu coast till 13 th November without intensification.	No Significant circulation over AS.
IMD-WRF	IMD-WRF model indicates Cyclonic Circulation over southwest BoB as of today 09 th November, having west-northwestward movement towards Tamil Nadu coast.	No Significant circulation over AS.
NCMRWF-NCUM(G)	NCMRWF model indicates Cyclonic Circulation over southwest BoB as of today 09 th November. It will remain over the same region till 10 th November and then it will have west-northwestward movement towards Sri Lanka-Tamil Nadu coast till 13 th November without intensification.	No Significant circulation over AS.
NCMRWF-NCUM(R)	NCMRWF-regional model indicates Cyclonic Circulation over southwest BoB as on today 09 th November, it will have northwestward movement towards north Tamil Nadu-south Andhra Pradesh coast.	No Significant circulation over AS.
NCMRWF-NEPS	NCMRWF-NEPS model indicates Cyclonic Circulation over southwest BoB as on today 09 th November, it will have west-northwestward movement towards Tamil Nadu coast till 12 th November without intensification.	No Significant circulation over AS.
ECMWF	ECMWF model indicates Cyclonic Circulation over southwest BoB as on today 09 th November, it is not indicating any movement till 10 th morning. Later it will have westward movement towards Tamil Nadu coast till 12 th November without intensification.	No Significant circulation over AS.

NCEP-GFS	NCEP-GFS indicates Cyclonic Circulation over southwest BoB as on today 09 th November, it will have west-northwestward movement towards Sri Lanka-Tamil Nadu coast till 13 th November without intensification.	No Significant circulation over AS.
-----------------	---	-------------------------------------

Summary:

(a) Bay of Bengal:

Most of the models like IMD-GFS, IMD-GEFS, NCUM-Global, NCMRWF-NEPS, ECMWF, and NCEP-GFS are indicating a cyclonic circulation over the southwest Bay of Bengal as of today the 9th of November, having its west-north-westwards movement towards Tamil Nadu coast till 12th/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:

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:

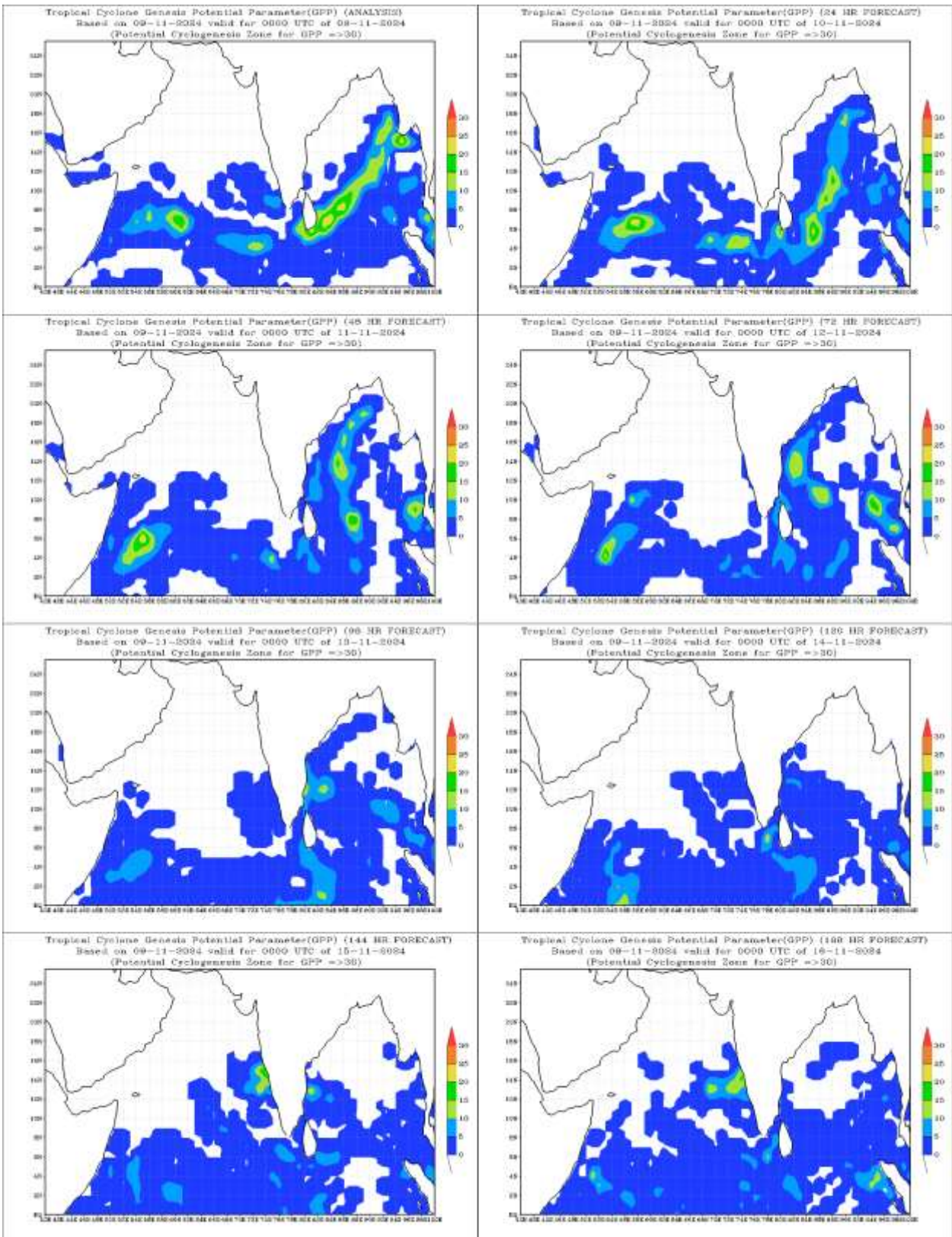
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

“-“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

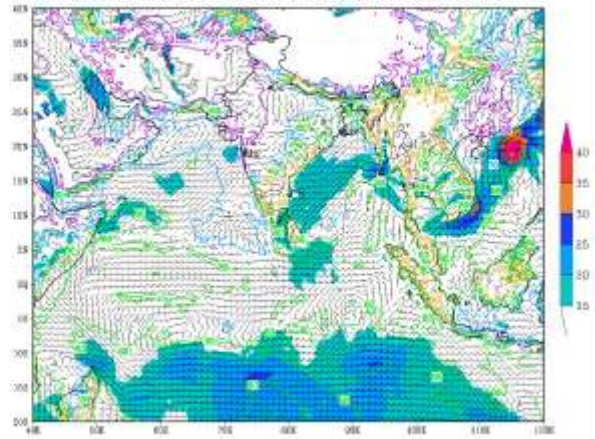


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
 based on 00 UTC of 09-11-2024 valid for 00 UTC of 09-11-2024



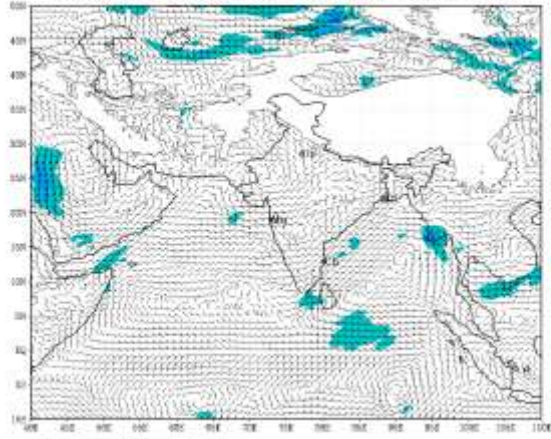
(Background area not depict political boundary)

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (00 HR)
 based on 00 UTC of 09-11-2024 valid for 00 UTC of 09-11-2024



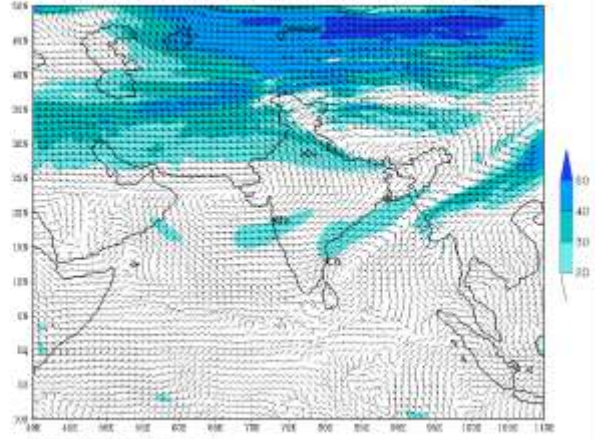
(Background area not depict political boundary)

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (00 HR)
 based on 00 UTC of 09-11-2024 valid for 00 UTC of 09-11-2024



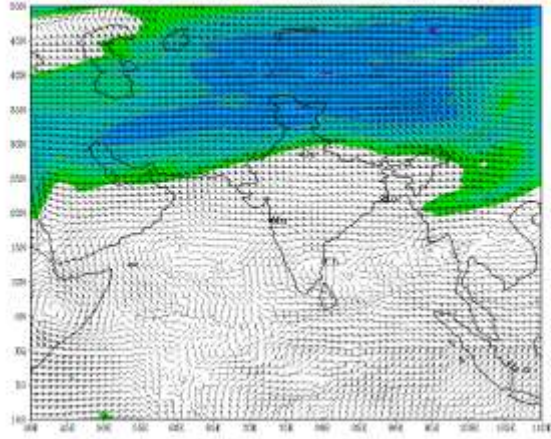
(Background area not depict political boundary)

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (00 HR)
 based on 00 UTC of 09-11-2024 valid for 00 UTC of 09-11-2024



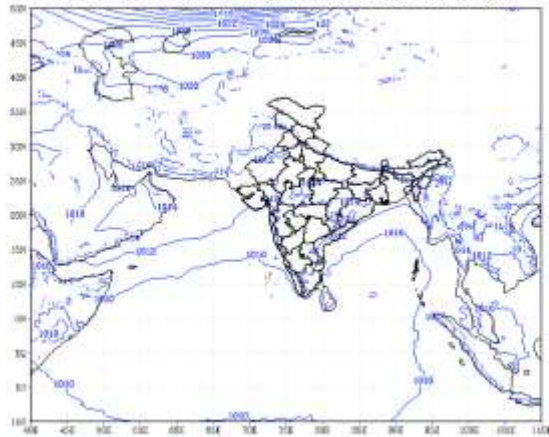
(Background area not depict political boundary)

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (00 HR)
 based on 00 UTC of 09-11-2024 valid for 00 UTC of 09-11-2024

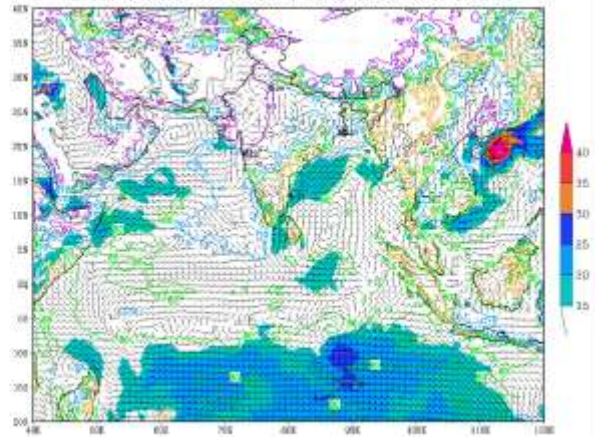


(Background area not depict political boundary)

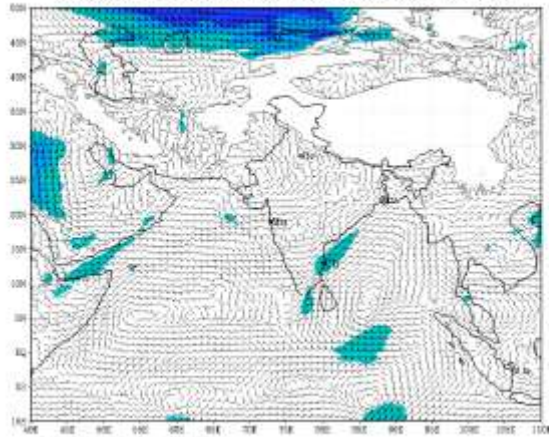
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 10-11-2024



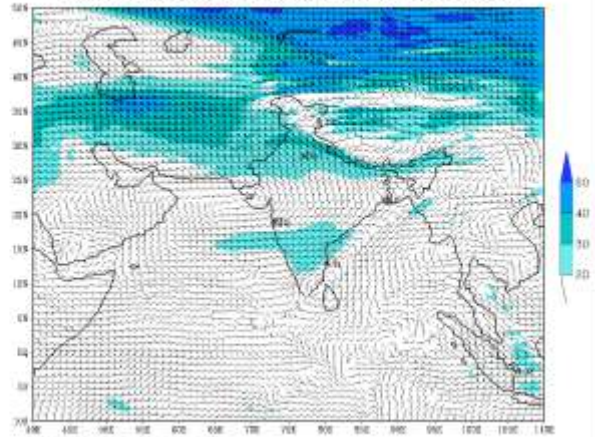
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (24 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 10-11-2024



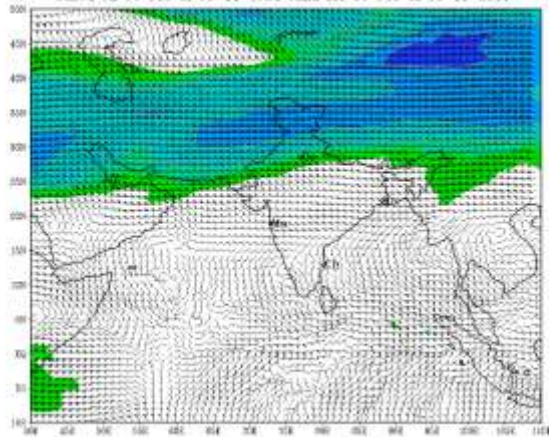
IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 10-11-2024



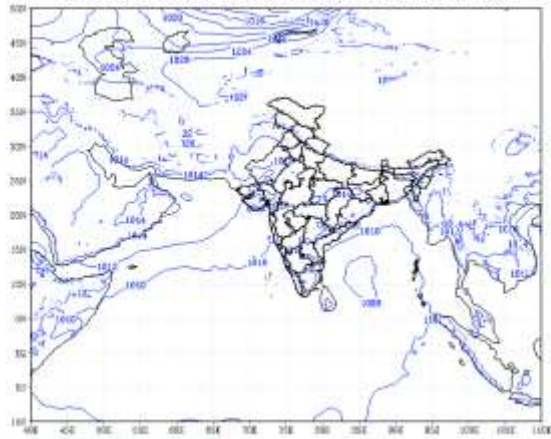
IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 10-11-2024



IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 10-11-2024

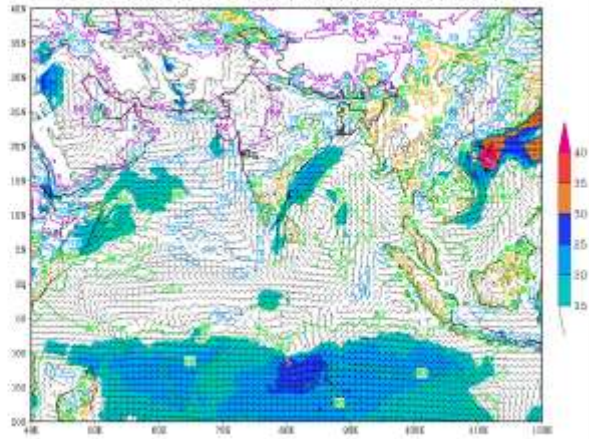


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 11-11-2024



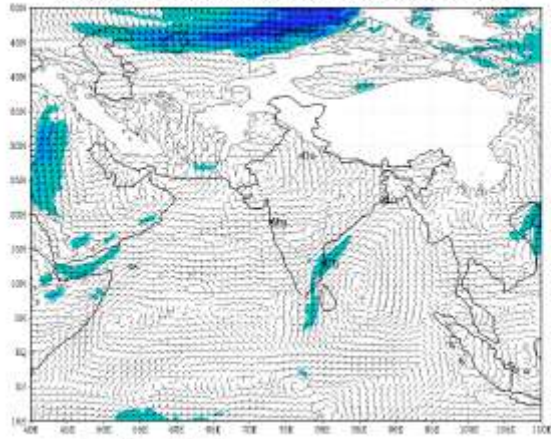
(Background area not depict political boundary)

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (48 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 11-11-2024



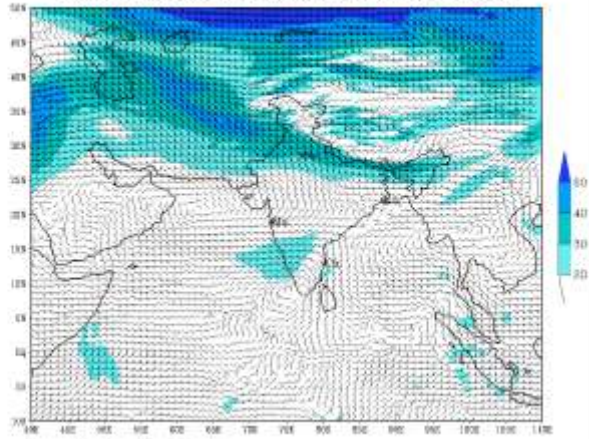
(Background area not depict political boundary)

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 11-11-2024



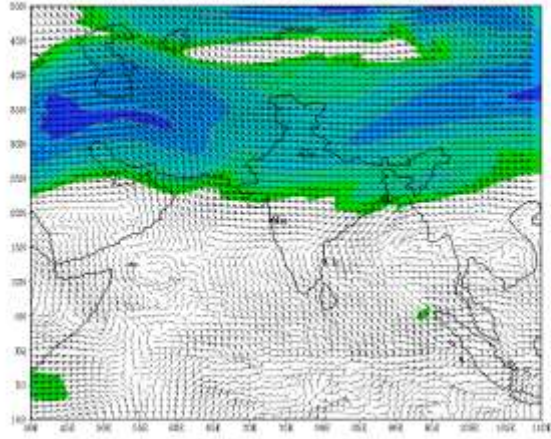
(Background area not depict political boundary)

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 11-11-2024



(Background area not depict political boundary)

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 11-11-2024

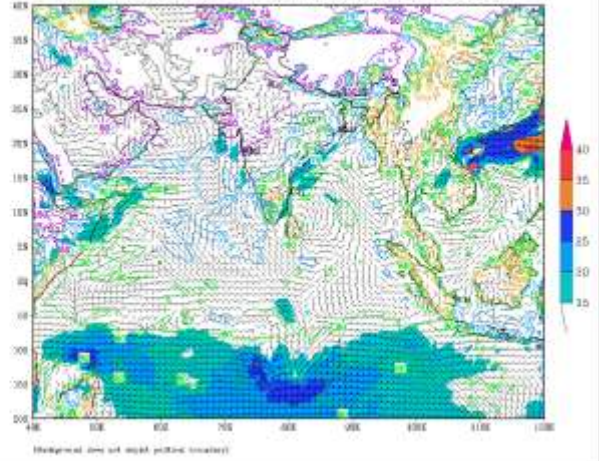


(Background area not depict political boundary)

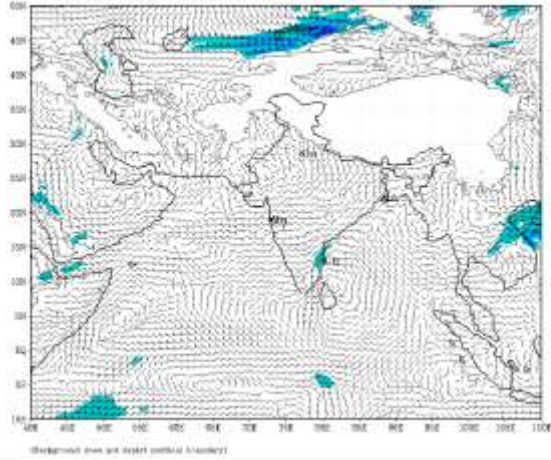
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (72 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 12-11-2024



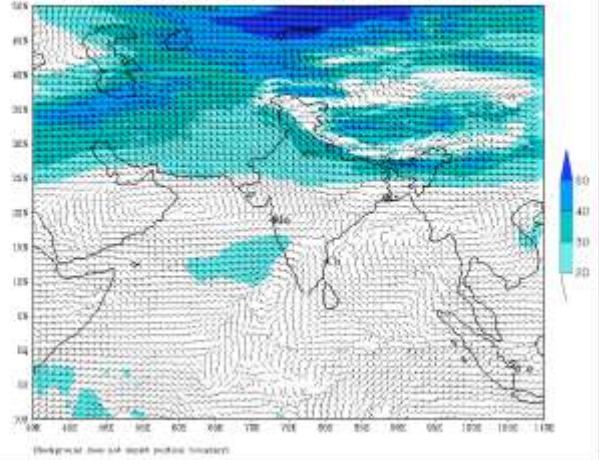
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (72 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 12-11-2024



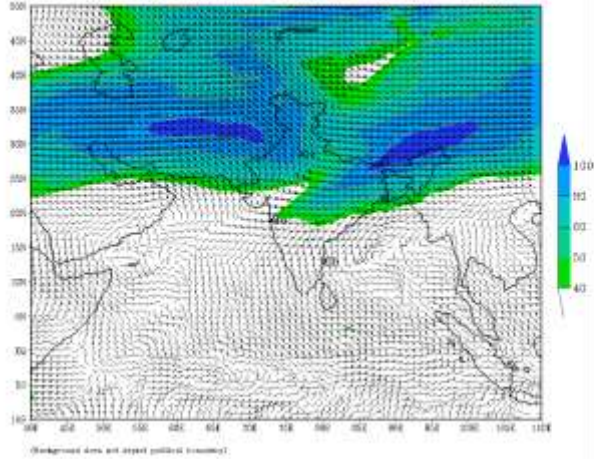
IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 12-11-2024



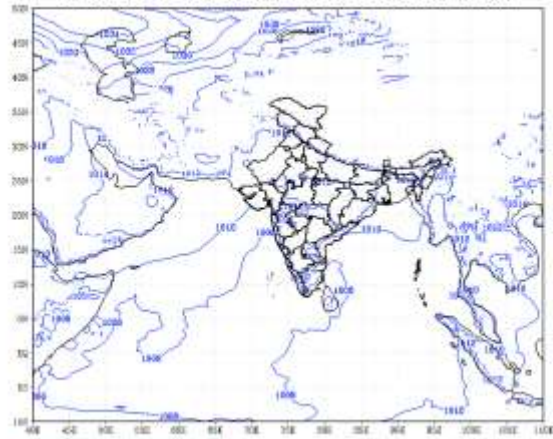
IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 12-11-2024



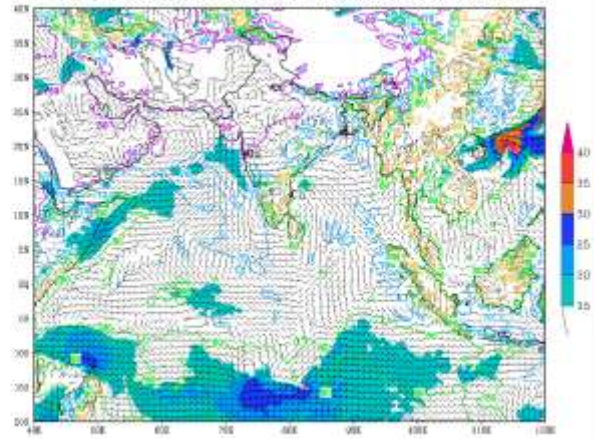
IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 12-11-2024



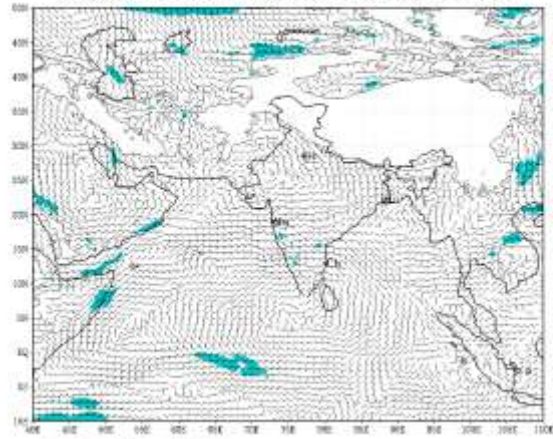
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (96 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 13-11-2024



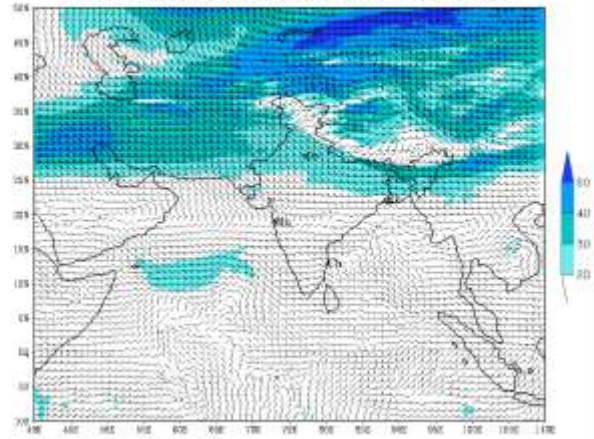
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (96 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 13-11-2024



IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 13-11-2024



IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 13-11-2024



IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 09-11-2024 valid for 00 UTC of 13-11-2024

