



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



FDP (Cyclone) NOC Report Dated 14th November, 2019

Time of Issue: 1100 UTC

Synoptic features:

No weather systems are observed over Indian Ocean region.

Dynamical and thermodynamical features

Sea Surface Temperature (SST):

Sea Surface Temperature is around 26-29°C over most parts of central Arabian Sea and adjoining northeast Arabian Sea. It increases to 28-30°C over northwest Arabian Sea and also over south Arabian Sea.

SST is around 27-28 °C over north BoB and adjoining WC BoB. It is around 28 - 30°C over rest BoB.

Tropical Cyclone Heat Potential (TCHP):

Tropical Cyclone Heat Potential (TCHP) is 20-40 kJ/cm² over most parts of central Arabian Sea and north Arabian Sea. Over south Arabian Sea it is of value 60-100 kJ/cm².

TCHP is around 30-50 kJ/cm² over north BoB and adjoining westcentral BoB. It is around 80-90 kJ/cm² over rest of the BOB.

Relative Vorticity:

Cyclonic relative vorticity at 850 hPa of value $10 \times 10^{-6} \text{s}^{-1}$ is seen over north Andaman Sea and adjoining eastcentral BoB.

Cyclonic relative vorticity at 850 hPa of value $10-20 \times 10^{-6} \text{s}^{-1}$ is seen over the north Arabian Sea.

Low level Convergence:

An area of positive lower level convergence area of value $5-10 \times 10^{-5} \text{s}^{-1}$ is seen over westcentral BoB region off south Andhra Pradesh coast and also over north Andaman Sea.

No significant area of positive lower level convergence is seen over Arabian Sea.

Upper level Divergence:

Upper level divergence of value $05 \times 10^{-5} \text{s}^{-1}$ is seen over north Andaman Sea.

Upper level divergence of value $05-10 \times 10^{-5} \text{s}^{-1}$ is seen over central Arabian Sea.

Wind Shear:

Wind shear is high over entire Arabian Sea. It is low to moderate over Comorin area.

Wind shear is low to moderate over most parts of BoB and Andaman Sea except extreme north BoB where it is high.

Wind Shear Tendency:

The wind shear tendency is negative over northwest, west central and adjoining parts of southwest BoB. It is positive or neutral elsewhere.

It is positive over north and adjoining central Arabian Sea. It is negative or neutral over rest Arabian Sea.

Upper tropospheric ridge:

The upper tropospheric ridge at 200 hPa runs roughly along 12°N over the BoB.

Satellite observations based on INSAT imagery:

Arabian Sea:-

As per the satellite imagery at 0900 UTC of 14th November, 2019, scattered low to medium clouds with embedded moderate to intense convection lies over extreme southeast Arabian Sea.

Bay of Bengal & Andaman Sea:

According to 0900 UTC satellite imagery, scattered low/medium clouds with embedded moderate to intense convection lies over eastcentral BoB, south Arakan coast and northwest Andaman Sea and also over westcentral BoB off Andhra Pradesh coast.

Large scale features

M.J.O. Index:

MJO index is in Phase 8 with amplitude more than 1. MJO is likely to propagate eastwards from phase 8 to phase 1 after 3-4 days with amplitude >1.

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

NWP Input for FDP Cyclone based on 0000 UTC of today

IMD-GFS T-1534: Indicates development of no low pressure systems for the next 10 days.

IMD-GEFS: Indicates development of no low pressure systems for the next 8 days.

IMD-WRF: Analysis shows a Low Pressure area over Andaman islands & neighborhood on 12th November (today) which gets less marked tomorrow and no subsequent development.

NCMRWF-NCUM: Indicates development of no low pressure systems for the next 10 days.

NCMRWF-UM-Regional Model: Indicates development of no low pressure systems for the next 3 days.

NEPS Model: Indicates development of no low pressure systems for the next 10 days.

ECMWF: Indicates development of no low pressure systems for the next 10 days.

NCEP-GFS: Indicates development of no low pressure systems for the next 10 days.

ARP-Meteo France : Indicates development of no low pressure systems for the next 3 days

Dynamical statistical models

IMD Genesis Potential Parameter (GPP):

No area of significant zone of GPP is seen to develop over NIO region during next 5 days.

IMD NWP products are available at:

<http://nwp.imd.gov.in/bias/gfsproducts.php>

<http://nwp.imd.gov.in/bias/wrf27pro.php>

http://www.rsmcnewdelhi.imd.gov.in/NWP_CYC/Analysis.htm or

http://www.rsmcnewdelhi.imd.gov.in/NWP_CYC/<HH> hrs.htm

<HH> are forecast hours i.e. 24, 48, 72 and etc.

Summary and Conclusion:

As per the NWP models considered, no low pressure area is seen to form over North Indian Ocean Region for the next 8-10 days.

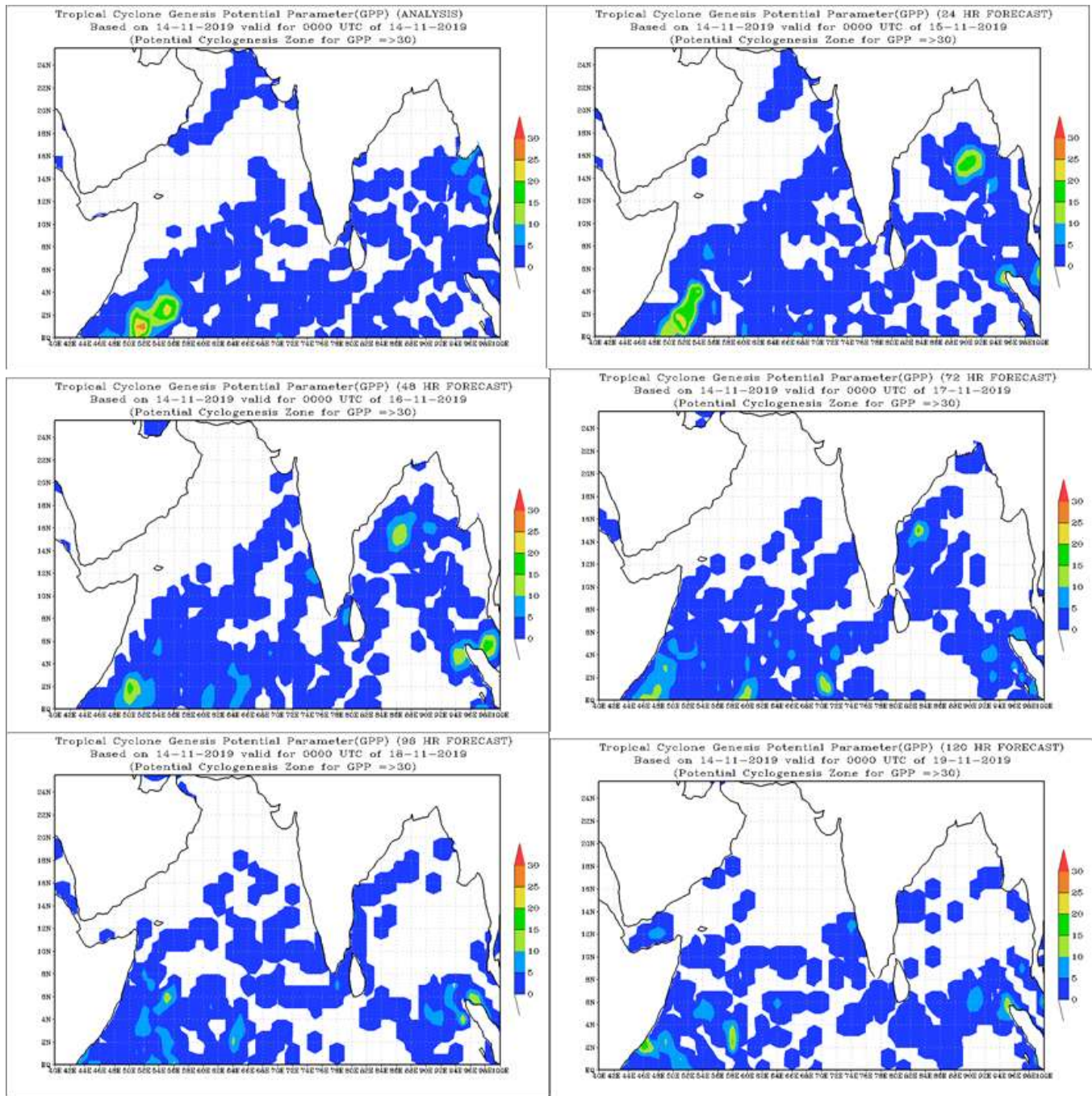
Probability of cyclogenesis over Bay of Bengal and Andaman Sea during next 120 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
Nil	Nil	Nil	Nil	Nil

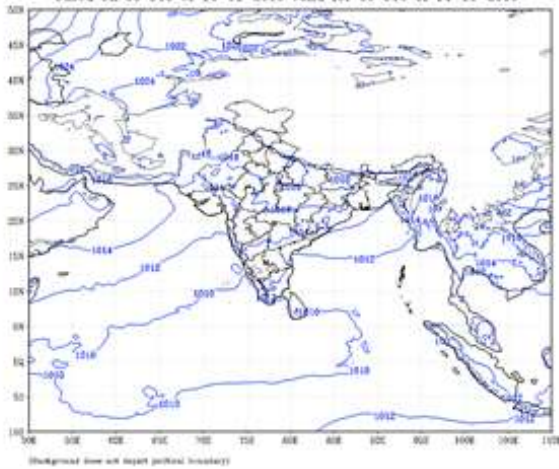
Probability of cyclogenesis over Arabian Sea during next 120 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
Nil	Nil	Nil	Nil	Nil

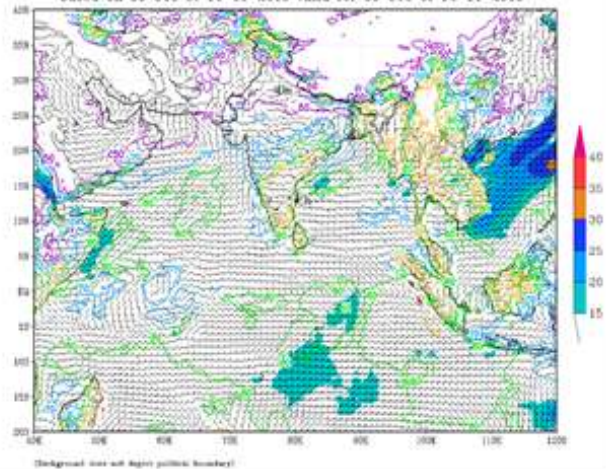
Advisory: No IOP area for the next 5 days



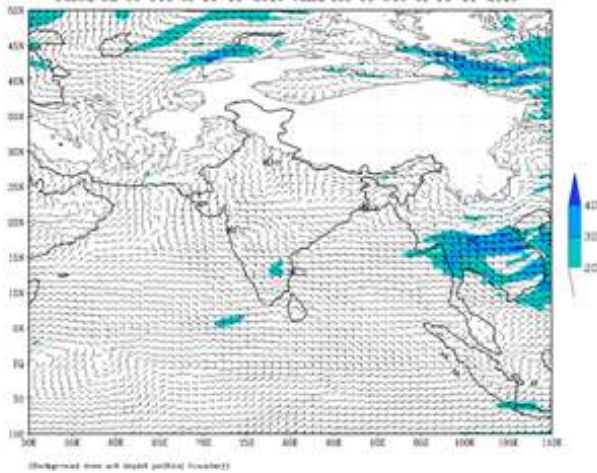
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 14-11-2019 valid for 00 UTC of 14-11-2019



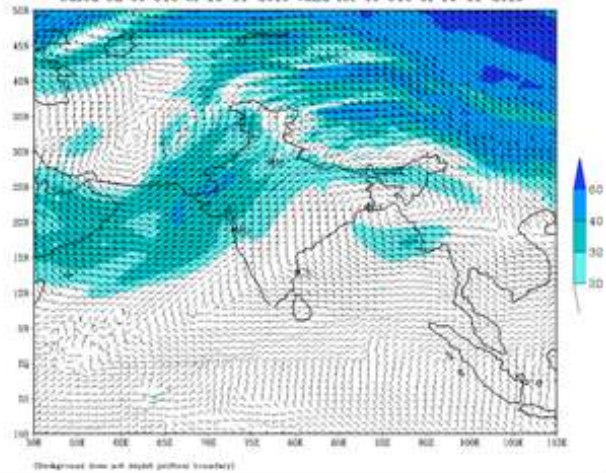
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (00 HR)
based on 00 UTC of 14-11-2019 valid for 00 UTC of 14-11-2019



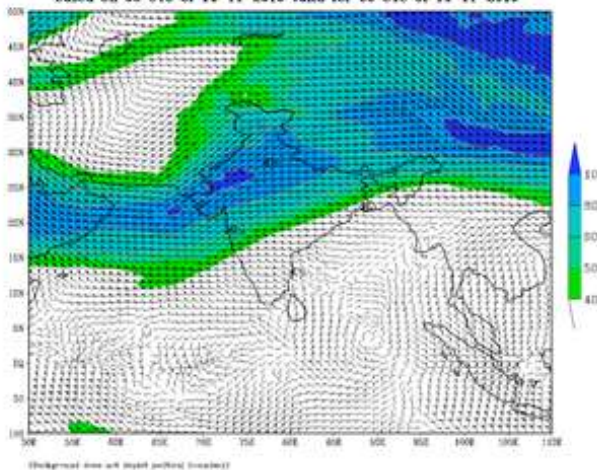
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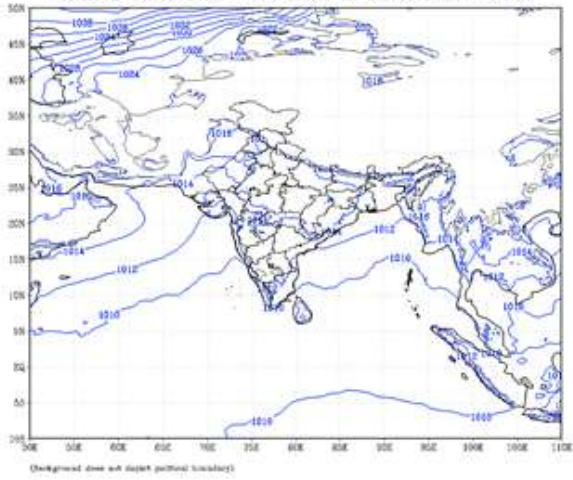
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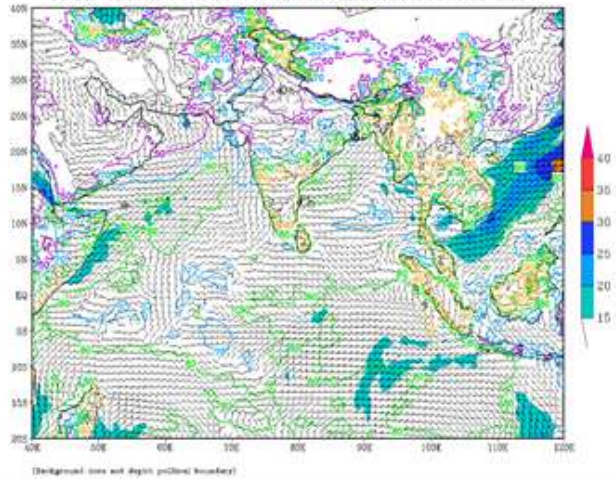
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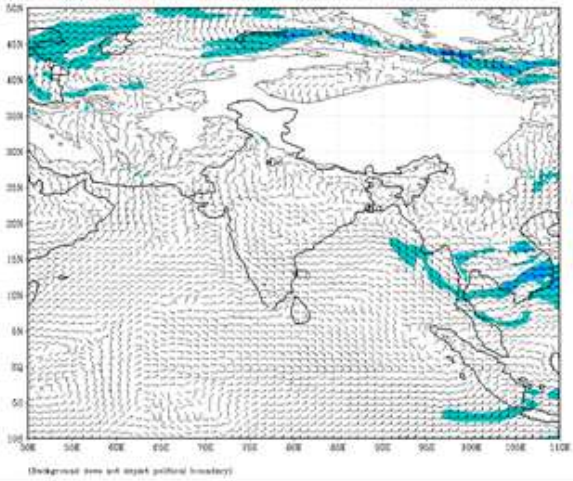
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)
based on 00 UTC of 14-11-2019 valid for 00 UTC of 15-11-2019



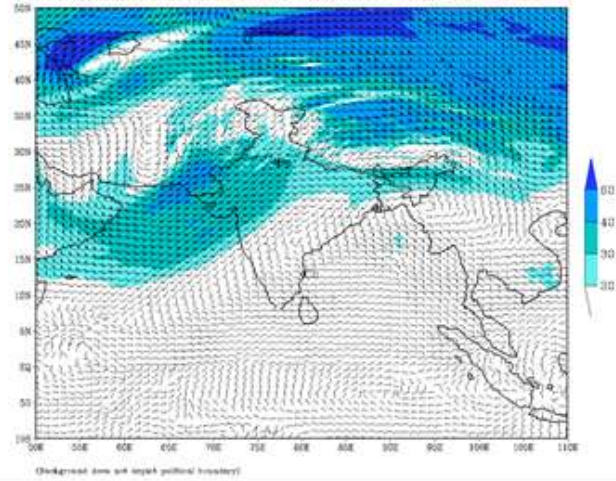
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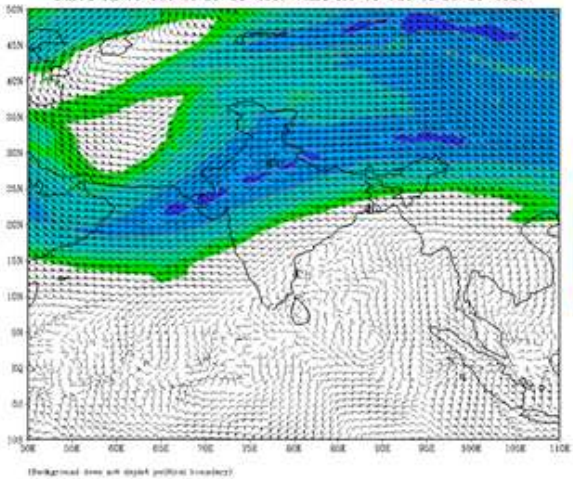
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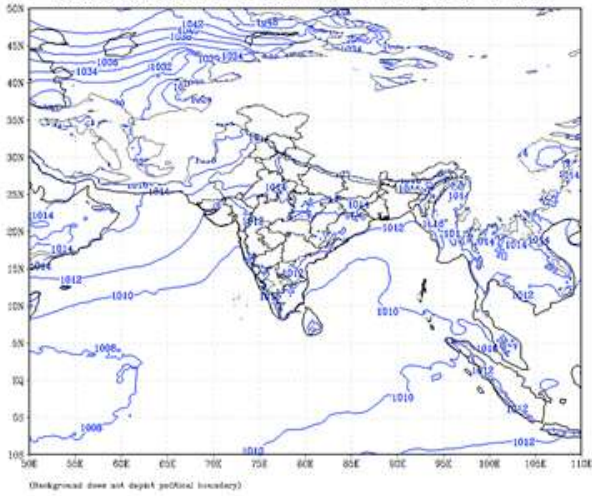
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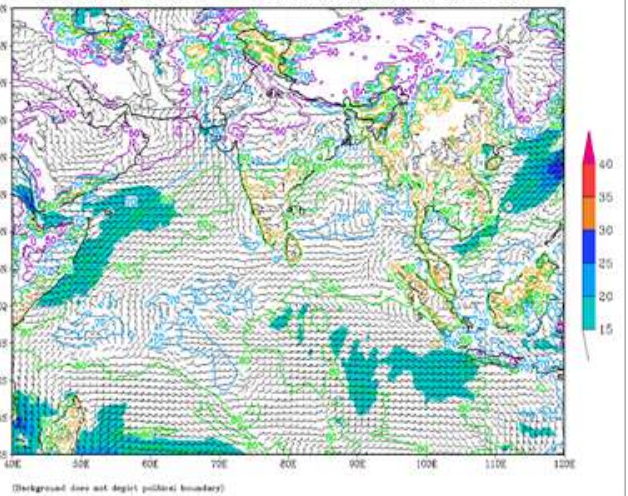
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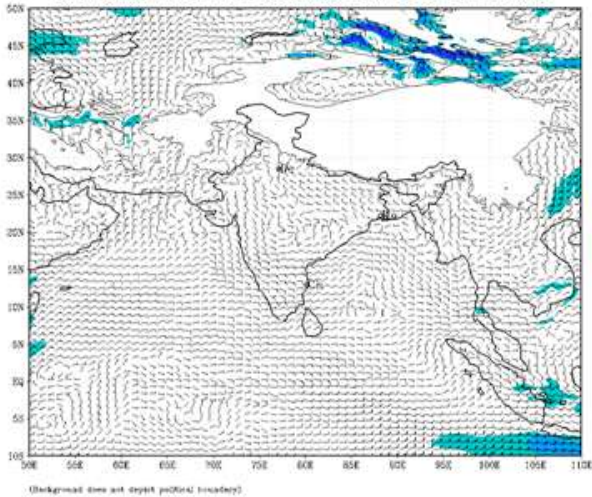
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based on 00 UTC of 14-11-2019 valid for 00 UTC of 16-11-2019



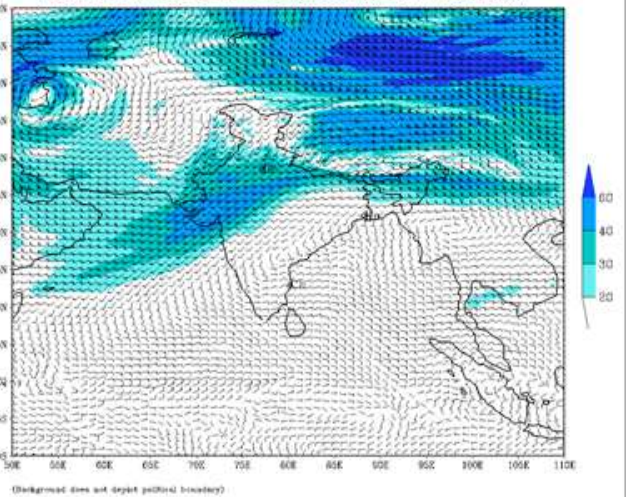
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (48 HR)
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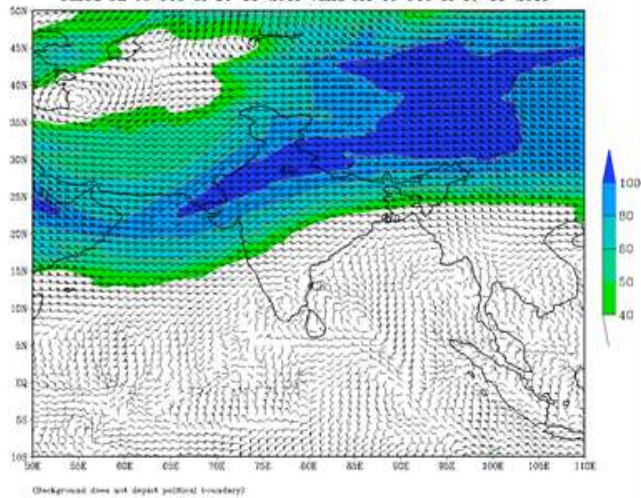
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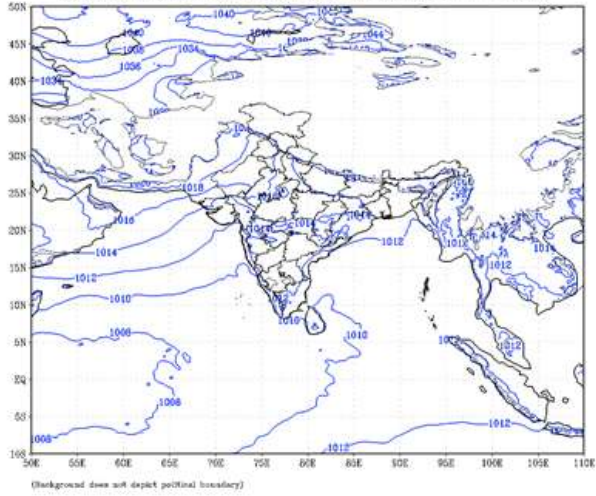
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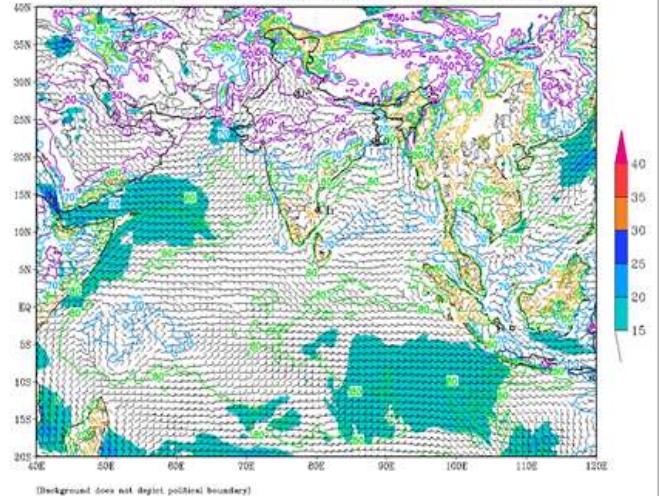
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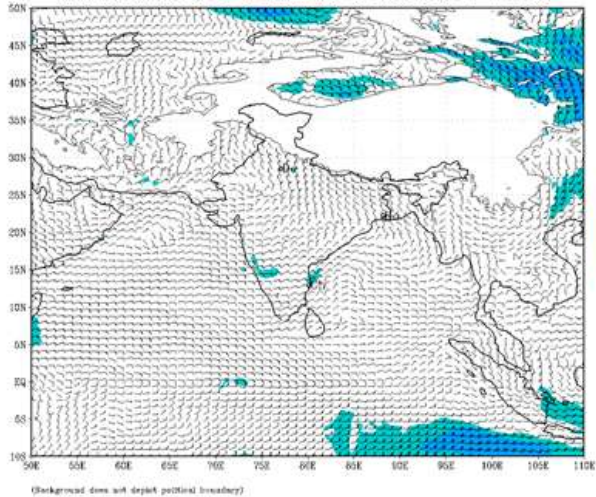
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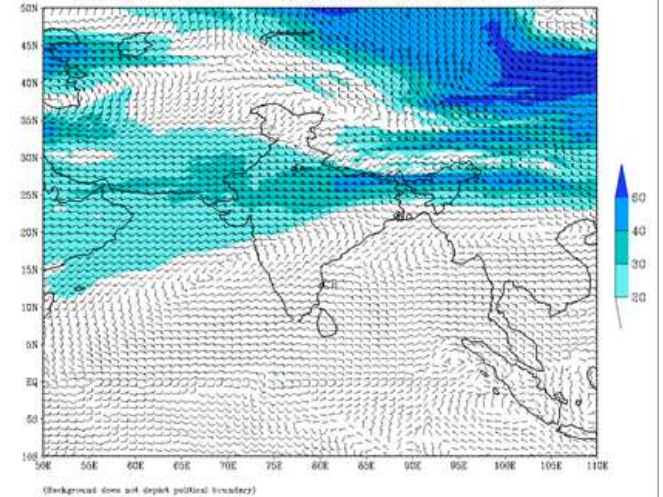
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (72 HR)
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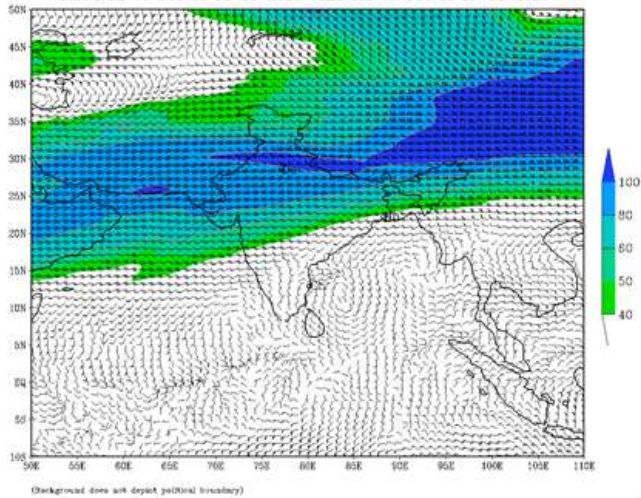
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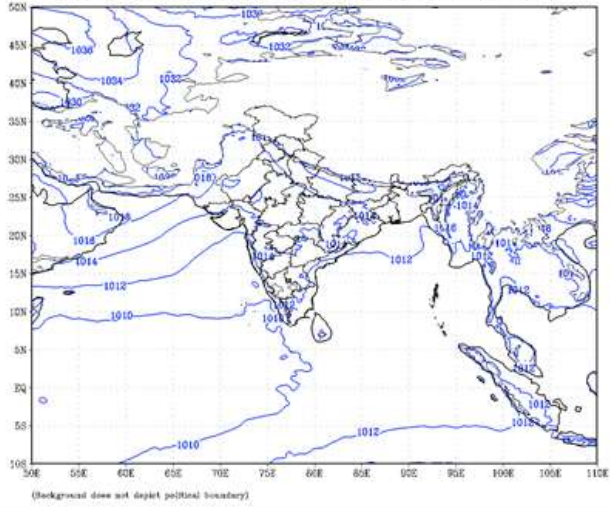
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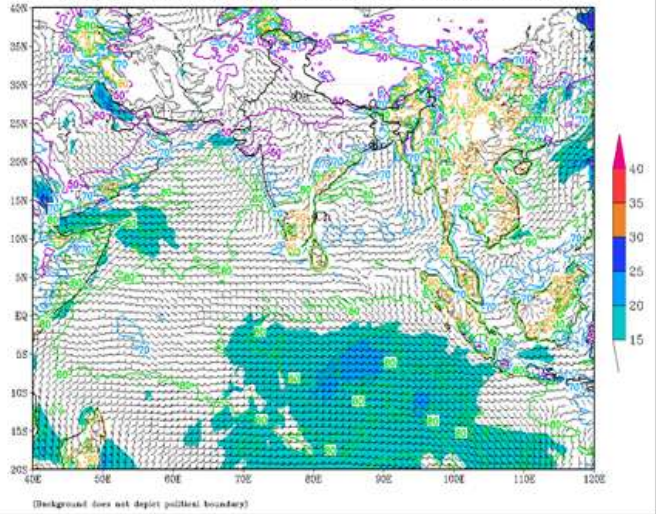
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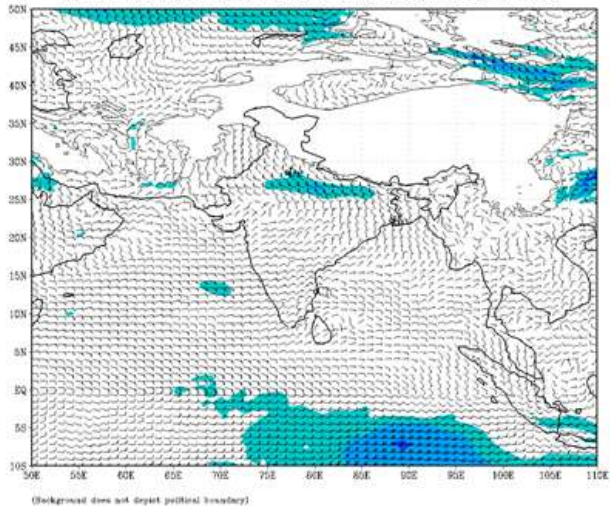
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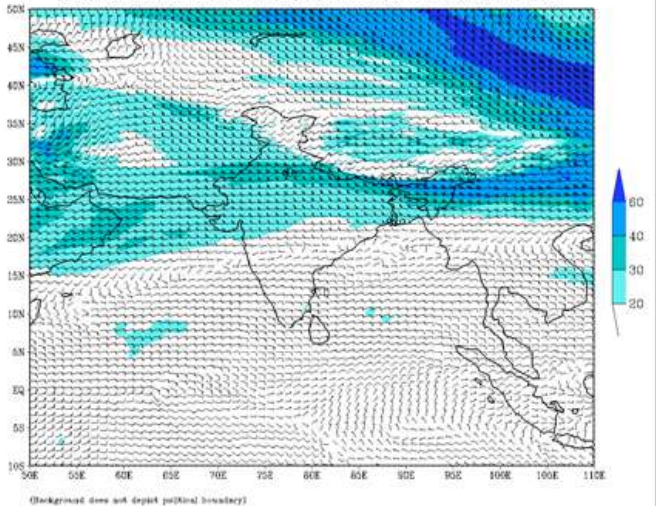
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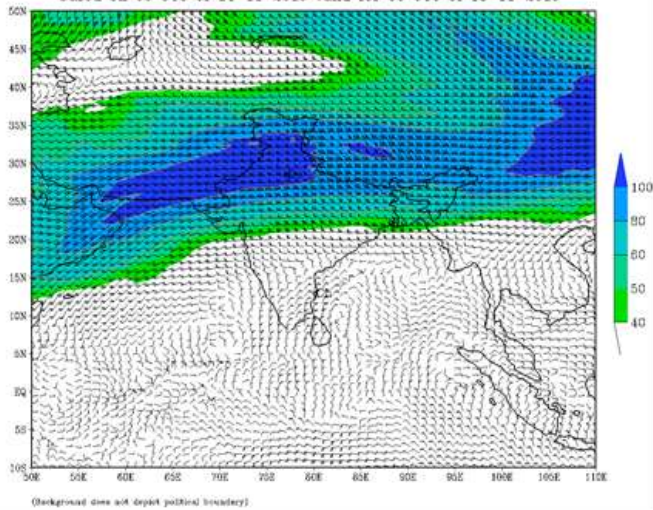
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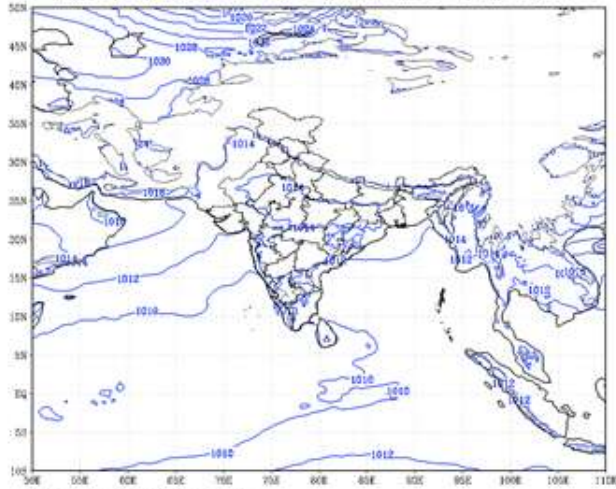
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IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (96 HR)
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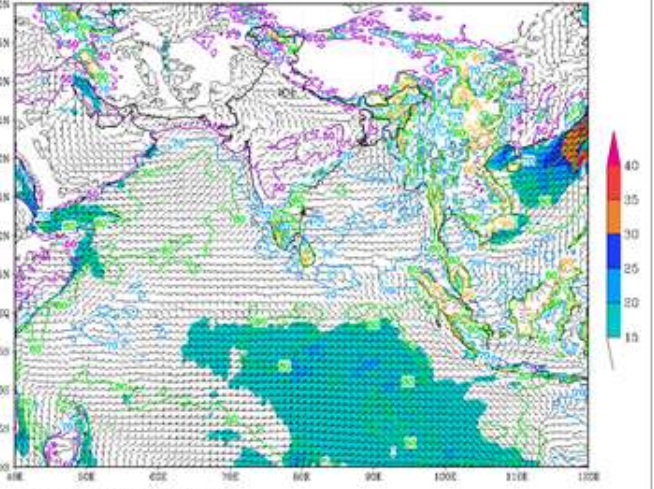


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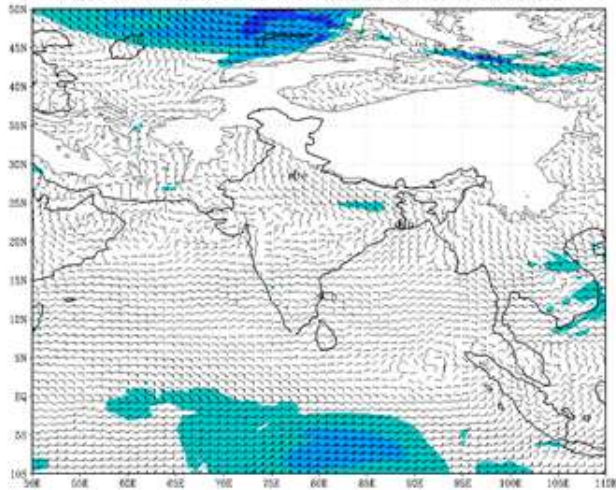
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based on 12 UTC of 13-11-2019 valid for 12 UTC of 18-11-2019



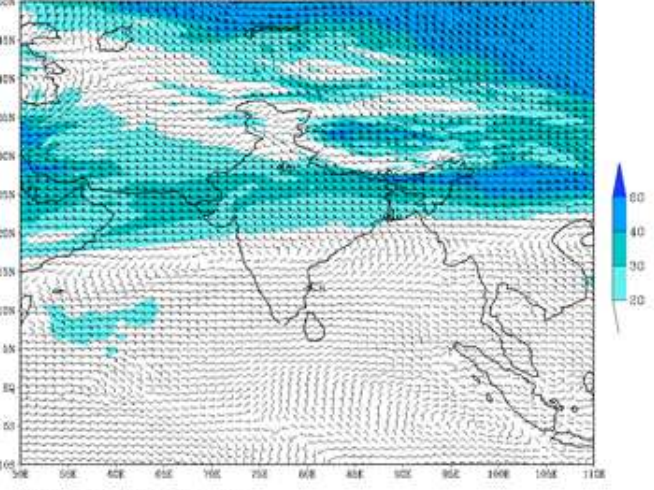
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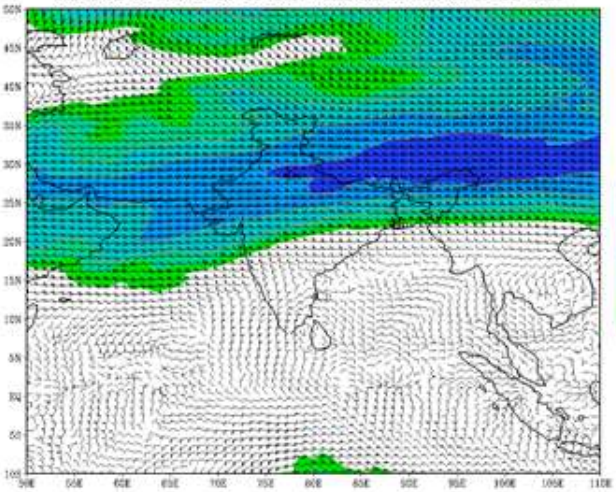
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IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (120 HR)
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