

Briefing hebdomadaire

Suivi MJO et ondes équatoriales pour le bassin SOOI

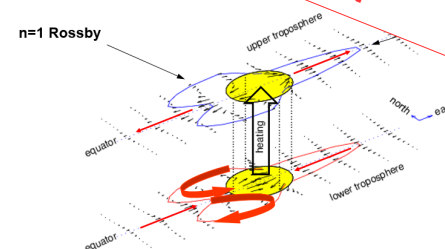
DATE : 21/03/2023

H. Vérèmes

support produit le 21/03/2023
sur bulletin ECMWF du 20/03
et figures du 20/03

S0 : 20 mars-26 mars
S1 : 27 mars-02 avril
S2 : 03 avril-09 avril
S3 : 10 avril-16 avril
S4 : 17 avril-23 avril

ATTENTION :
Changement de
formalisme des
semaines !!!!
S0 est devenu S1 mais
correspond toujours à la
semaine en cours.



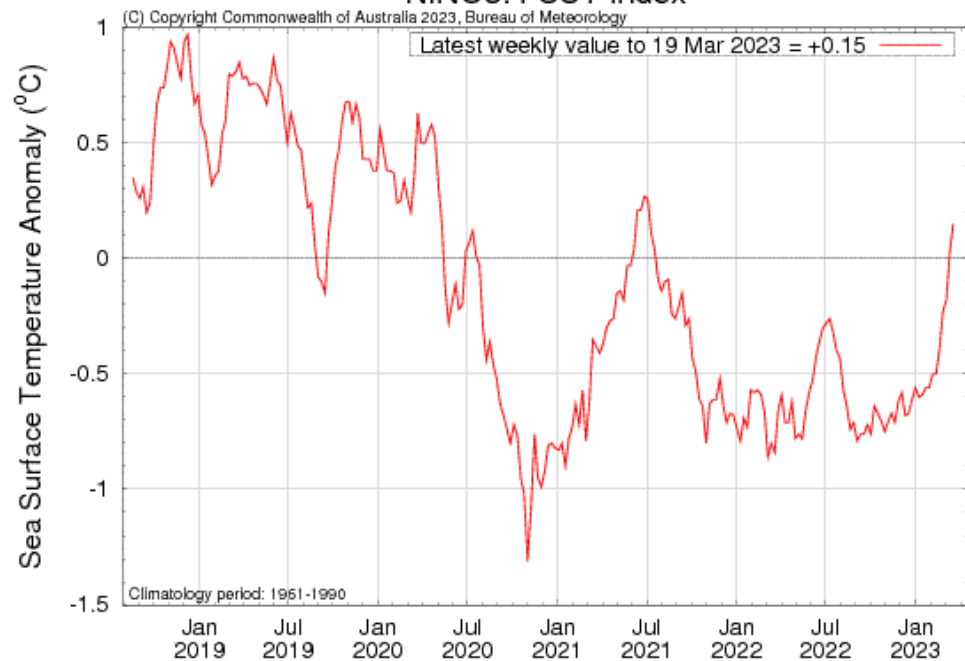
Matsuno, 1966
Webster, 1972
Gill, 1980

1. Prévision - Basse fréquence

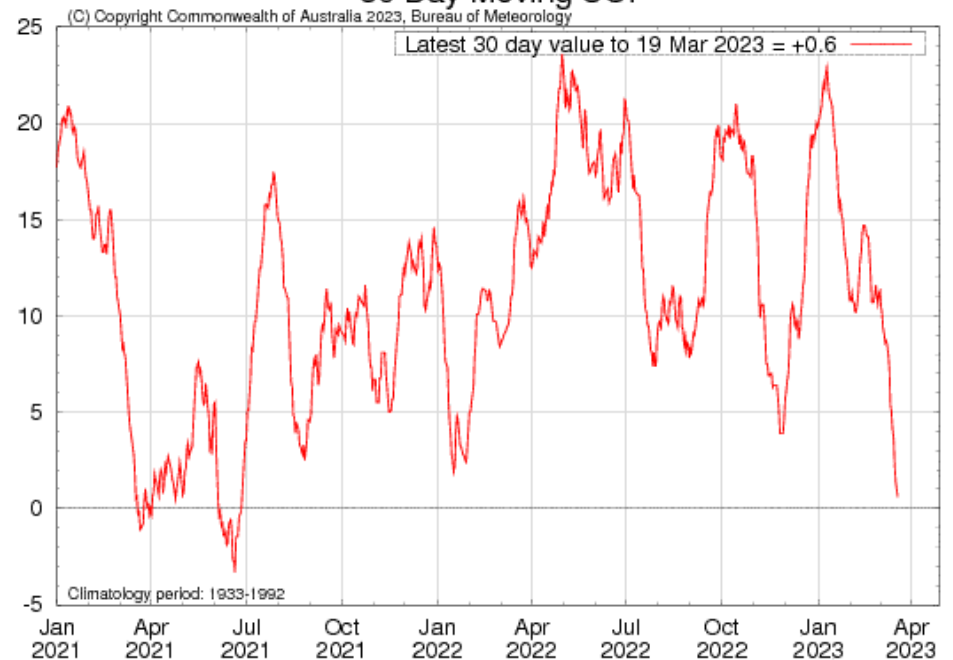
Signal Basse Fréquence

Contexte ENSO

NINO3.4 SST Index



30 Day Moving SOI

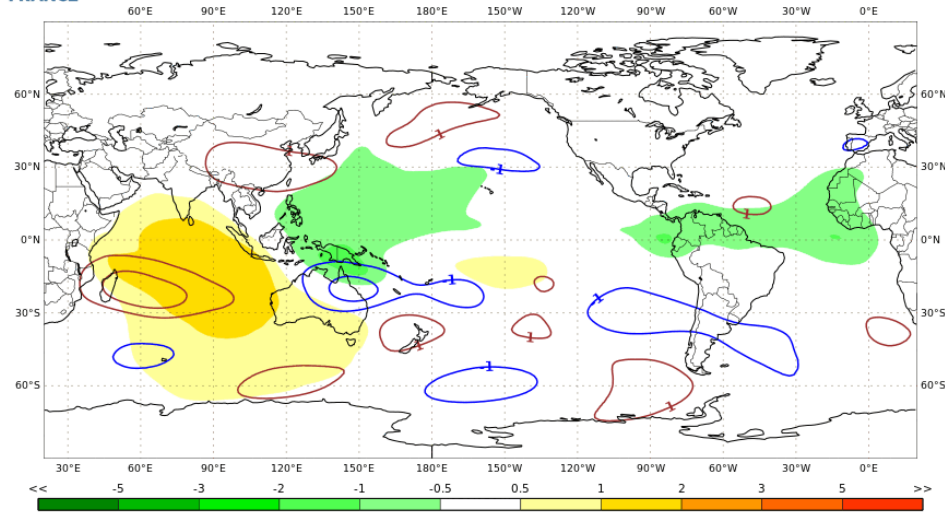


Signal Basse Fréquence

VP 200 prévu



Météo-France system 8 - Forecast
For AMJ 2023 (issued March 2023)



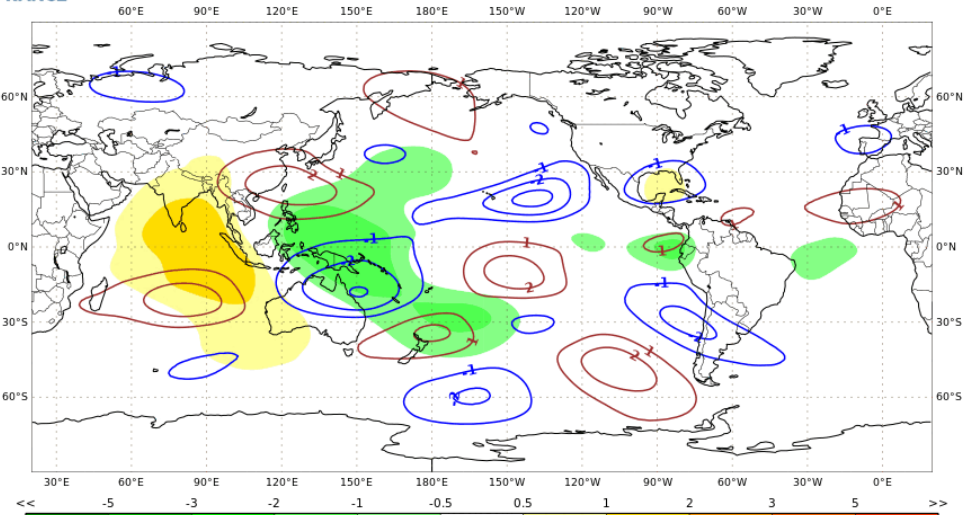
200hPa velocity potential and 200hPa streamfunction - zonal mean
3-months ensemble mean anomaly

unit : km2/s

SST prévue



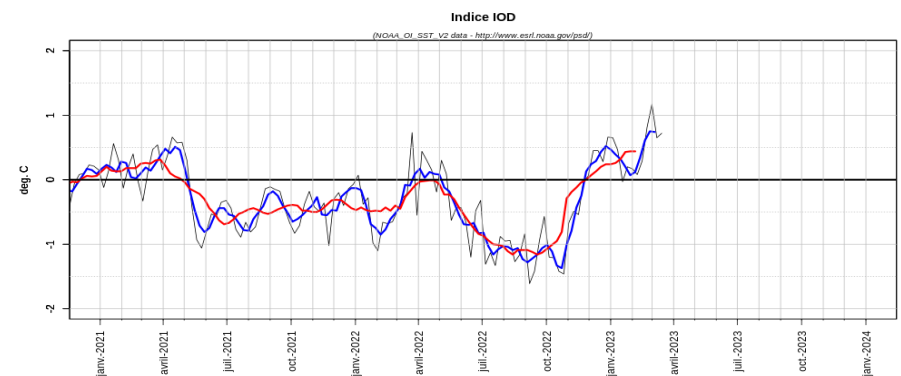
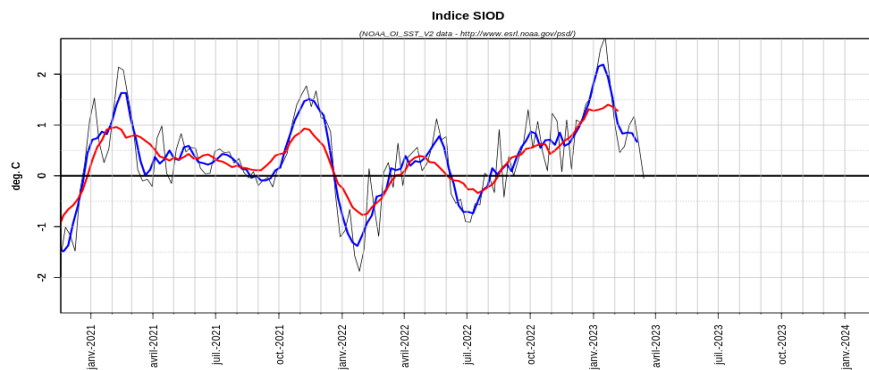
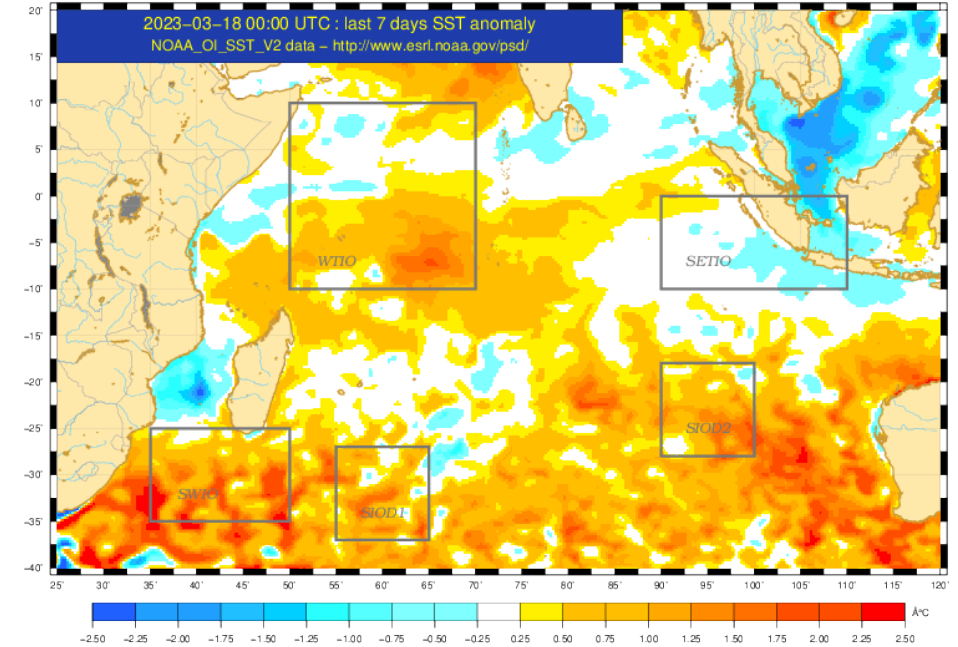
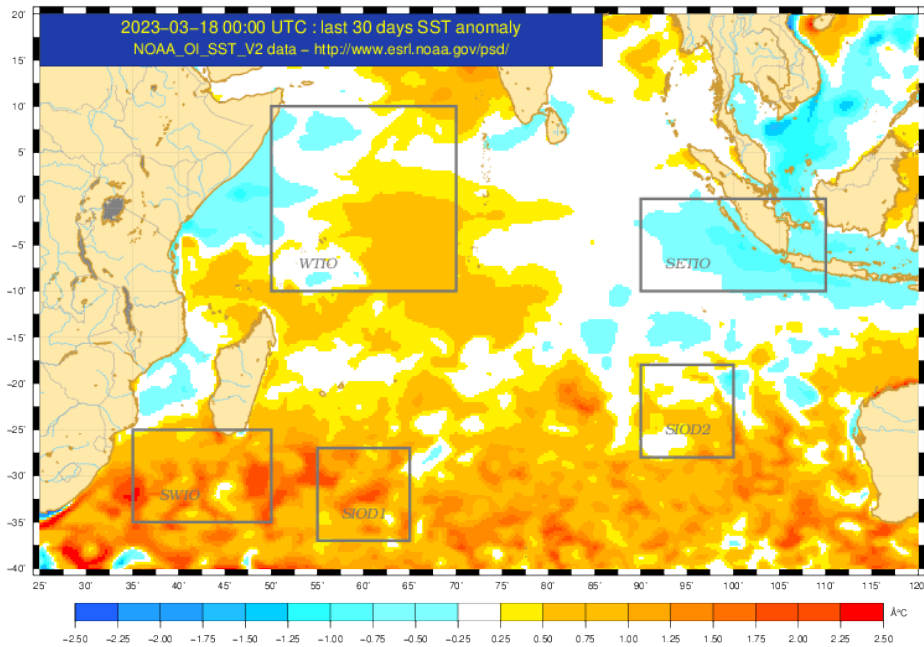
ECMWF SEAS5 - Forecast
For AMJ 2023 (issued March 2023)



200hPa velocity potential and 200hPa streamfunction - zonal mean
3-months ensemble mean anomaly

unit : km2/s

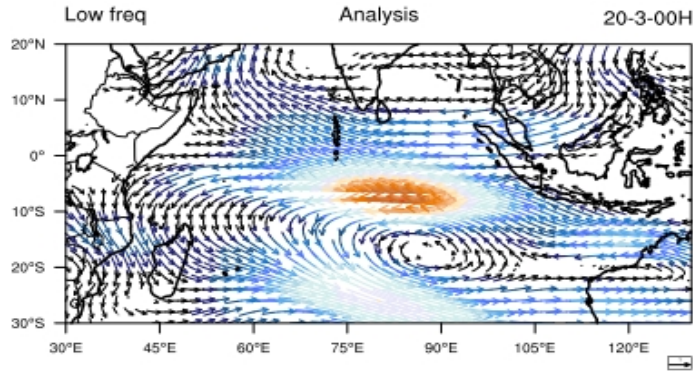
Signal Basse Fréquence - Zoom sur l'OI



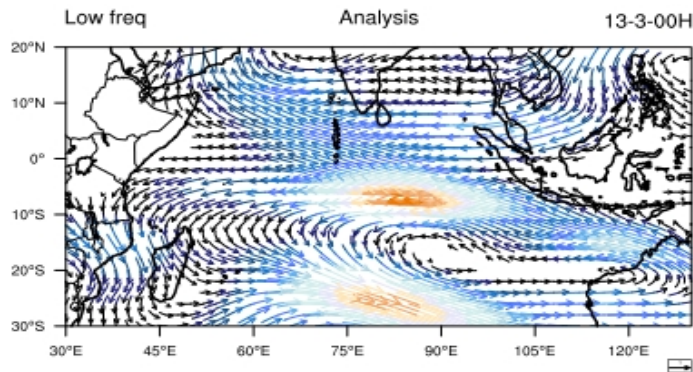
Signal Basse Fréquence - Zoom sur l'OI

U 850

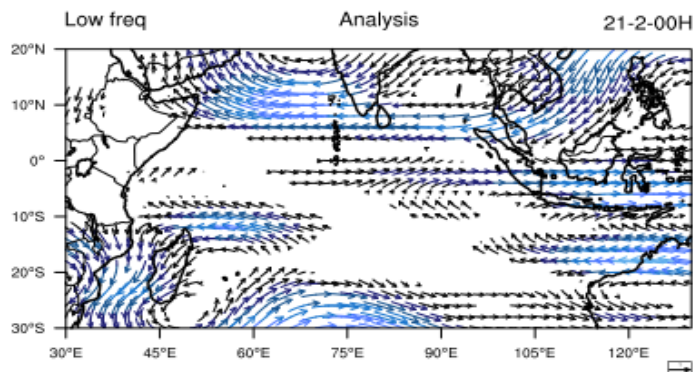
J0



J-8

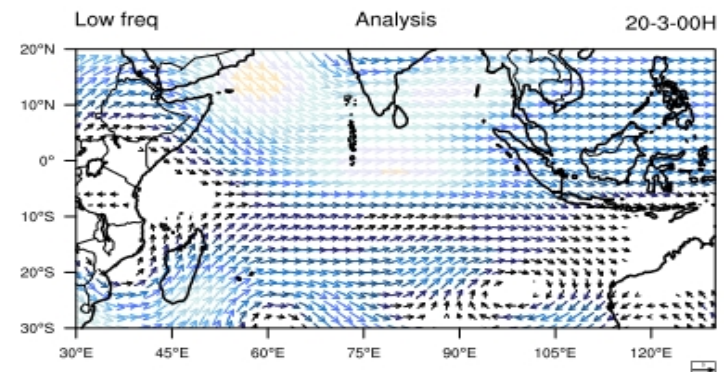


J-29

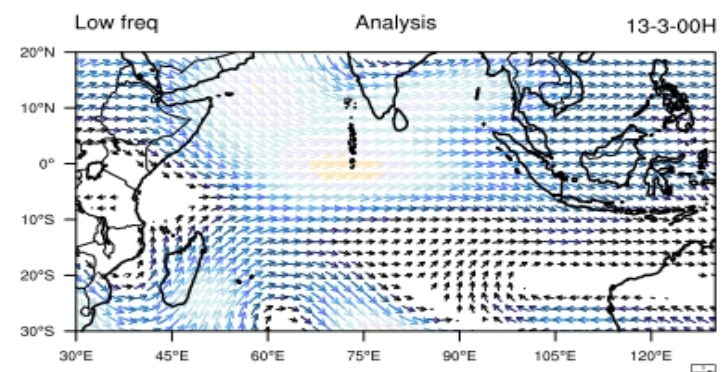


U 200

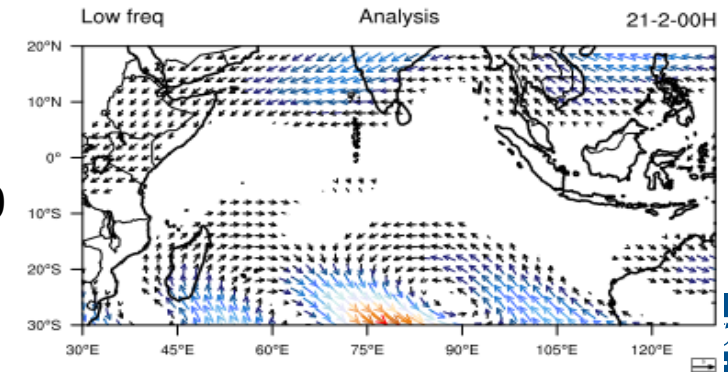
J0



J-8

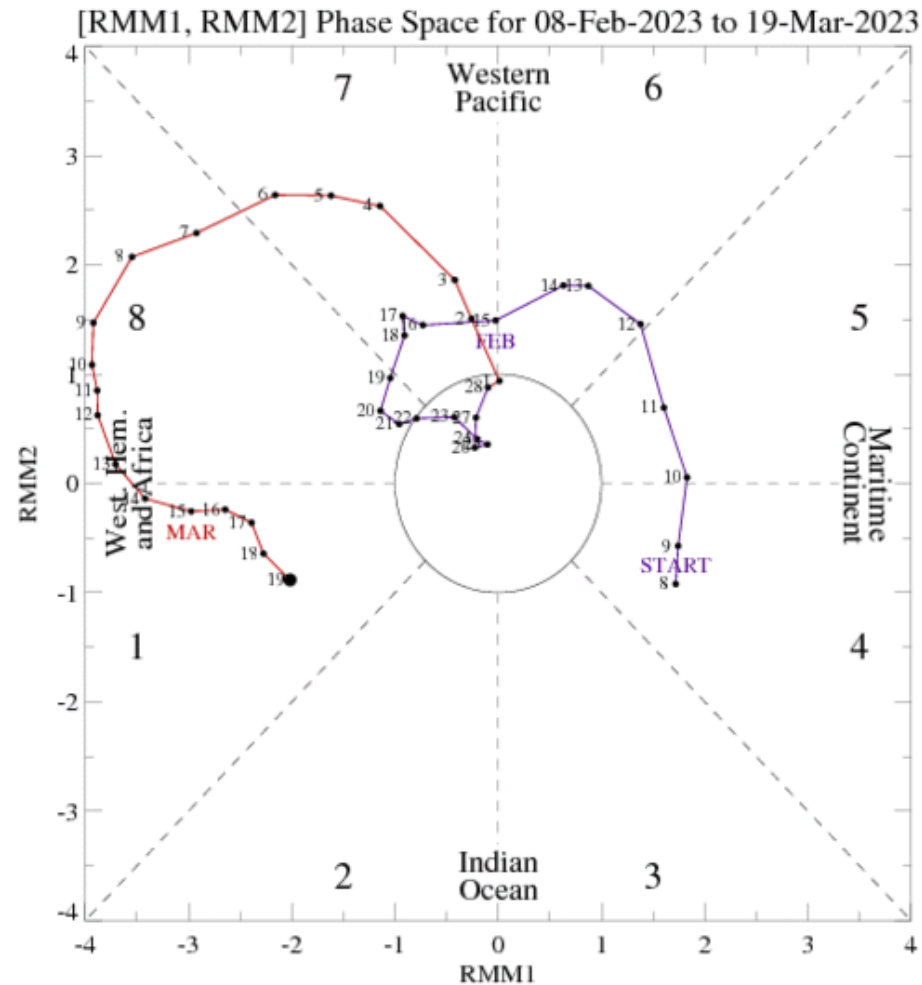


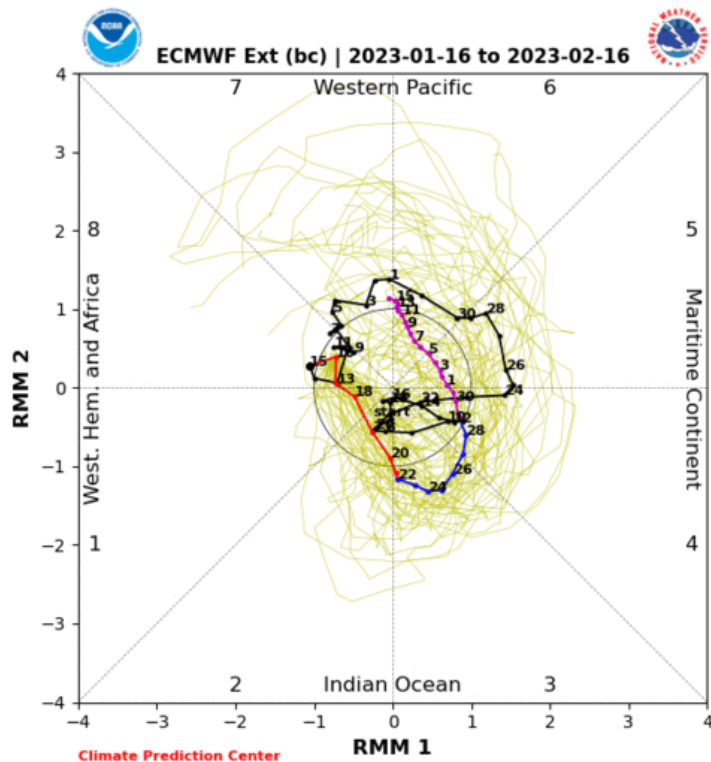
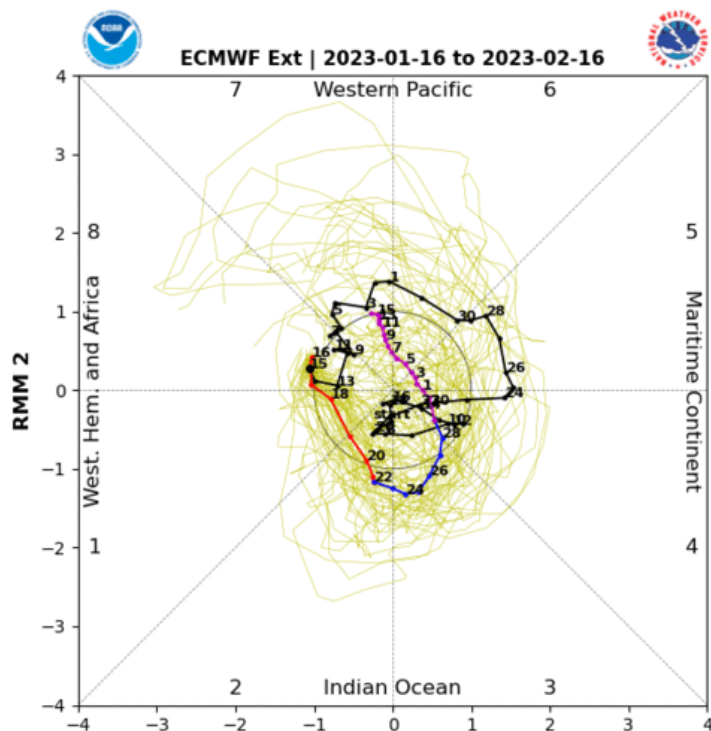
J-29



2. Prévision - MJO

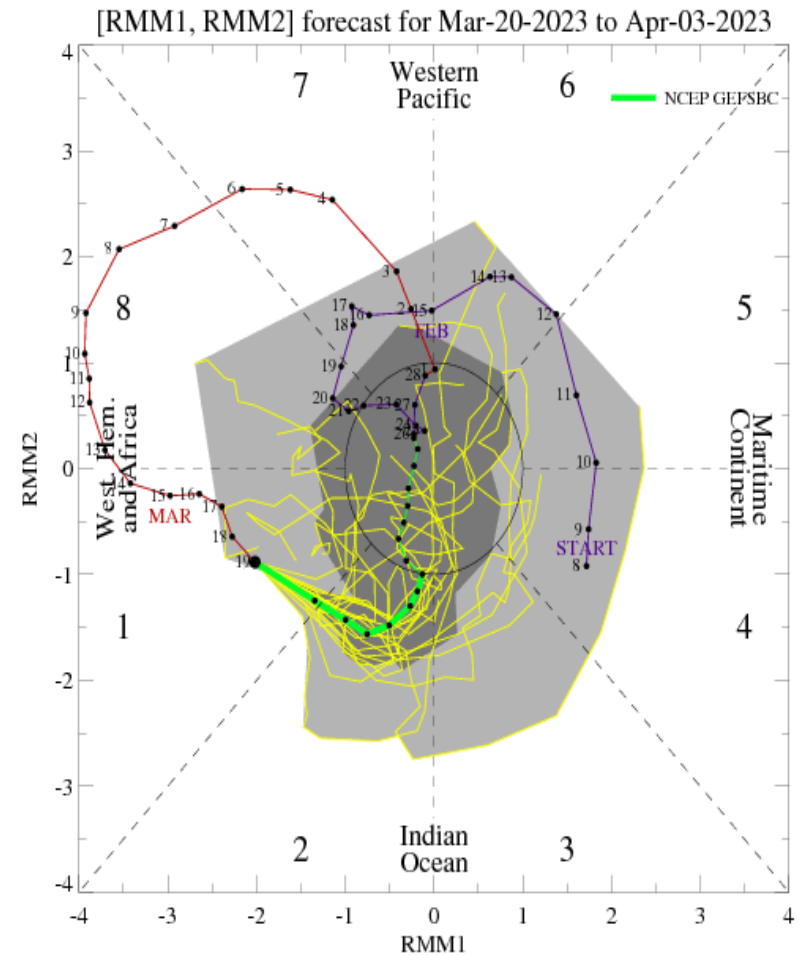
2. MJO observée, indice RMM



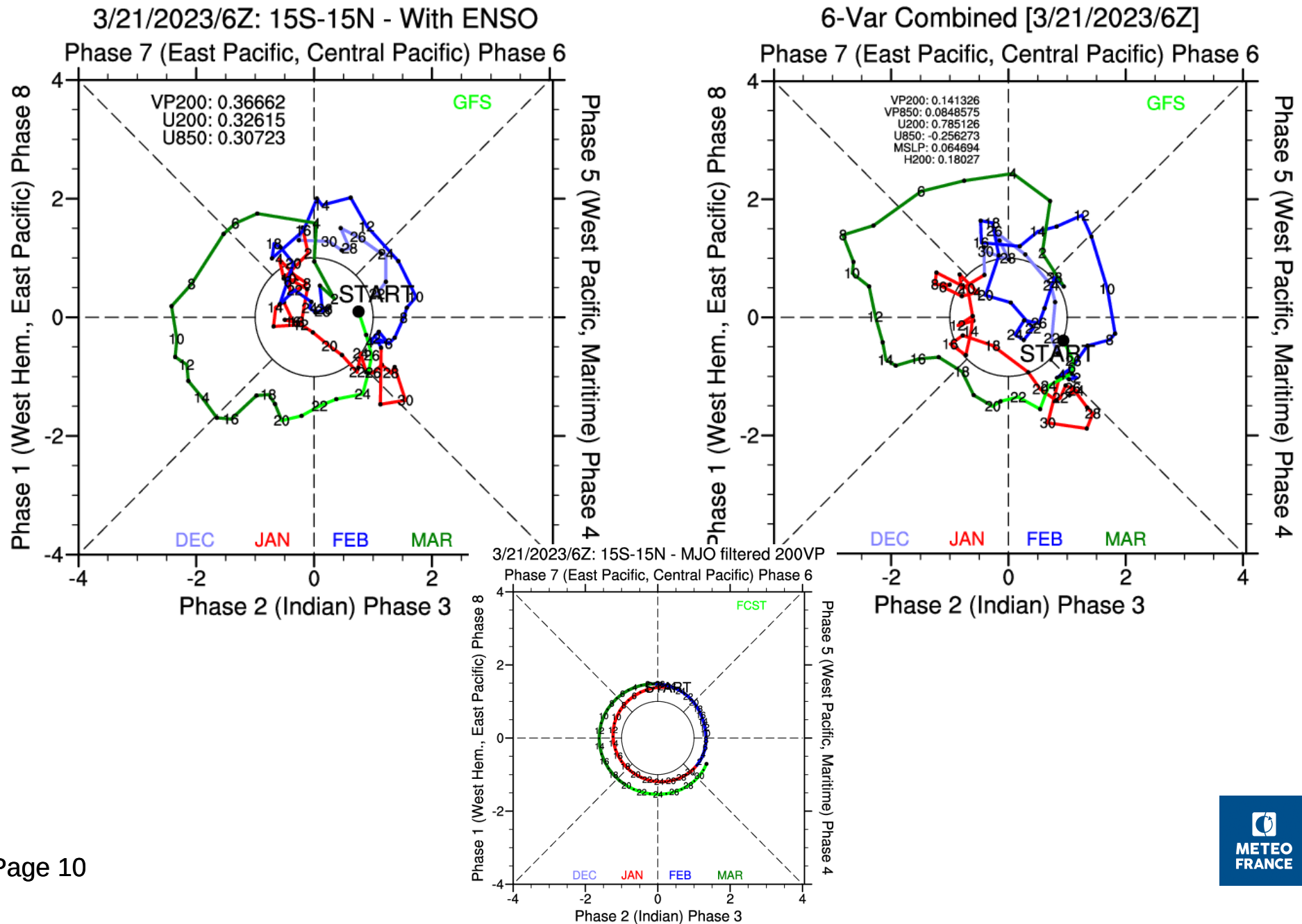


MJO prévue indice RMM multi modèles

GEFS



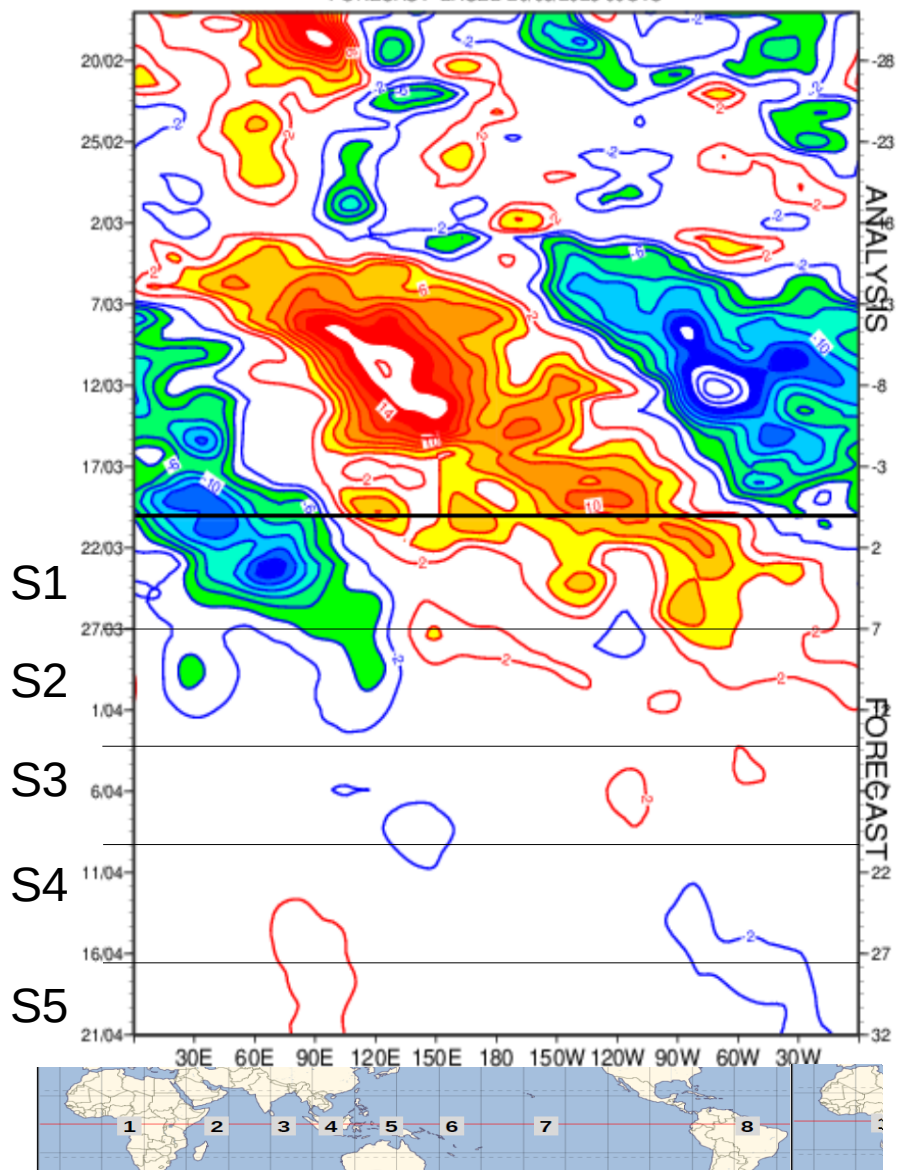
MJO prévue – indices VPM



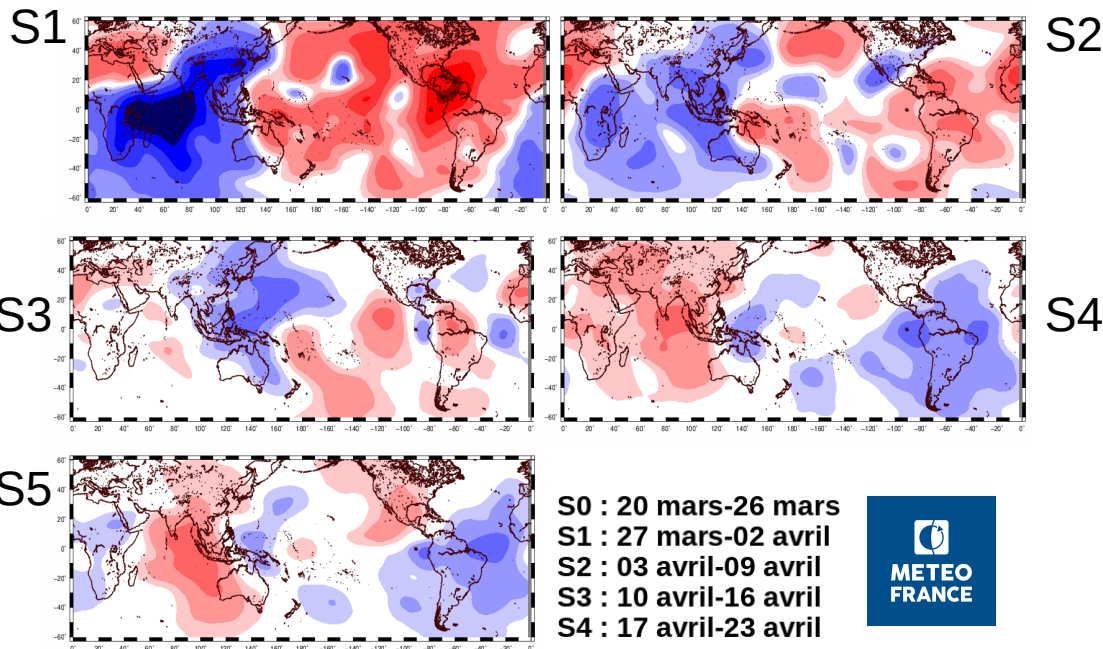
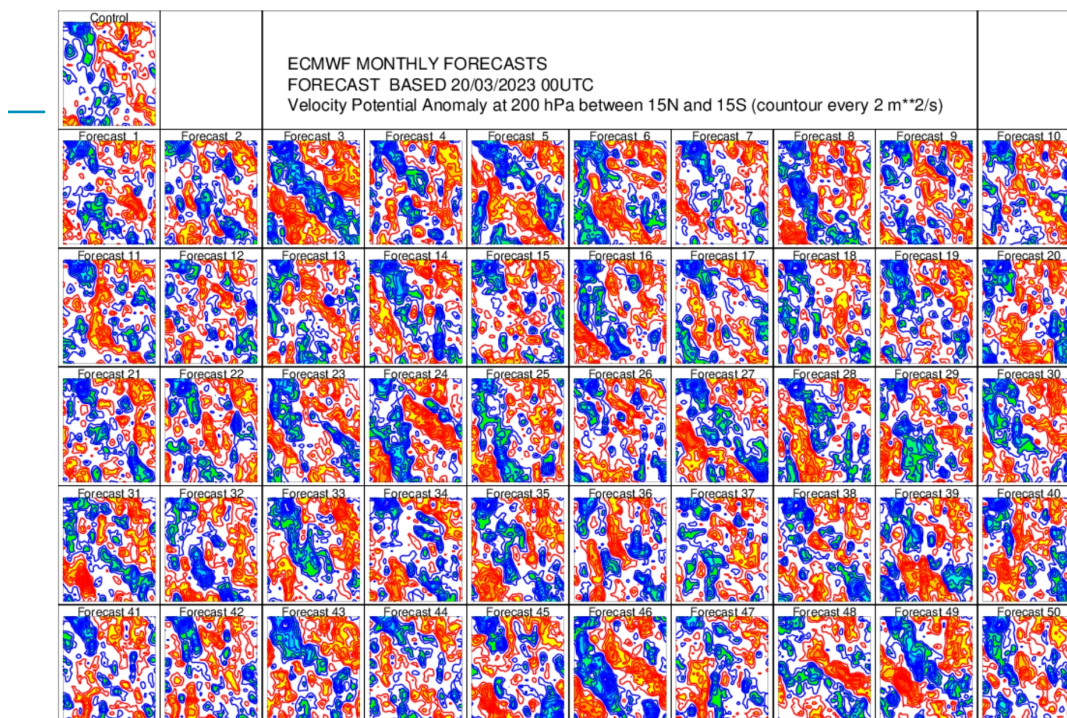
VP200 – EPS mensuel

Moyenne EPS

VELOCITY POTENTIAL AT 200 HPA
Ensemble mean between Lat 15S and 15N
FORECAST BASED 20/03/2023 00UTC



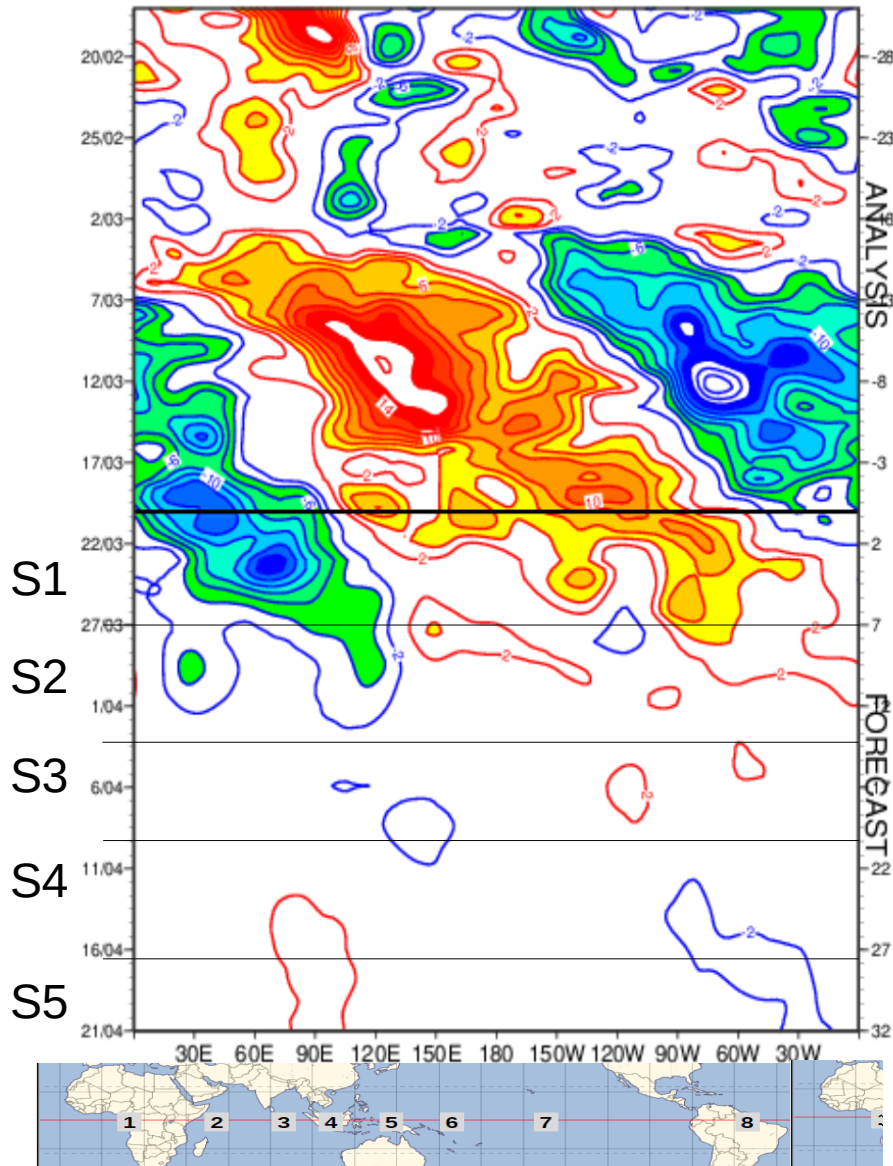
Prévisions 51 membres



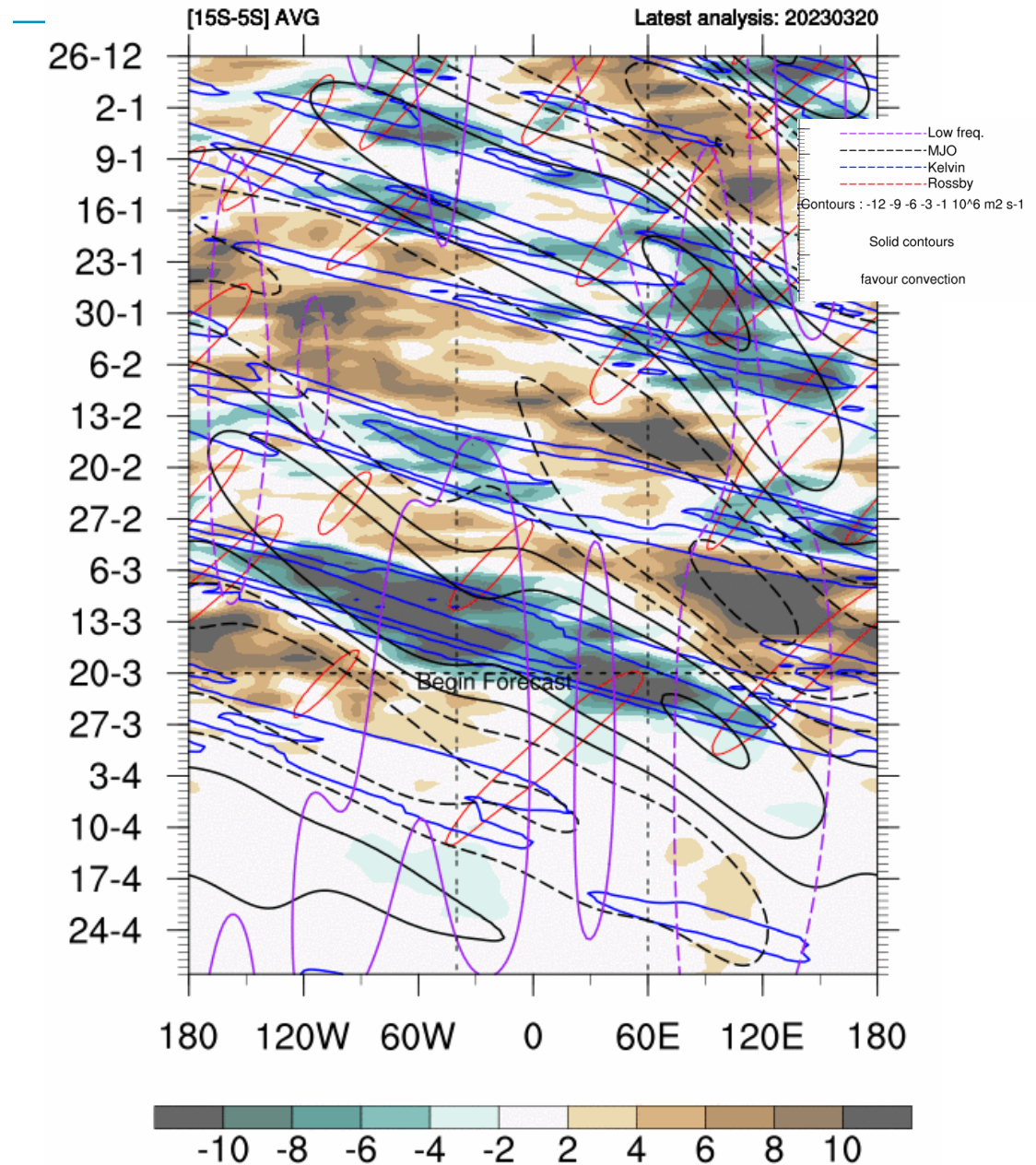
VP200 – EPS mensuel

Moyenne EPS

VELOCITY POTENTIAL AT 200 HPA
Ensemble mean between Lat 15S and 15N
FORECAST BASED 20/03/2023 00UTC

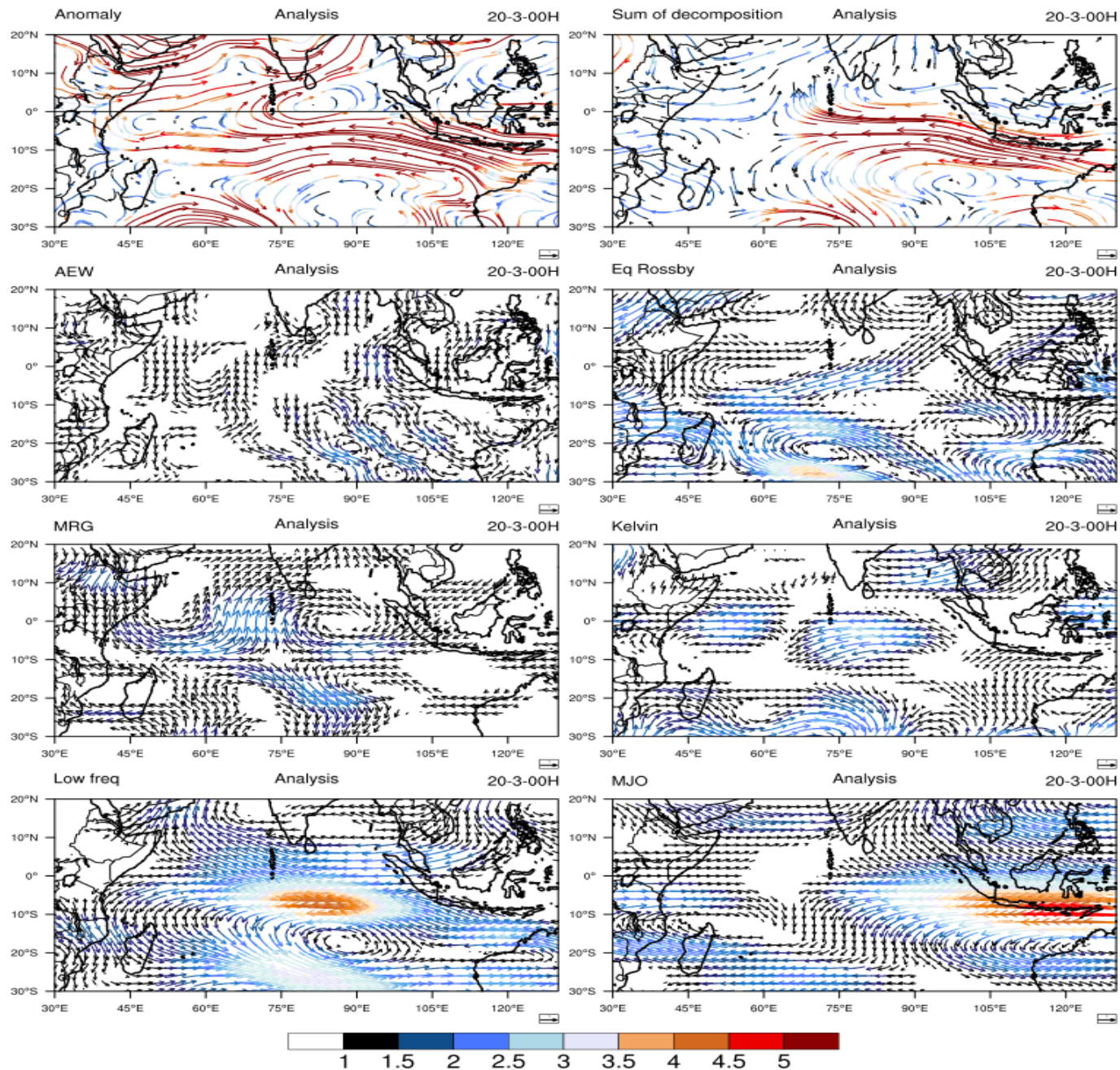


vp200 anomaly + Eq. Waves filtering

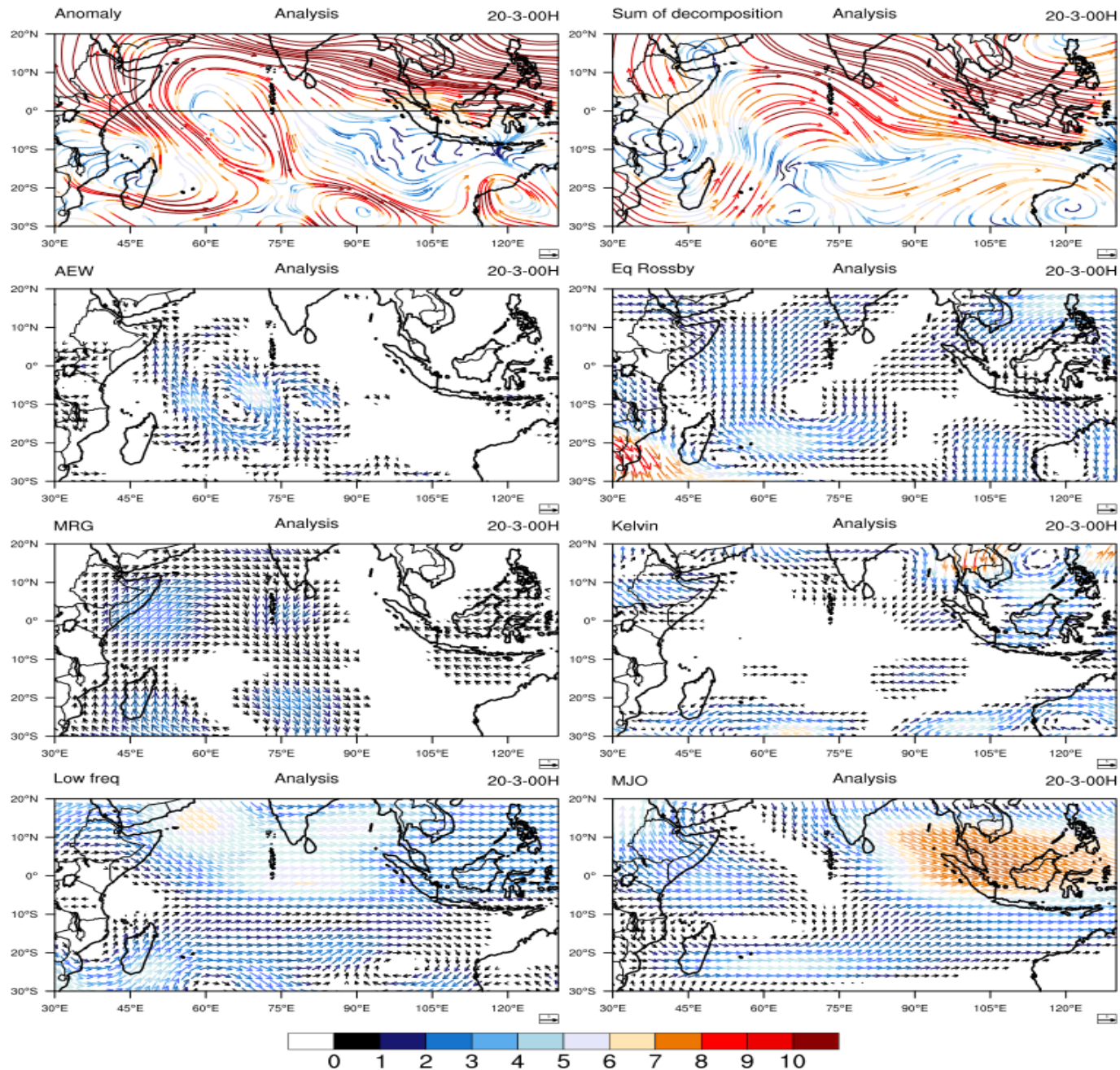


3. Prévision – Ondes équatoriales

3. Ondes équatoriales

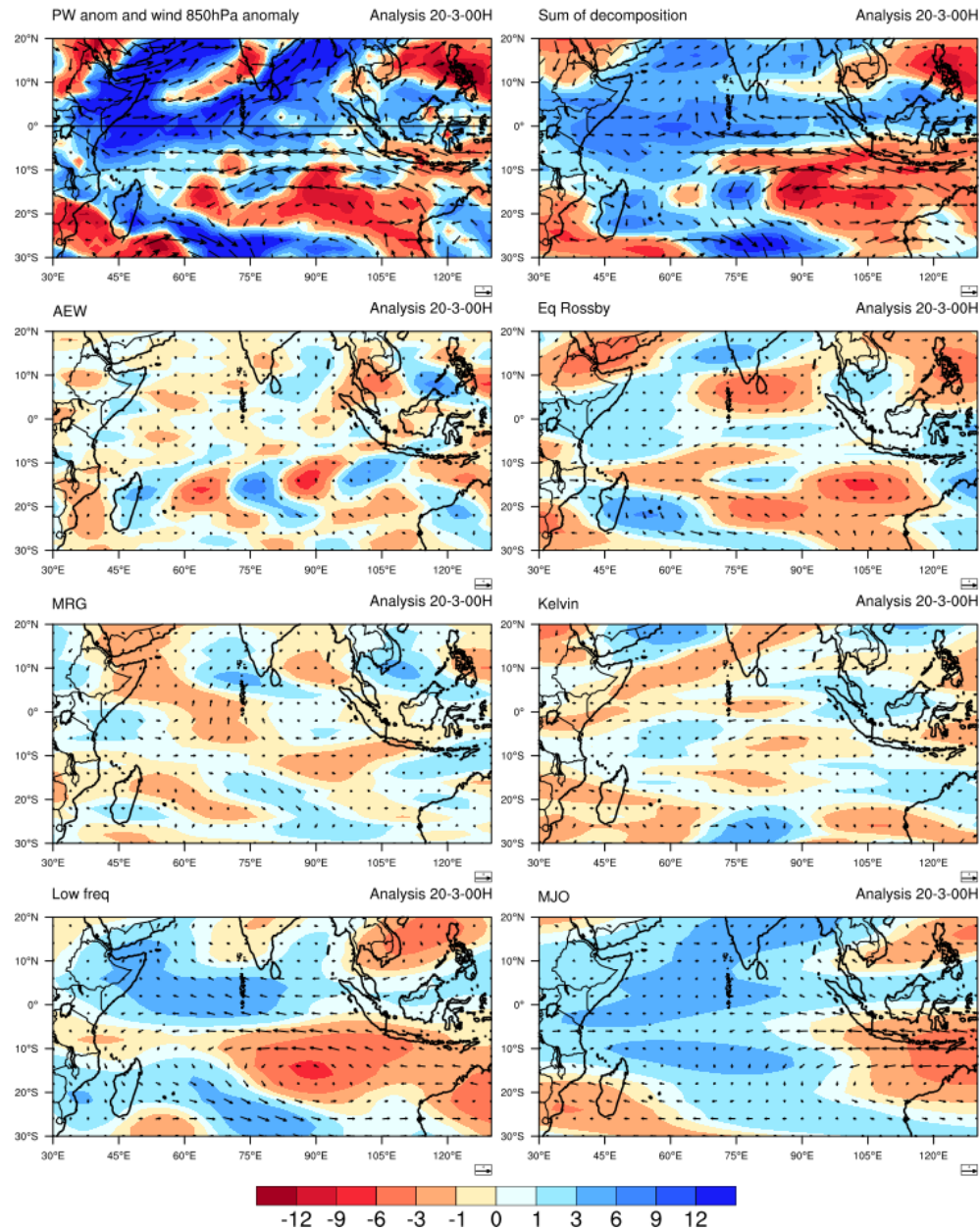


3. Ondes équatoriales



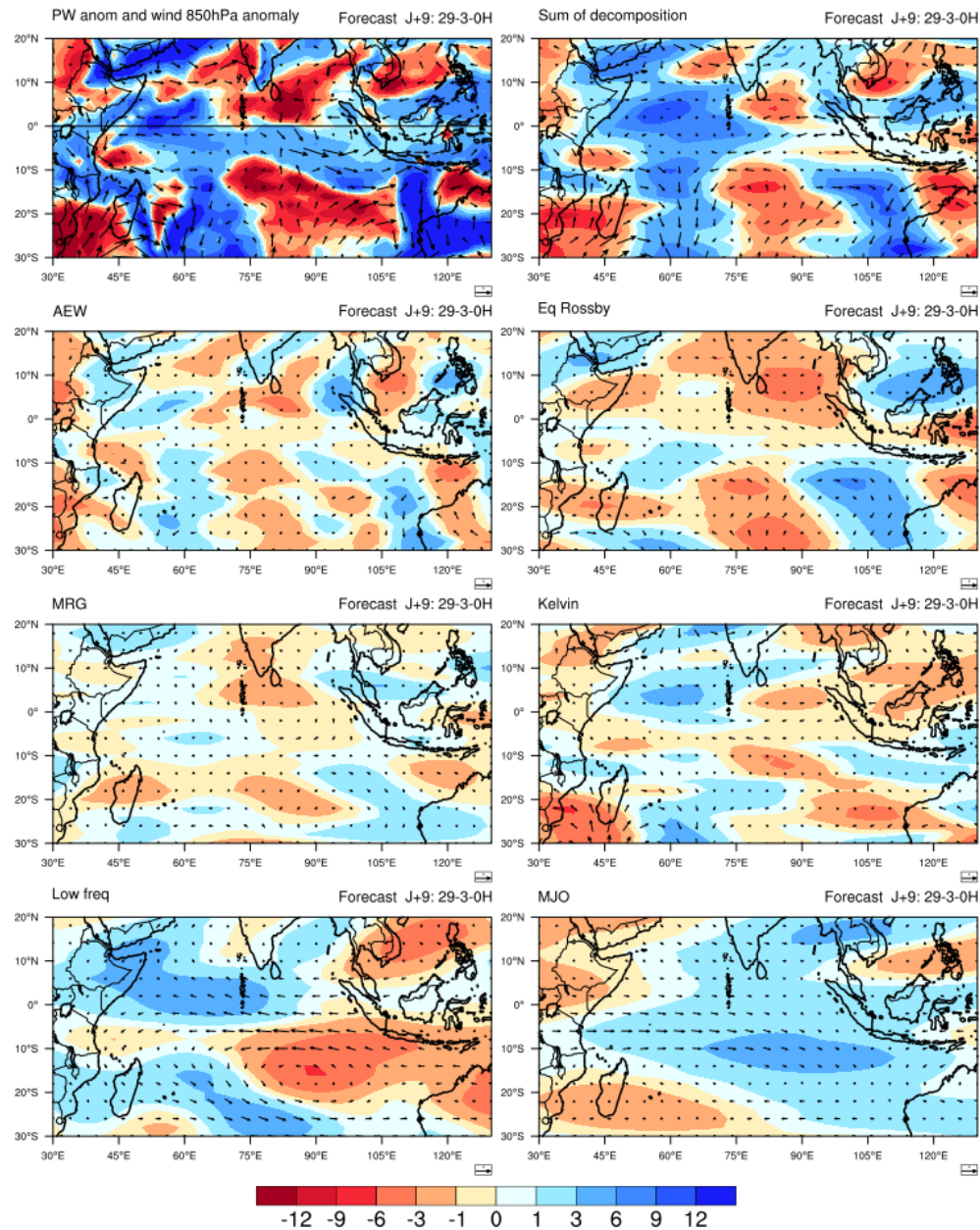
3. Ondes équatoriales

PW and 850hPa wind anomalies



3. Ondes équatoriales

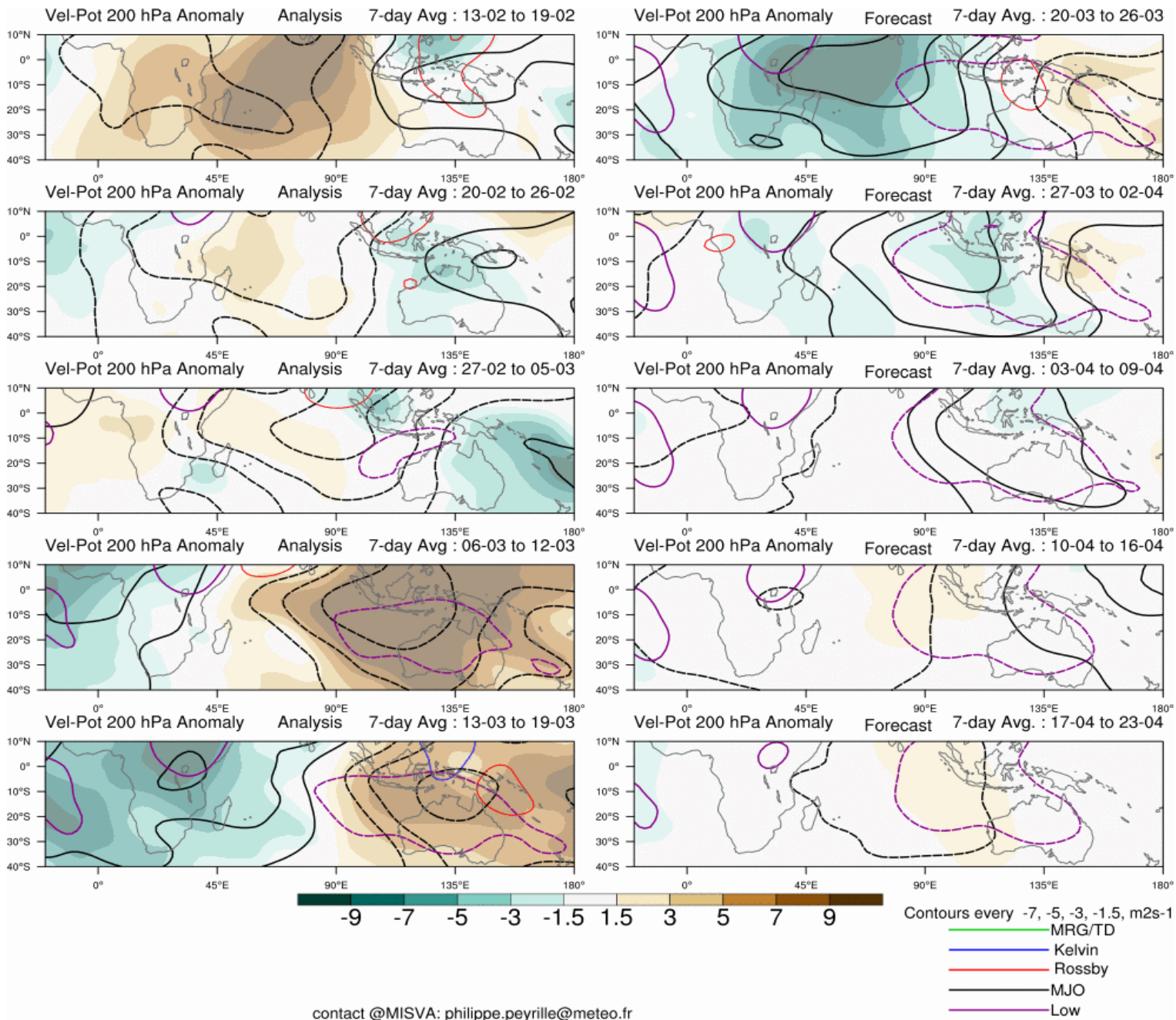
PW and 850hPa wind anomalies



VP200 – MJO, ER dans l'Indien

Analyse

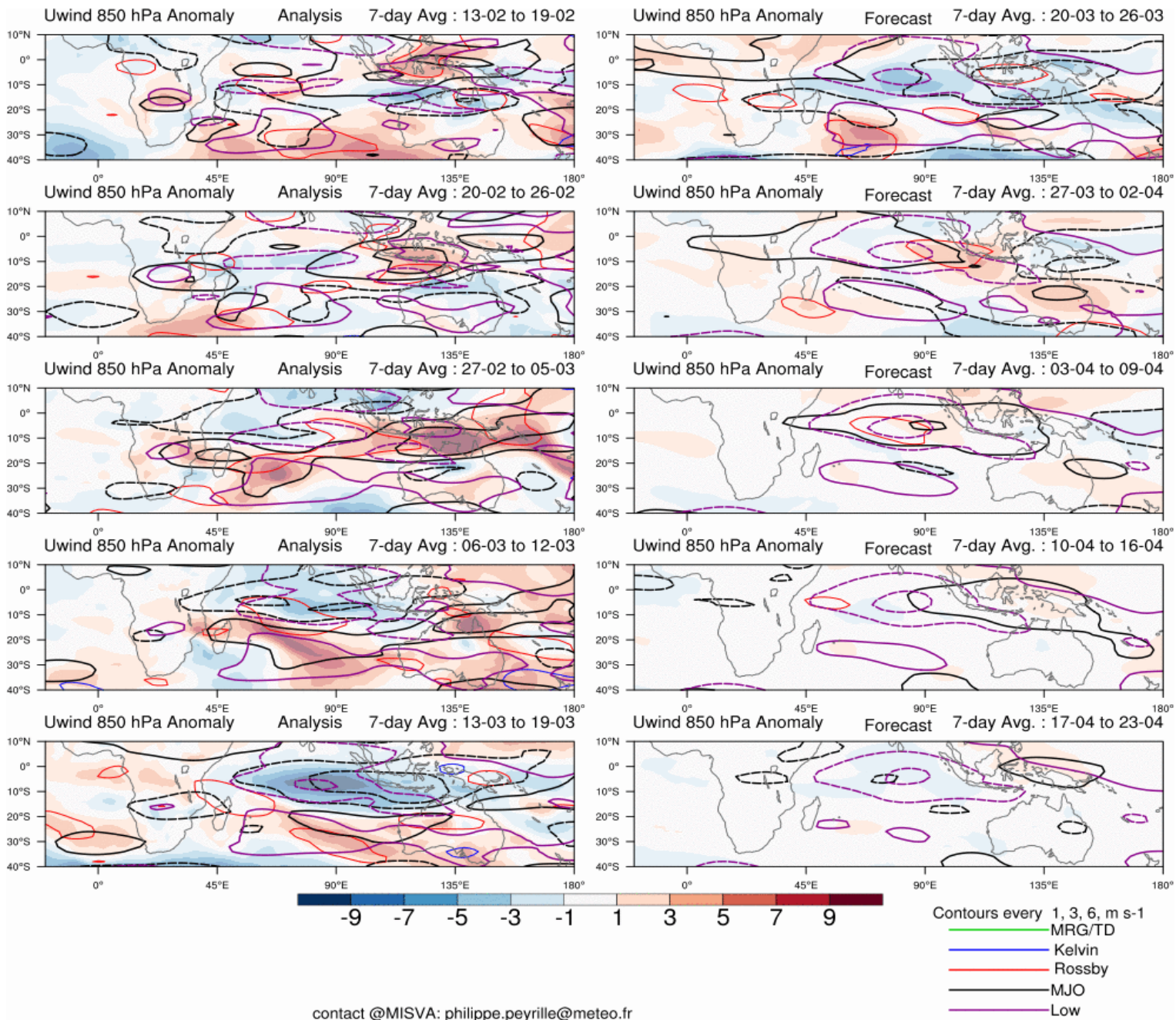
S1 à S4



U850 – MJO, ER dans l'Indien

Analyse

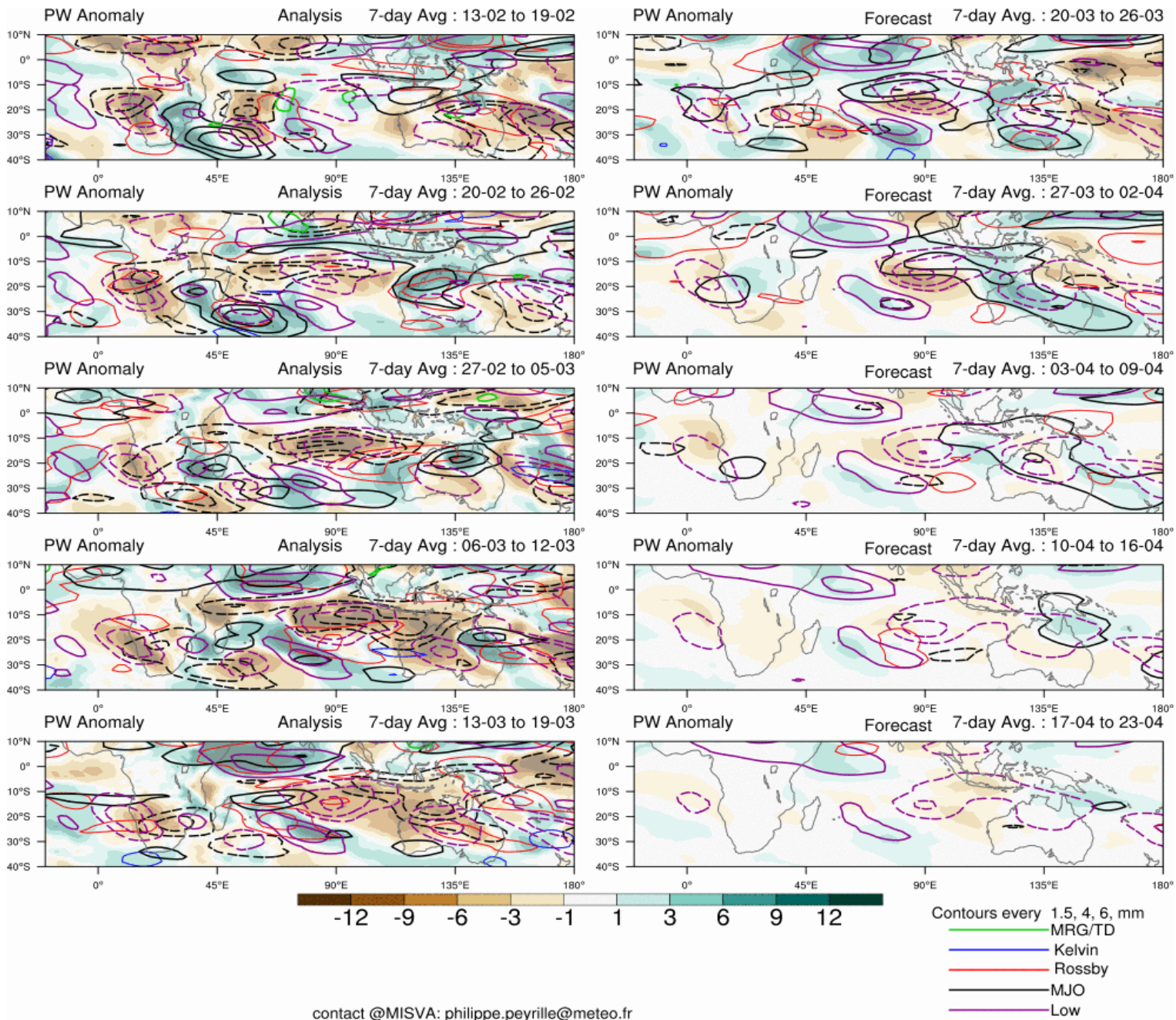
S1 à S4



PW – MJO, ER dans l'Indien

Analyse

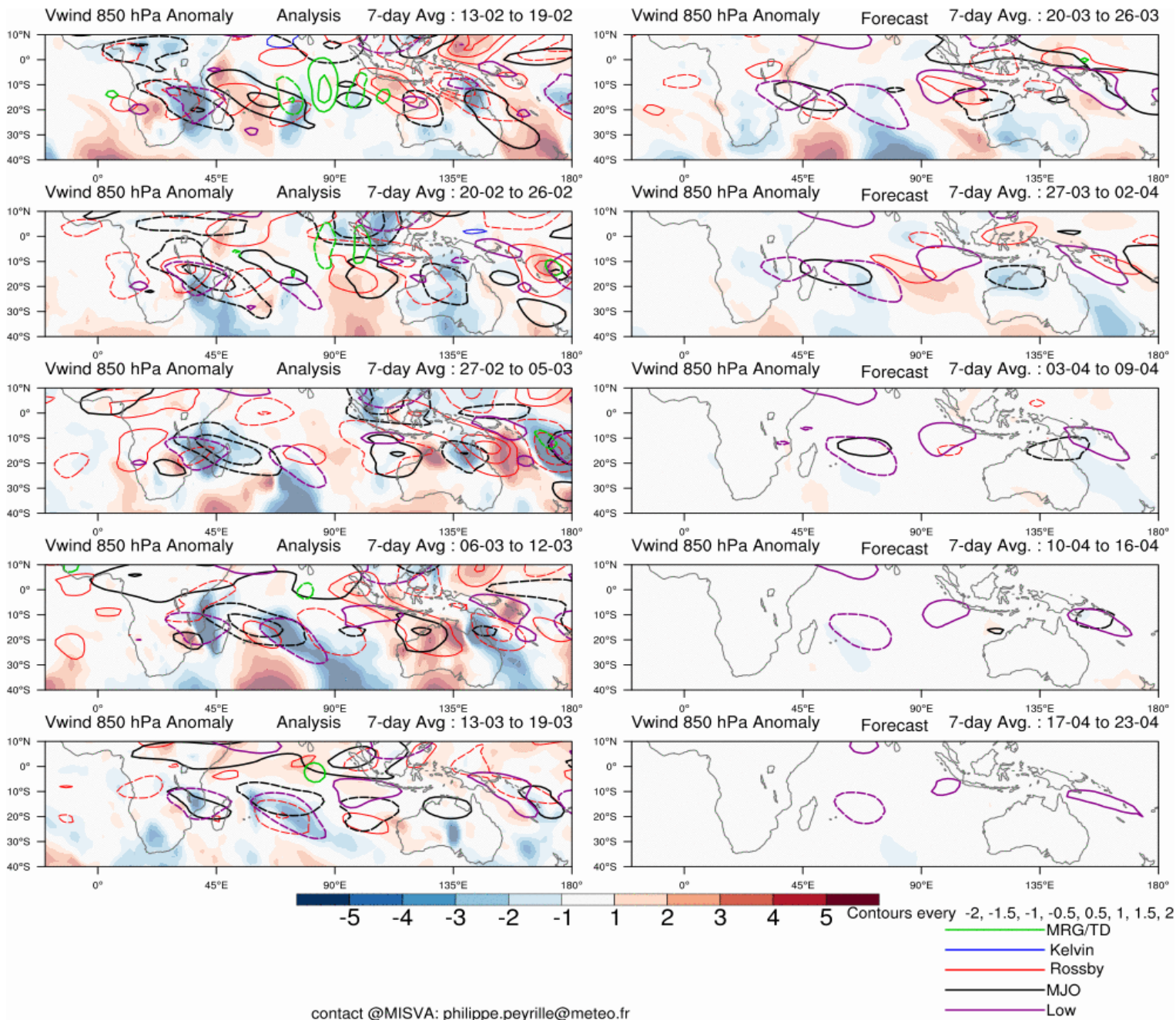
S1 à S4



V850 – MJO, ER dans l'Indien

Analyse

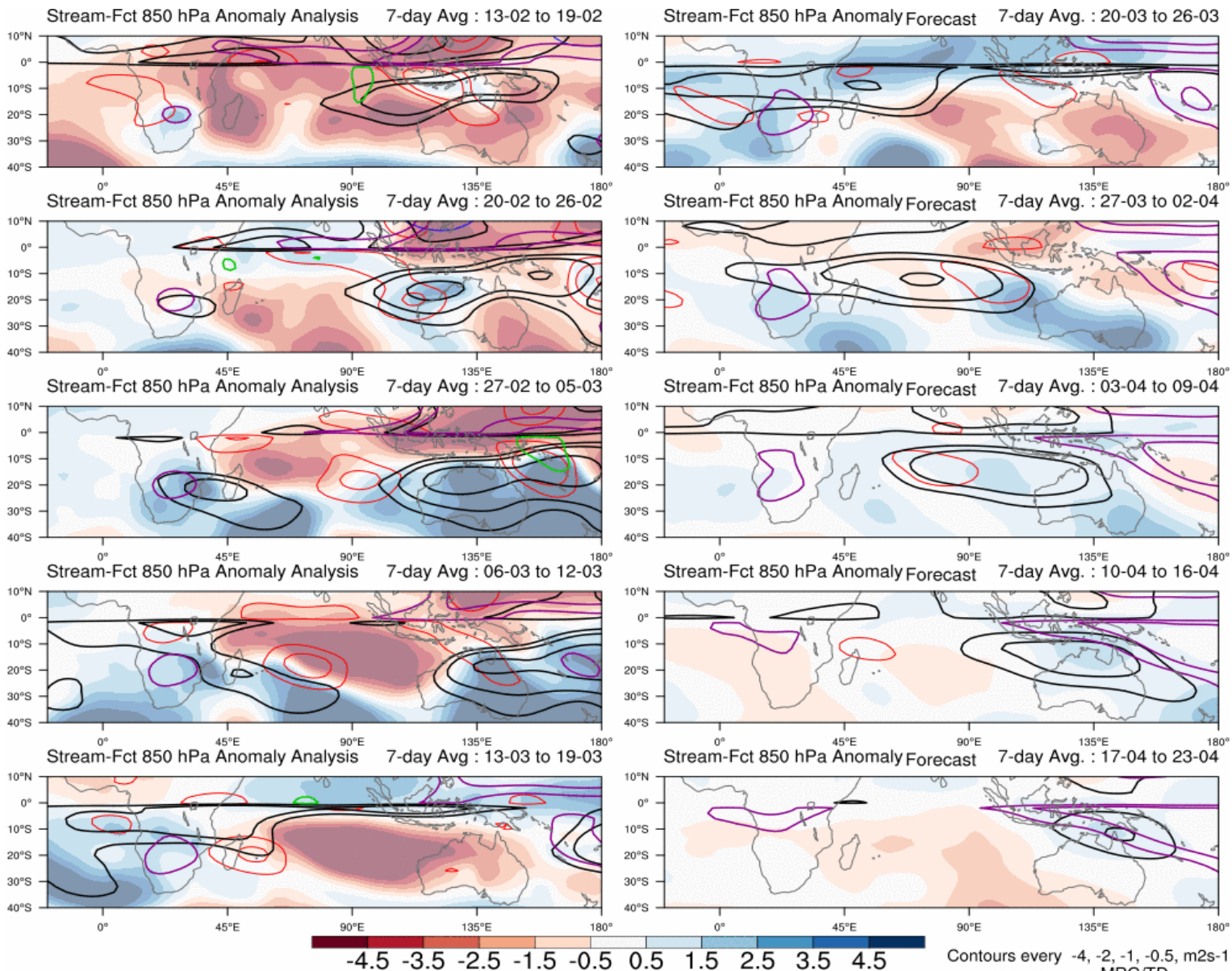
S1 à S4



SF850 – MJO, ER dans l'Indien

Analyse

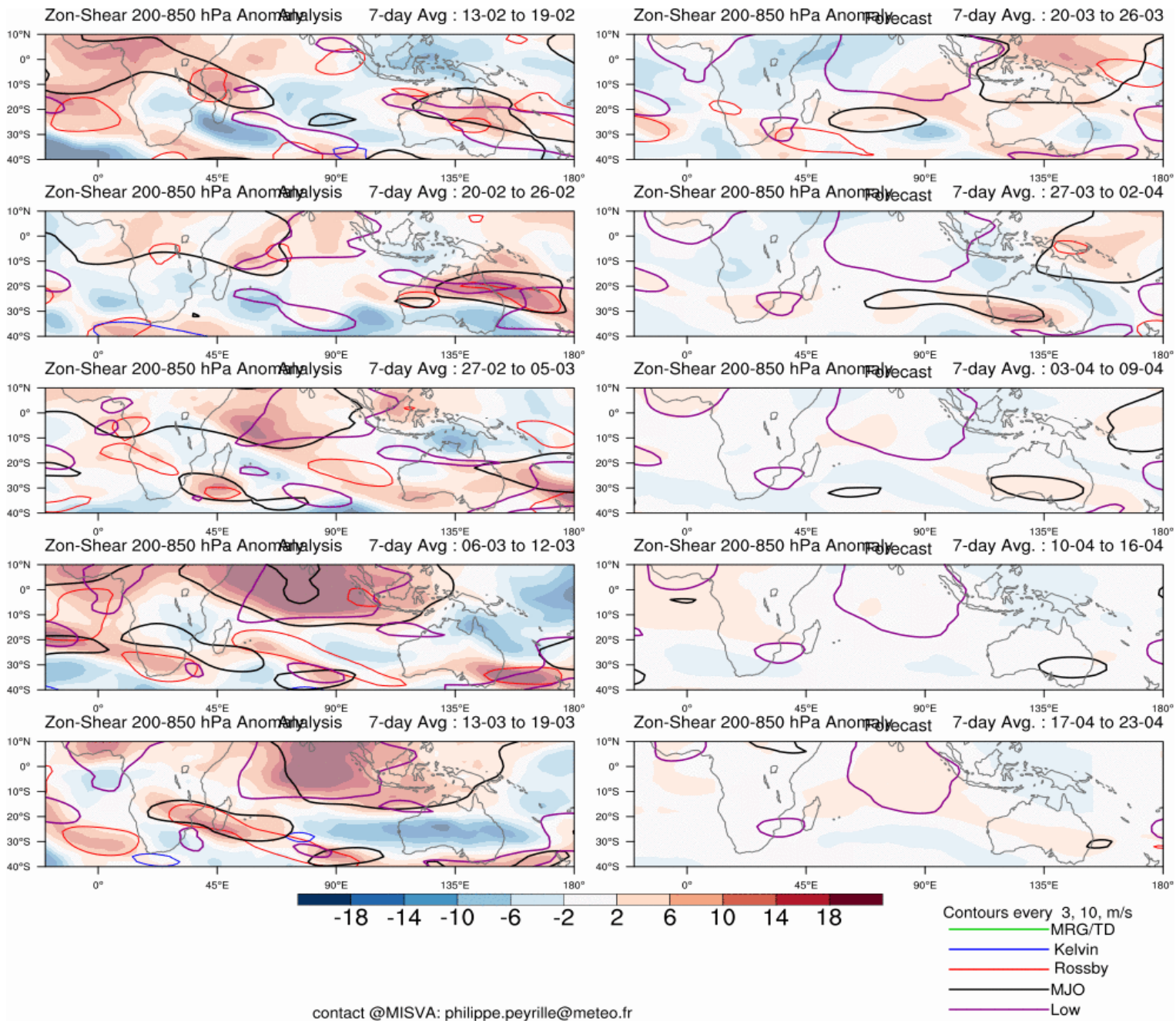
S1 à S4



U_{shear} – MJO, ER dans l'Indien

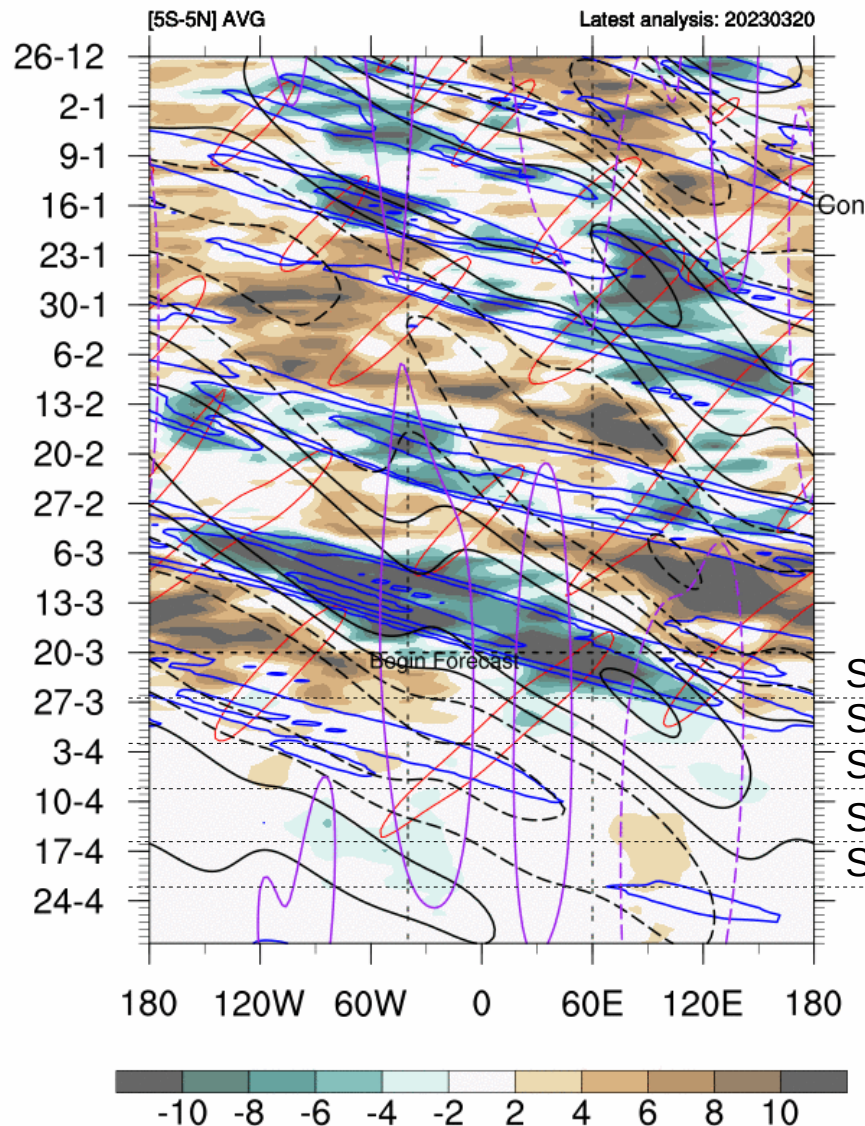
Analyse

S1 à S4



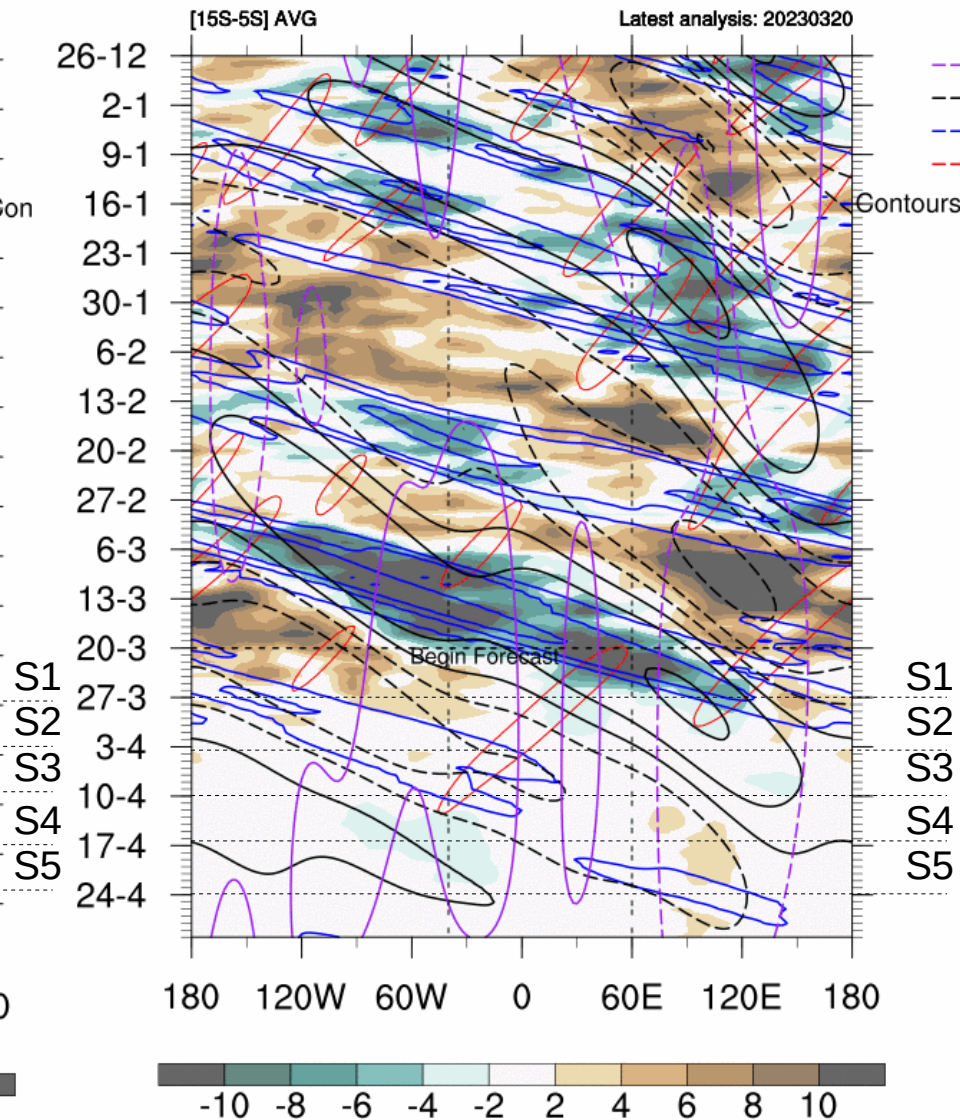
3. Ondes équatoriales

vp200 anomaly + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

vp200 anomaly + Eq. Waves filtering



Low freq.
MJO
Kelvin
Rossby

Contours : -12 -9 -6 -3 -1 10^6 m^2

Solid contours

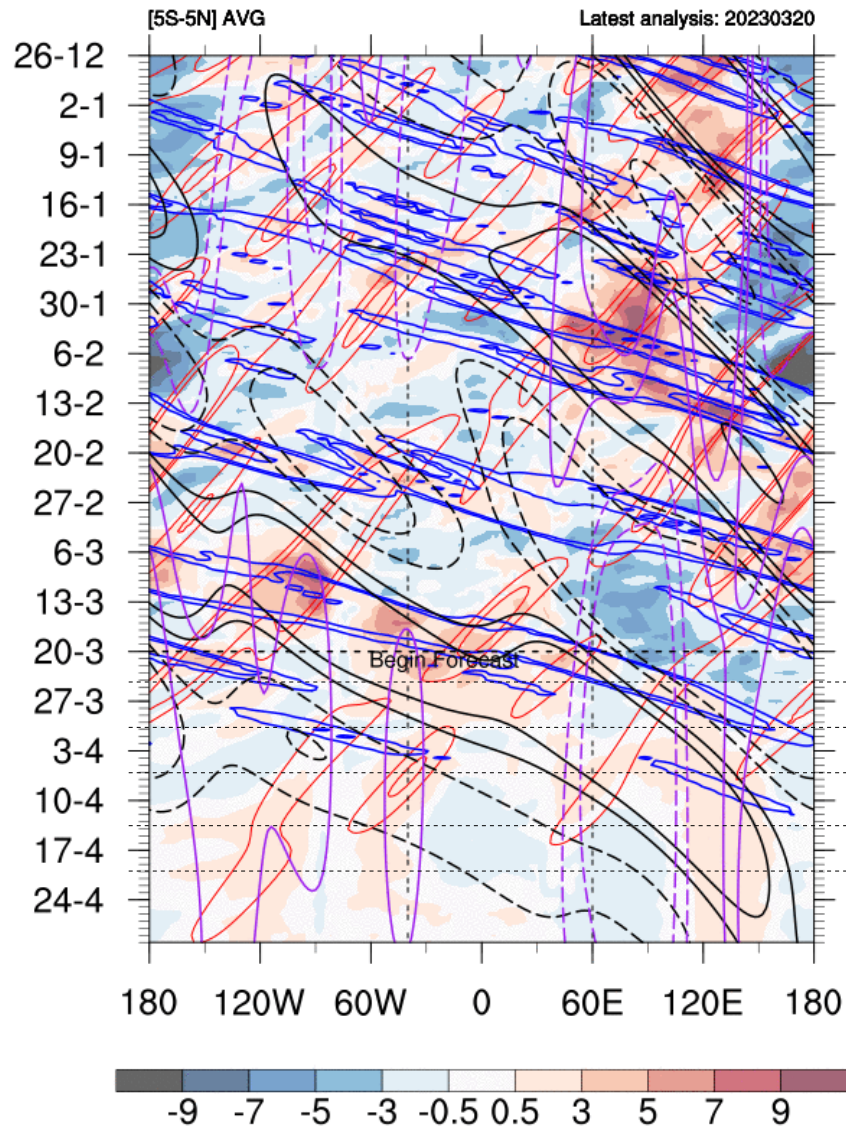
favour convection

S1
S2
S3
S4
S5

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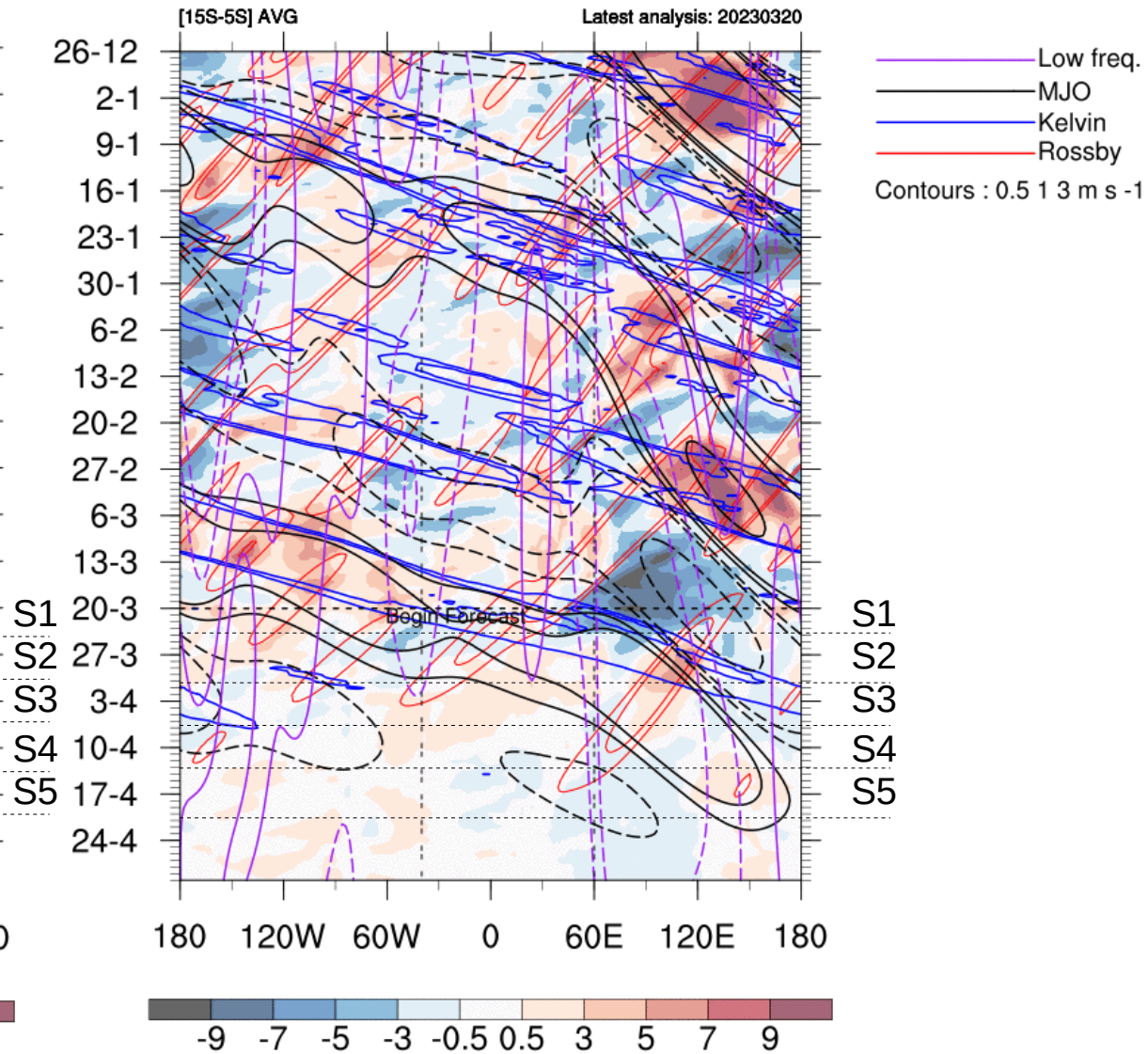
3. Ondes équatoriales

u850 anomaly + Eq. Waves filtering



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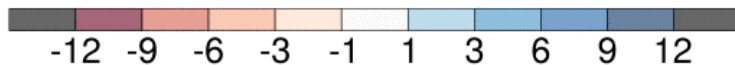
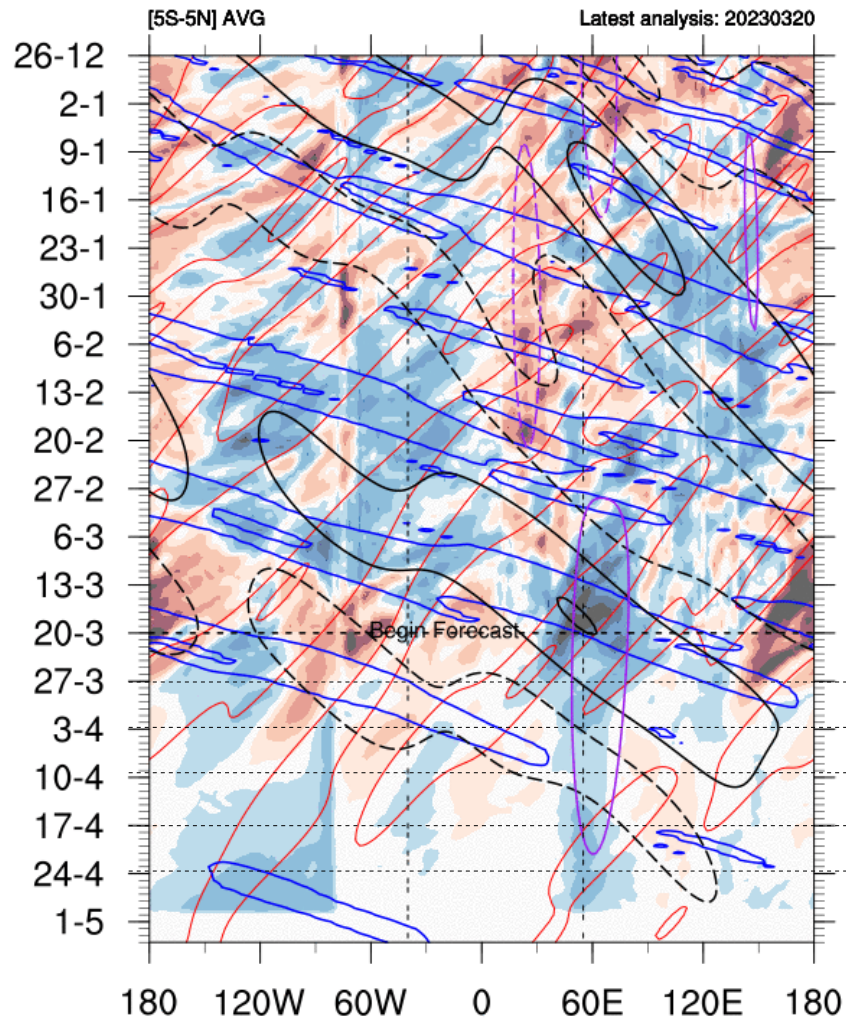
u850 anomaly + Eq. Waves filtering



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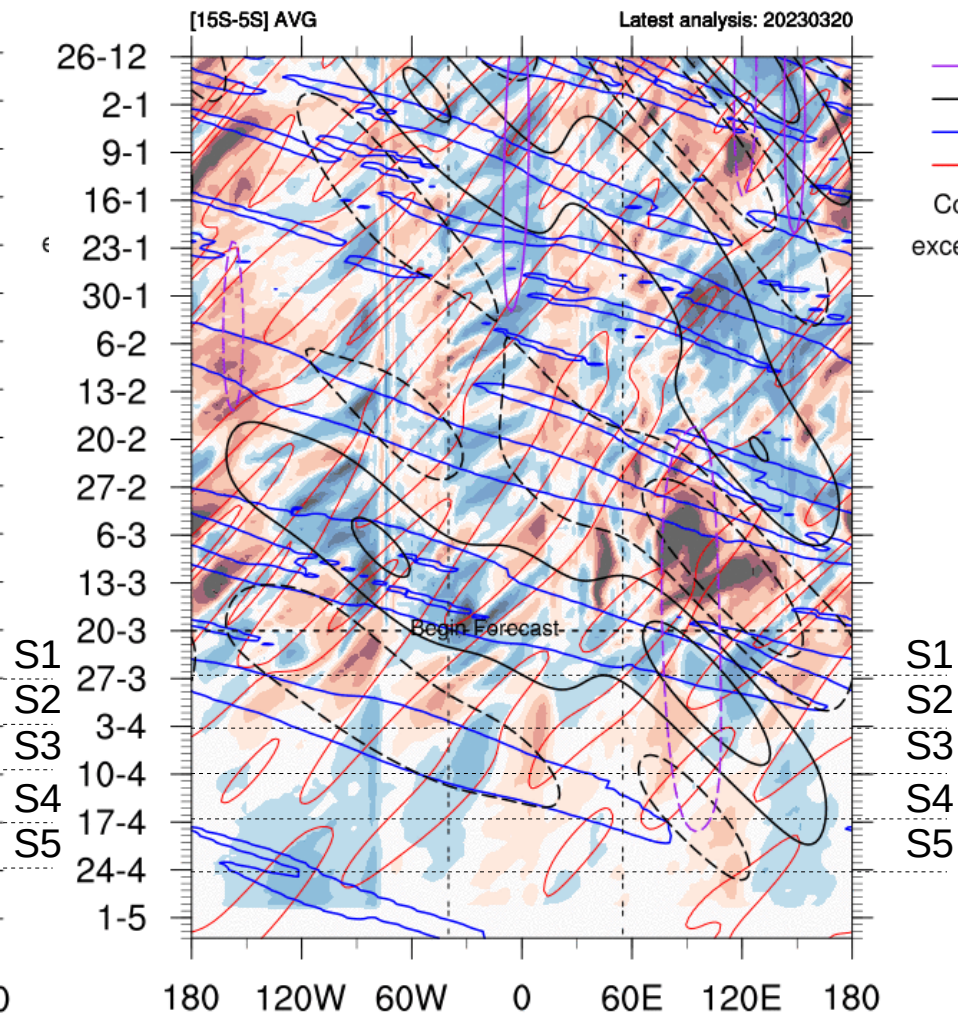
3. Ondes équatoriales

TCWV anomaly (mm) + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

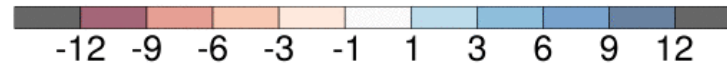
TCWV anomaly (mm) + Eq. Waves filtering



Low freq.
MJO
Kelvin
Rossby

Contours : 0.5 3 6 mm
except Low freq, 3,6, 9 mm

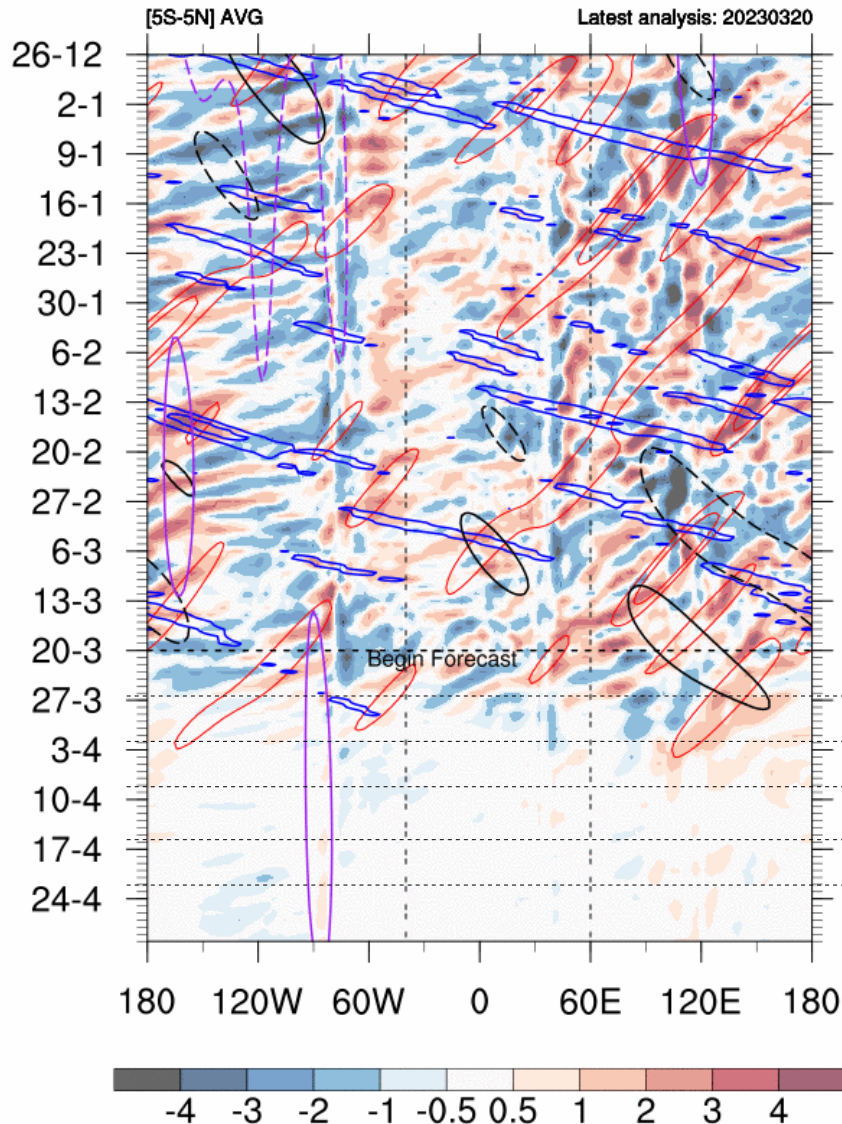
S1
S2
S3
S4
S5



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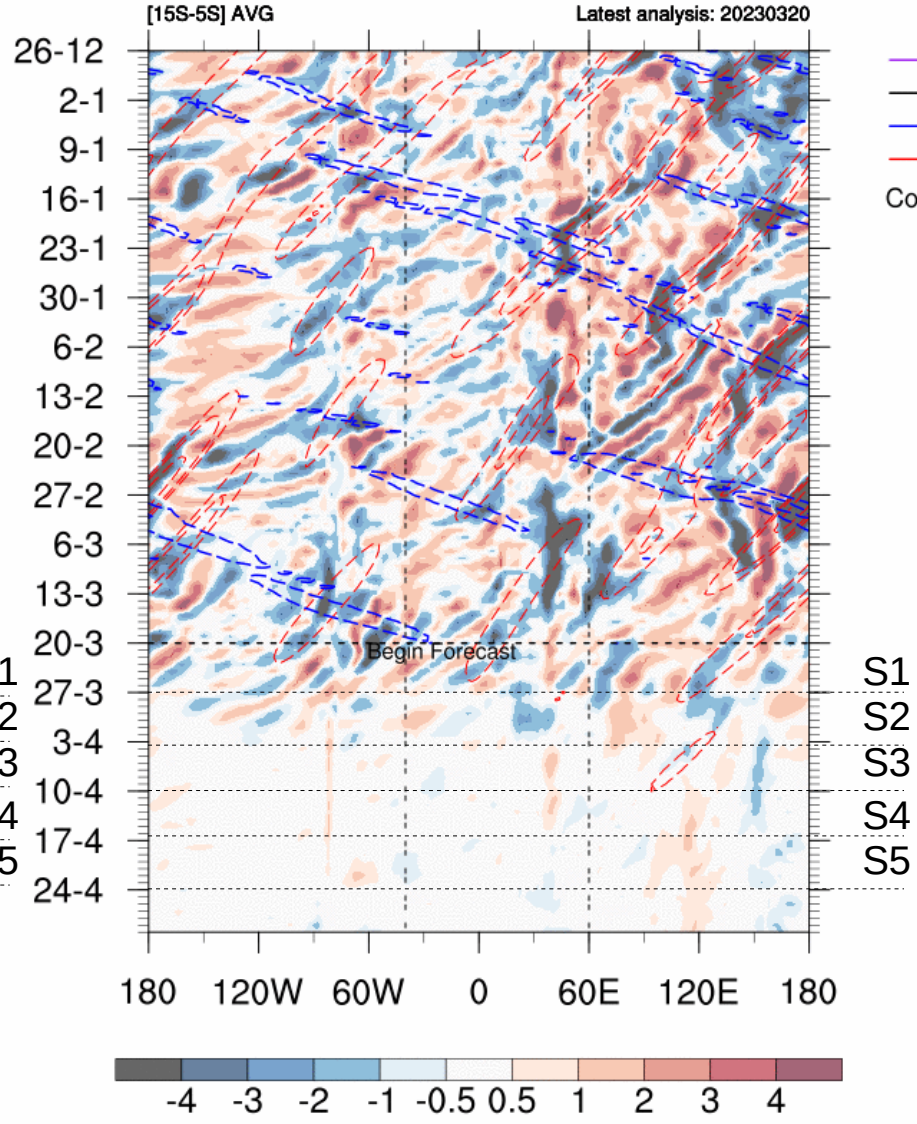
3. Ondes équatoriales

v850 anomaly + Eq. Waves filtering



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v850 anomaly + Eq. Waves filtering

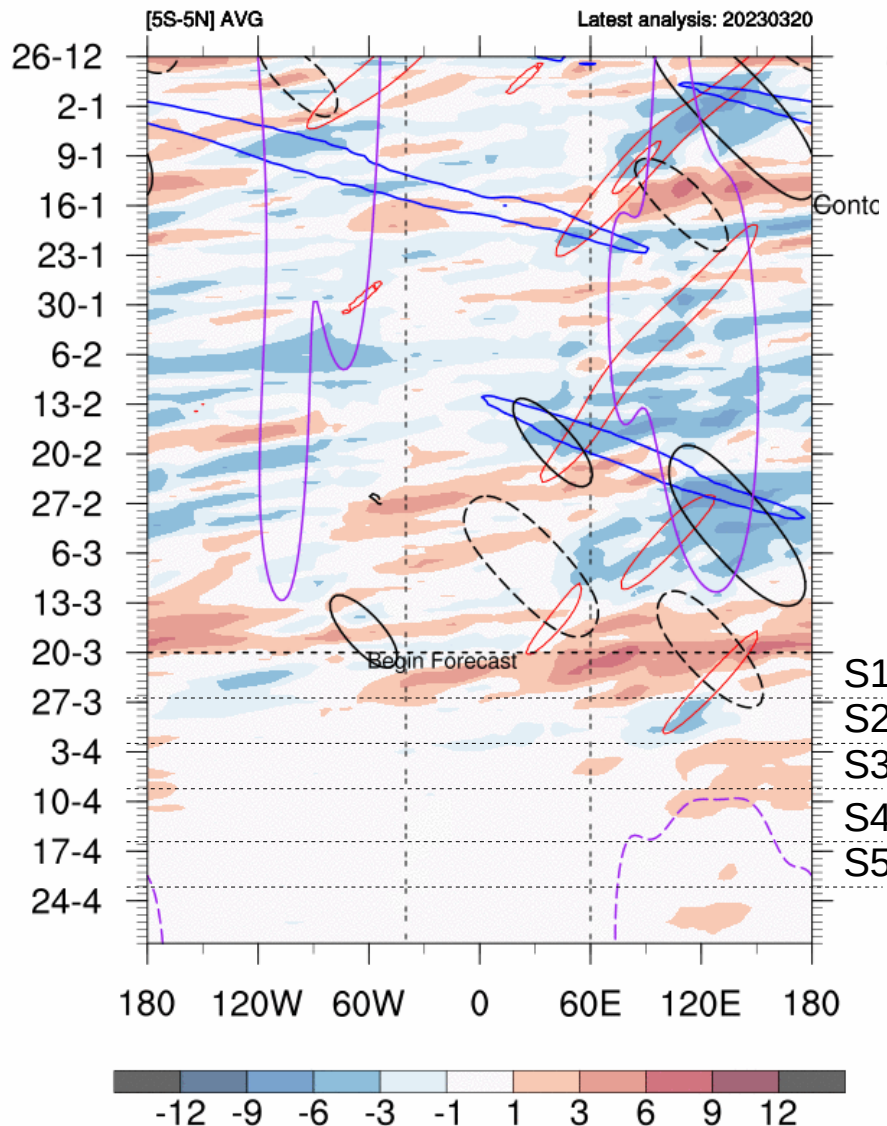


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Low freq.
MJO
Kelvin
Rossby
Contours : -5 -4 -3 m s⁻¹

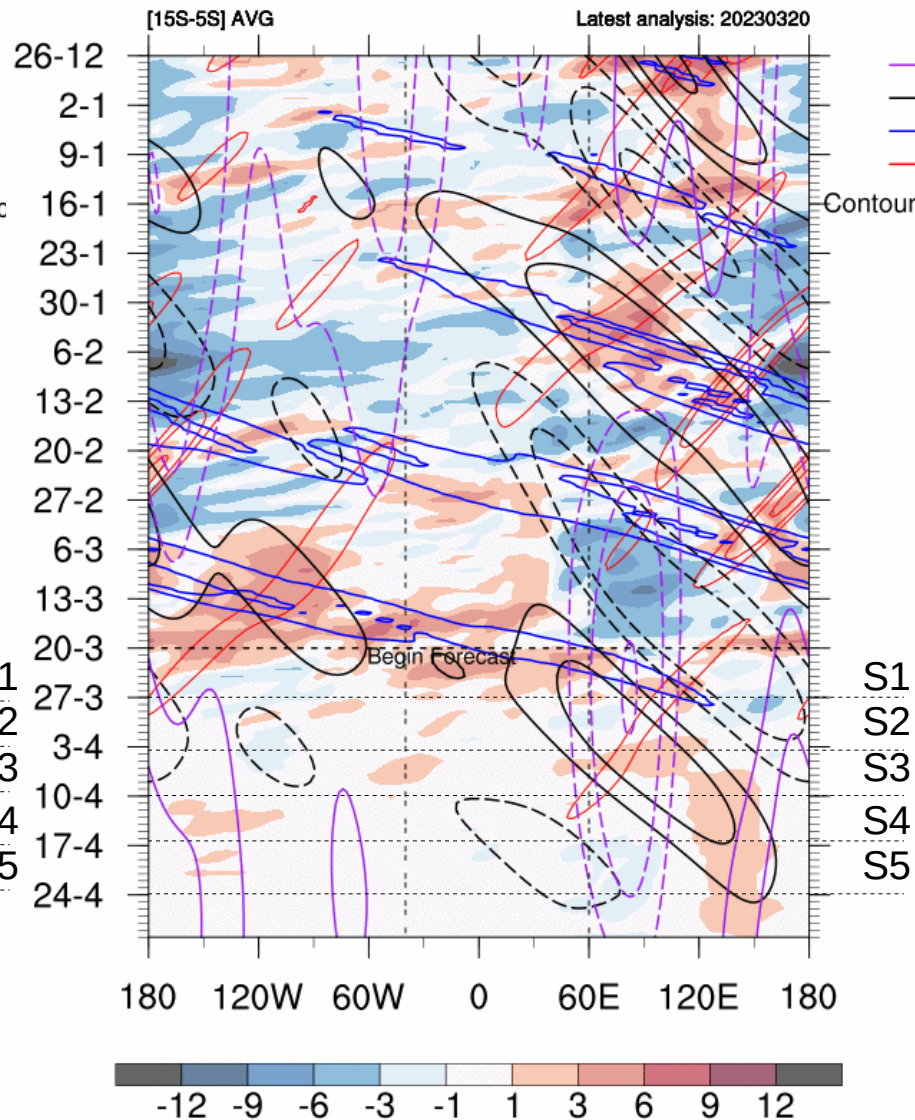
3. Ondes équatoriales

sf850 anomaly + Eq. Waves filtering



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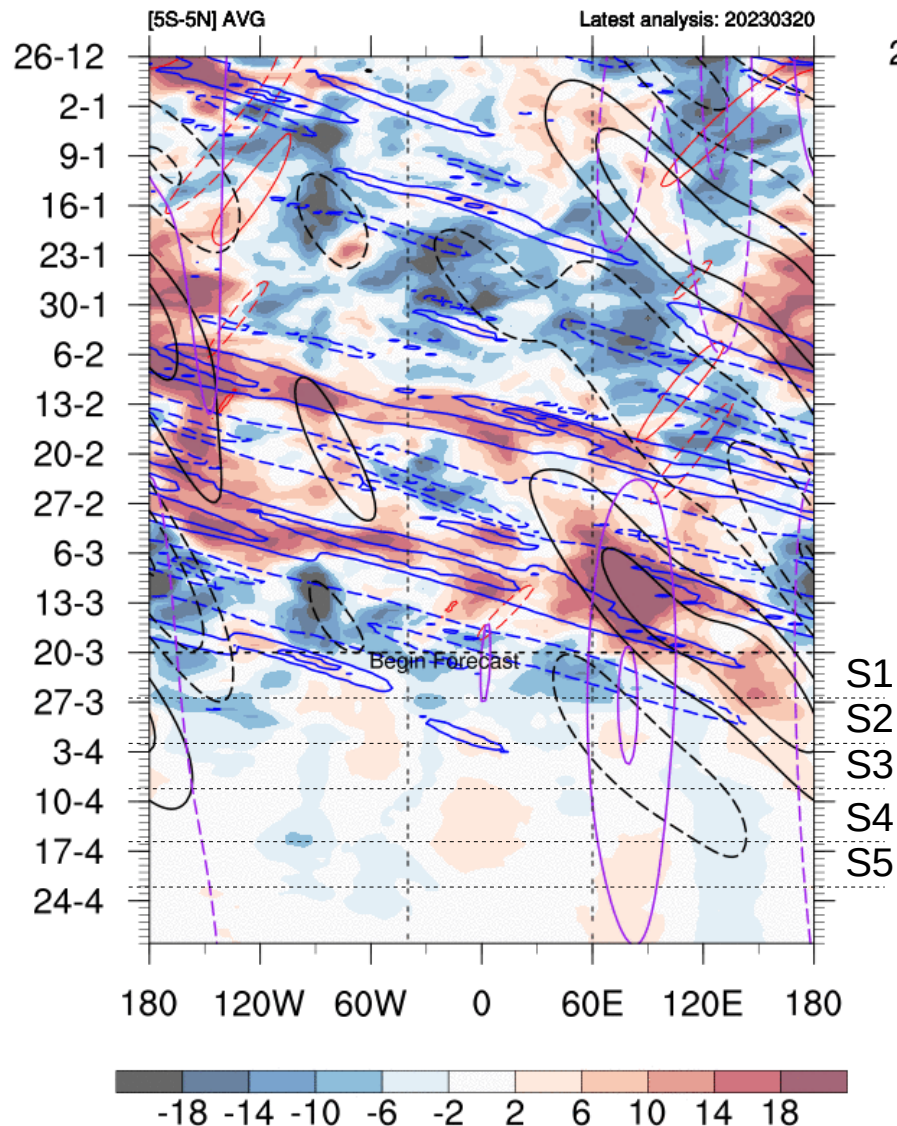
sf850 anomaly + Eq. Waves filtering



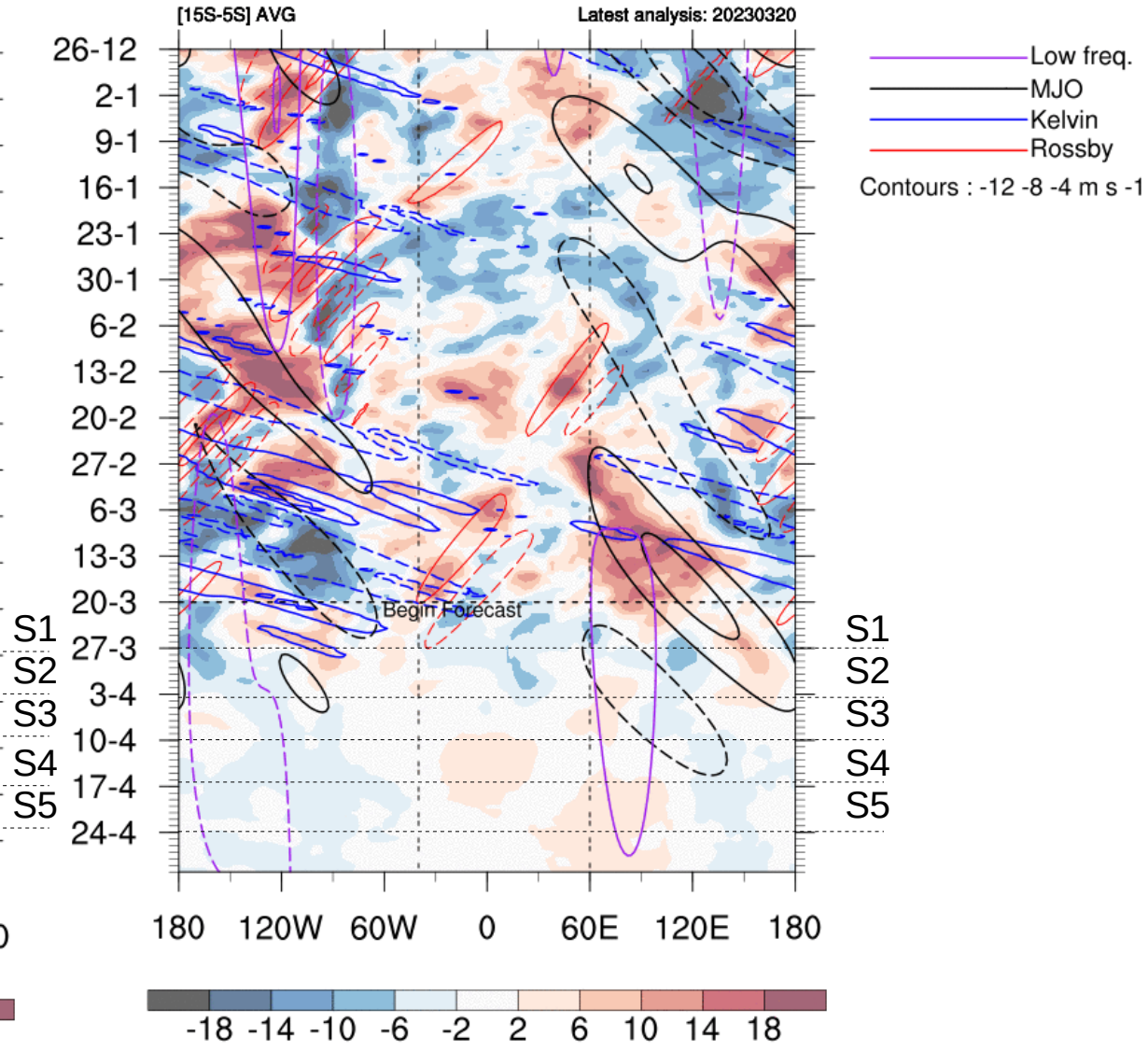
Contact: philippe.peyrille@meteo.fr

3. Ondes équatoriales

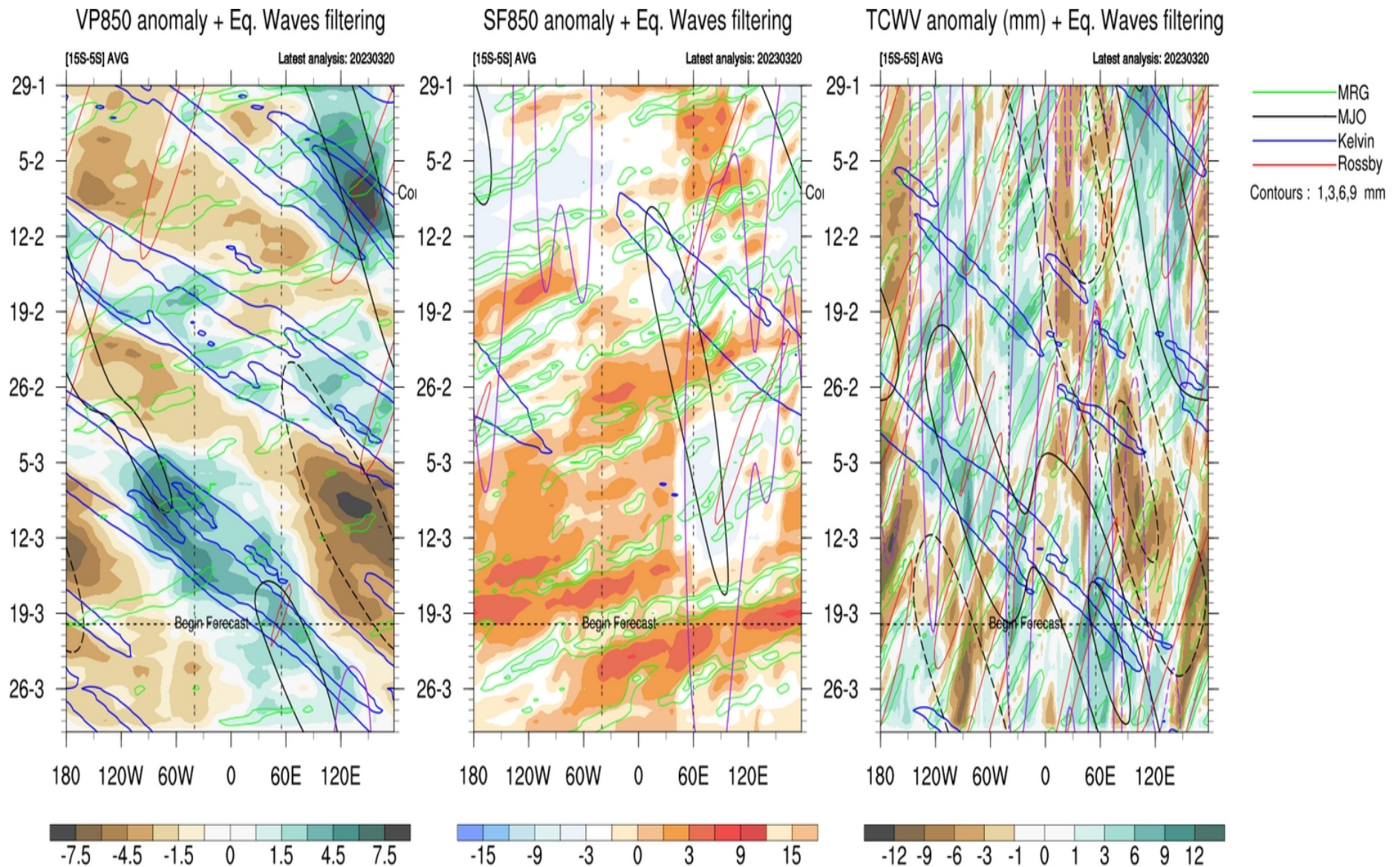
ushear200-850 anomaly + Eq. Waves filtering



ushear200-850 anomaly + Eq. Waves filtering

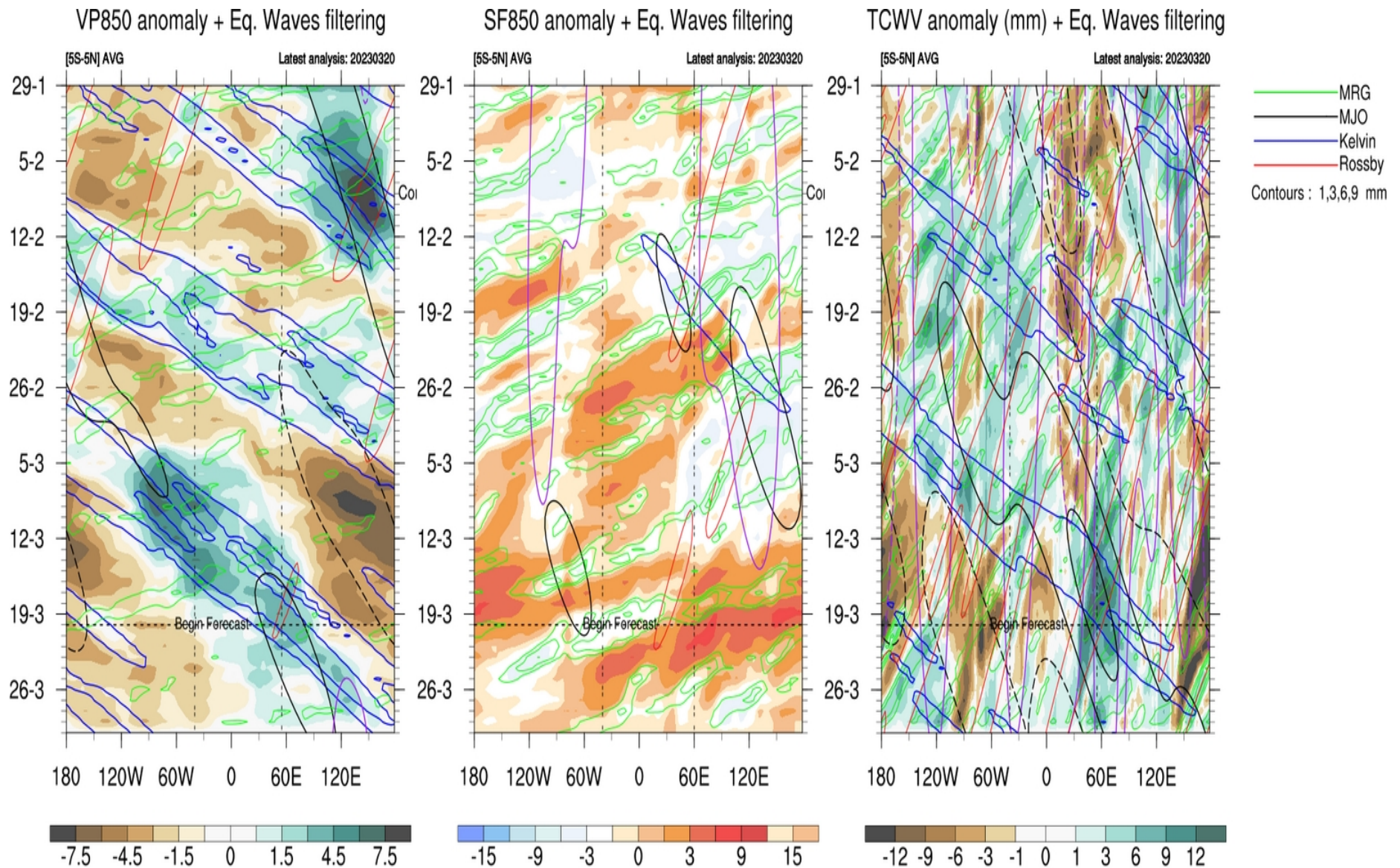


3. Ondes équatoriales



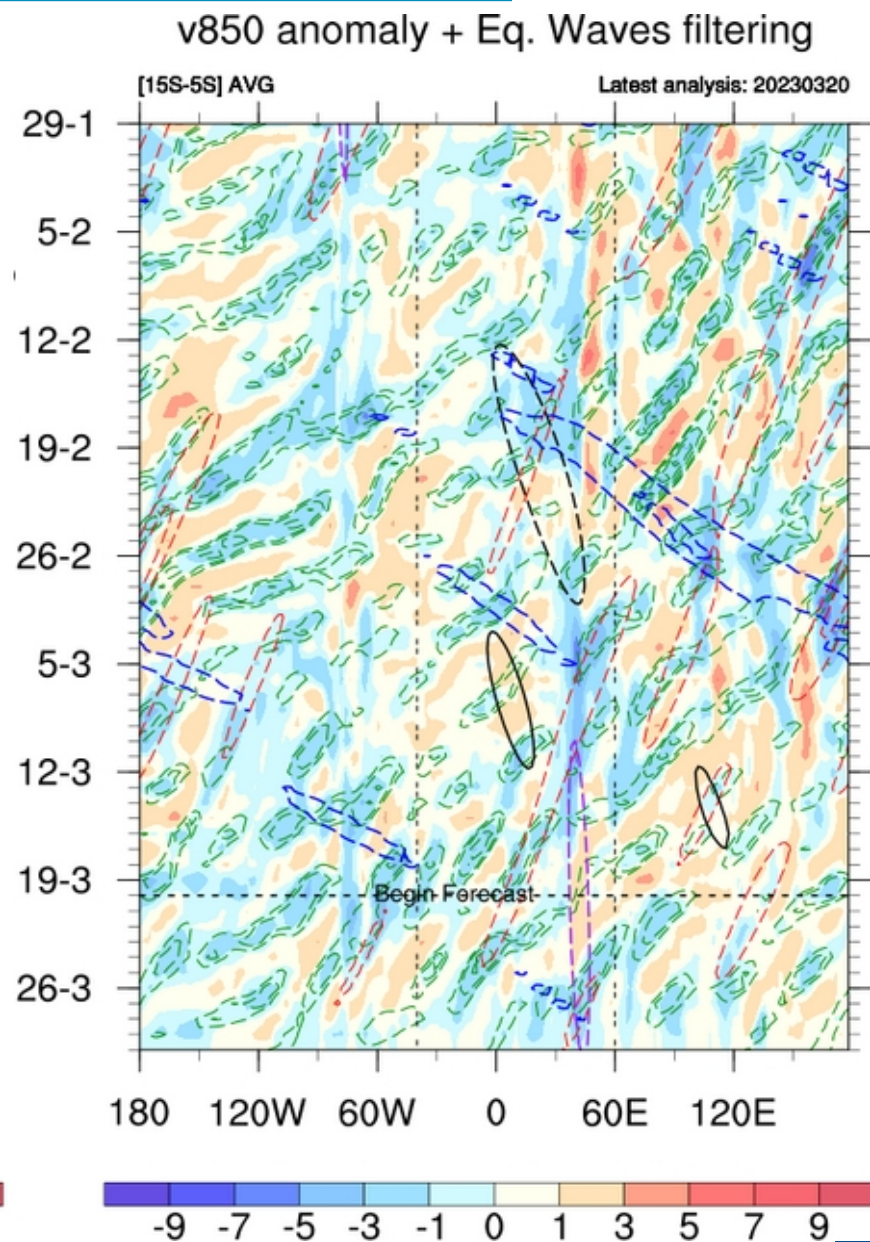
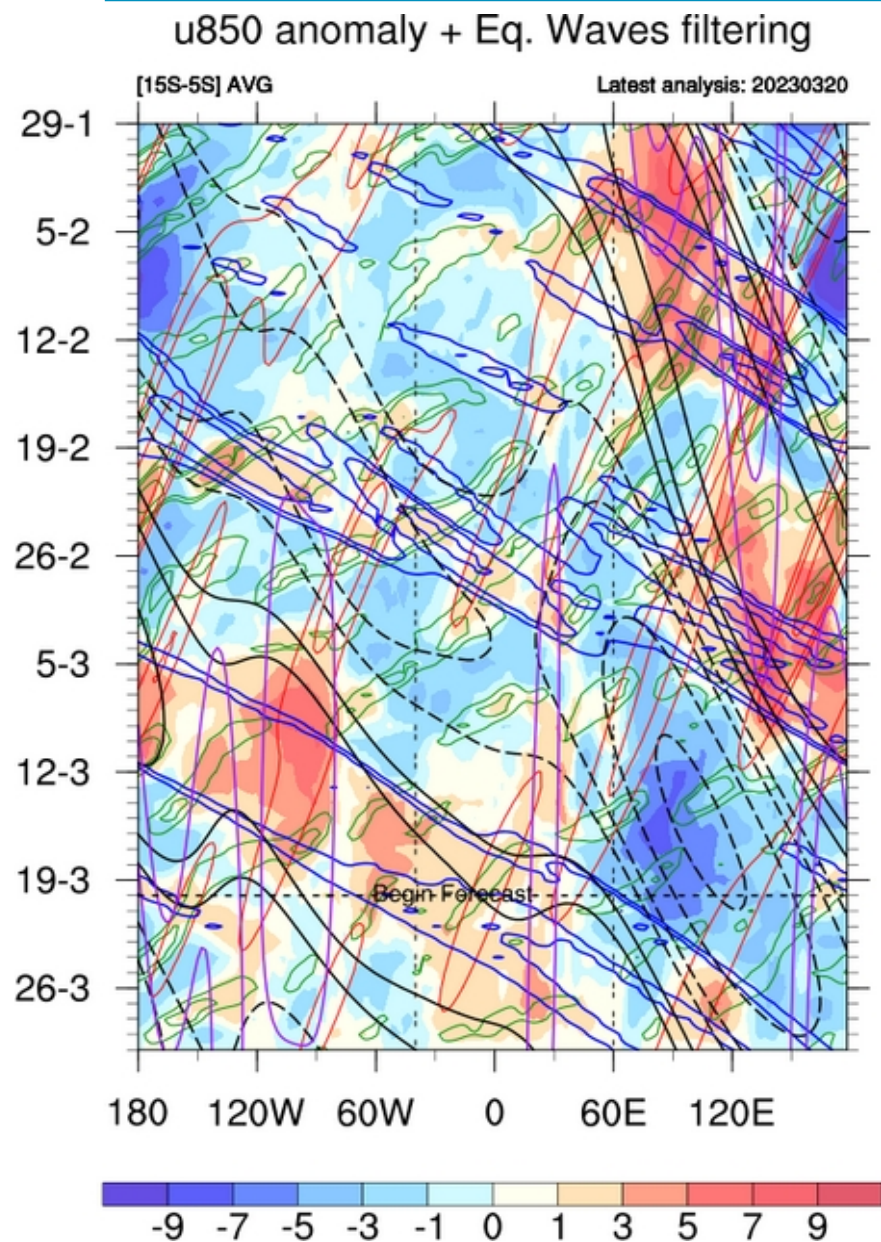
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3. Ondes équatoriales

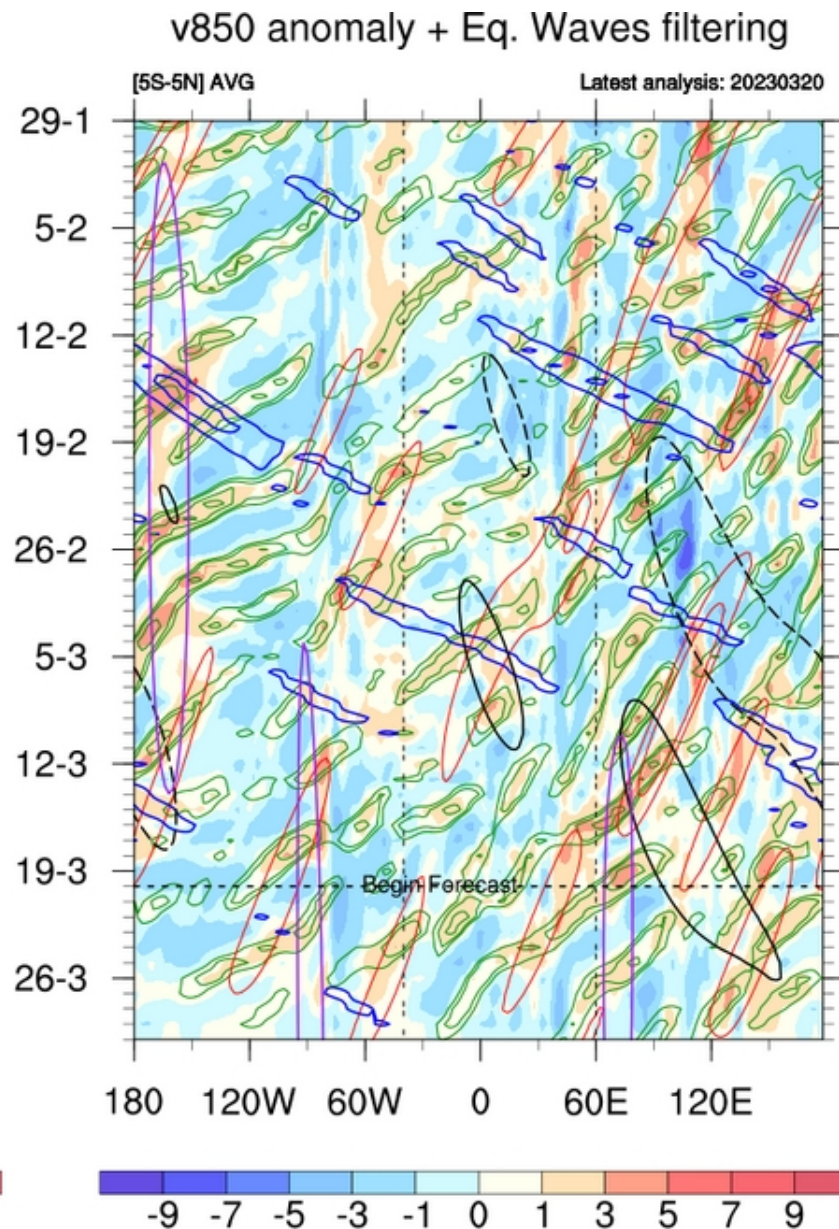
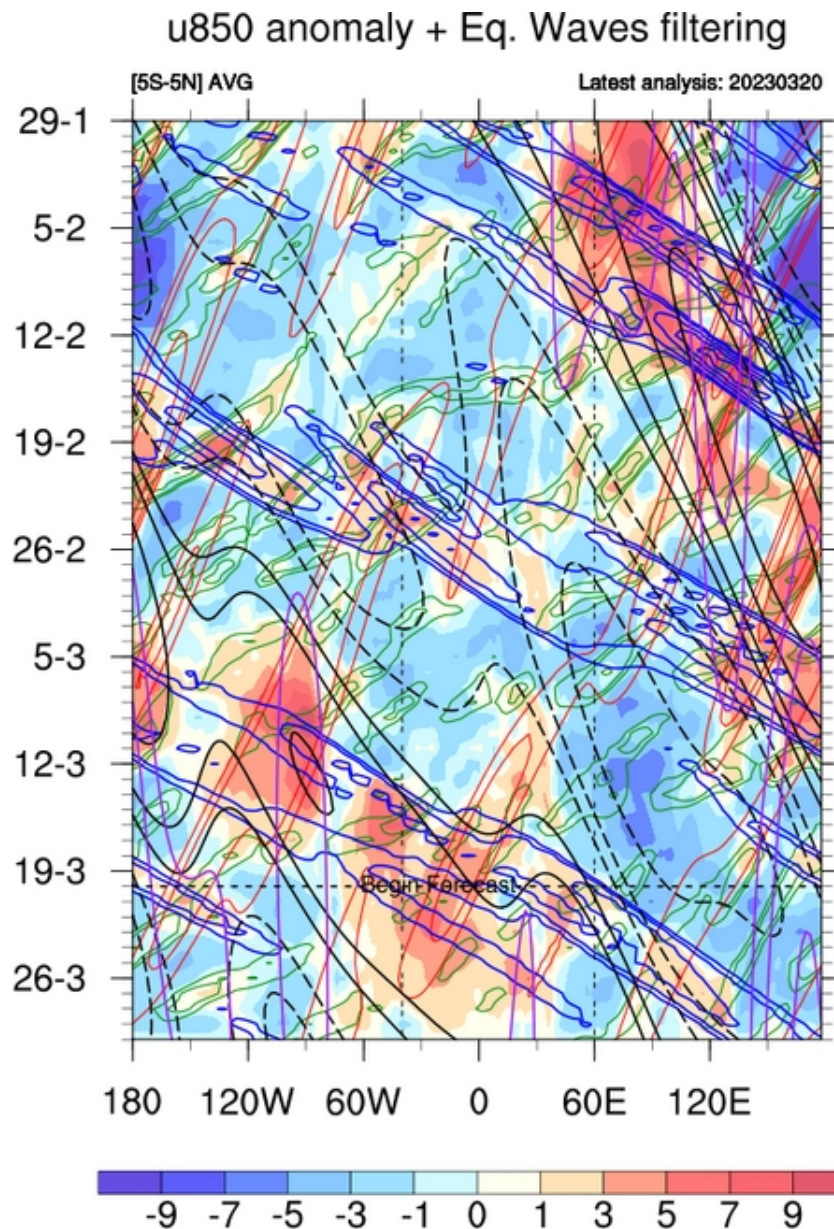


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3. Ondes équatoriales

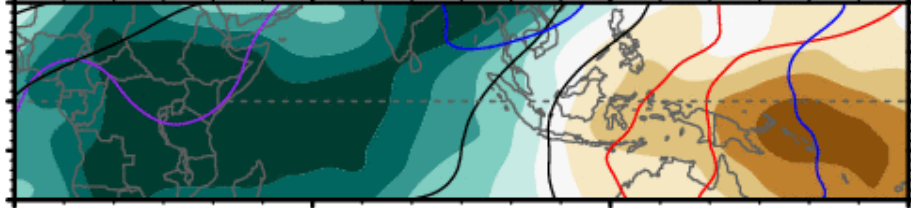


3. Ondes équatoriales

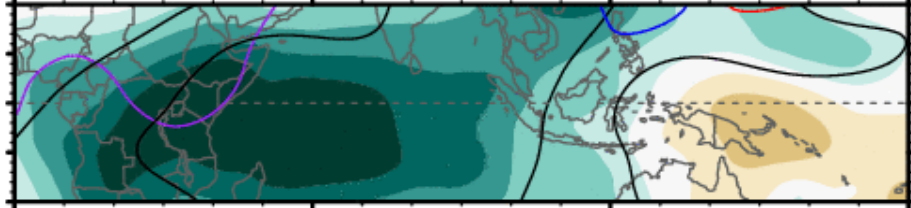


S1 / S2 – VP 200 – MJO, ER et Kelvin dans l'Indien

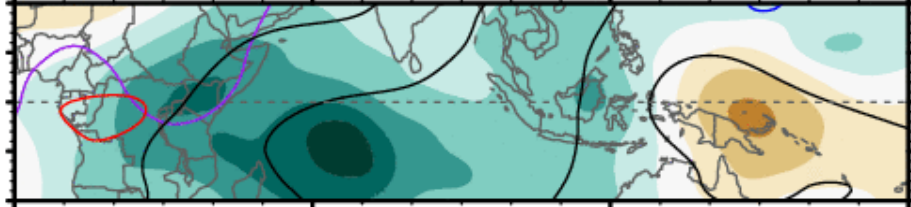
20-Mar to 22-Mar S1 CFS Forecast



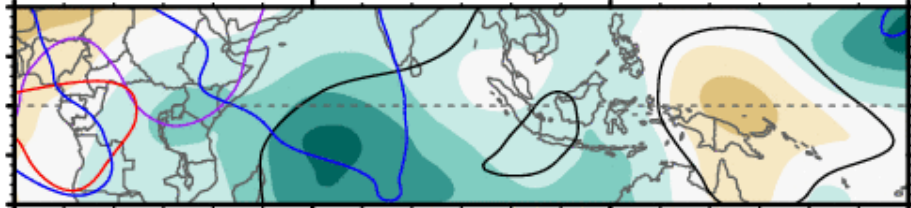
23-Mar to 25-Mar S1



26-Mar to 28-Mar S2

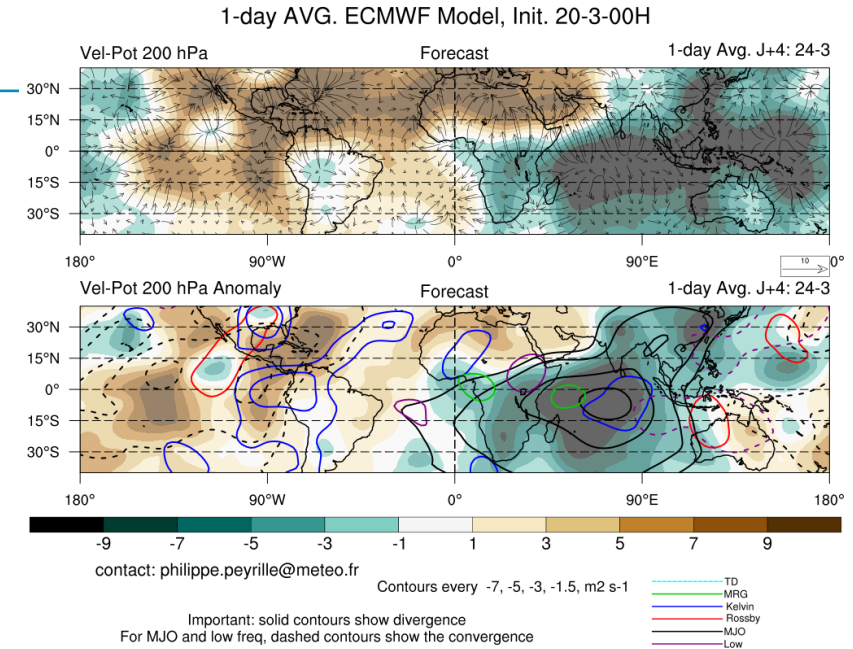


29-Mar to 31-Mar S2

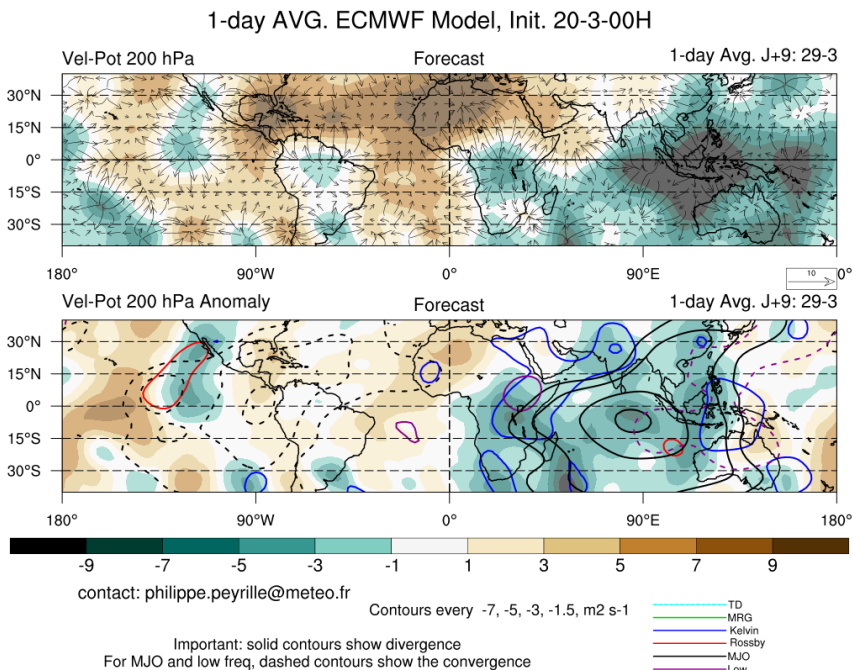


0 60E 120E 180

S1

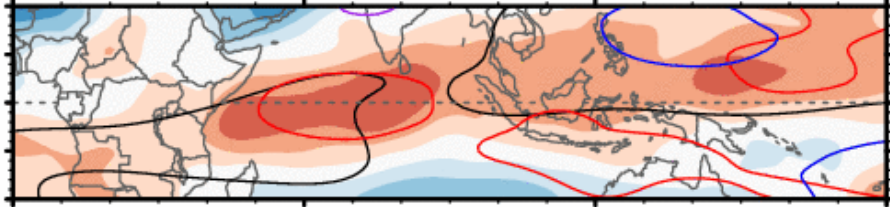


S2

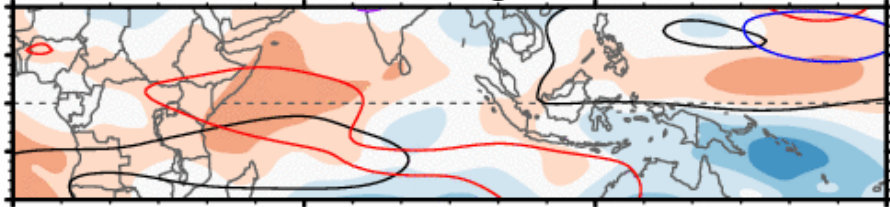


S1 / S2 – SF 850 – MJO, ER et Kelvin dans l'Indien

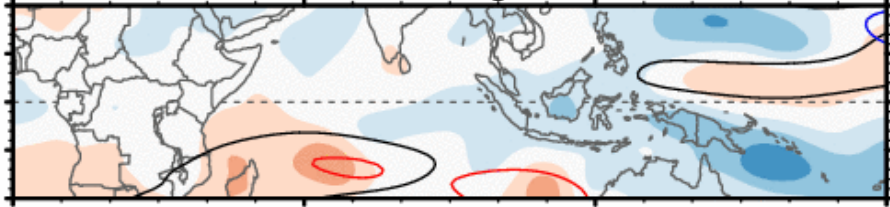
20-Mar to 22-Mar S1 CFS Forecast



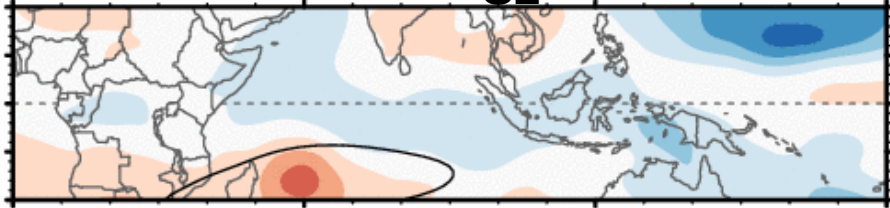
23-Mar to 25-Mar S1



26-Mar to 28-Mar S2

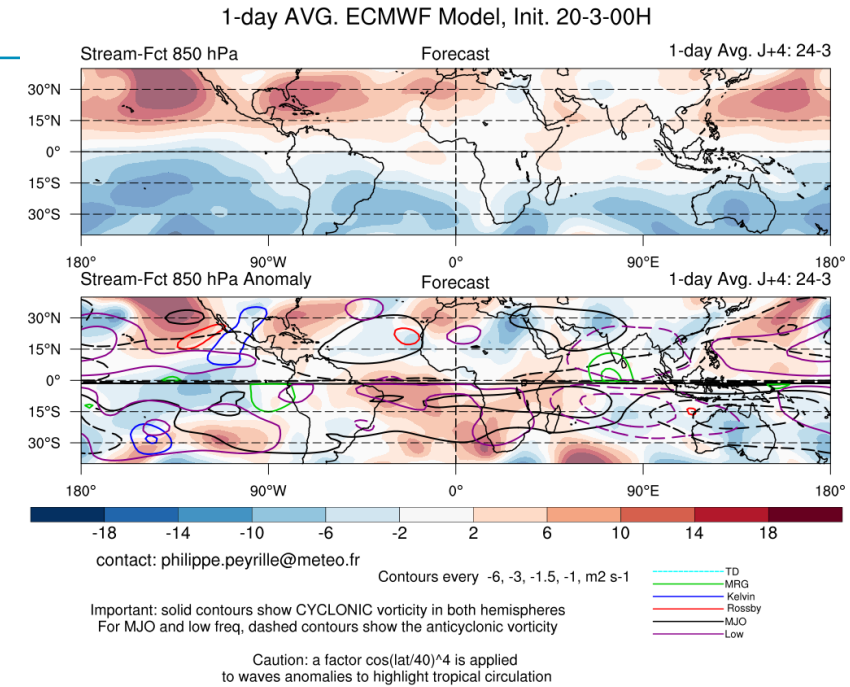


29-Mar to 31-Mar S2

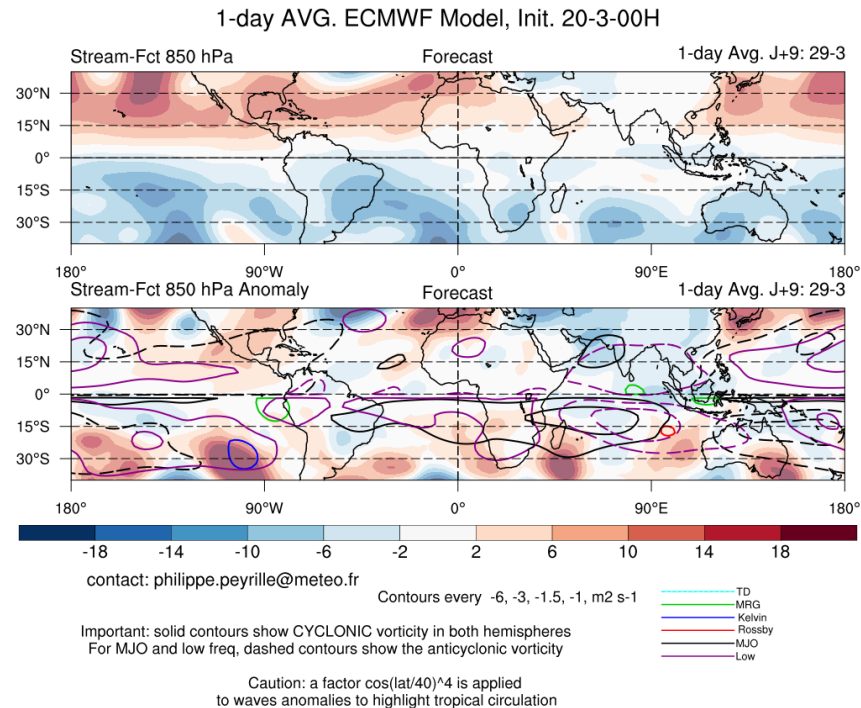


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S1

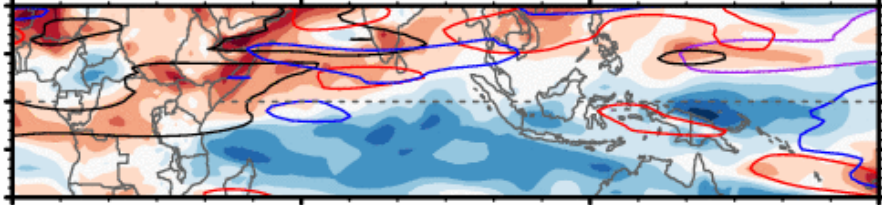


S2

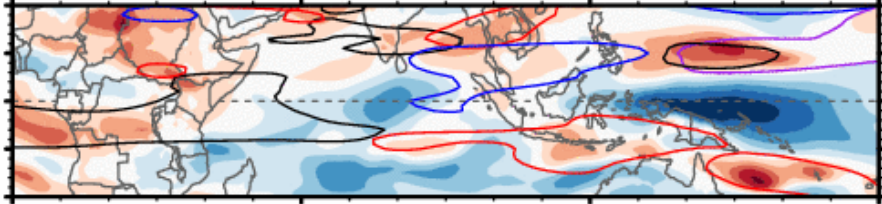


S1 / S2 – U850 - MJO, ER, Kelvin dans l'Indien

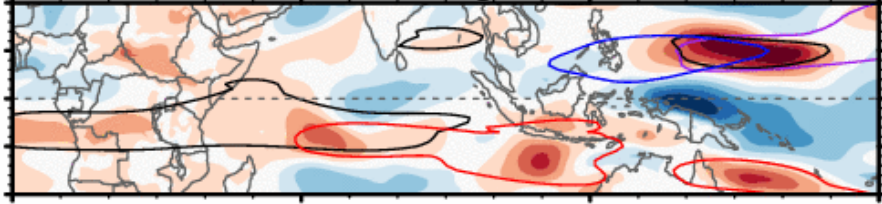
20-Mar to 22-Mar S1 CFS Forecast



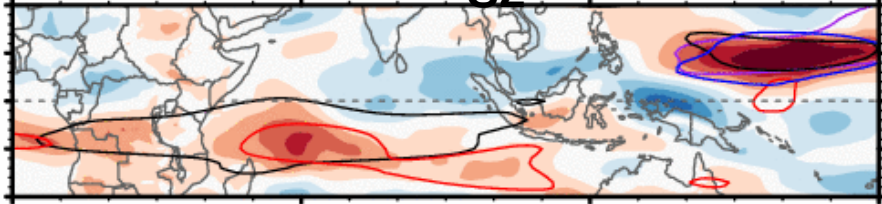
23-Mar to 25-Mar S1



26-Mar to 28-Mar S2

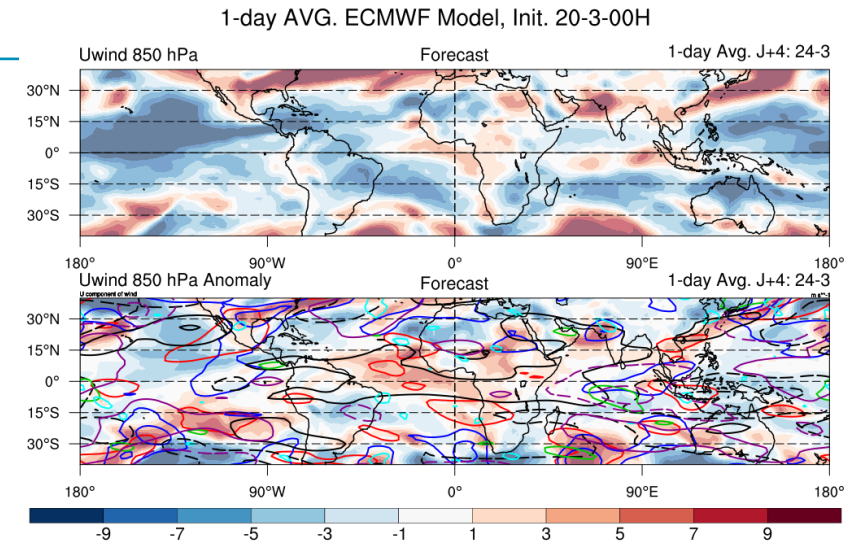


29-Mar to 31-Mar S2

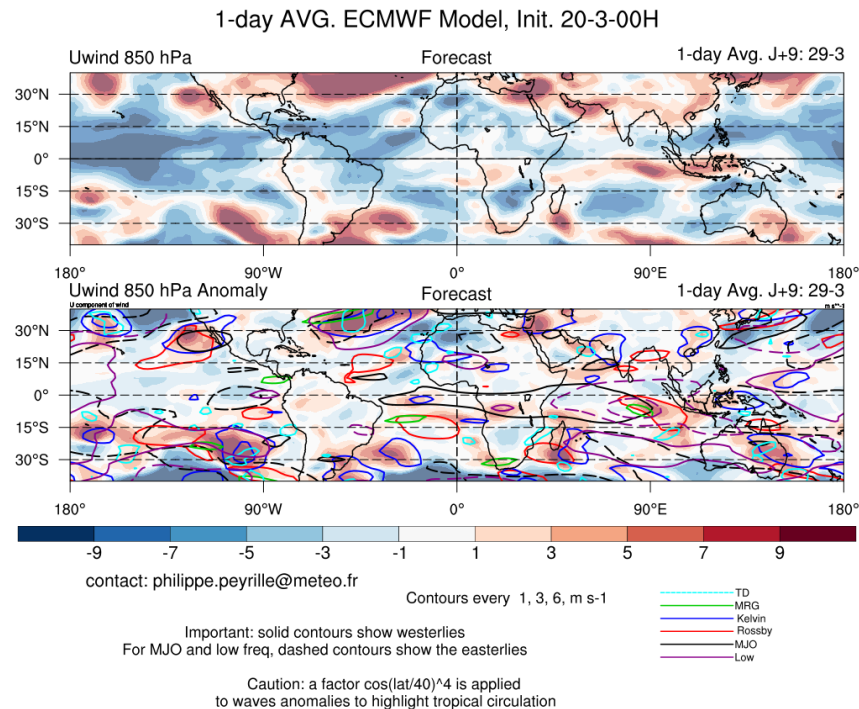


0 60E 120E 180

S1

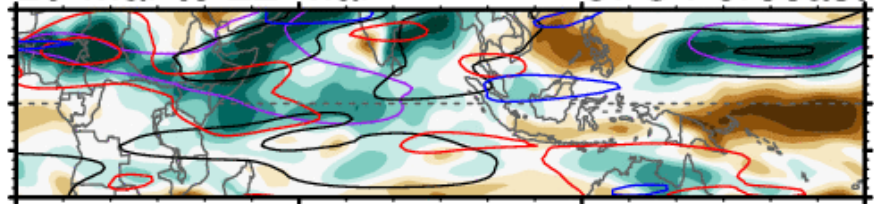


S2

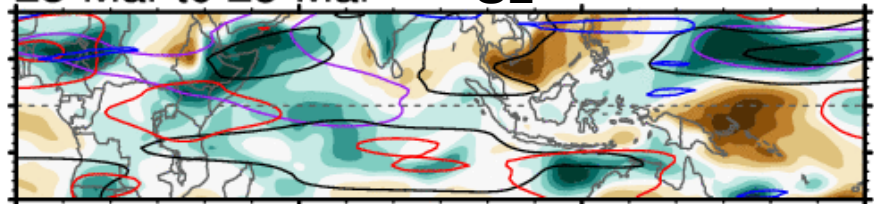


S1 / S2 – PW - MJO, ER, Kelvin dans l'Indien

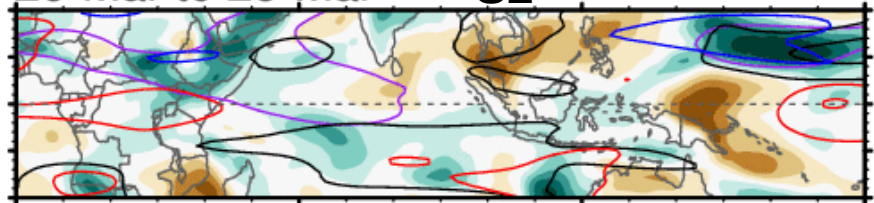
20-Mar to 22-Mar S1 CFS Forecast



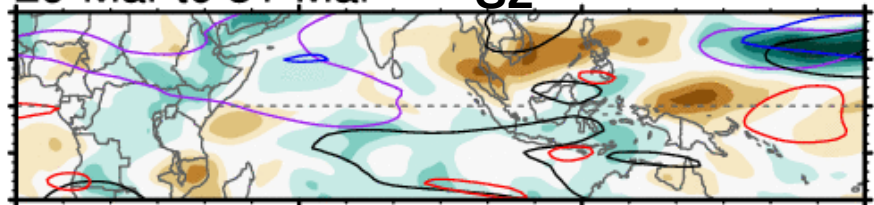
23-Mar to 25-Mar S1



26-Mar to 28-Mar S2



29-Mar to 31-Mar S2

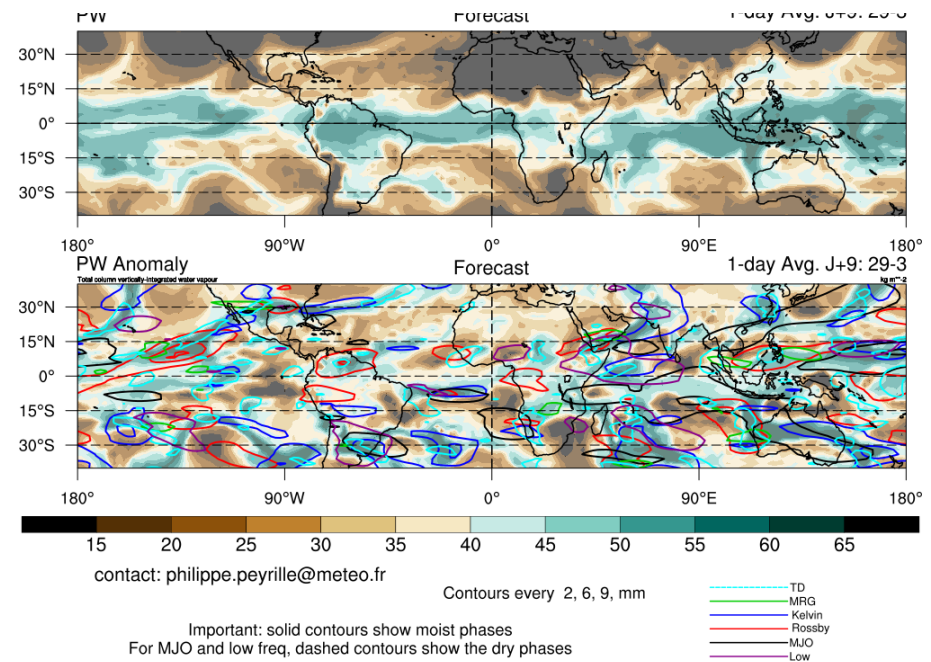
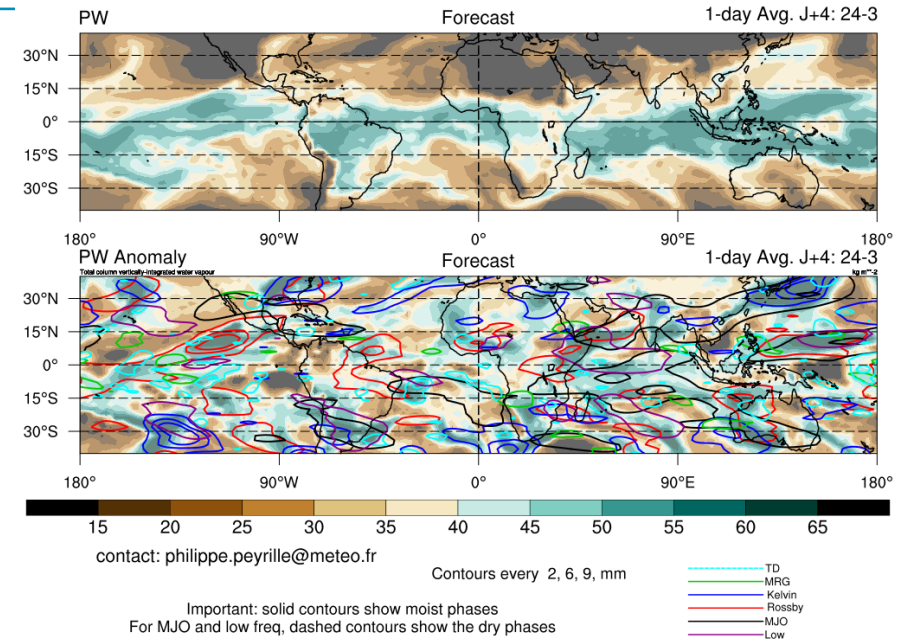


0 60E 120E 180

S1

S2

1-day AVG. ECMWF Model, Init. 20-3-00H

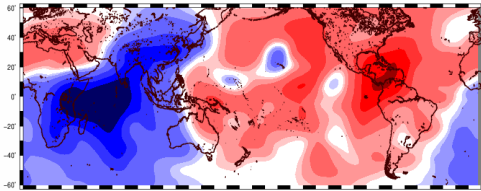


Synthèse MJO

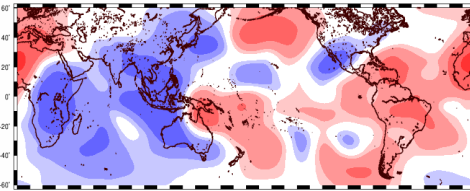
	S1	S2	S3	S4	S5
Phase MJO prévue	X	X	X	X	X
Intensité	X	X	X	X	X
Confiance	X	X	X	X	X



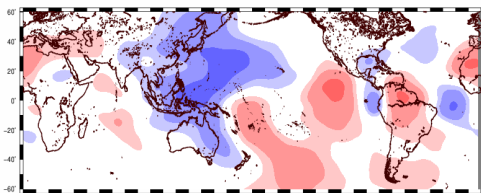
S1



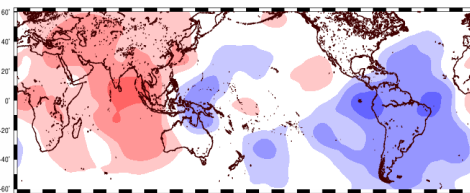
S2



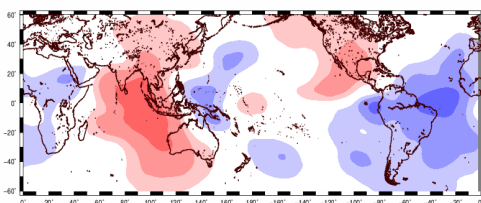
S3



S4

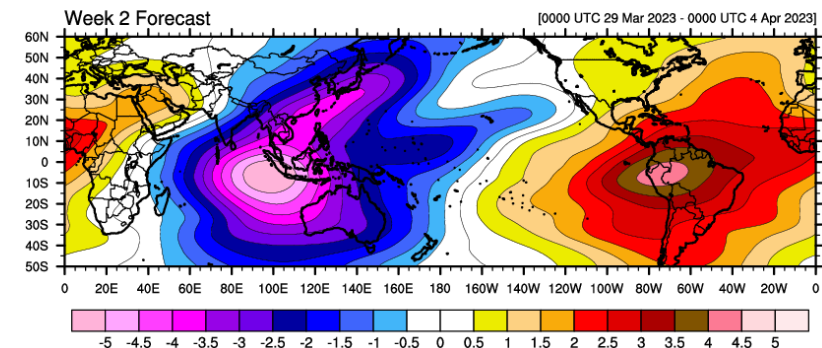
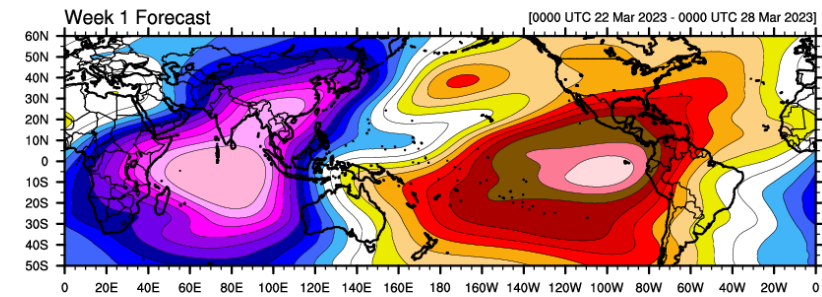
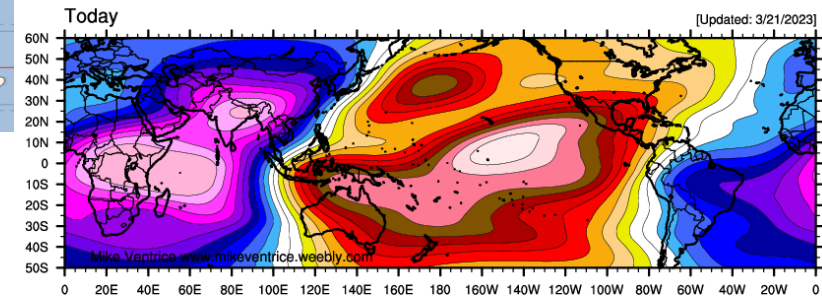


S5



S0 : 20 mars-26 mars
 S1 : 27 mars-02 avril
 S2 : 03 avril-09 avril
 S3 : 10 avril-16 avril
 S4 : 17 avril-23 avril

MJO filtered VP200 Forecast

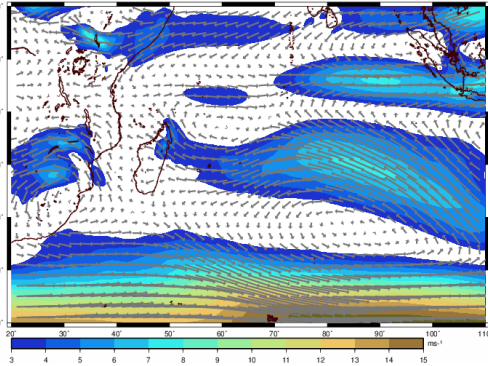


4. Impacts en temps sensible, temps sévère

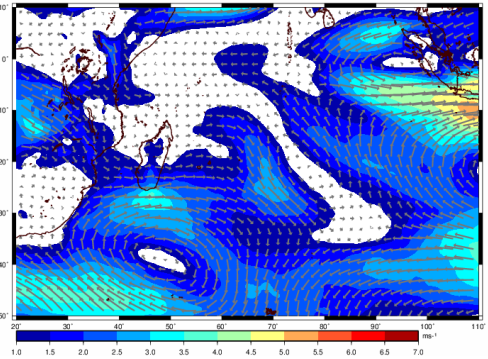
Configuration du bassin

S2

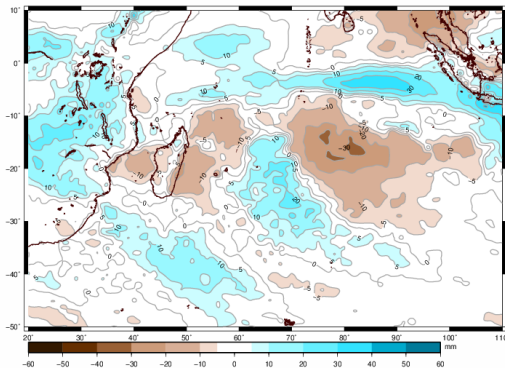
Vent 850hPa
période du 2023-03-27 au 2023-04-03
Prévision mensuelle CEPMMT base 2023-03-20



Anomalie force du vent 850hPa
période du 2023-03-27 au 2023-04-03
Prévision mensuelle CEPMMT base 2023-03-20

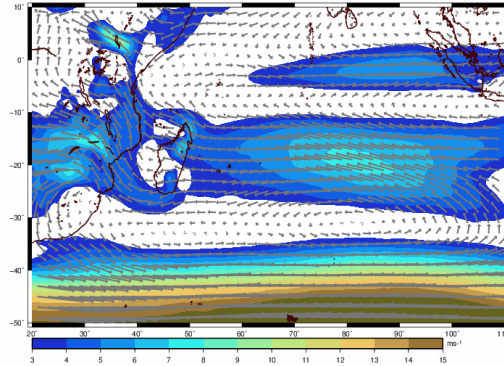


Anomalie de précipitations
période du 2023-03-27 au 2023-04-03
Prévision mensuelle CEPMMT base 2023-03-20

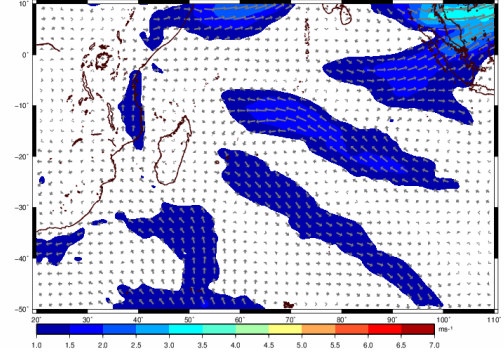


S3

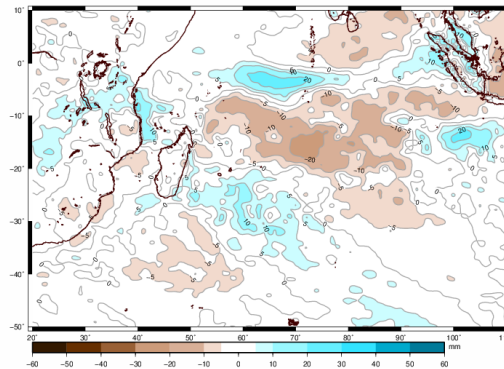
Vent 850hPa
période du 2023-04-03 au 2023-04-10
Prévision mensuelle CEPMMT base 2023-03-20



Anomalie force du vent 850hPa
période du 2023-04-03 au 2023-04-10
Prévision mensuelle CEPMMT base 2023-03-20

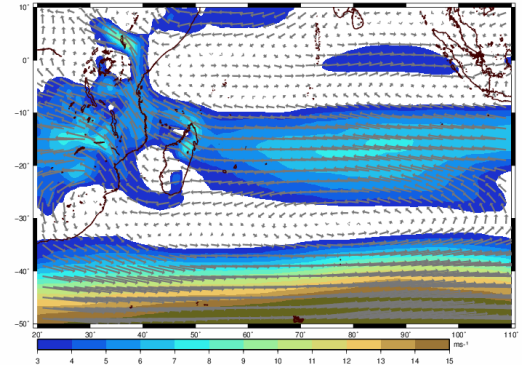


Anomalie de précipitations
période du 2023-04-03 au 2023-04-10
Prévision mensuelle CEPMMT base 2023-03-20

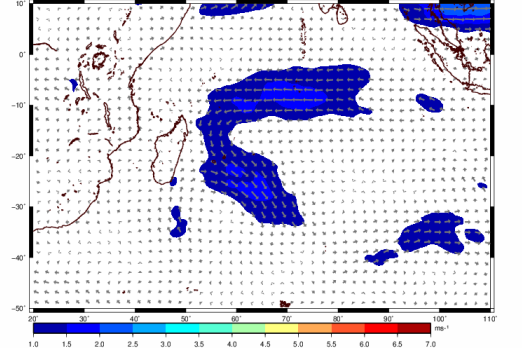


S4

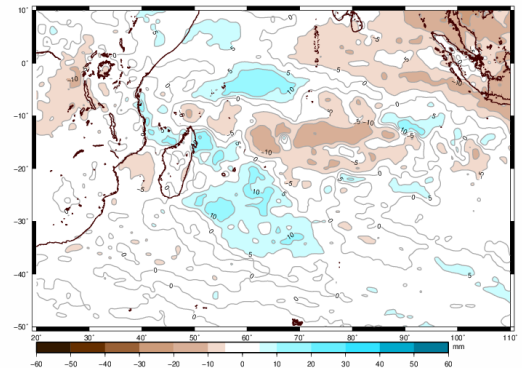
Vent 850hPa
période du 2023-04-10 au 2023-04-17
Prévision mensuelle CEPMMT base 2023-03-20

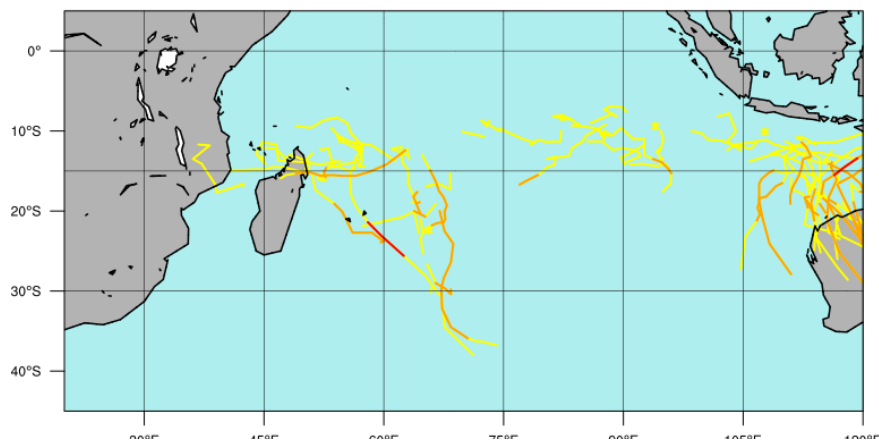


Anomalie force du vent 850hPa
période du 2023-04-10 au 2023-04-17
Prévision mensuelle CEPMMT base 2023-03-20

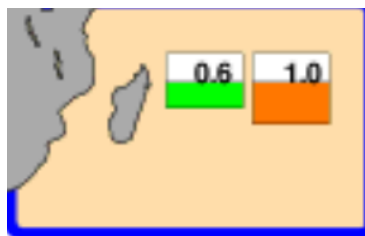
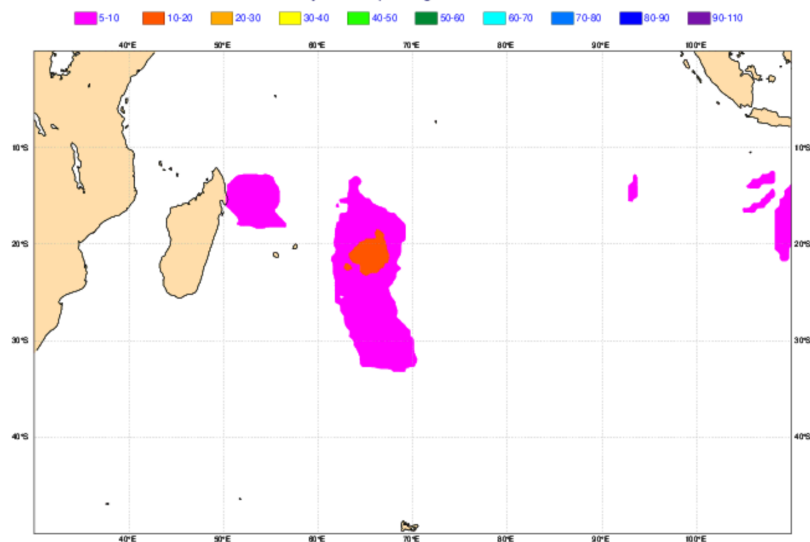


Anomalie de précipitations
période du 2023-04-10 au 2023-04-17
Prévision mensuelle CEPMMT base 2023-03-20

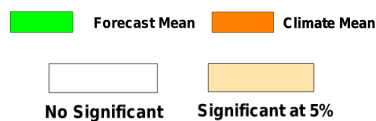




Weekly mean Tropical Storm Strike Probability. Date: 20230320 00 UTC t+(168-336)
Probability of a TS passing within 300km radius

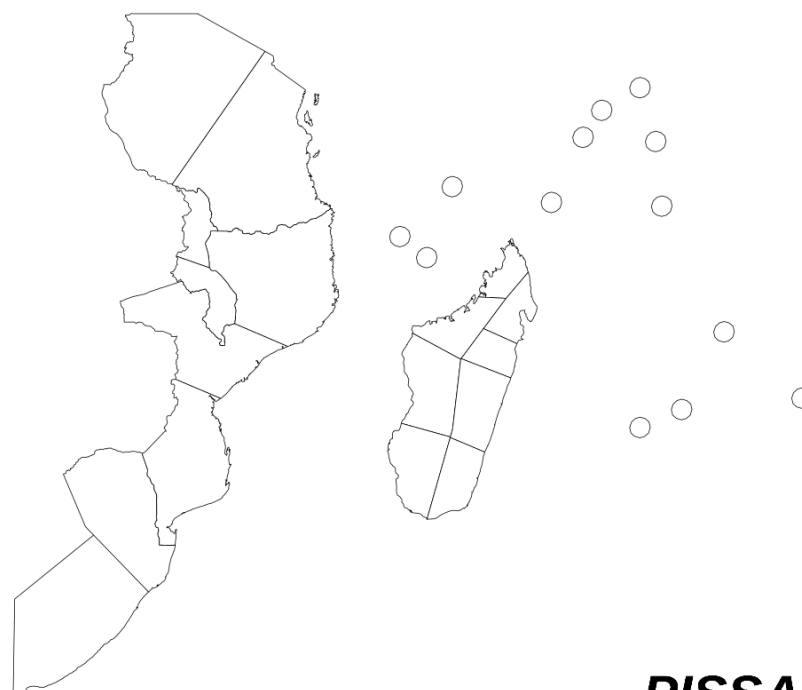


ECMWF Monthly Forecast
Accumulated Cyclone Energy



Tropical Cyclone Hazard Assessment based on ECMWF strike probability monthly forecast

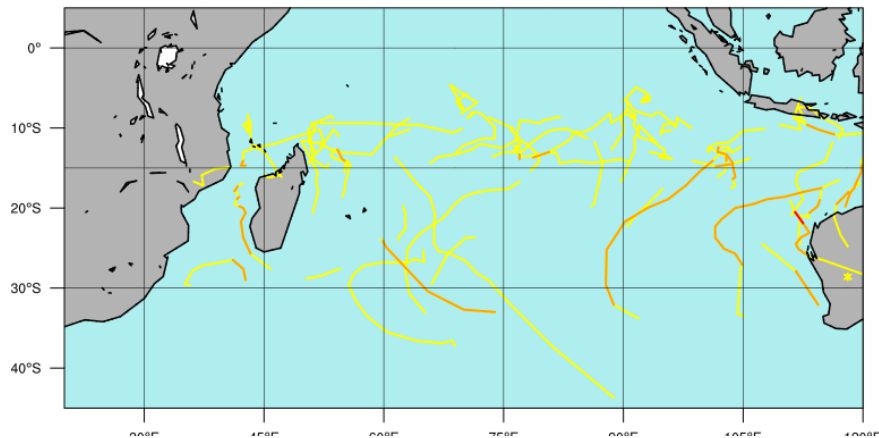
Week 2 starting 2023-03-27 ending 2023-04-03
Base : 2023-03-20 00UTC



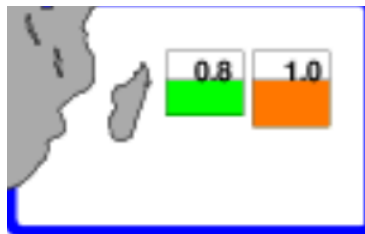
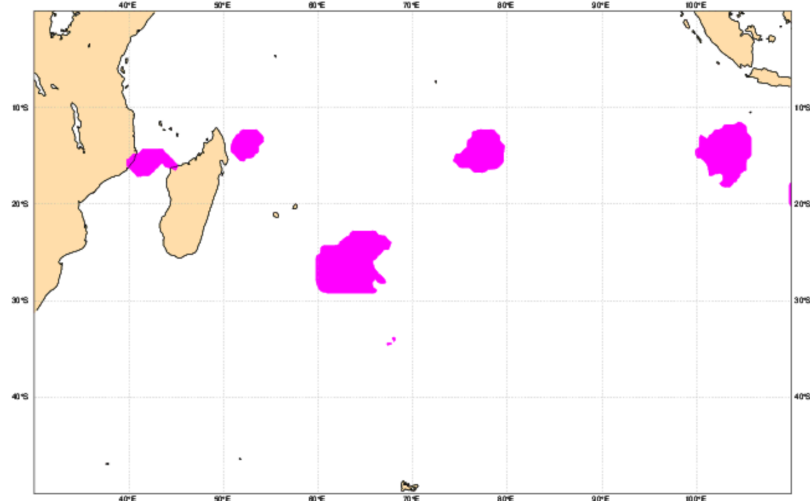
PISSAR

Copyright Météo-France/LACy, Experimental products resulting from research activities

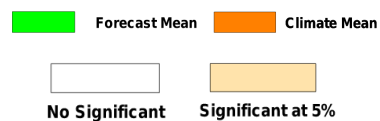
■ Max. Hit Detection Rate ■ Best Hit / False Alarm Rate ■ Low False Alarm Rate



Weekly mean Tropical Storm Strike Probability. Date: 20230320 00 UTC t+(336-504)
Probability of a TS passing within 300km radius

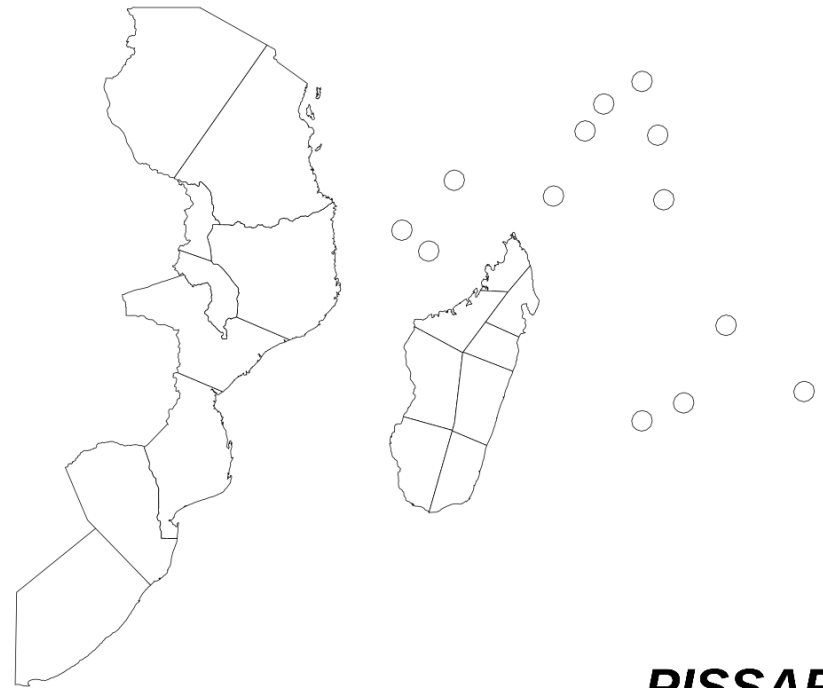


ECMWF Monthly Forecast
Accumulated Cyclone Energy



Tropical Cyclone Hazard Assessment based on ECMWF strike probability monthly forecast

Week 3 starting 2023-04-03 ending 2023-04-10
Base : 2023-03-20 00UTC

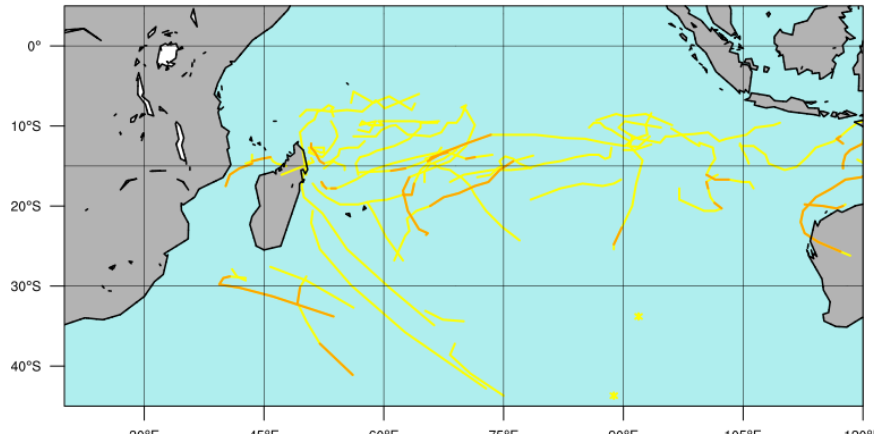


PISSAR

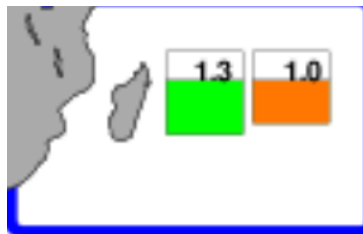
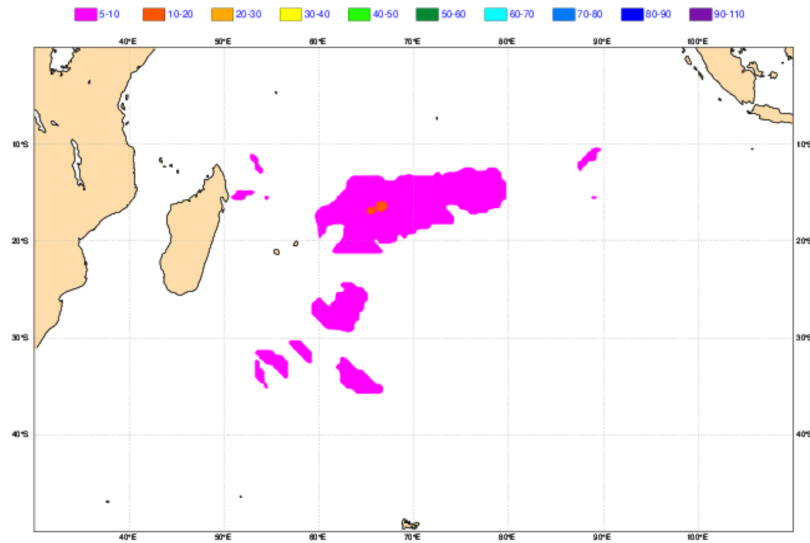
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Max. Hit Detection Rate Best Hit / False Alarm Rate Low False Alarm Rate

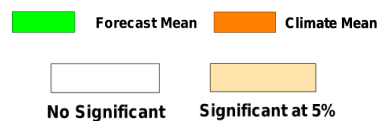
S4



Weekly mean Tropical Storm Strike Probability. Date: 20230320 0 UTC t+(504-672)
Probability of a TS passing within 300km radius

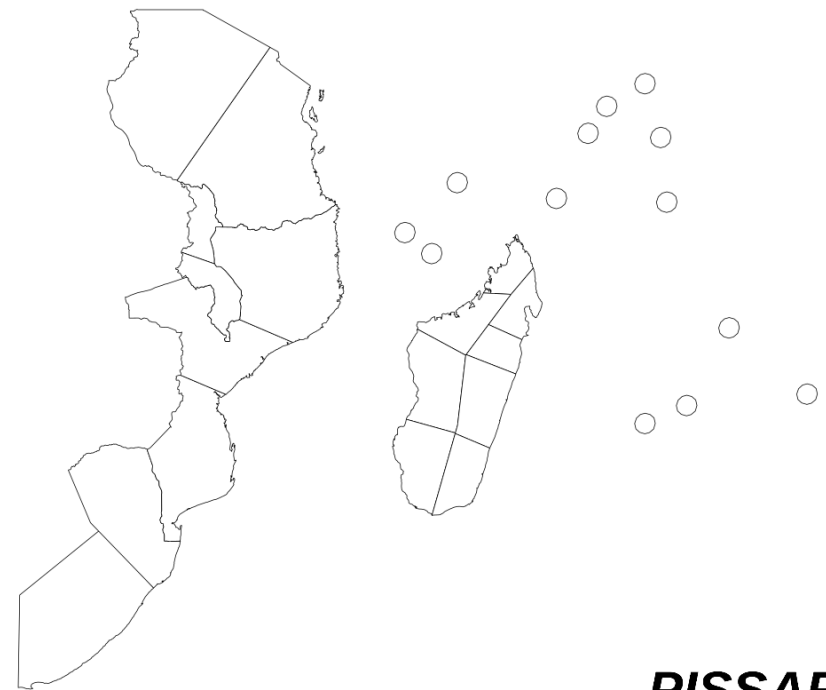


ECMWF Monthly Forecast
Accumulated Cyclone Energy



Tropical Cyclone Hazard Assessment based on ECMWF strike probability monthly forecast

Week 4 starting 2023-04-10 ending 2023-04-17
Base : 2023-03-20 00UTC



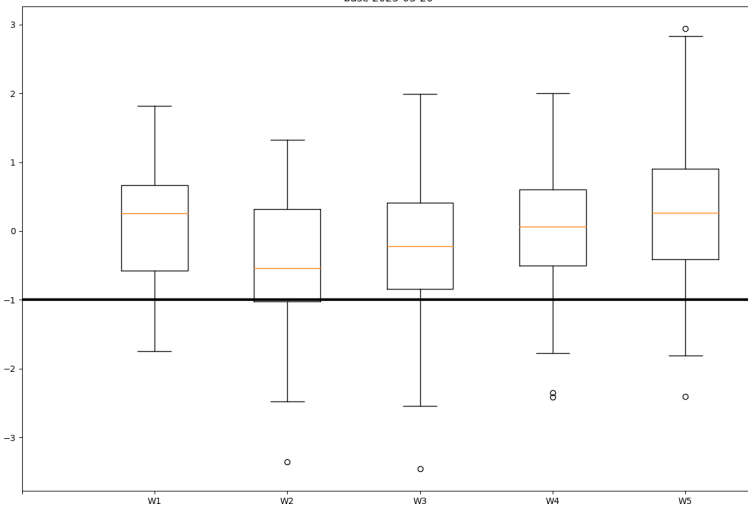
PISSAR

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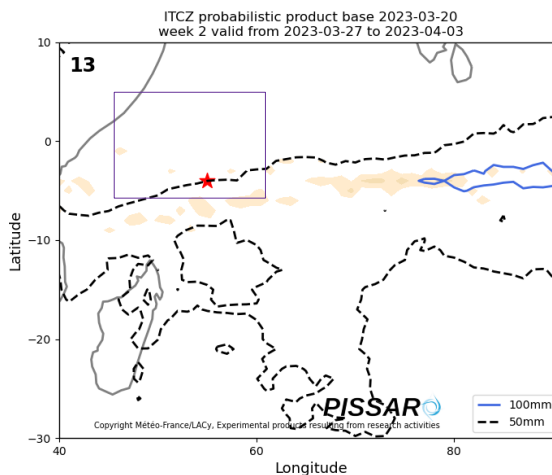
Max. Hit Detection Rate Best Hit / False Alarm Rate Low False Alarm Rate

Configuration du bassin et prévision ZCIT

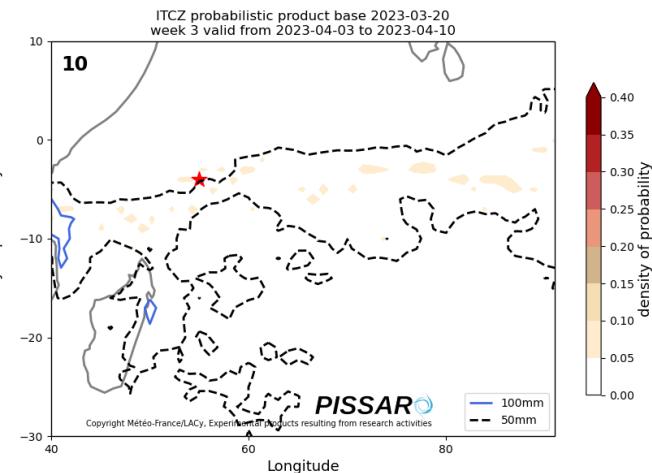
Monsoon Flux Index Monthly Forecast
base 2023-03-20



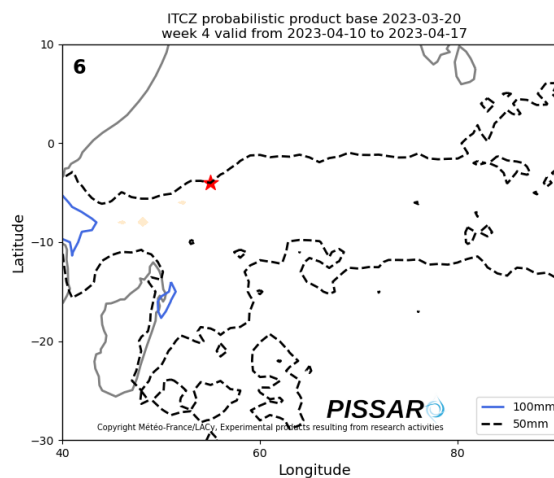
S2



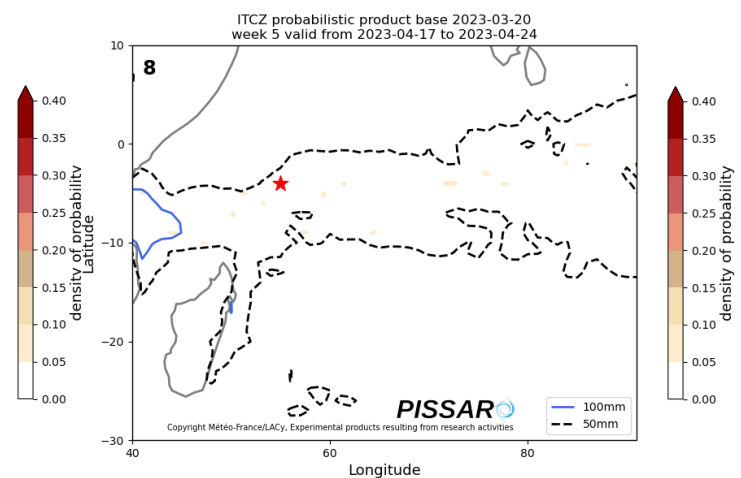
S3



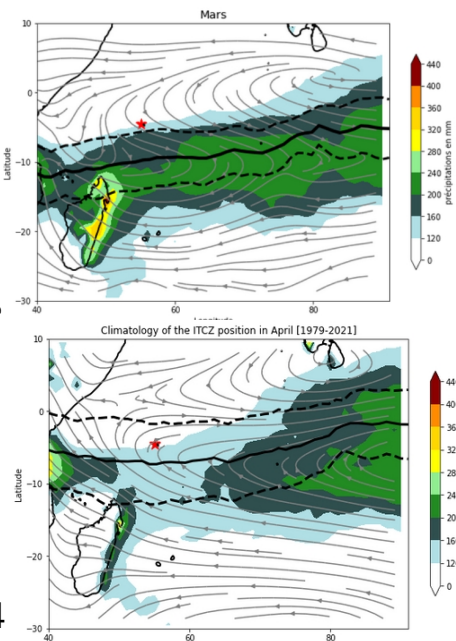
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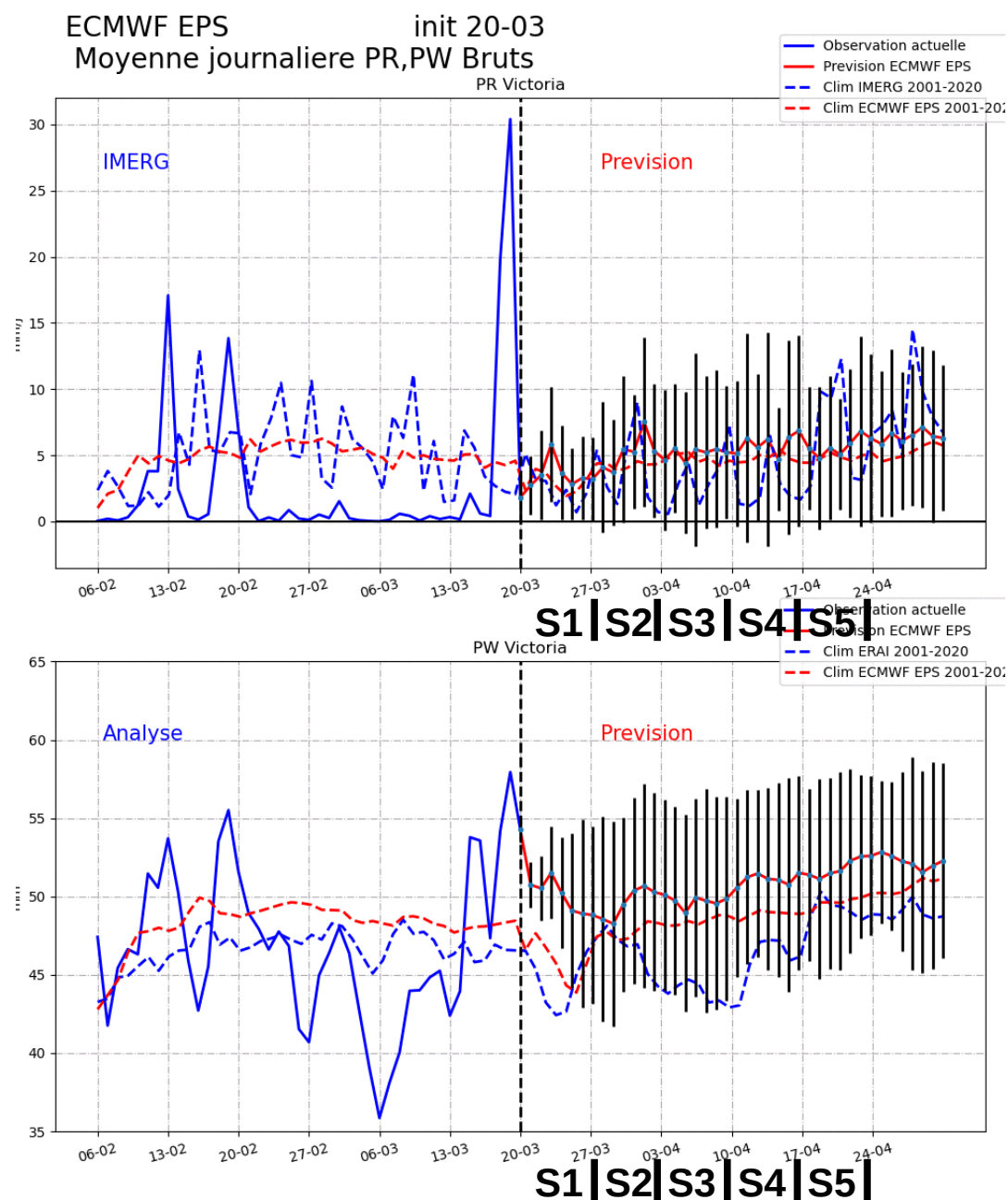
S5



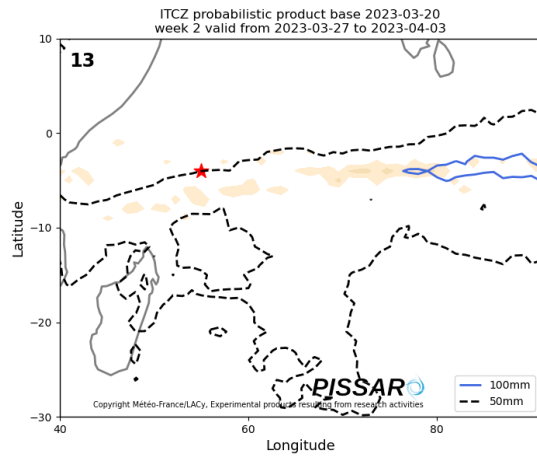
*Climatologie
mensuelle*



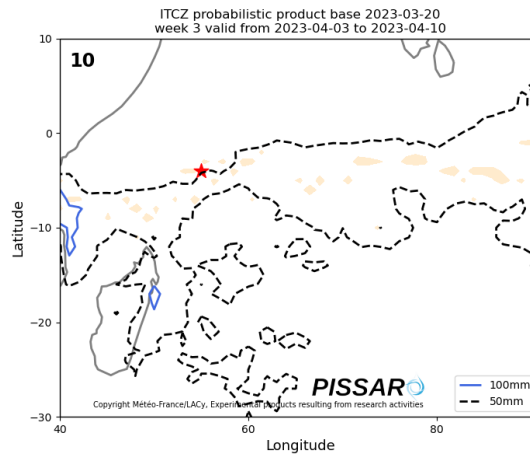
Synthèse temps sensible S2 – S4 [SEYCHELLES]



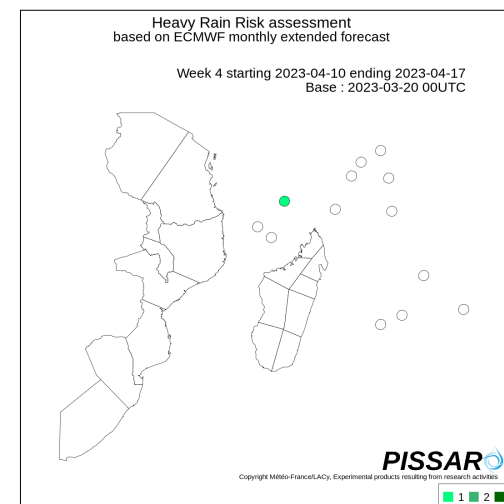
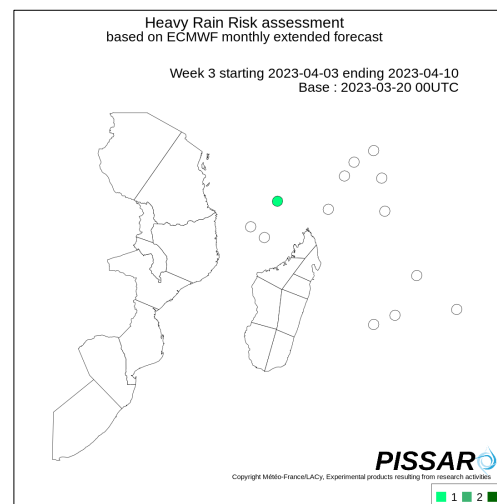
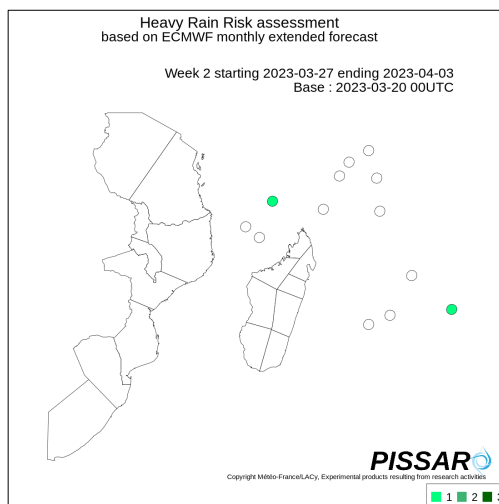
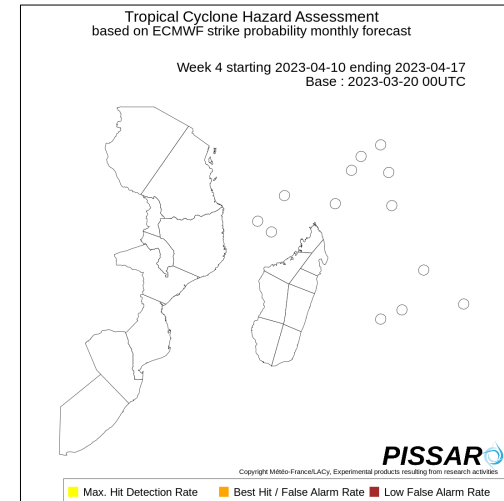
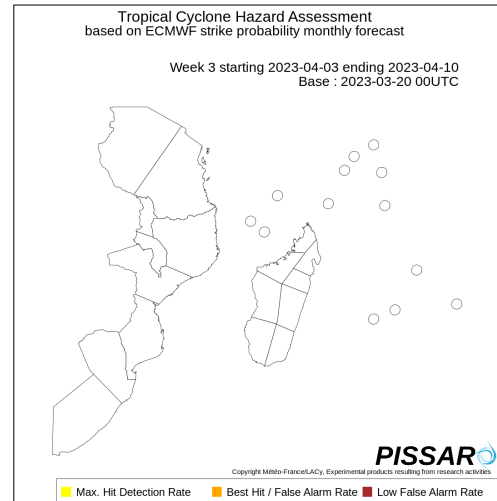
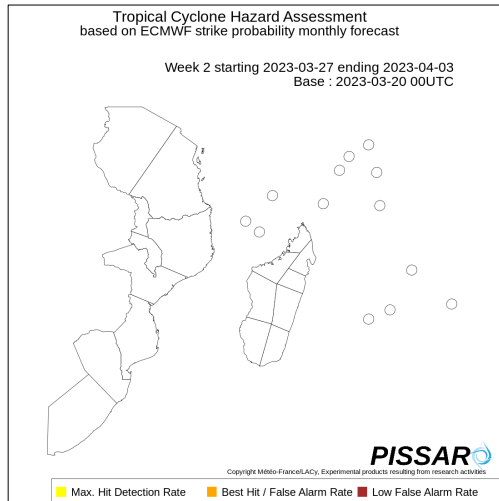
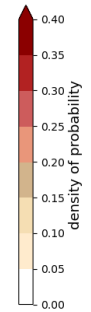
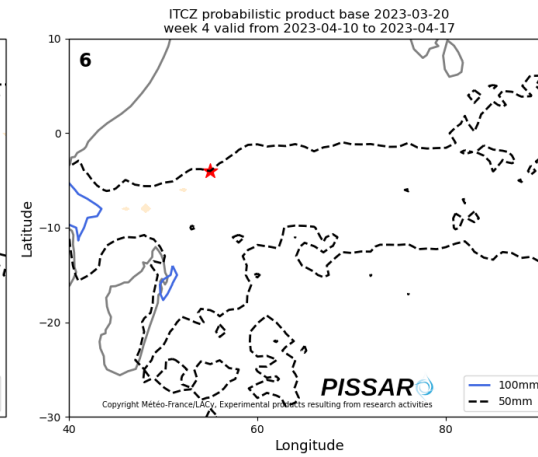
S2



S3



S4



Briefing hebdomadaire

Suivi MJO et ondes équatoriales pour le bassin SOOI

Sources :

<http://www.bom.gov.au/climate/enso/>
<http://seasonal.meteo.fr/sites/data/Modeles/>
<https://cds.climate.copernicus.eu#!/home>
<http://regionalclimate-change.sc/swiocof/SST/>
<http://intra.cnrm.meteo.fr/moana/tropiques/images/>
<https://www.cpc.ncep.noaa.gov/products/>
<https://ncics.org/pub/mjo/v2/map/>
<http://rewebvirt.dirre.meteo.fr/clim/PreviMens/>
https://apps.ecmwf.int/plots/product-download/mofc_multi/mofc_multi_tcyc_family_forecast/
<http://mikeventrice.weebly.com/mjo.html>
http://www.atmos.albany.edu/student/ventrice/real_time/
<https://misva.aeris-data.fr/products/>