



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

**Tropical Cyclone Forecast Programme
Report Dated 18th November 2024**

Time of Issue: 1230 UTC

Synoptic features (based on 0300 UTC analysis):

- Yesterday's cyclonic circulation over Maldives & adjoining Equatorial Indian Ocean at 0.9 km above mean sea level has become less marked at 0300 UTC of today, the 18th November, 2024.
- A fresh cyclonic circulation lay over Comorin area & neighborhood at 0.9 km above mean sea level at 0300 UTC of today, the 18th November, 2024.

Environmental Features:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	<ul style="list-style-type: none"> ➤ 28-30°C over entire Bob and Andaman Sea. 	<ul style="list-style-type: none"> ➤ 28-30°C over entire Arabian Sea except parts of westcentral and southwest Arabian Sea off Somalia & Oman-Yemen coasts.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	<ul style="list-style-type: none"> ➤ 120-160 over northeast & east central BoB and Andaman sea & 100-130 over northwest, extreme south BoB and adjoining EIO. ➤ 40-70 over remaining parts of BoB 	<ul style="list-style-type: none"> ➤ 100-110 over southeast AS, Lakshadweep islands area off south Kerala coast and adjoining EIO. ➤ 30-60 over west central & southwest AS off Oman, Yemen & Somalia coasts. ➤ 60-80 over rest of the Arabian Sea.
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	<ul style="list-style-type: none"> ➤ 10-20 over north & extreme south BoB. 	<ul style="list-style-type: none"> ➤ 10-20 over south & adjoining central AS.
Low Level convergence (X10⁻⁵ s⁻¹)	<ul style="list-style-type: none"> ➤ 10-15 over southwest BoB & Sri Lanka. 	<ul style="list-style-type: none"> ➤ 5 over central parts of southwest Arabian Sea.
Upper-Level divergence (X10⁻⁵ s⁻¹)	<ul style="list-style-type: none"> ➤ 5 over parts of southwest BoB off Sri Lanka coast. 	<ul style="list-style-type: none"> ➤ 5-10 over central parts of southwest Arabian Sea.
Vertical Wind Shear (VWS knots) Low: 05-10 knots Moderate: 10-20 knots High: >20 knots	<ul style="list-style-type: none"> ➤ High over north & adjoining central BoB. ➤ Low-Moderate over rest of BoB. 	<ul style="list-style-type: none"> ➤ High over north & adjoining central AS. ➤ Low-Moderate over rest of AS.
Wind Shear Tendency (knots)	Decreasing over south, eastcentral BoB. Increasing over parts of westcentral BoB off north Andhra Pradesh coast.	Decreasing over eastcentral AS. Increasing over south AS, Lakshadweep islands area and Comorin area.

Upper Ridge	tropospheric	At 12 ⁰ N.	At 14 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 south Bay of Bengal and isolated moderate to intense convection lay over Andaman Sea.

b) Over the Arabian Sea:

Scattered low and medium clouds with embedded intense to very intense convection lay over south Arabian sea adjoining south parts of central Arabian sea & Comorin area. Scattered low and medium clouds with embedded moderate to intense convection lay over Lakshadweep islands area & Maldives area.

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection over north Sri Lanka, Palk Strait, Gulf of Mannar, Maldives, east China Sea, Taiwan, south Myanmar, extreme south Thailand, Gulf of Thailand, Sumatra, Strait of Malacca, Malaysia, Borneo, south China Sea, Java Islands & Sea, Celebes Islands & Sea, Philippines, Sulu Sea, Mozambique channel and over Indian Ocean between latitude 5.0⁰ N to 25.0⁰ S longitude 40.0⁰ E to 115.0⁰ E.

M.J.O. Index:

Madden Julian Oscillation (MJO) index is currently in Phase 3 with an amplitude greater than 1. It will be in the same phase with amplitude greater than 1 till 23rd November, it will be in phase 4 with amplitude close to 1 on 24th November.

Storms and Depression over East China Sea adjoining Taiwan/ South Indian Ocean:

Vortex (BHEKI) over South Indian Ocean (area E80 adjoining D60 & D40) centered near 17.2S / 69.5E. Intensity T5.0/6.0. Maximum sustained winds 90-119 knots. Associated broken low & medium clouds with embedded intense to very intense convection over area between latitude 15.0S to 22.0S longitude 67.0E to 75.0E.

Vortex (MAN-YI) over East China Sea (area F05) centered near 18.0N / 117.7E. Intensity T3.0/4.0. Maximum sustained winds 48-89 knots. Associated broken low & medium clouds with embedded intense to very intense convection over area between latitude 15.0N to 23.0N longitude 116.0E to 125.0E & north Philippines Taiwan.

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	Low pressure area/depression over southeast BoB on 23 rd Nov, depression/Deep Depression over central parts of south BoB (6 N/88 E) on 24 th Nov, VSCS over southwest BoB (12.0 N/79.5	No Significant circulation over AS.

	E) on 25 th , moving northwesterly and lay over southwest BoB (11.0 N/81 E) on 26 th as VSCS. Crossing Tamil Nadu coast near 12.0 N/80 E as VSCS/ESCS on 27/00 UTC.	
IMD-GEFS	Low pressure area over southeast BoB on 23 rd Nov, Depression over central parts of south BoB (6 N/88 E) on 24 th Nov, deep depression over southwest BoB (10.0 N/83.5 E) on 25 th , moving northwesterly and lay over southwest BoB (11.0 N/81 E) close to Tamil Nadu coast on 26 th as deep depression.	No Significant circulation over AS.
IMD-WRF	No Significant circulation over BoB.	No Significant circulation over AS.
NCMRWF-NCUM(G)	No Significant circulation over BoB during next seven days.	No Significant circulation over AS.
NCMRWF-NCUM(R)	No Significant circulation over BoB.	No Significant circulation over AS.
NCMRWF-NEPS	No Significant circulation over BoB.	No Significant circulation over AS.
ECMWF	Depression over southwest BoB (6.7 N/89.5 E) on 24 th November 00 UTC, moving westnorthwesterly and lay over southwest BoB off Sri Lanka coast (7.5 N/84.2 E) as deep depression on 25 th 12 UTC, moving then northwesterly towards Tamil Nadu coast while weakening.	An extended cyclonic circulation over southwest and adjoining southeast Arabian Sea as on today the 18 th November, having its westwards movement till 19 th November towards Somalia coasts without intensification.
NCEP-GFS	Low pressure area over southeast BoB on 23 rd Nov with westwards movement, Depression over southwest BoB on 24/00 UTC, moving west-northwestwards and lay over westcentral BoB (6.7 N/86.8 E) as deep depression/CS on 24 th 12 UTC, VSCS over southwest BoB (10 N/83.5 E) on 25 th 18 UTC, moving northwestwards towards Tamil Nadu coast and lay over southwest BoB off Tamil Nadu coast (11.5 N/82 E) as VSCS on 27 th 06 UTC, moving in the same towards Tamil Nadu coast while weakening.	No Significant circulation over AS.
GPP	Potential for cyclogenesis over southeast BoB on 23 rd Nov with westnorthwestward movement.	-

Summary:**(a) Bay of Bengal:**

Most of the models (IMD GFS, IMD GEFS, NCEP GFS, ECMWF) are indicating likely formation low pressure area over southeast Bay of Bengal around 23rd under the influence of cyclonic circulation over southeast and adjoining south Andaman Sea on 22nd November, likely formation of depression over central parts of south Bay of Bengal around 24th November. These models are also indicating the further intensification of the system and moving towards the Tamil Nadu coast and cross the Tamil Nadu coast. However, NCUM group of models are not indicating the development of depression. IMD GFS is indicating higher intensification. ECMWF is indicating intensification upto deep depression stage.

(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:

There is likelihood of formation low pressure area over southeast Bay of Bengal around 23rd November, depression over central parts of south Bay of Bengal around 24th November. The continuous watch may be maintained for probable development of cyclonic disturbance over south Bay of Bengal from 23rd November onwards.

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	LOW

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

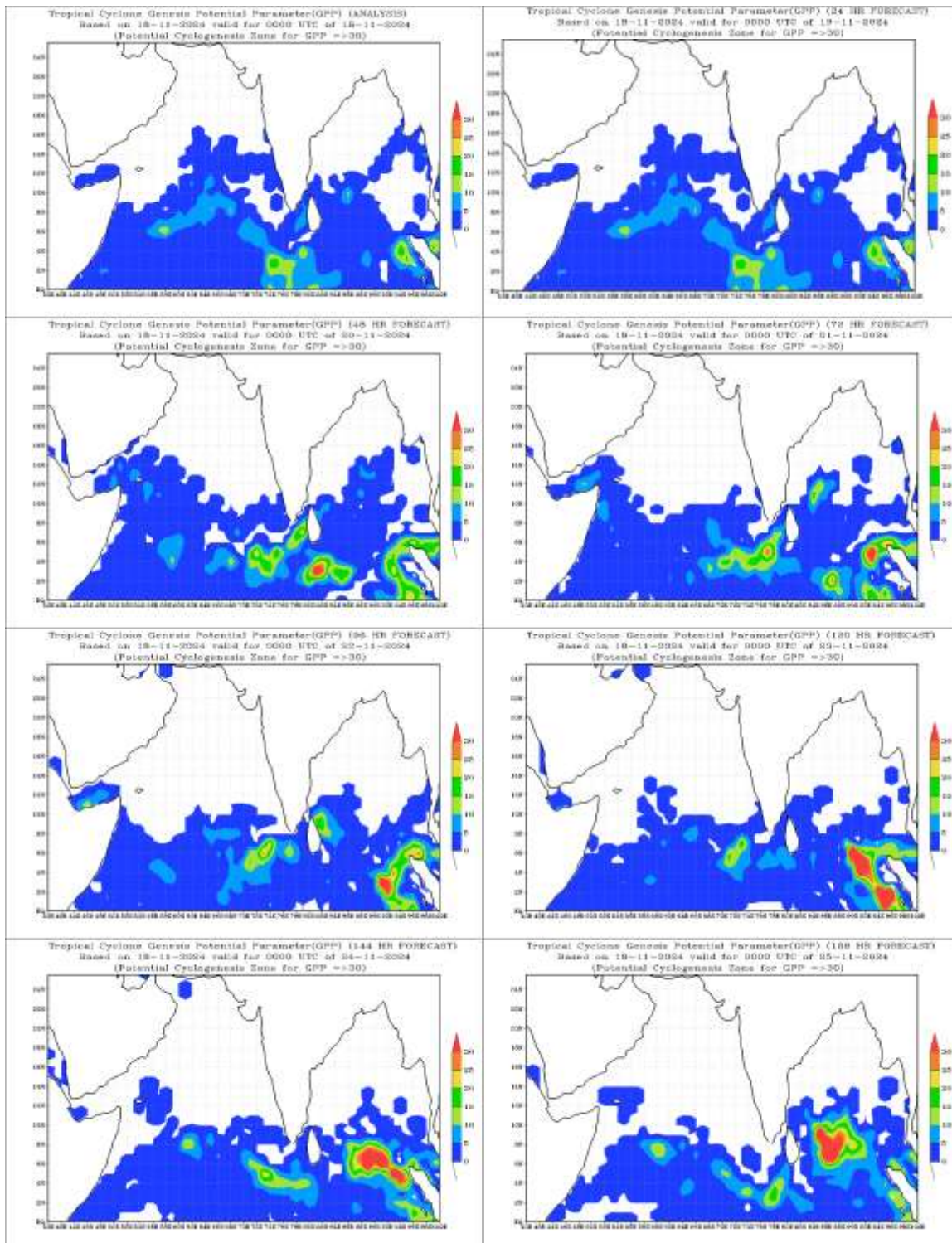
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

“- “indicates genesis has already occurred.

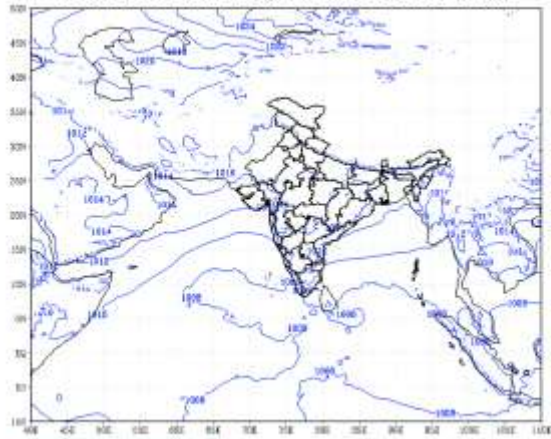
Probability is indicated as NIL for 0%, LOW for 1-33%, MOD for 34-67% and High for 68-100%.

Intense Observation Period (IOP): NIL

ANNEXURE

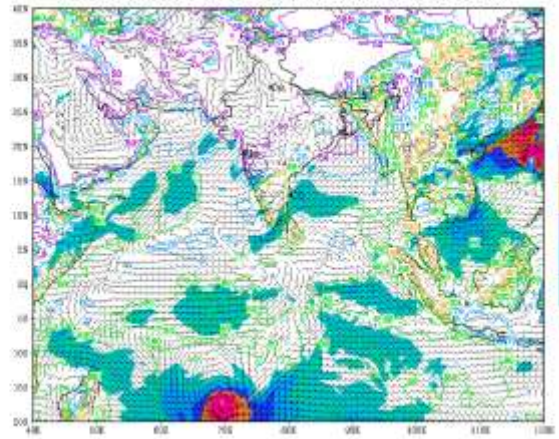


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 18-11-2024



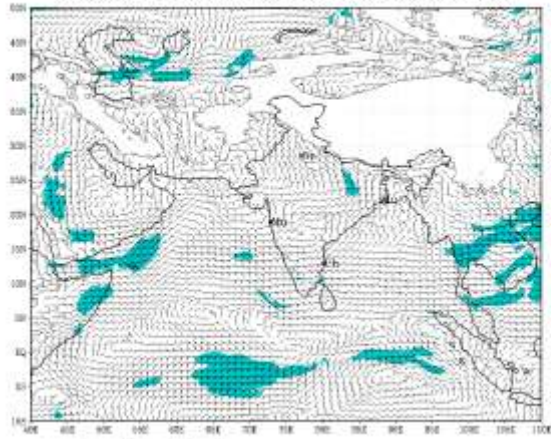
(Background area not depict political boundary)

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (00 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 18-11-2024



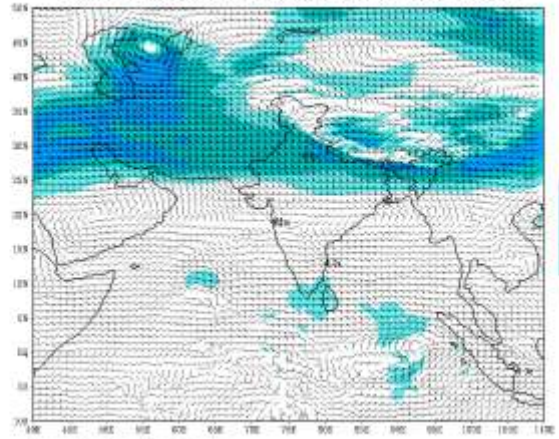
(Background area not depict political boundary)

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



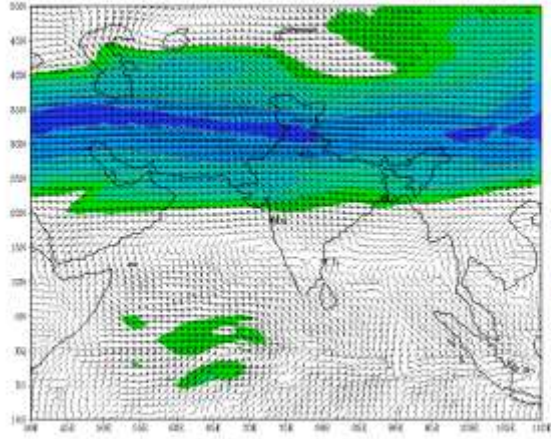
(Background area not depict political boundary)

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



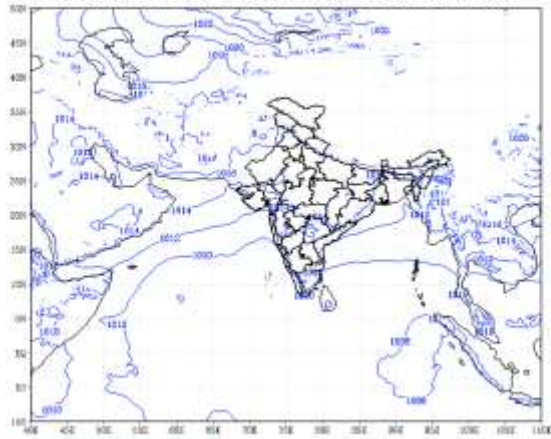
(Background area not depict political boundary)

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

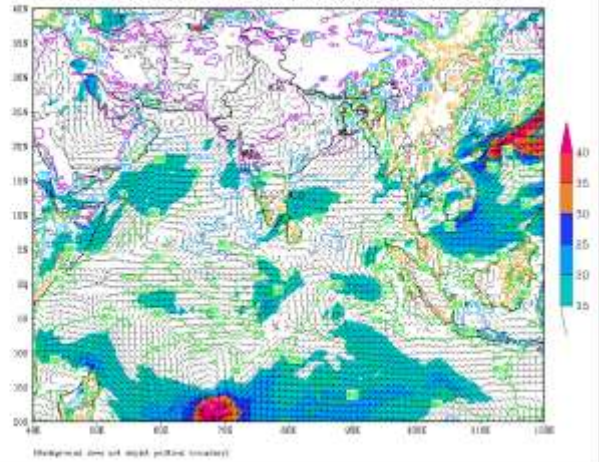


(Background area not depict political boundary)

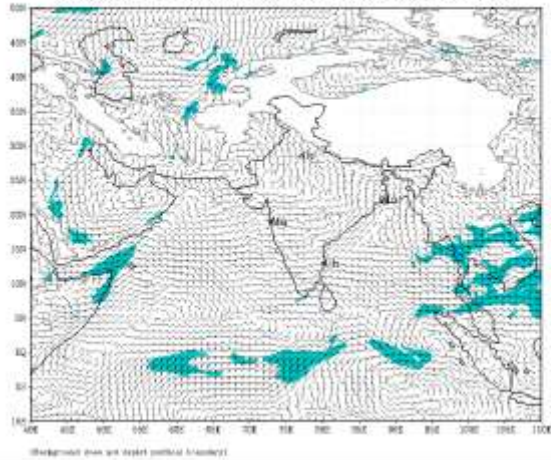
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 19-11-2024



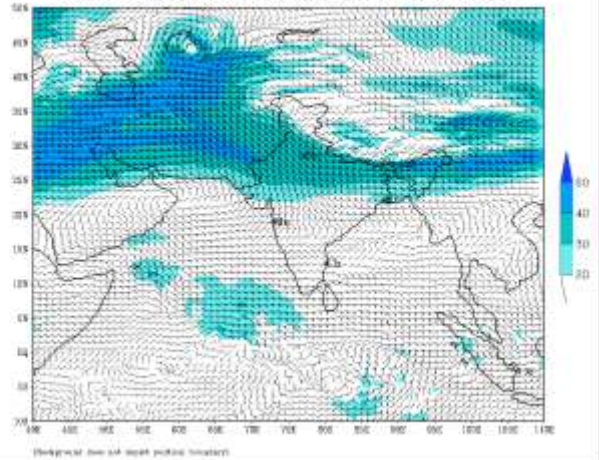
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (24 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 19-11-2024



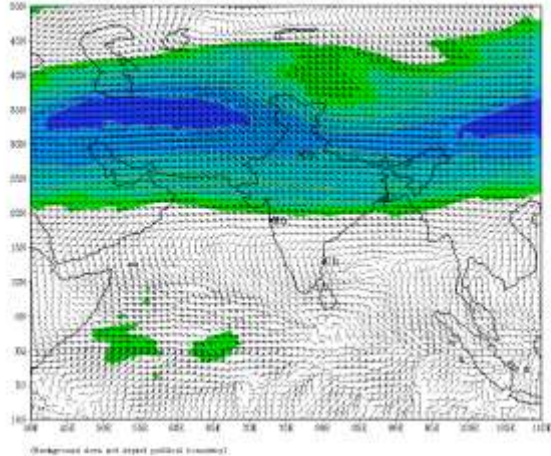
IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 19-11-2024



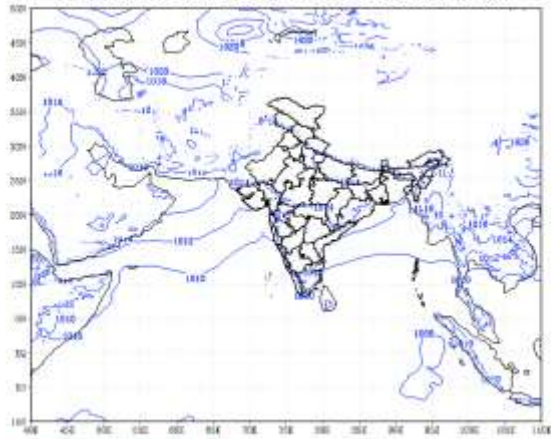
IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 19-11-2024



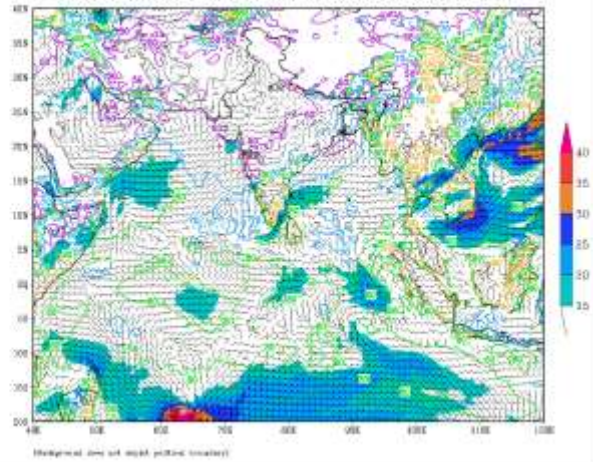
IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 19-11-2024



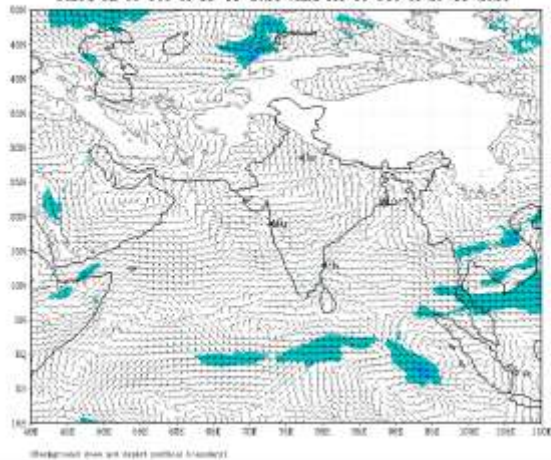
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 20-11-2024



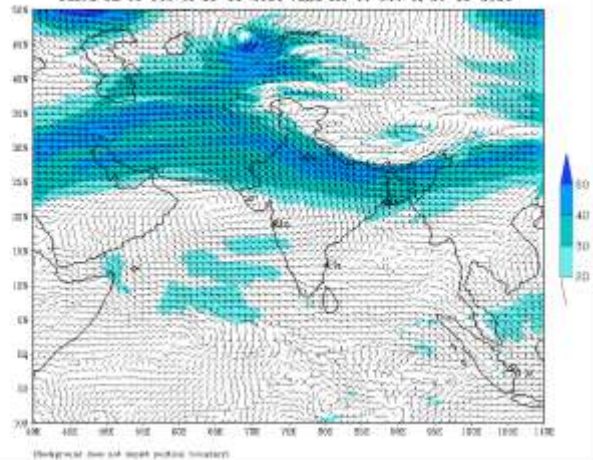
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (48 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 20-11-2024



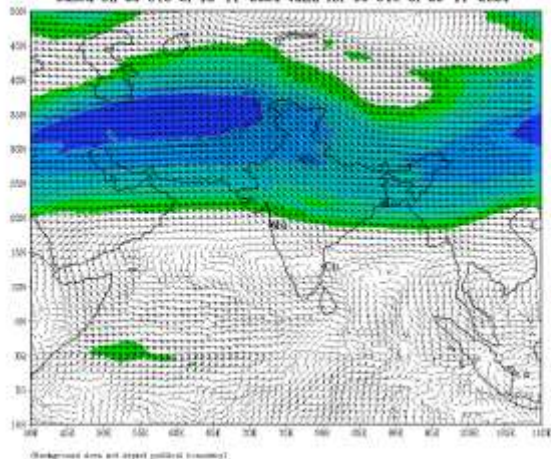
IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 20-11-2024



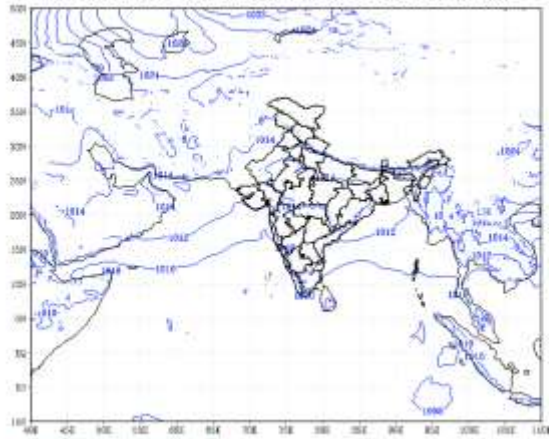
IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 20-11-2024



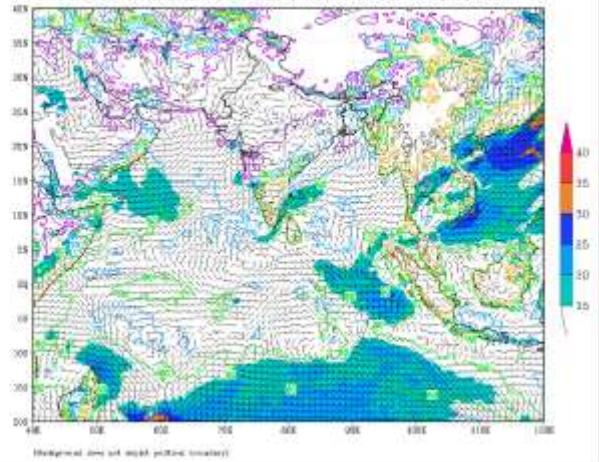
IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 20-11-2024



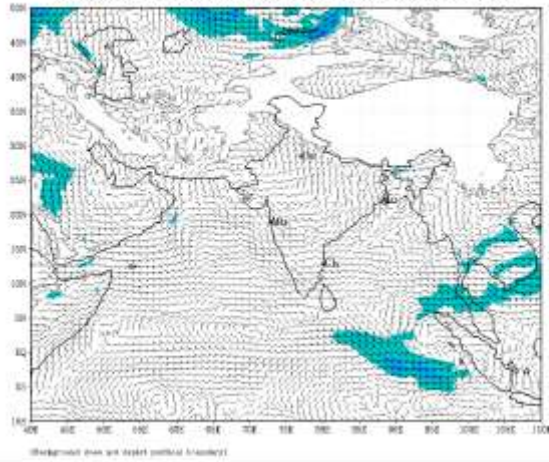
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (72 HR)
 based on 00 UTC of 18-11-2024 valid for 00 UTC of 21-11-2024



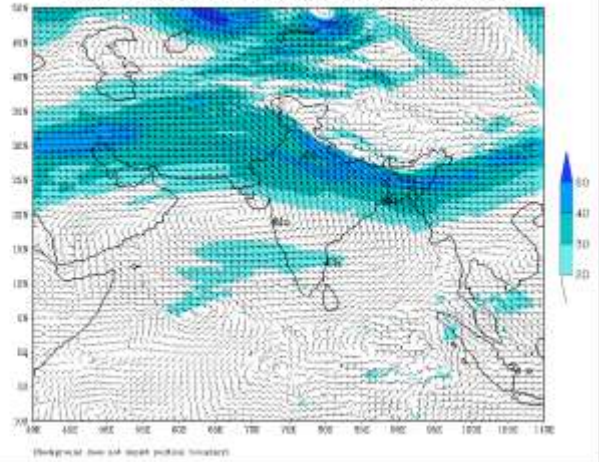
IMD :GFS MODEL(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (72 HR)
 based on 00 UTC of 18-11-2024 valid for 00 UTC of 21-11-2024



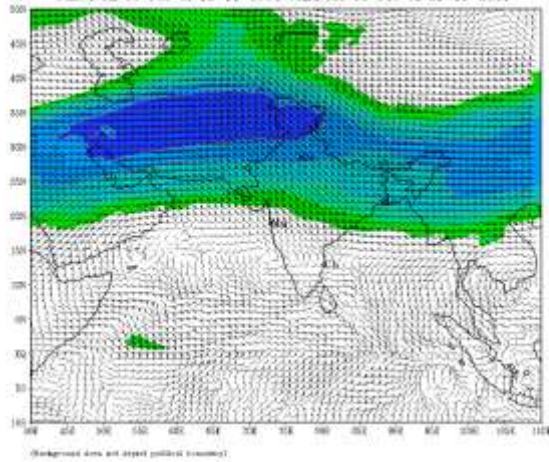
IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (72 HR)
 based on 00 UTC of 18-11-2024 valid for 00 UTC of 21-11-2024



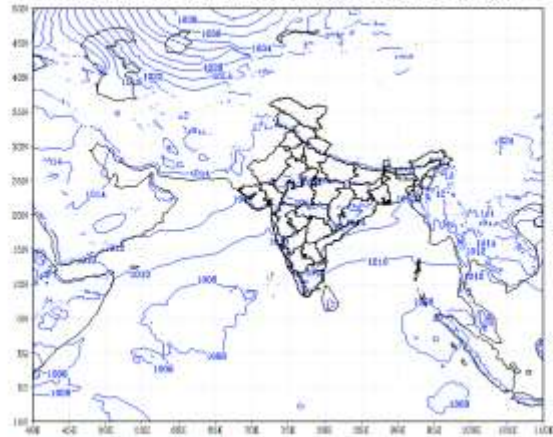
IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (72 HR)
 based on 00 UTC of 18-11-2024 valid for 00 UTC of 21-11-2024



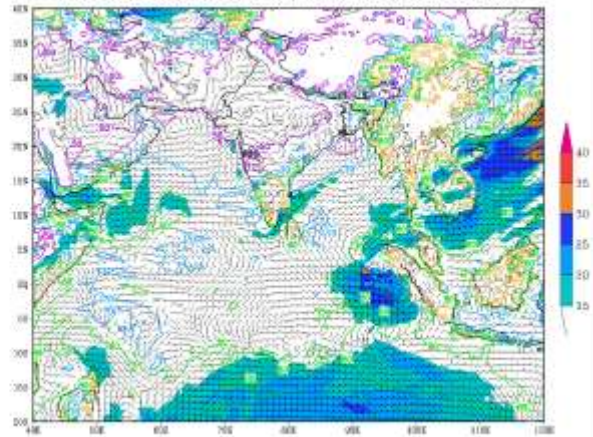
IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (72 HR)
 based on 00 UTC of 18-11-2024 valid for 00 UTC of 21-11-2024



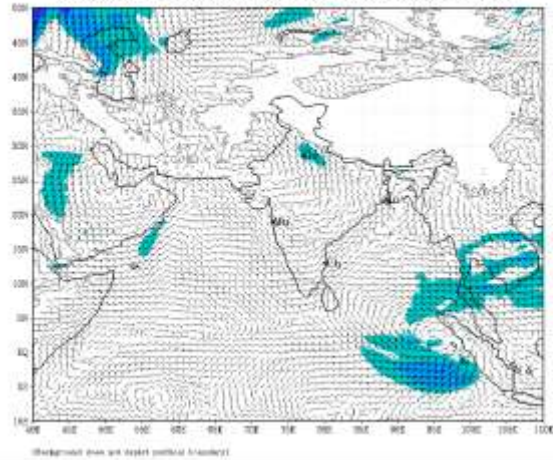
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (96 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 22-11-2024



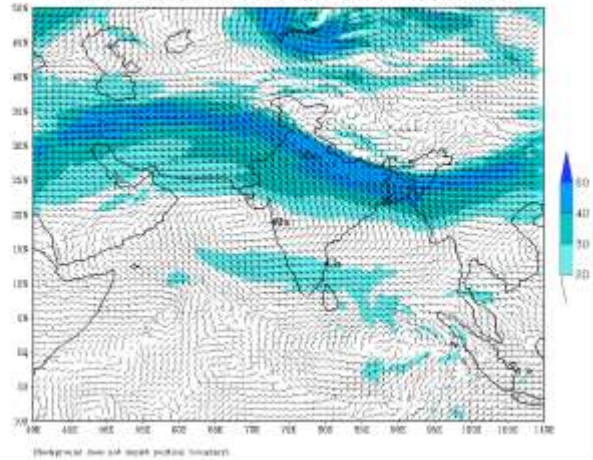
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (96 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 22-11-2024



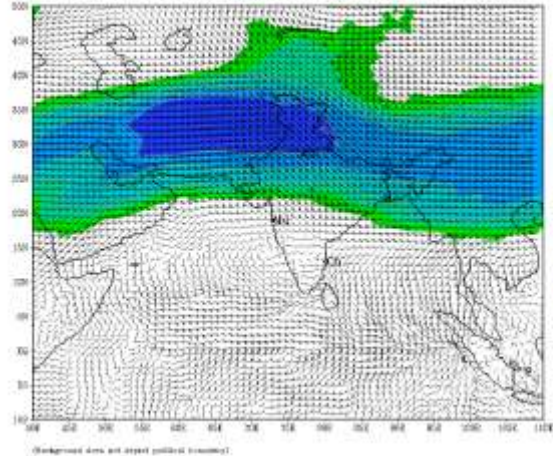
IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 22-11-2024

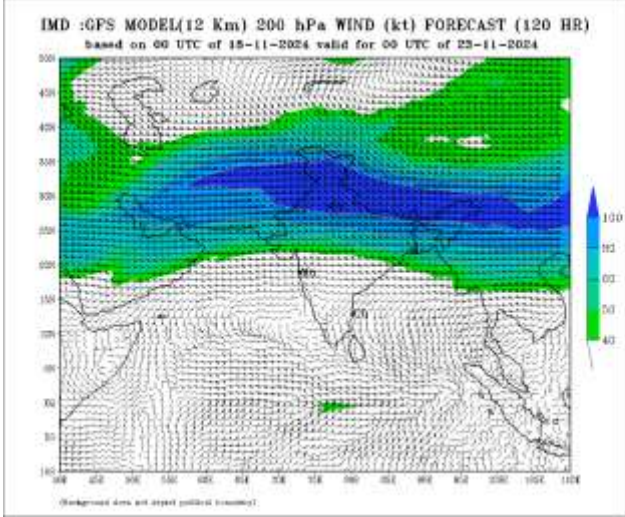
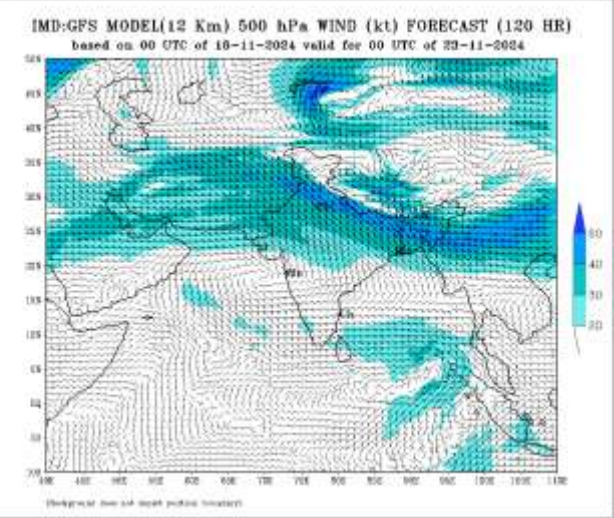
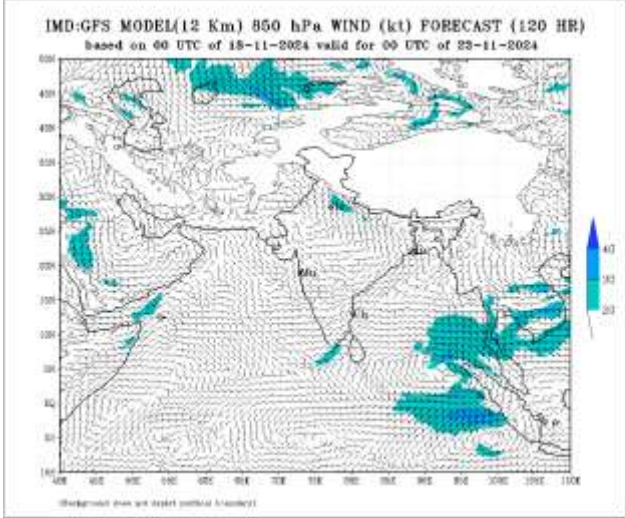
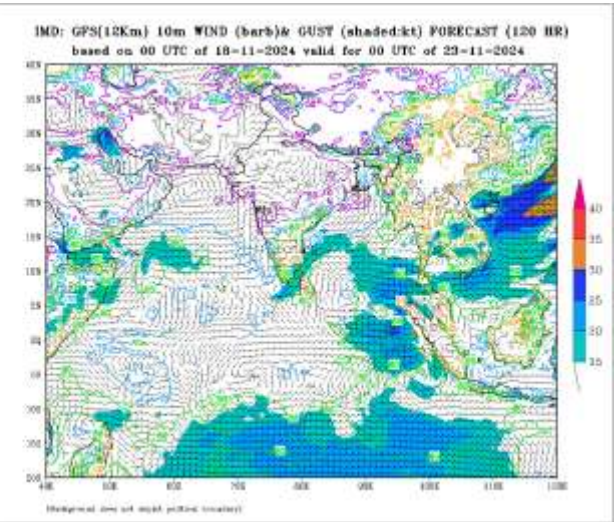
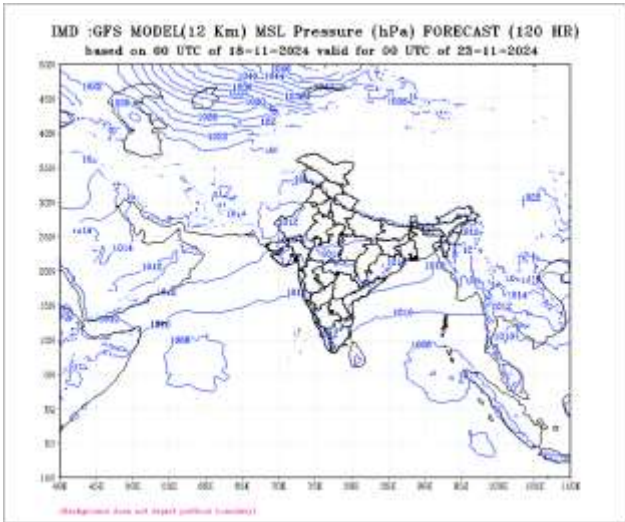


IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 22-11-2024

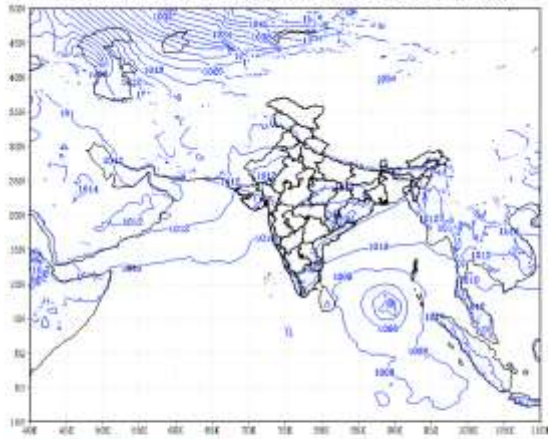


IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (96 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 22-11-2024



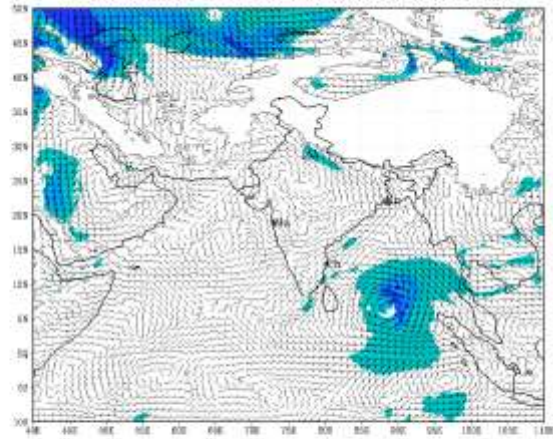


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (144 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 24-11-2024



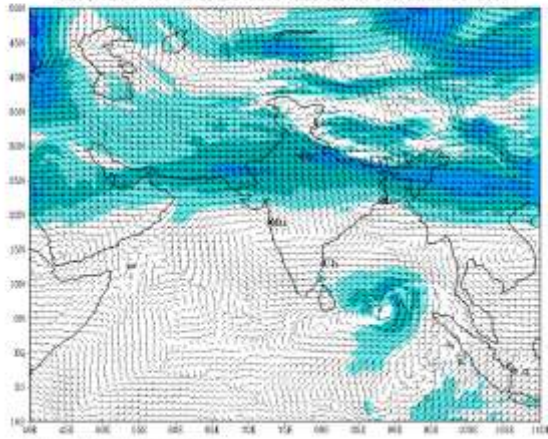
(Background does not depict political boundary)

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 24-11-2024



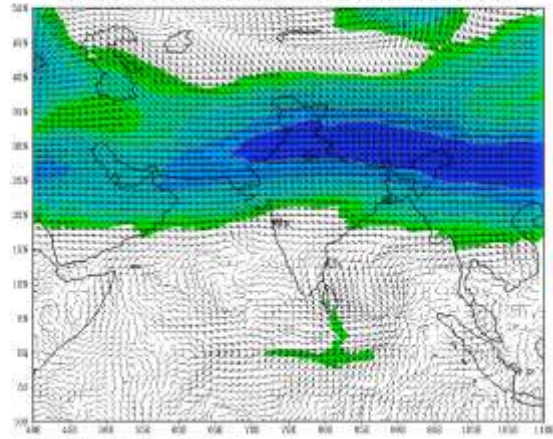
(Background does not depict political boundary)

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 24-11-2024



(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (144 HR)
based on 00 UTC of 18-11-2024 valid for 00 UTC of 24-11-2024



(Background does not depict political boundary)

