

Briefing hebdomadaire

Suivi MJO et ondes équatoriales pour le bassin SOOI

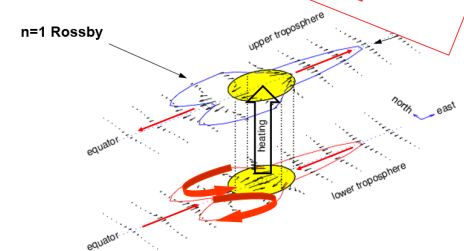
DATE : 09/05/2023

H. Vérèmes

support produit le 09/05/2023
sur bulletin ECMWF du 08/05
et figures du 08/05

S1 : 08 mai-14 mai
S2 : 15 mai-21 mai
S3 : 22 mai-28 mai
S4 : 29 mai-04 juin
S5 : 05 juin-11 juin

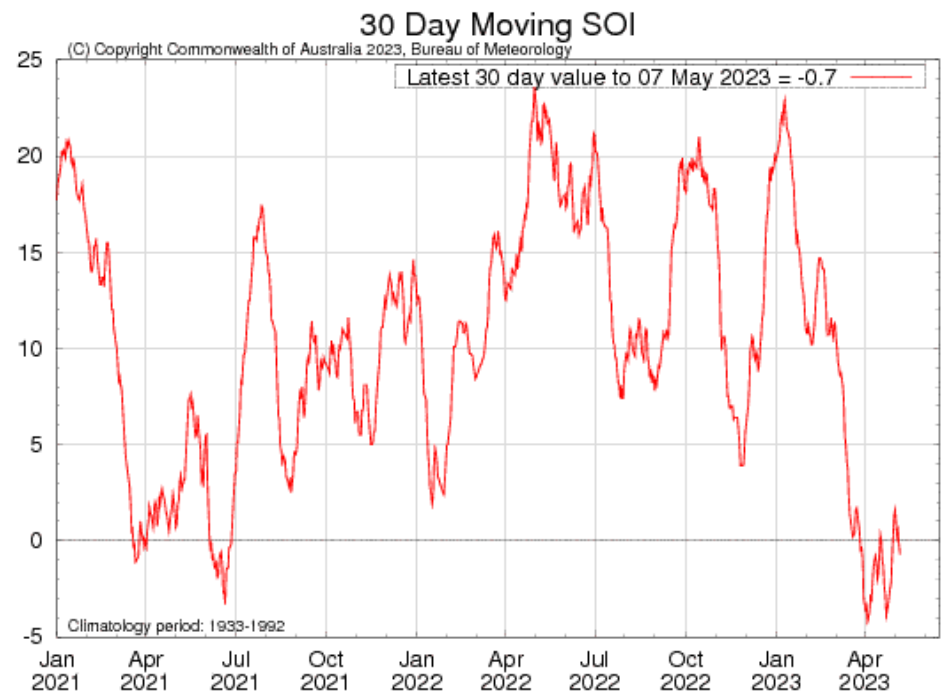
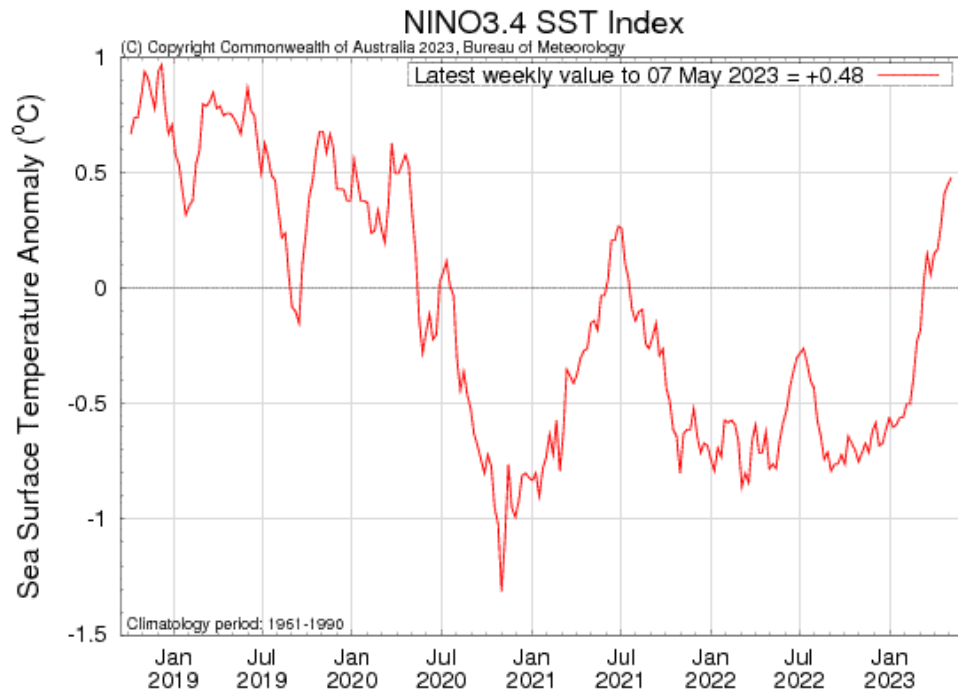
ATTENTION :
Changement de formalisme des semaines !!!!
S0 est devenu S1 mais correspond toujours à la semaine en cours.



1. Prévision - Basse fréquence

Signal Basse Fréquence

Contexte ENSO

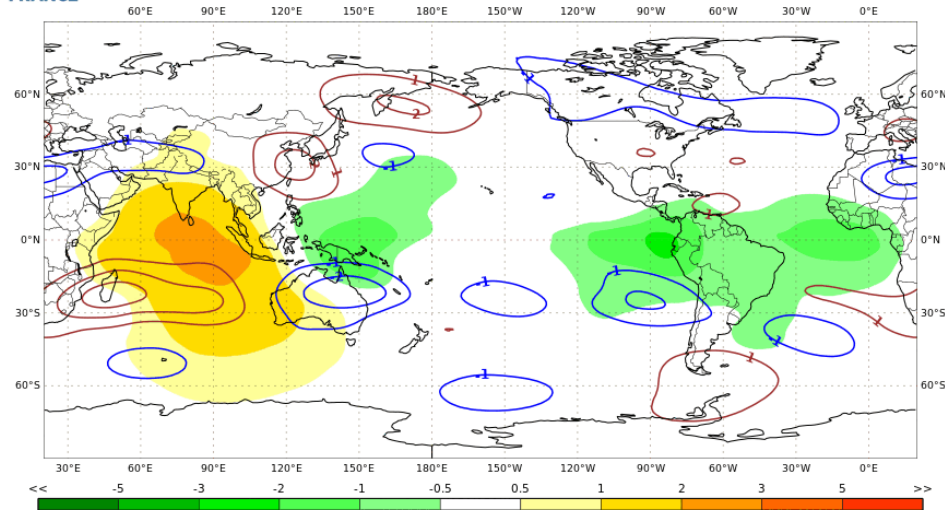


Signal Basse Fréquence

VP 200 prévu



Meteo-France system 8 - Forecast
For AMJ 2023 (issued April 2023)

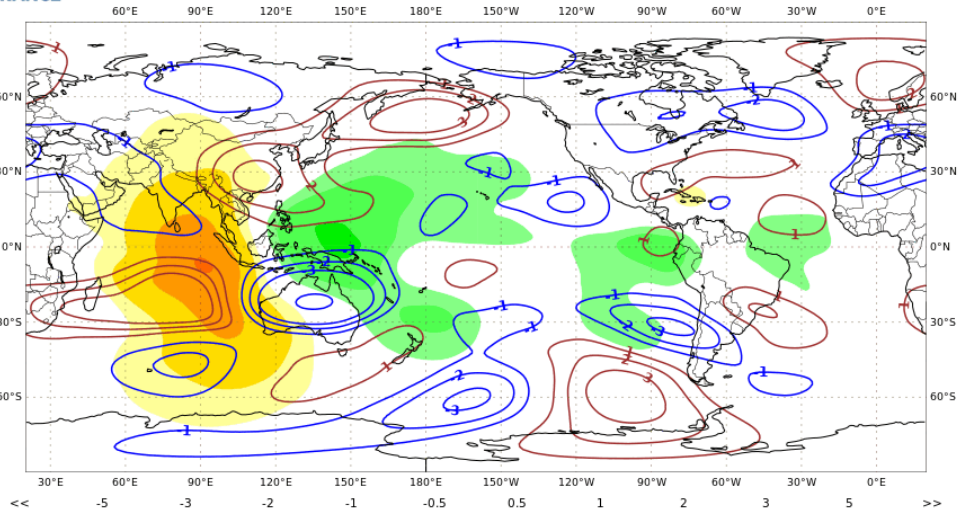


200hPa velocity potential and 200hPa streamfunction - zonal mean
3-months ensemble mean anomaly

unit : km2/s



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

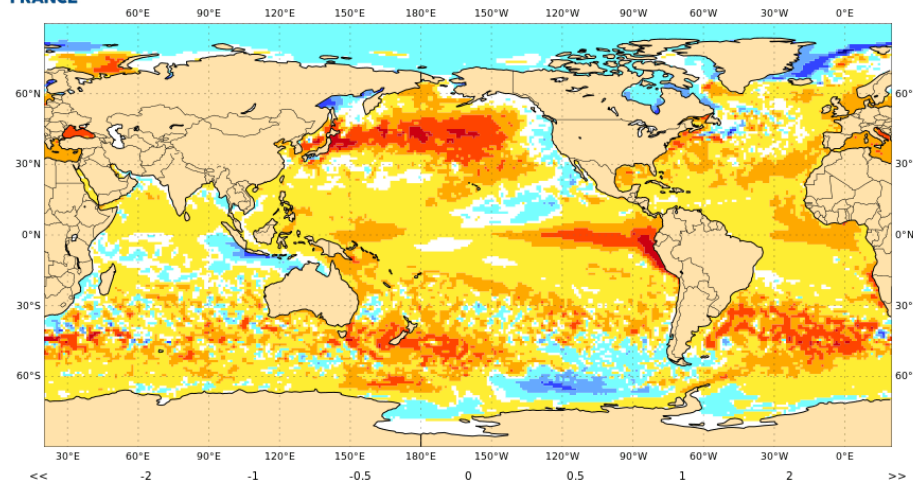


200hPa velocity potential and 200hPa streamfunction - zonal mean
3-months ensemble mean anomaly

unit : km2/s



Meteo-France system 8 - Forecast
For AMJ 2023 (issued April 2023)



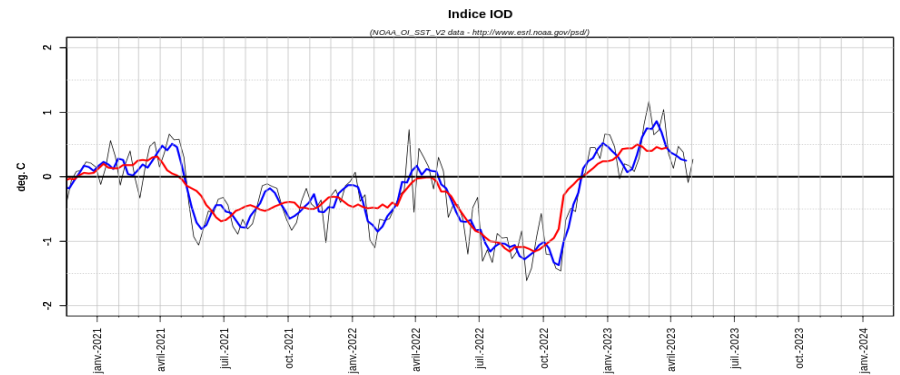
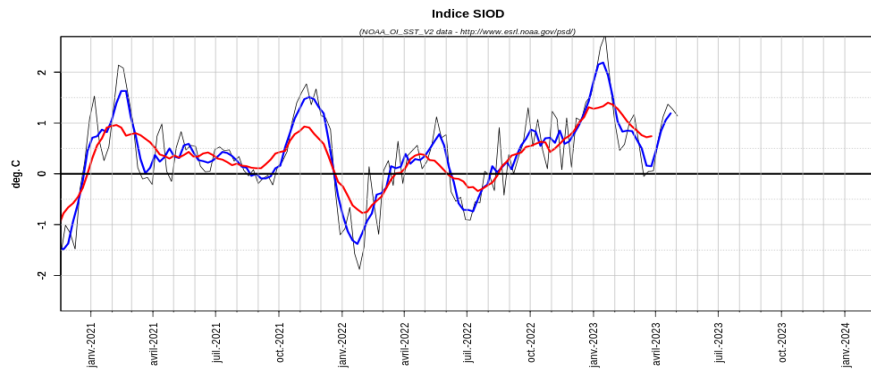
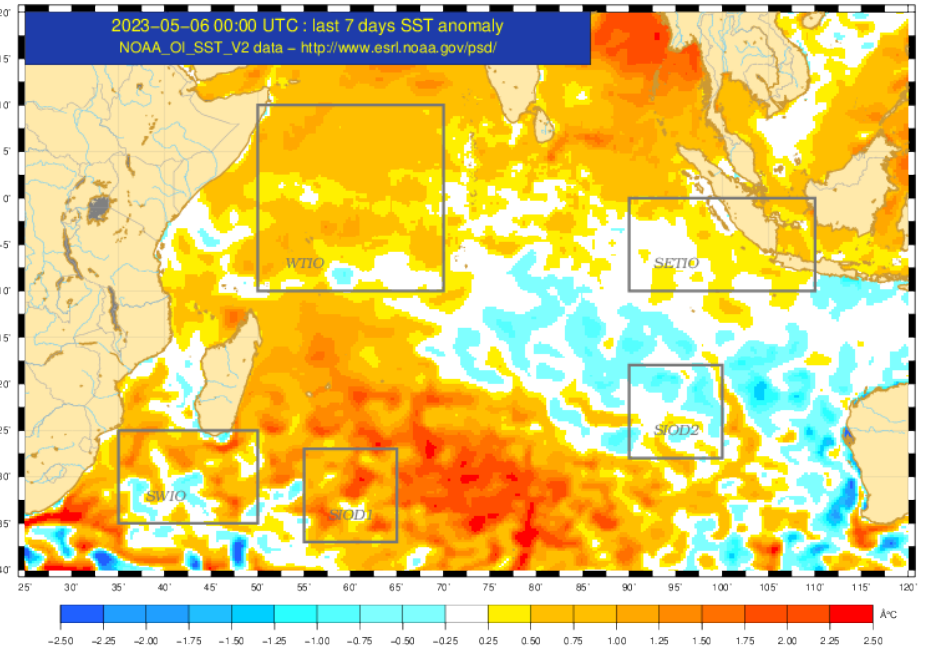
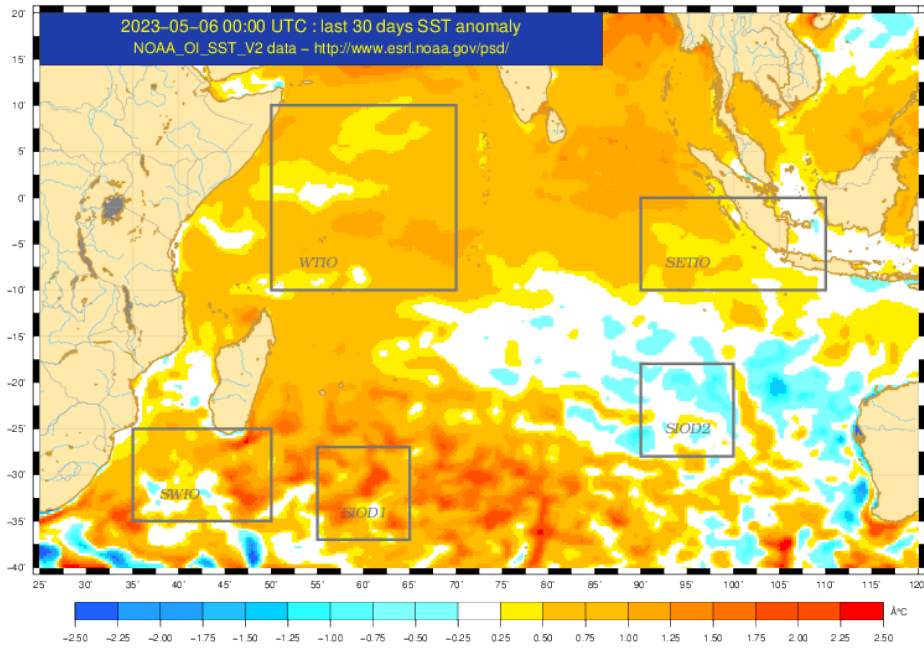
SST prévue

sea surface temperature
3-months ensemble mean anomaly

unit : °C (white = no signal)



Signal Basse Fréquence - Zoom sur l'OI



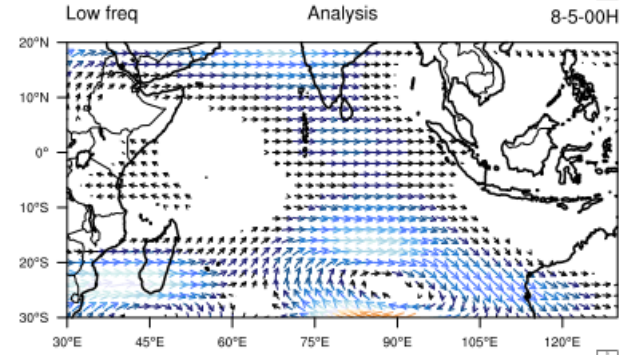
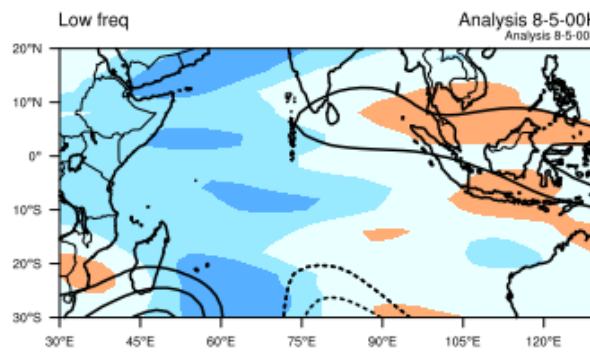
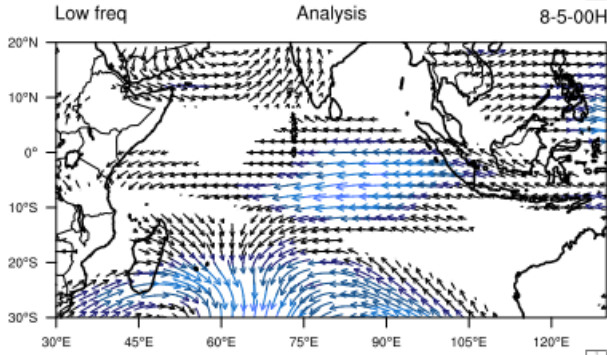
Signal Basse Fréquence - Zoom sur l'OI

J0

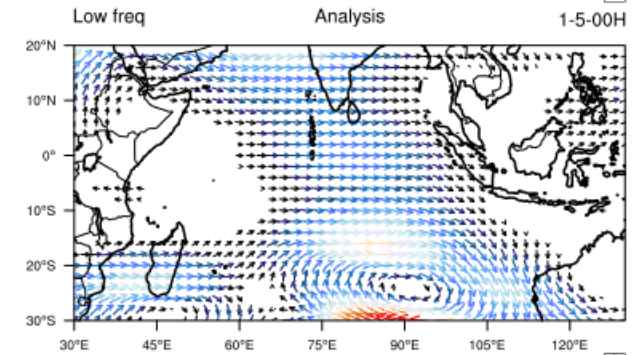
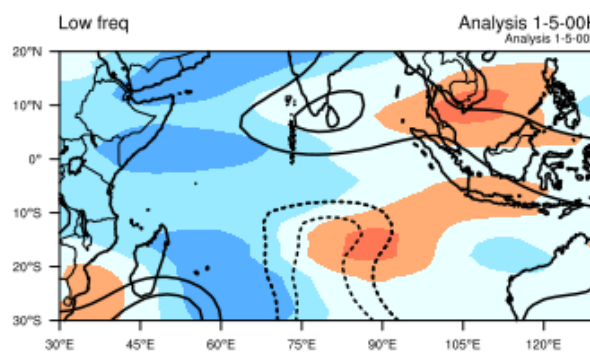
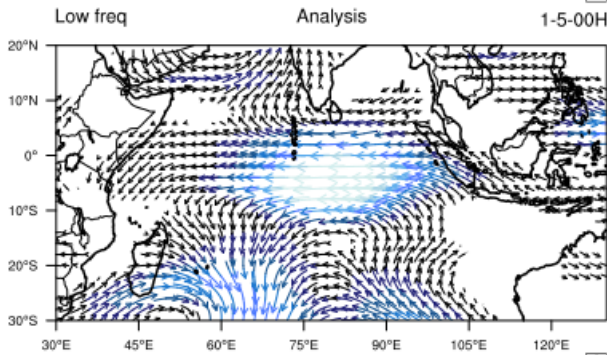
U850

PW+SF850

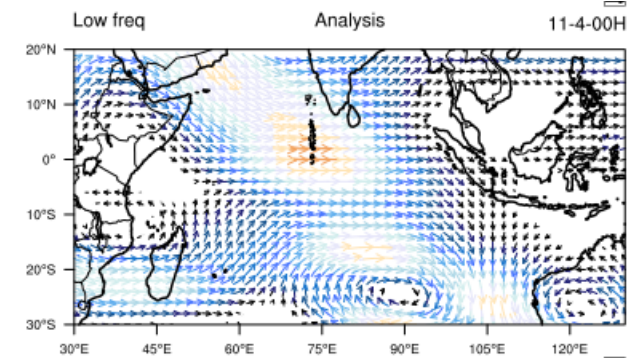
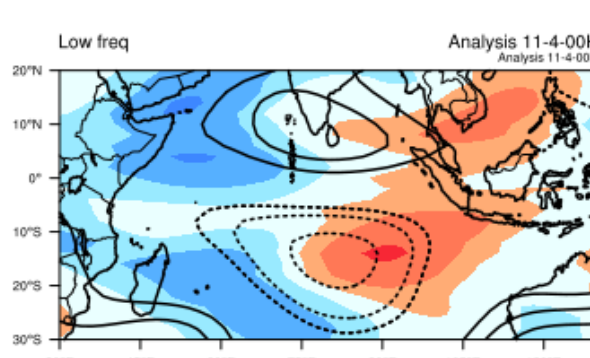
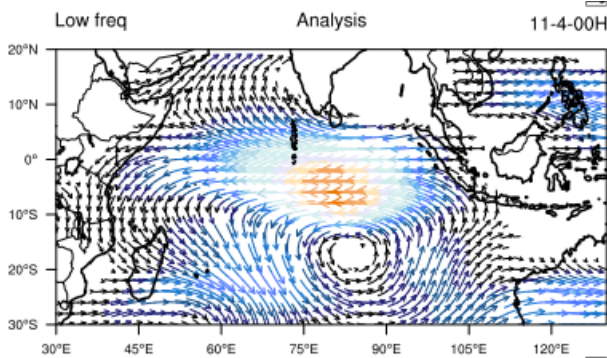
U200



J-7

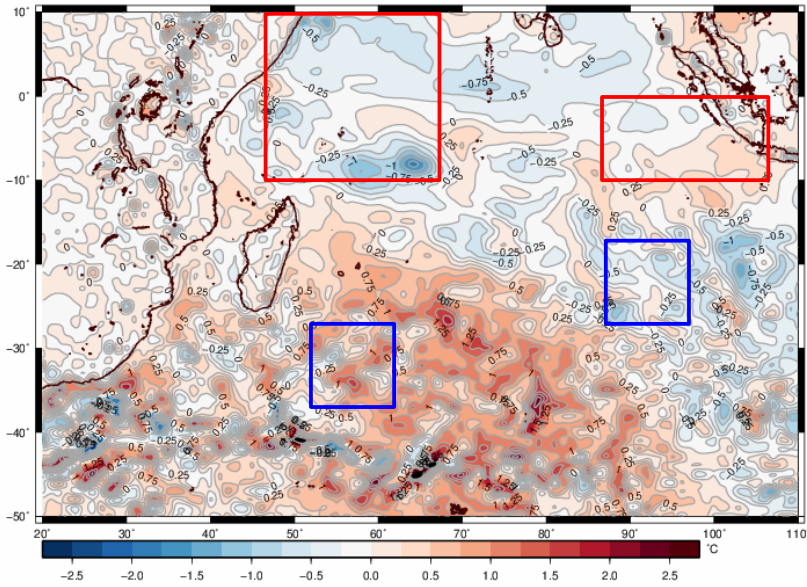


J-28

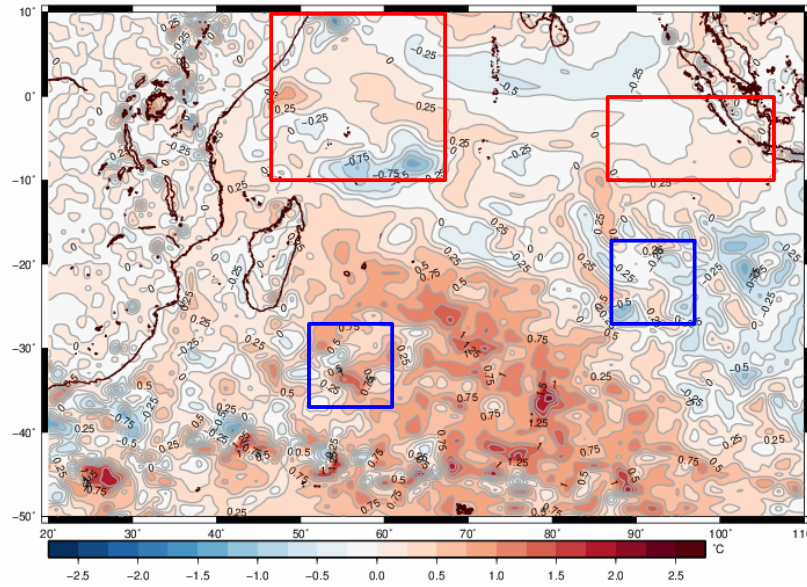


Signal Basse Fréquence – Prévission SST OI

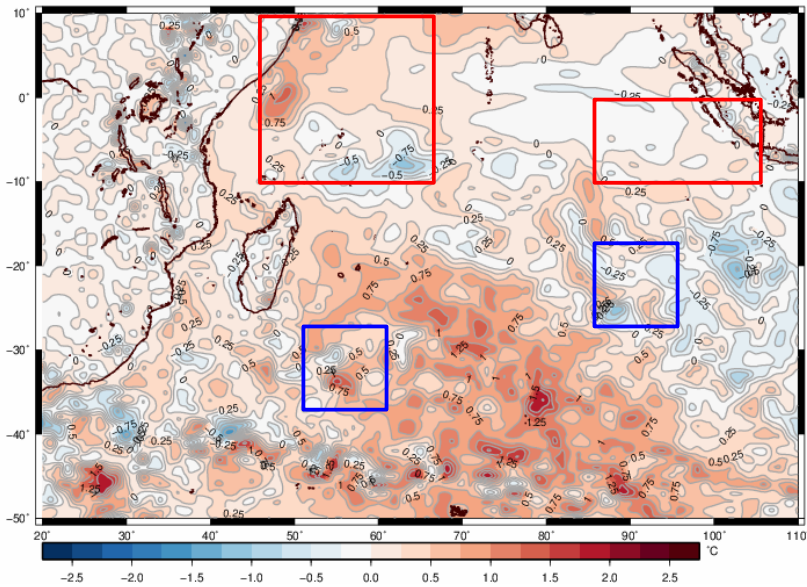
Anomalie de température de surface océanique
période du 2023-05-08 au 2023-05-15
Prévission mensuelle CEPMMT base 2023-05-08



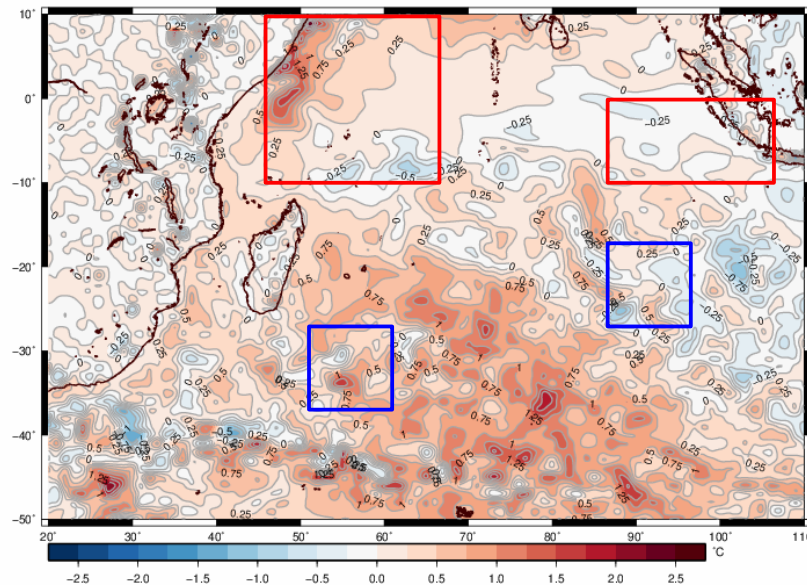
Anomalie de température de surface océanique
période du 2023-05-15 au 2023-05-22
Prévission mensuelle CEPMMT base 2023-05-08



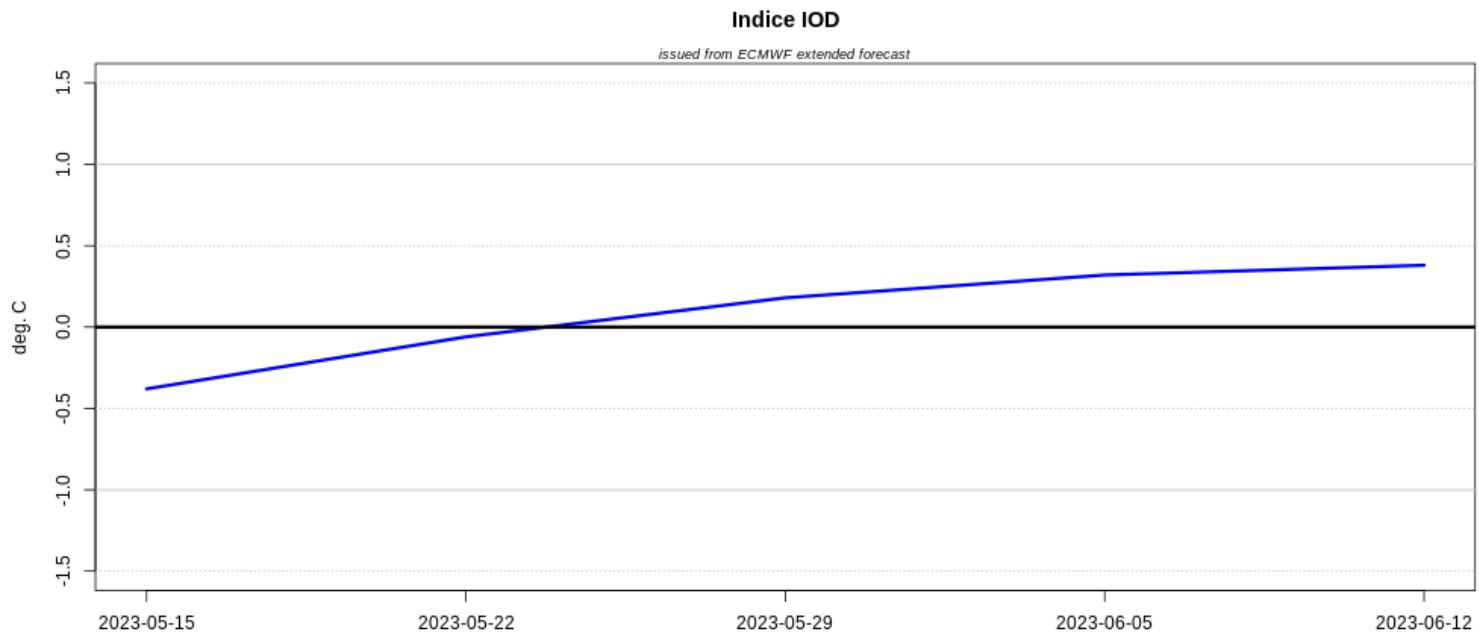
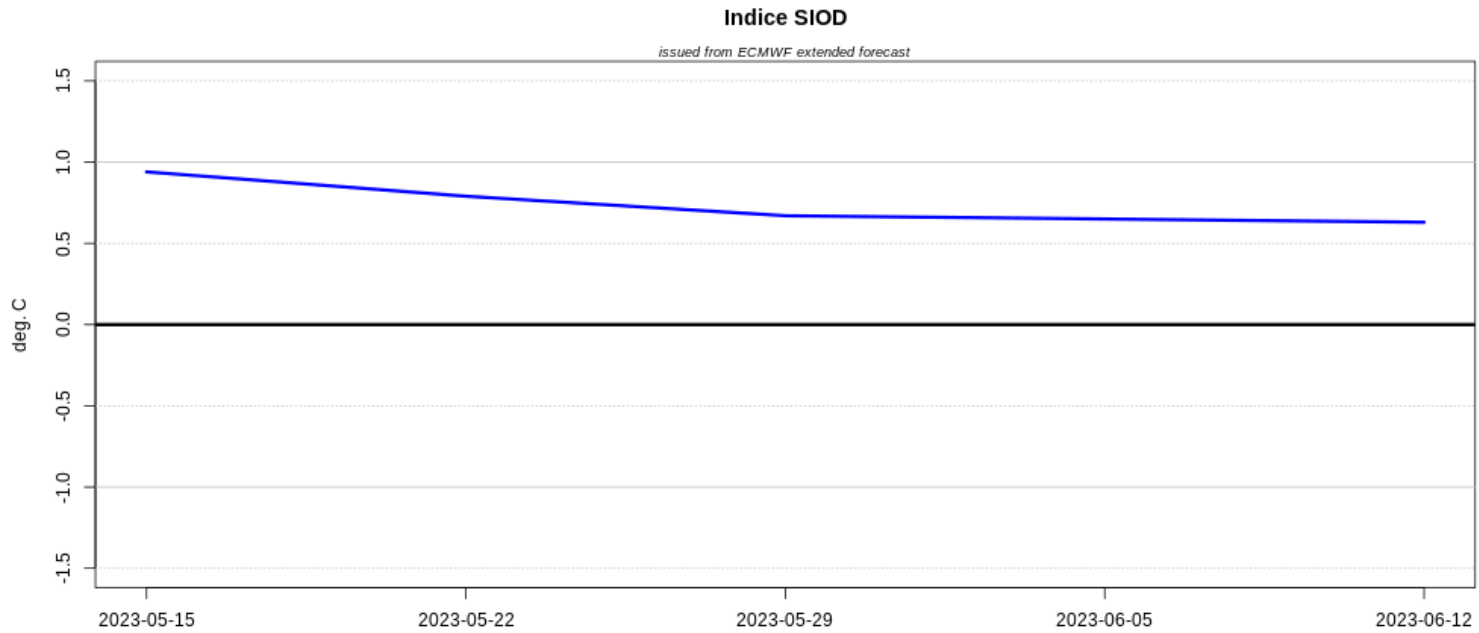
Anomalie de température de surface océanique
période du 2023-05-22 au 2023-05-29
Prévission mensuelle CEPMMT base 2023-05-08



Anomalie de température de surface océanique
période du 2023-05-29 au 2023-06-05
Prévission mensuelle CEPMMT base 2023-05-08

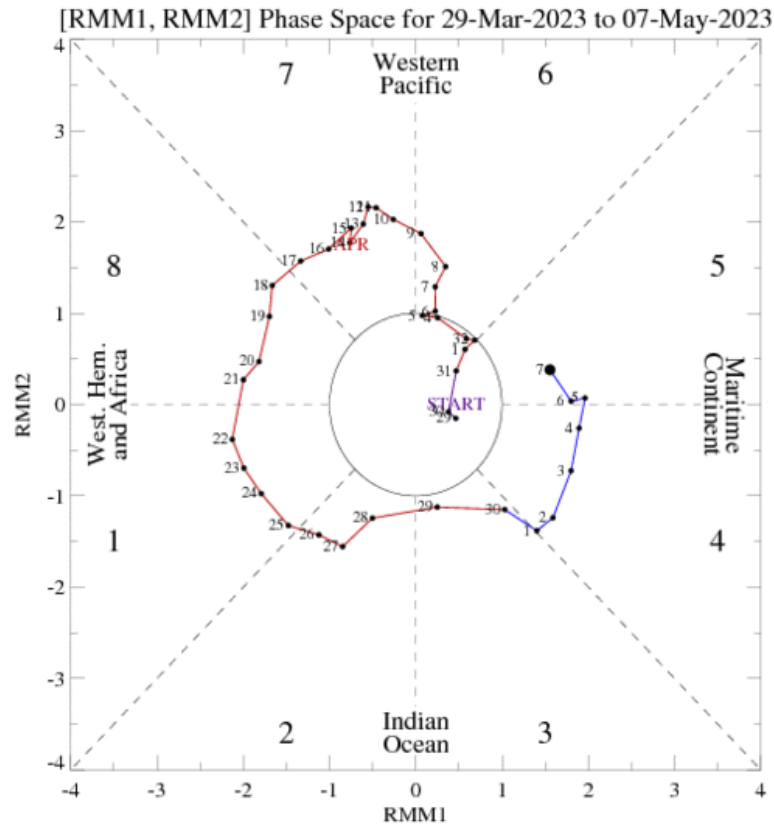


Signal Basse Fréquence – Prévision SST OI

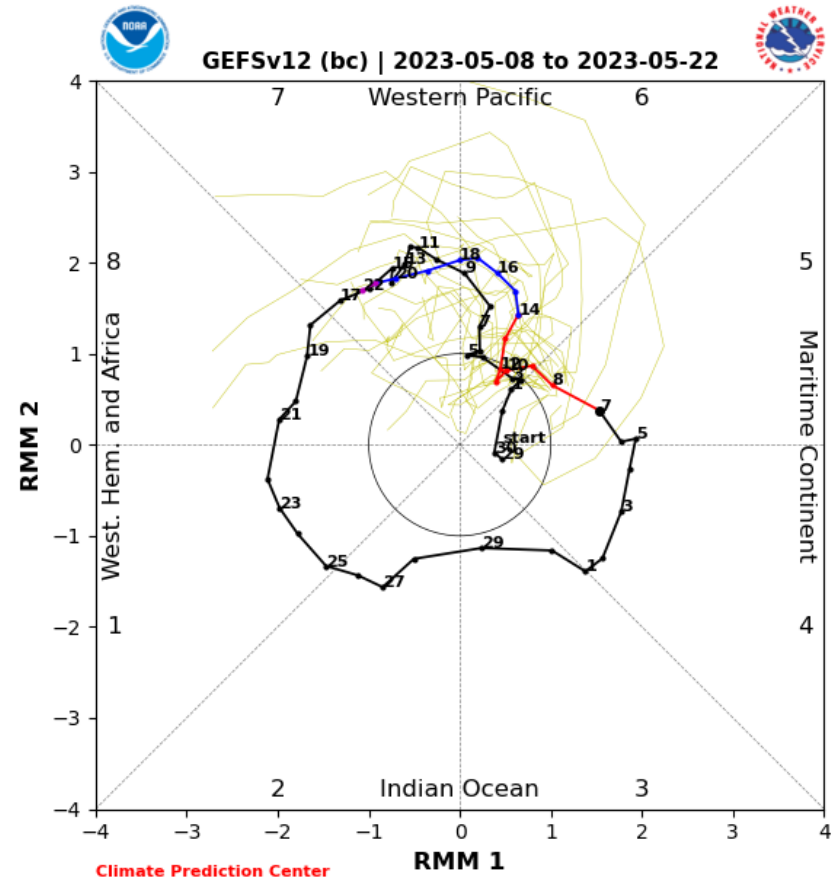
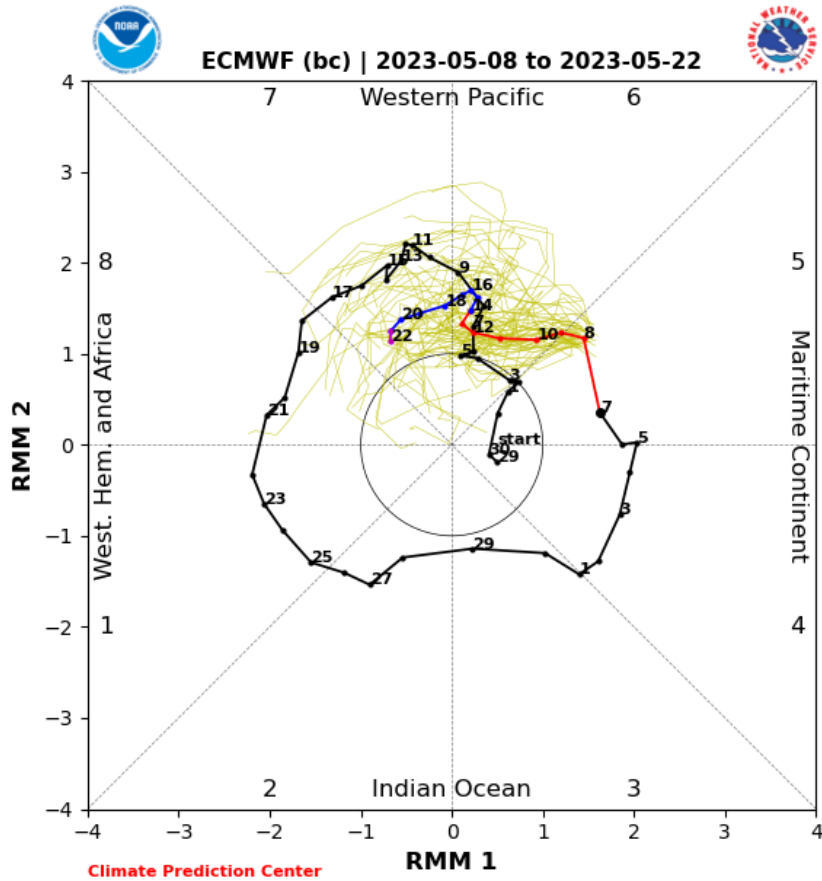


2. Prévision - MJO

2. MJO observée, indice RMM

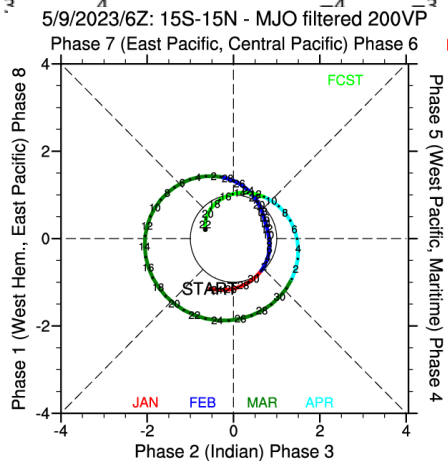
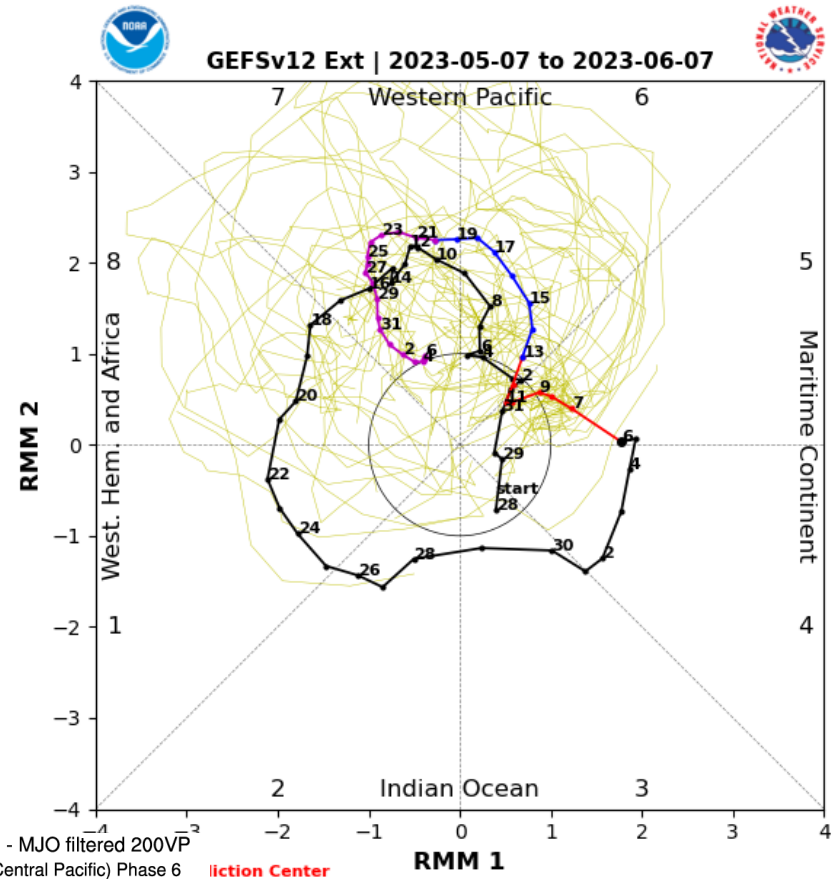
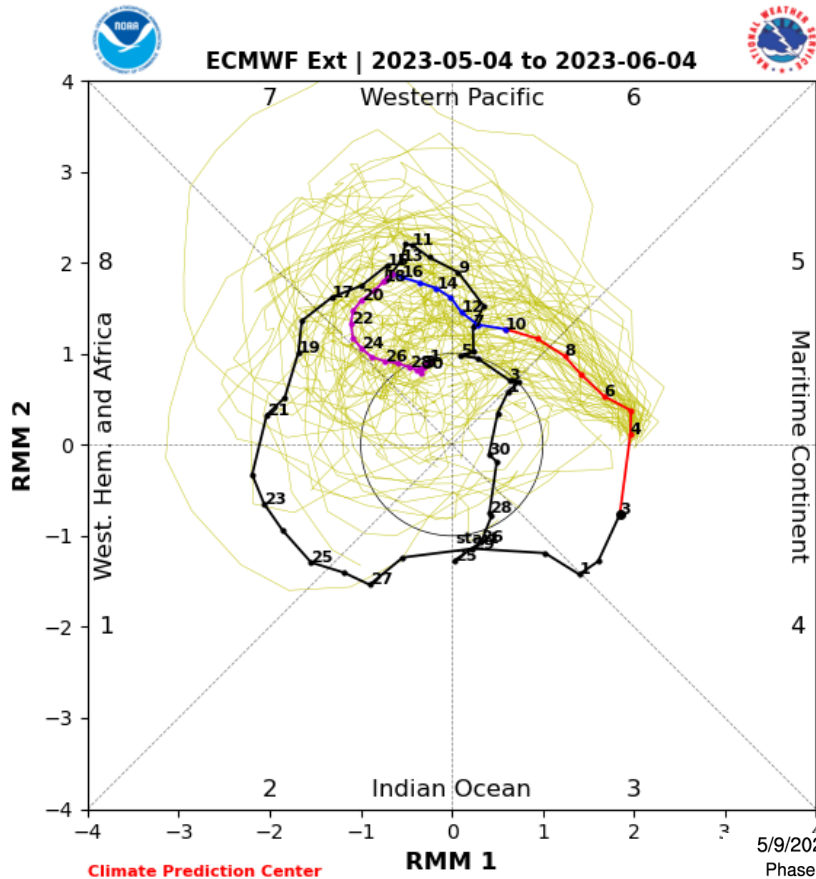


MJO prévue indice RMM multi modèles



MJO prévue

indice RMM multi modèles



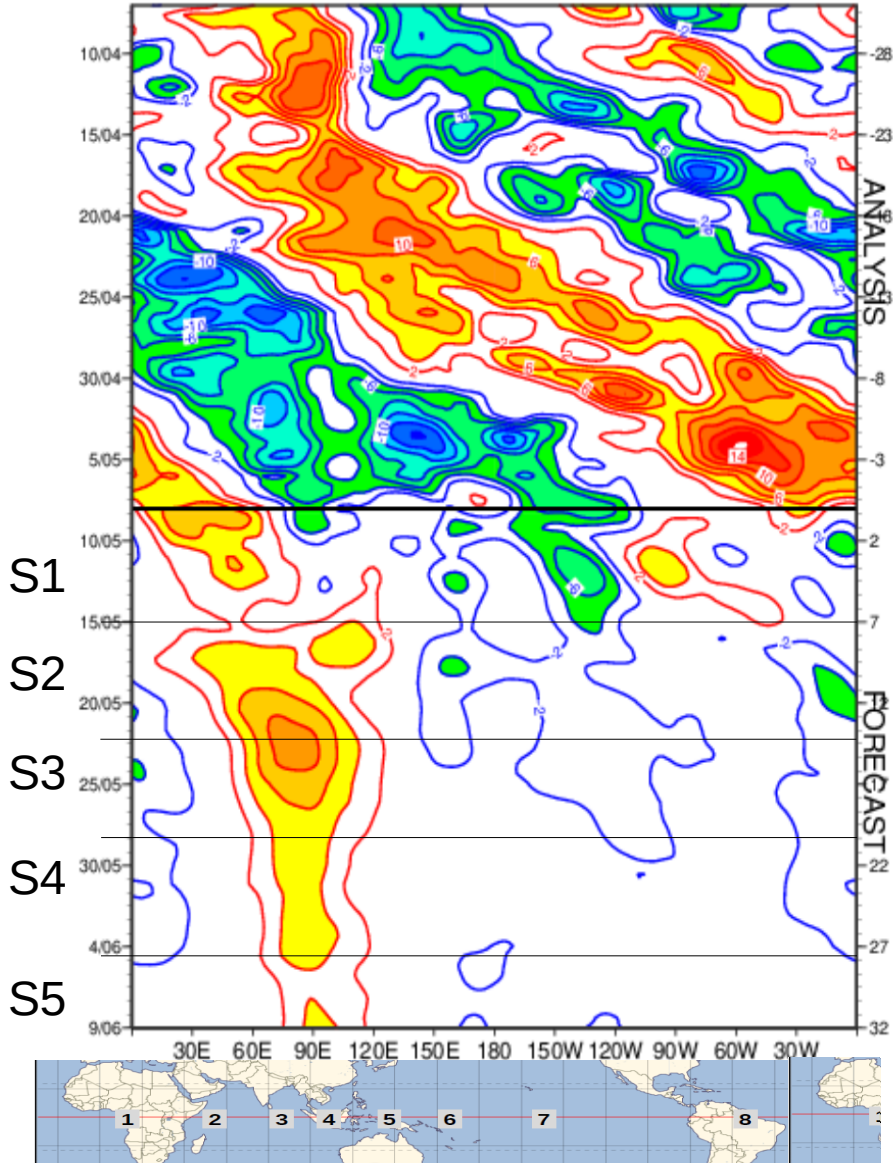
Indice VPM



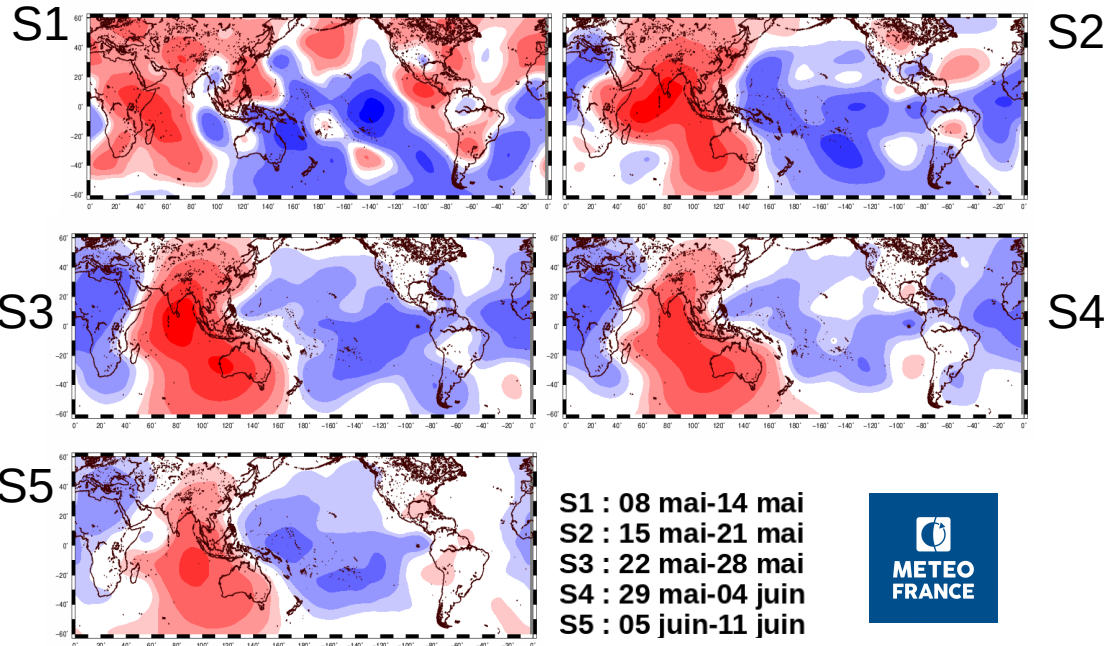
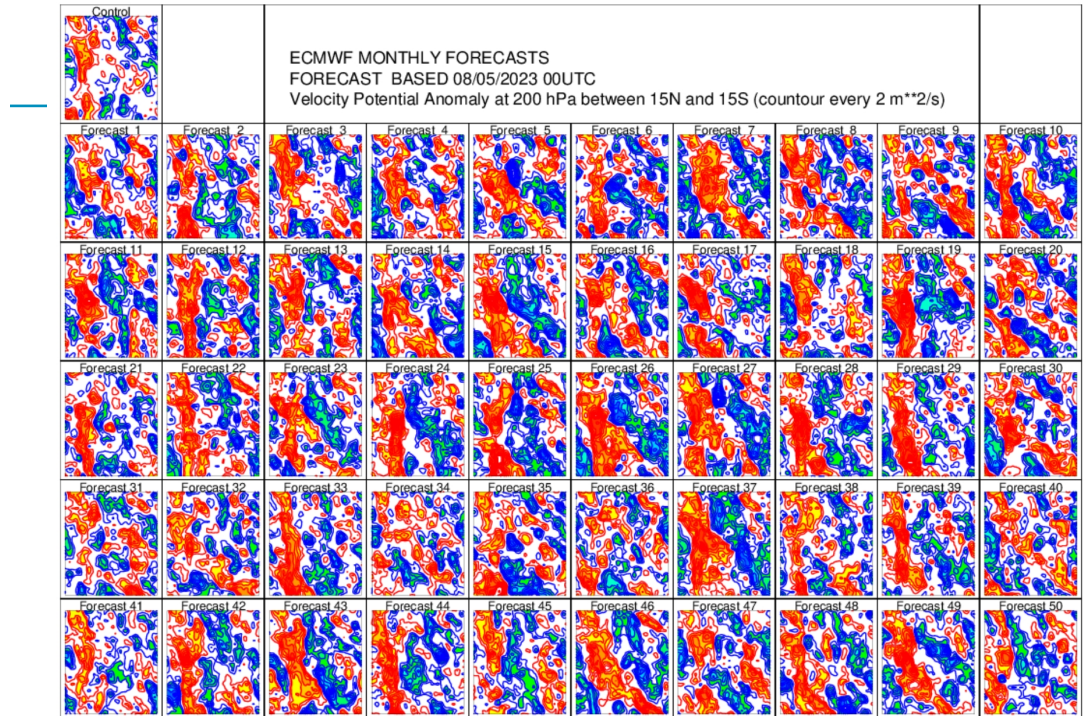
VP200 – EPS mensuel

Moyenne EPS

VELOCITY POTENTIAL AT 200 HPA
Ensemble mean between Lat 15S and 15N
FORECAST BASED 08/05/2023 00UTC



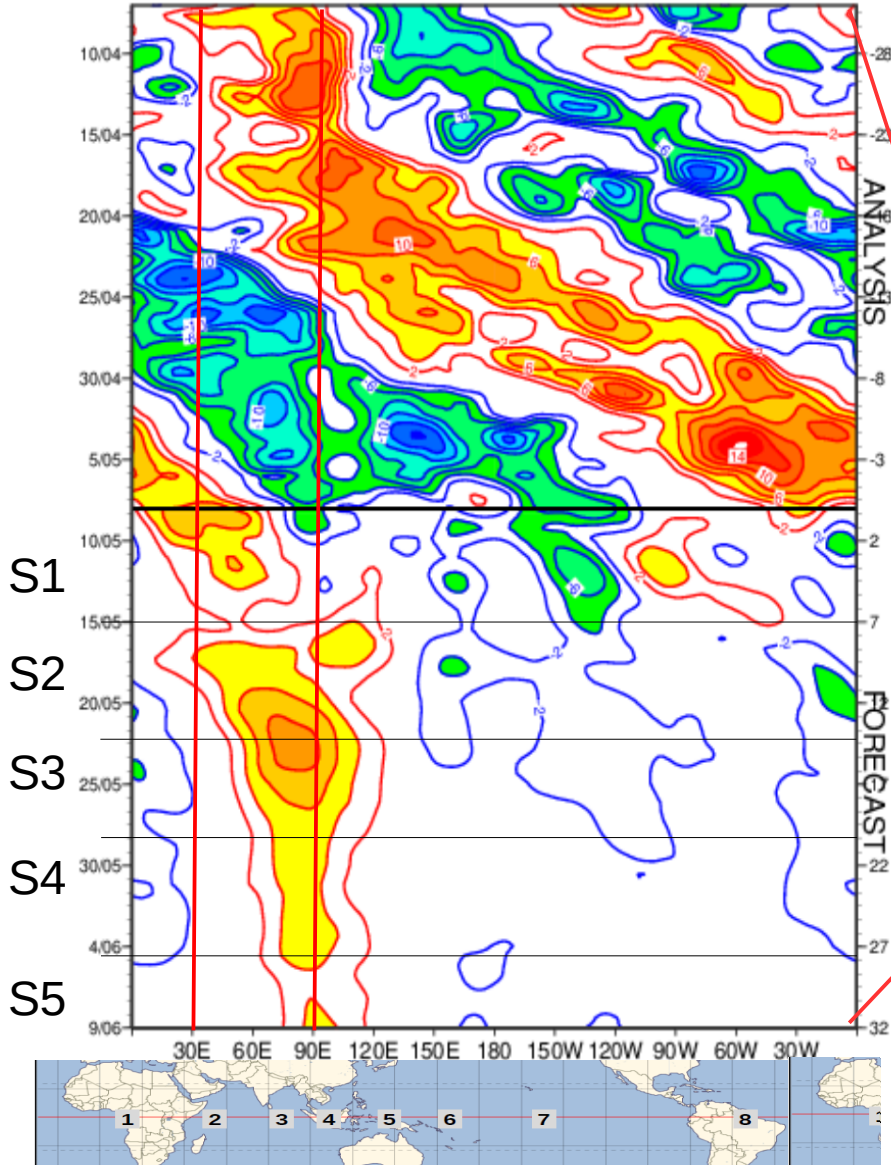
Prévisions 51 membres



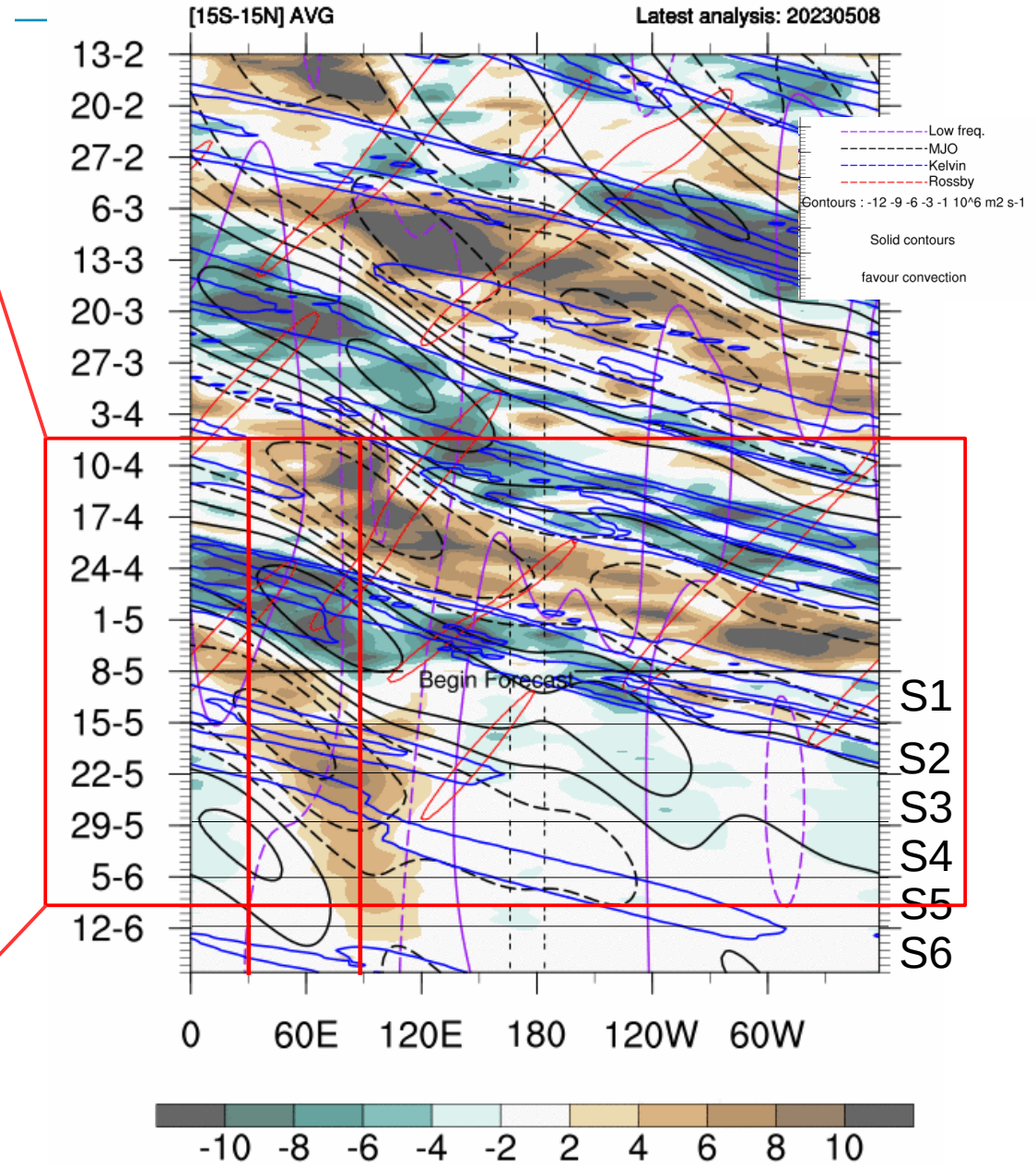
VP200 – EPS mensuel

Moyenne EPS

VELOCITY POTENTIAL AT 200 HPA
Ensemble mean between Lat 15S and 15N
FORECAST BASED 08/05/2023 00UTC



vp200 anomaly + Eq. Waves filtering

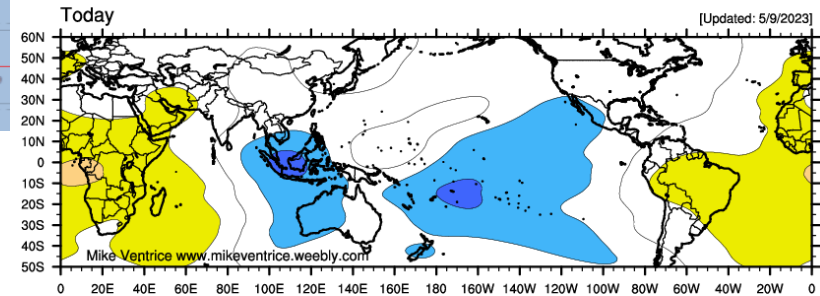


Synthèse MJO

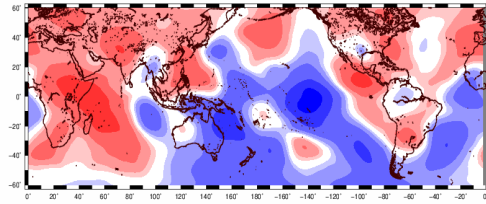
	S1	S2	S3	S4	S5
Phase MJO prévue	X	X	X	X	X
Intensité	X	X	X	X	X
Confiance	X	X	X	X	X



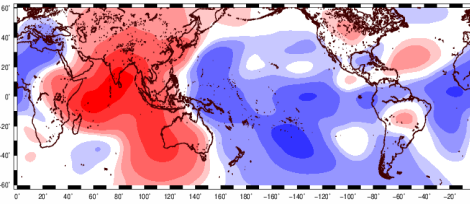
MJO filtered VP200 Forecast



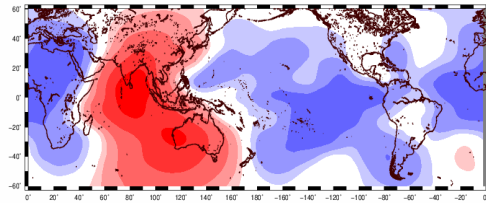
S1



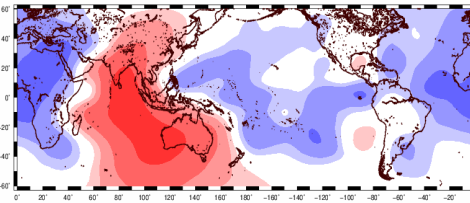
S2



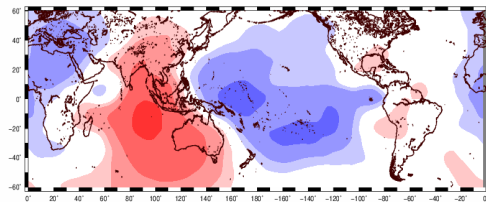
S3



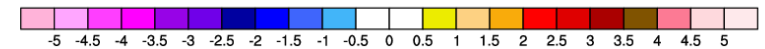
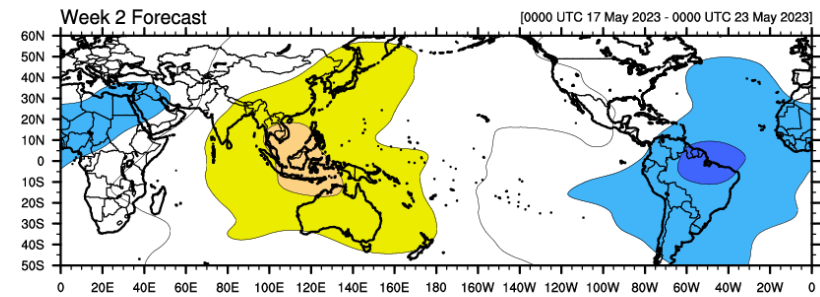
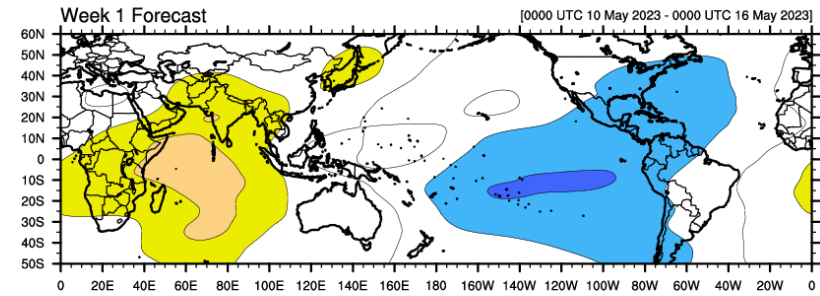
S4



S5

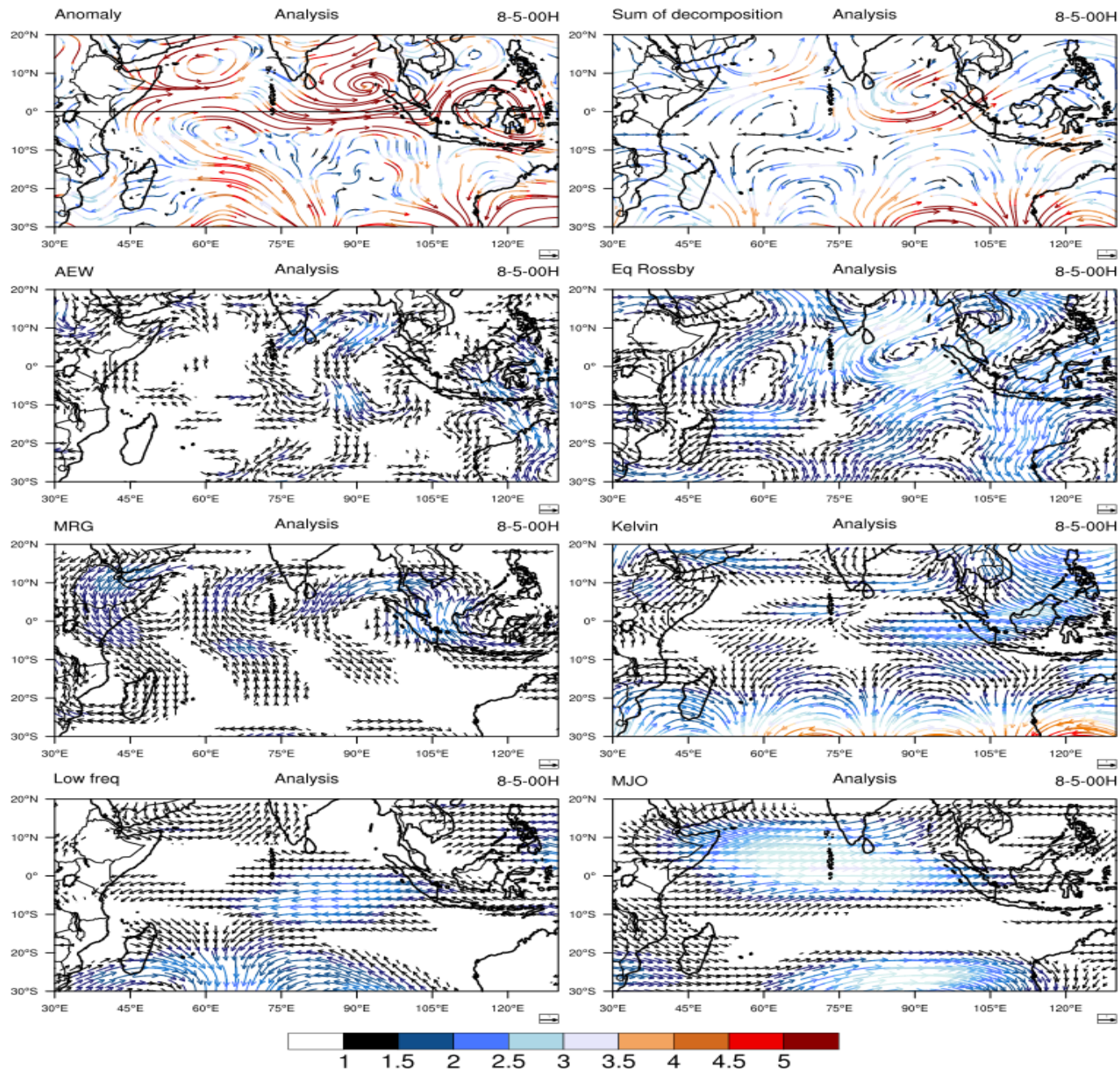


S1 : 08 mai-14 mai
 S2 : 15 mai-21 mai
 S3 : 22 mai-28 mai
 S4 : 29 mai-04 juin
 S5 : 05 juin-11 juin

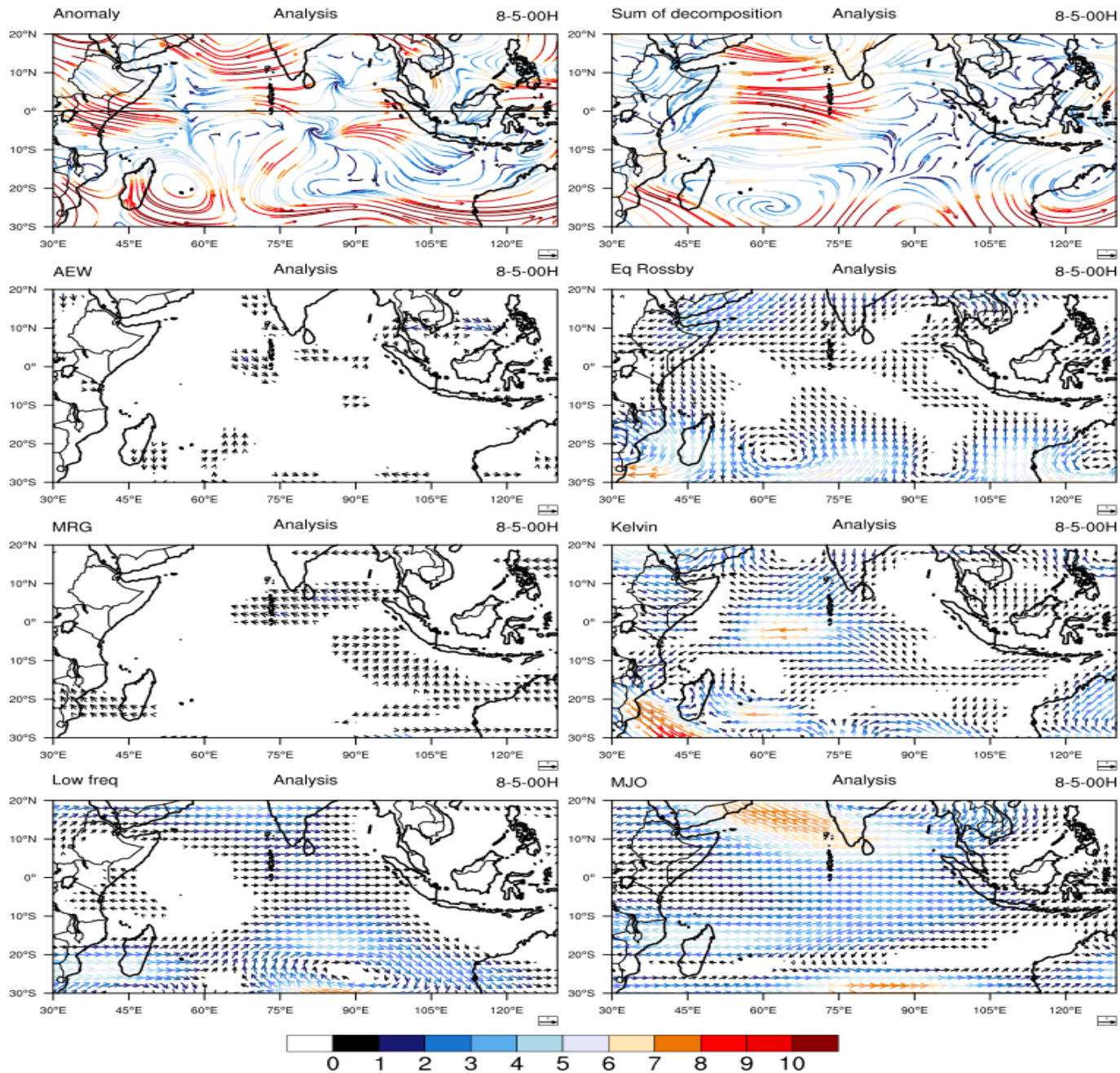


3. Prévision – Ondes équatoriales

3. Ondes équatoriales

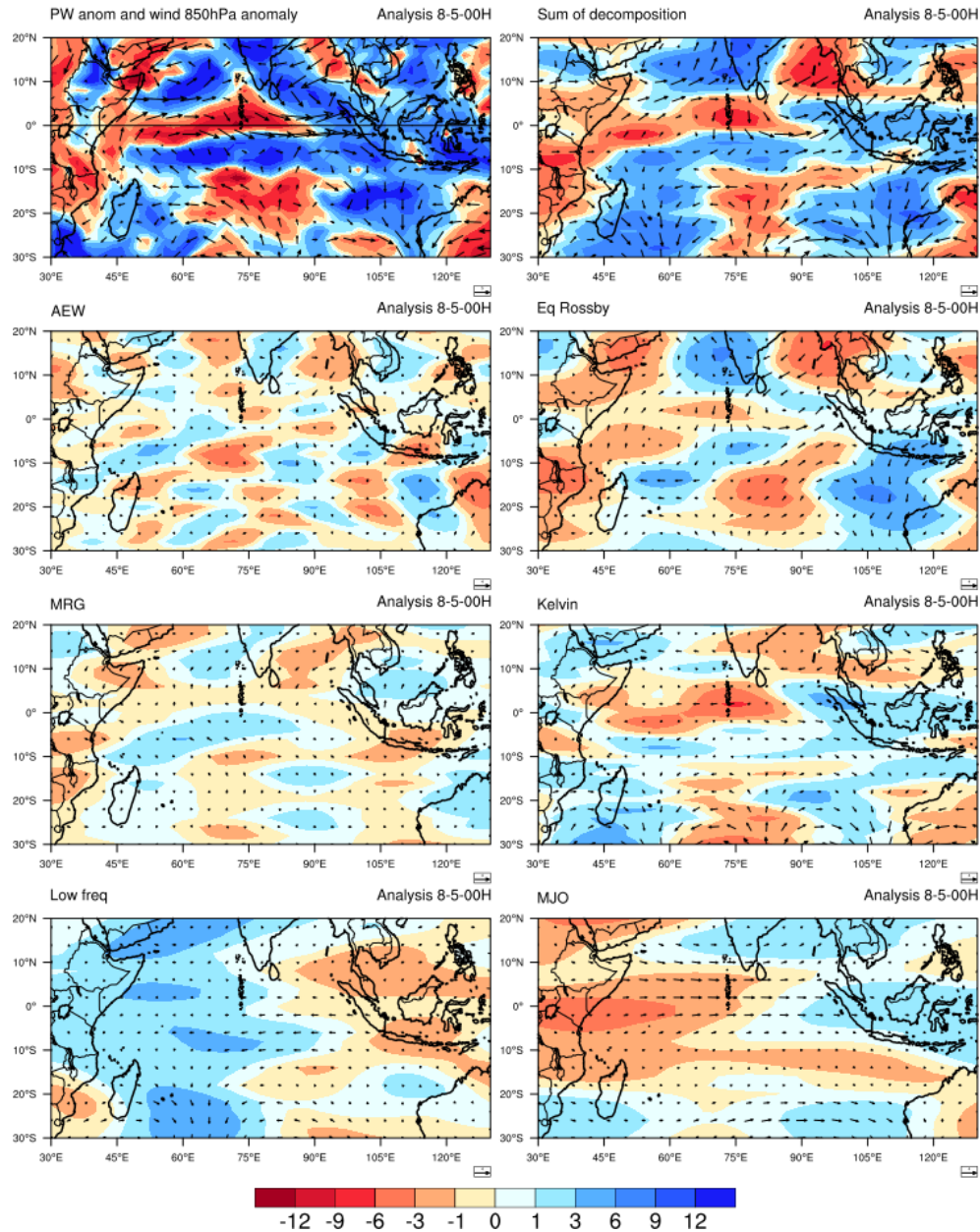


3. Ondes équatoriales



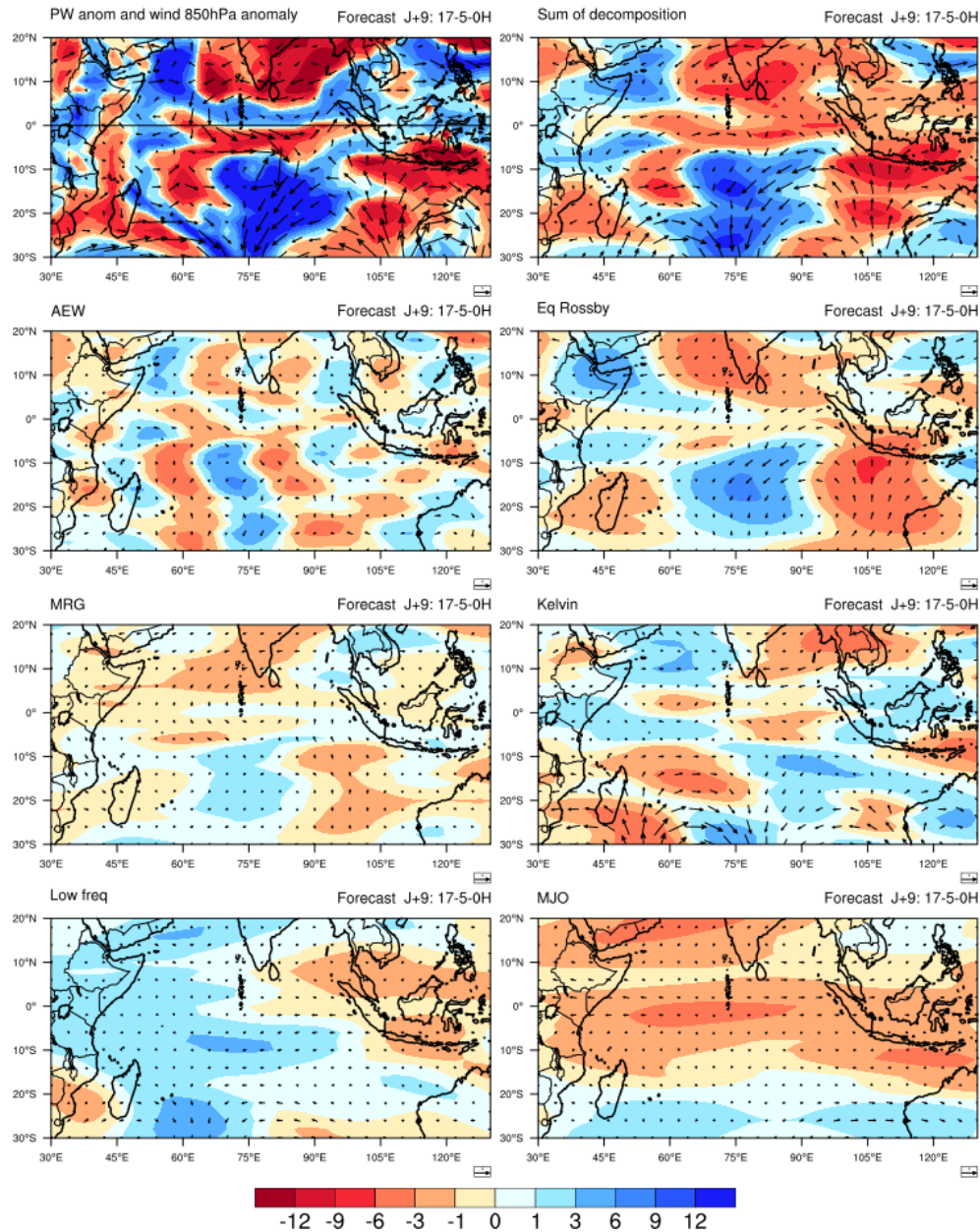
3. Ondes équatoriales

PW and 850hPa wind anomalies

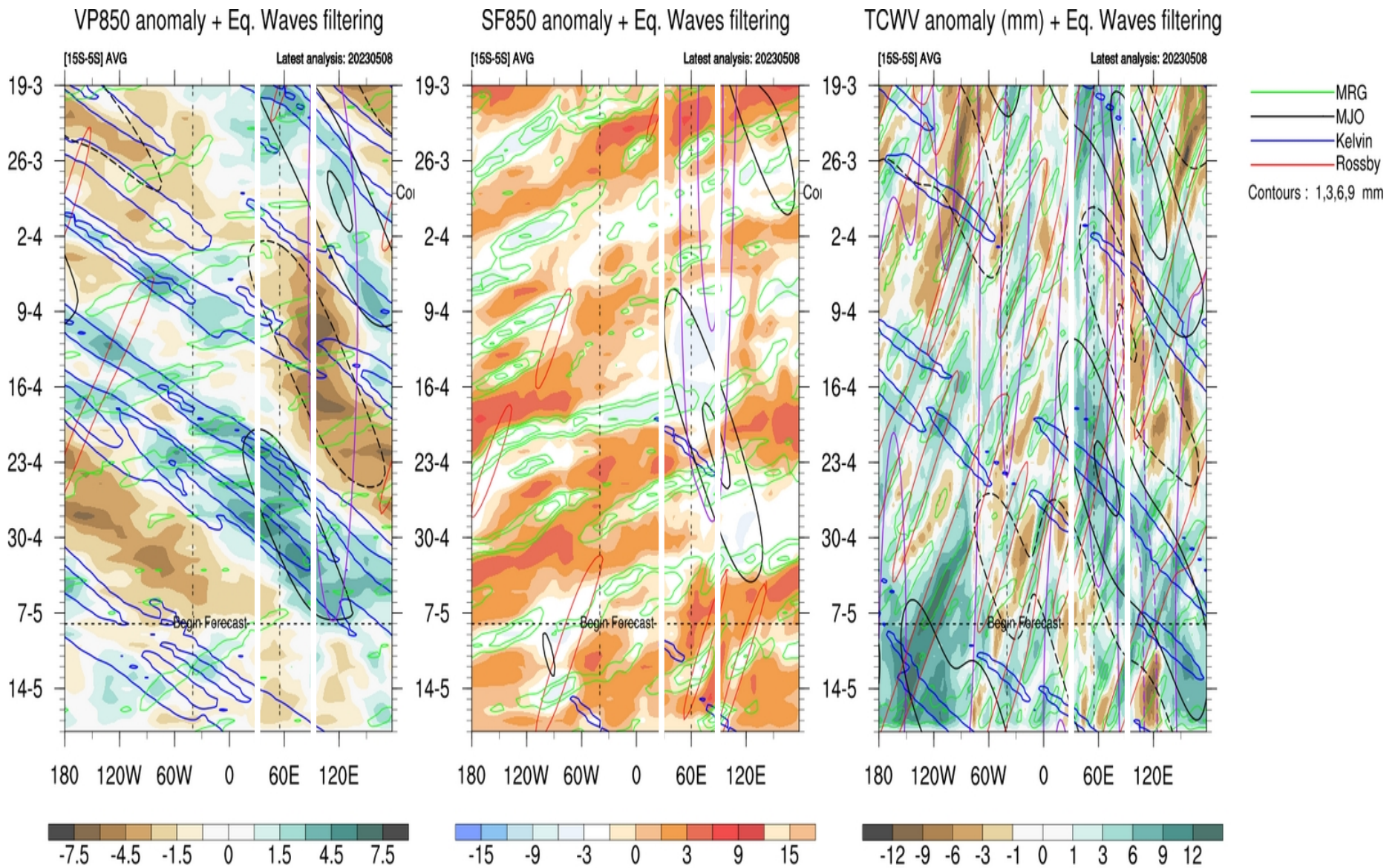


3. Ondes équatoriales

PW and 850hPa wind anomalies

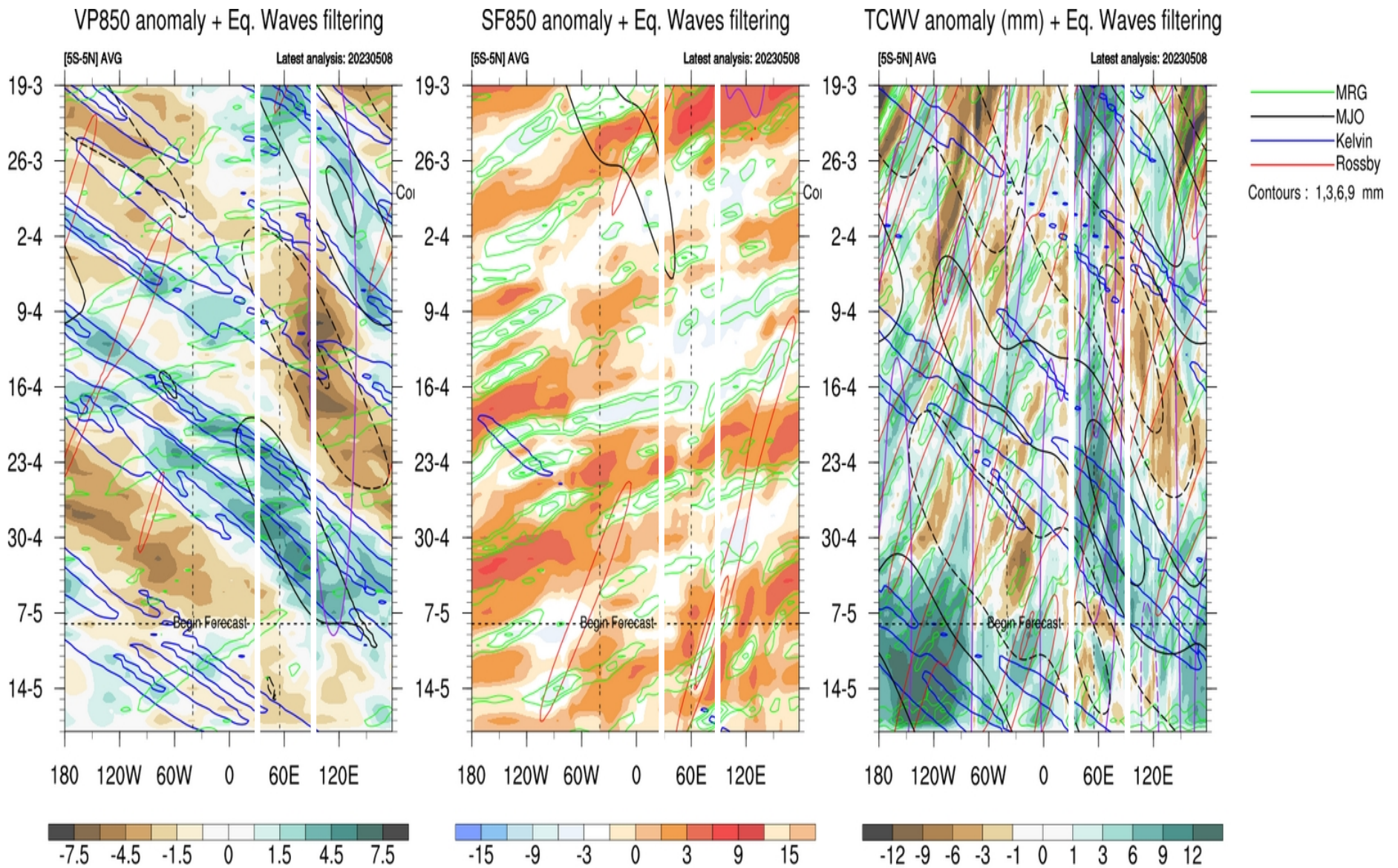


3. Ondes équatoriales



Contact: philippe.peyrille@meteo.fr

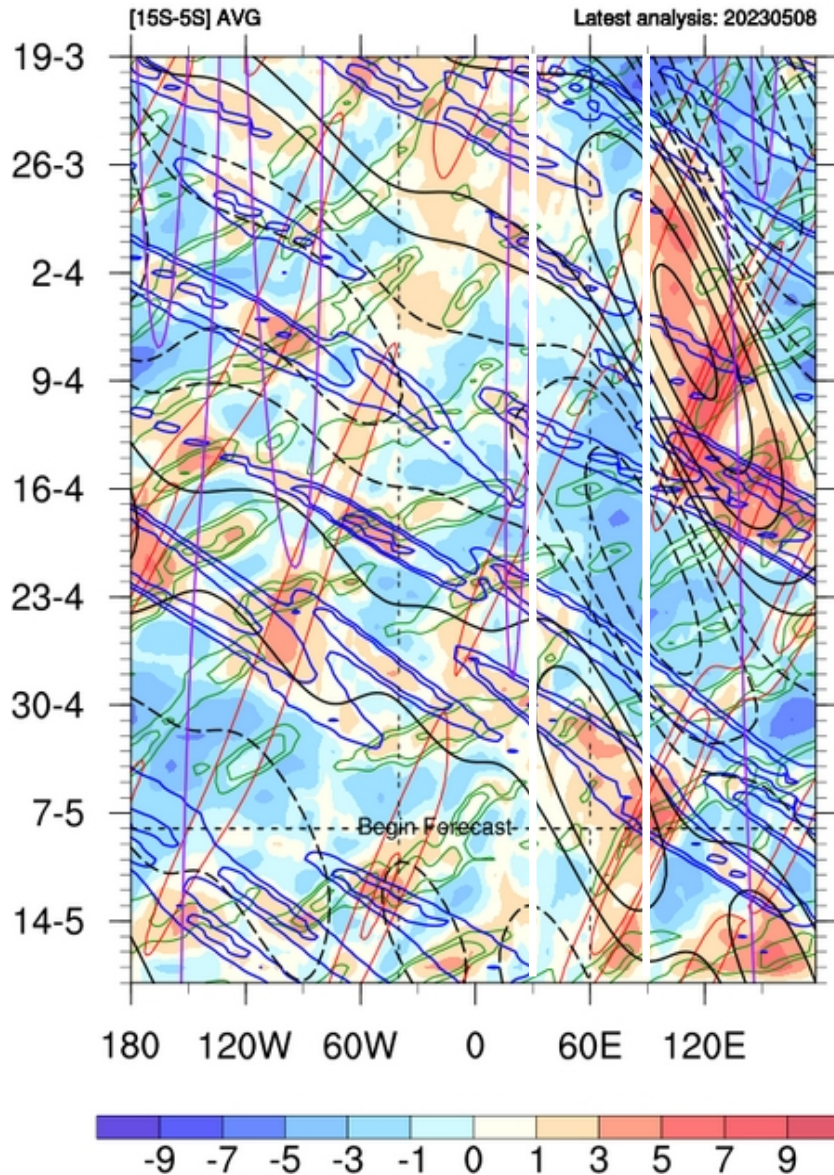
3. Ondes équatoriales



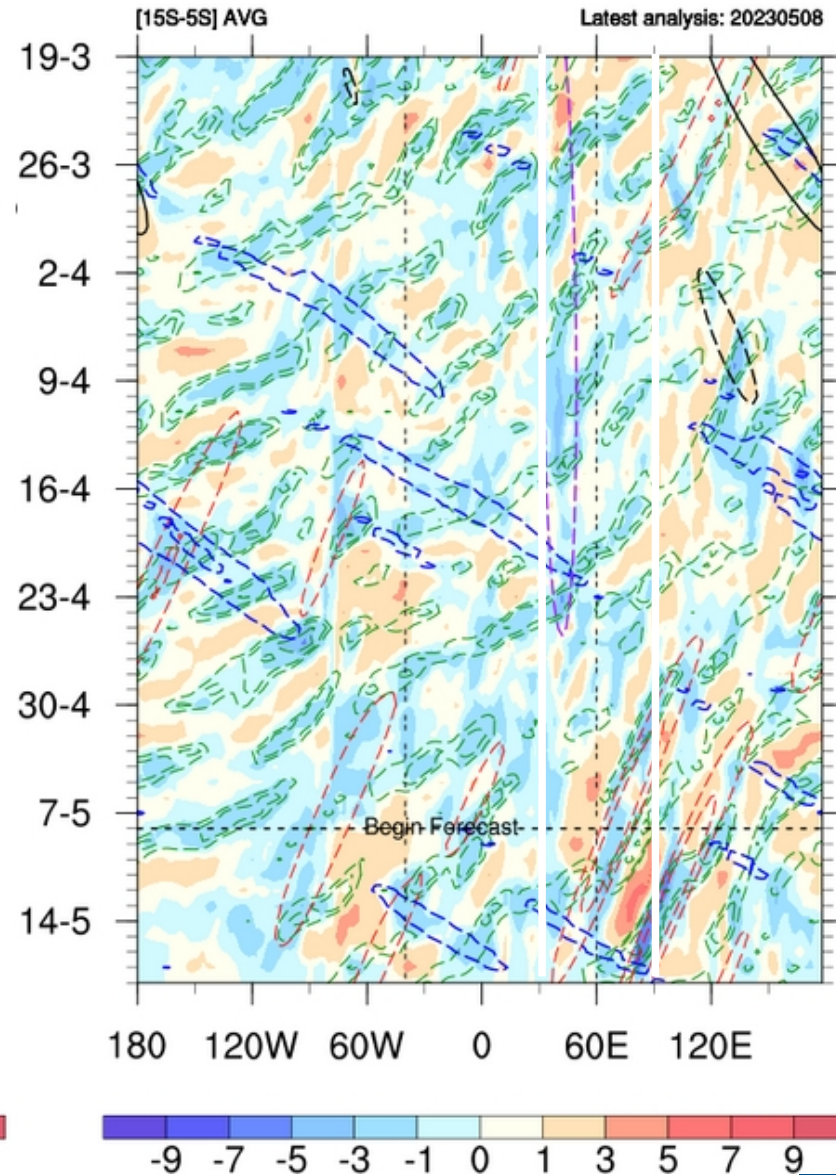
Contact: philippe.peyrylle@meteo.fr

3. Ondes équatoriales

u850 anomaly + Eq. Waves filtering

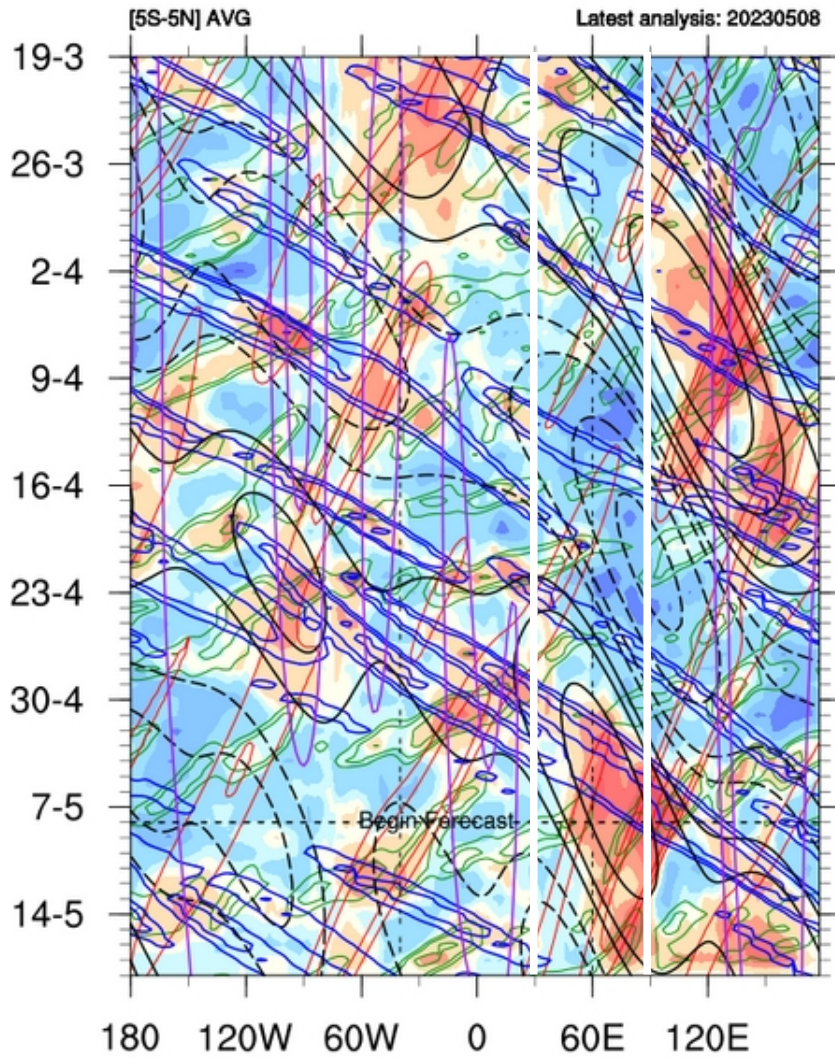


v850 anomaly + Eq. Waves filtering

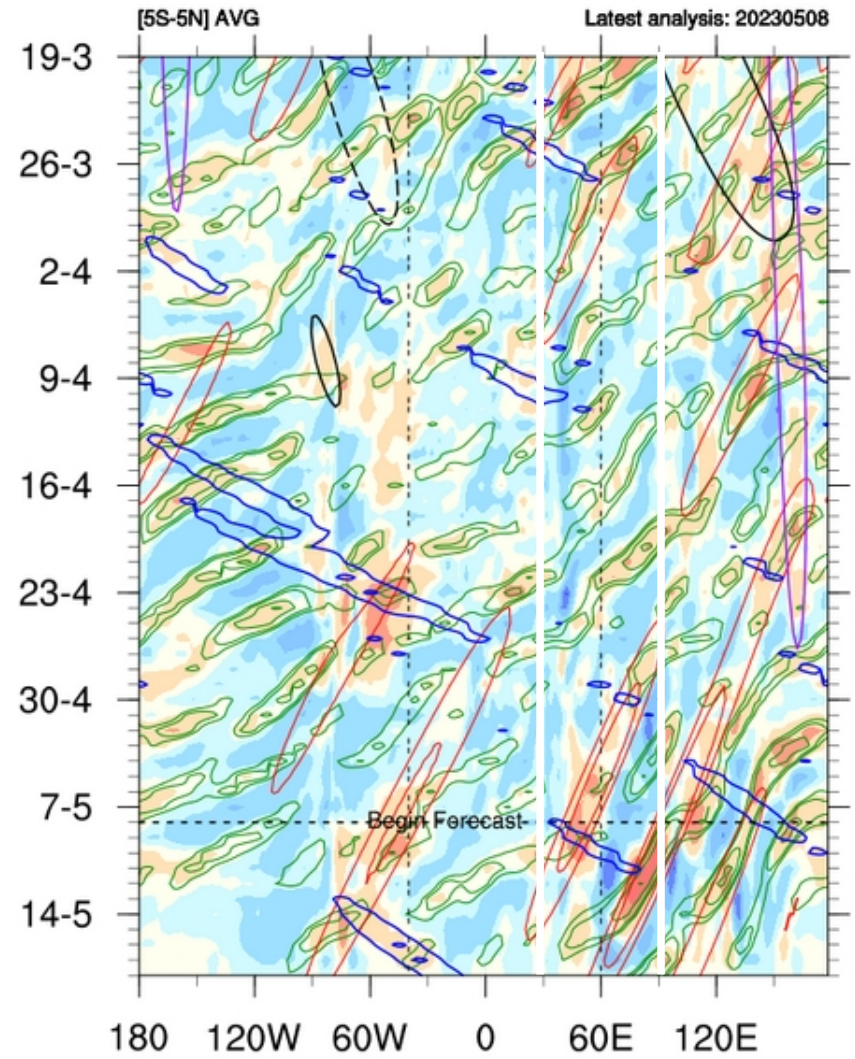


3. Ondes équatoriales

u850 anomaly + Eq. Waves filtering

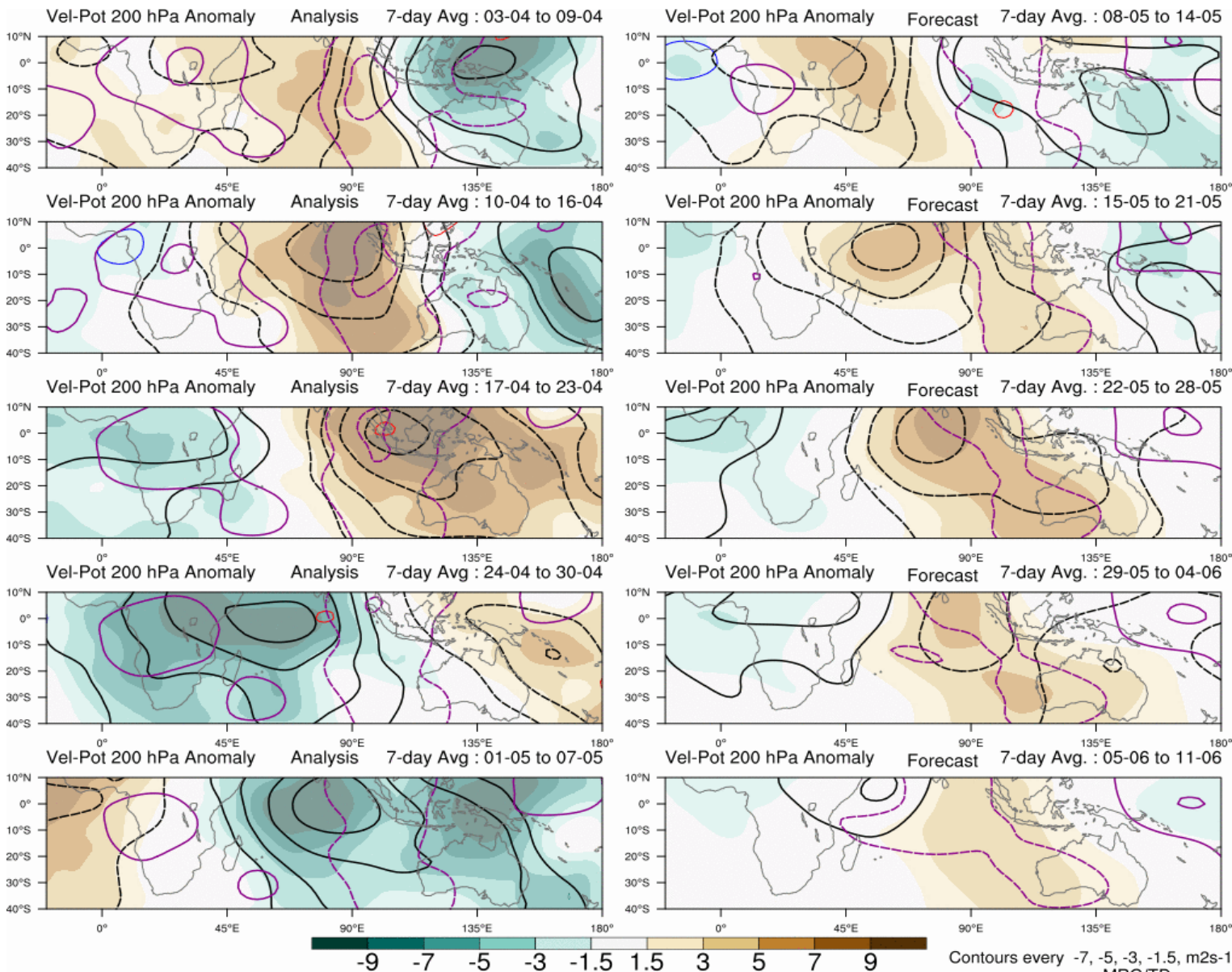


v850 anomaly + Eq. Waves filtering



VP200 – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

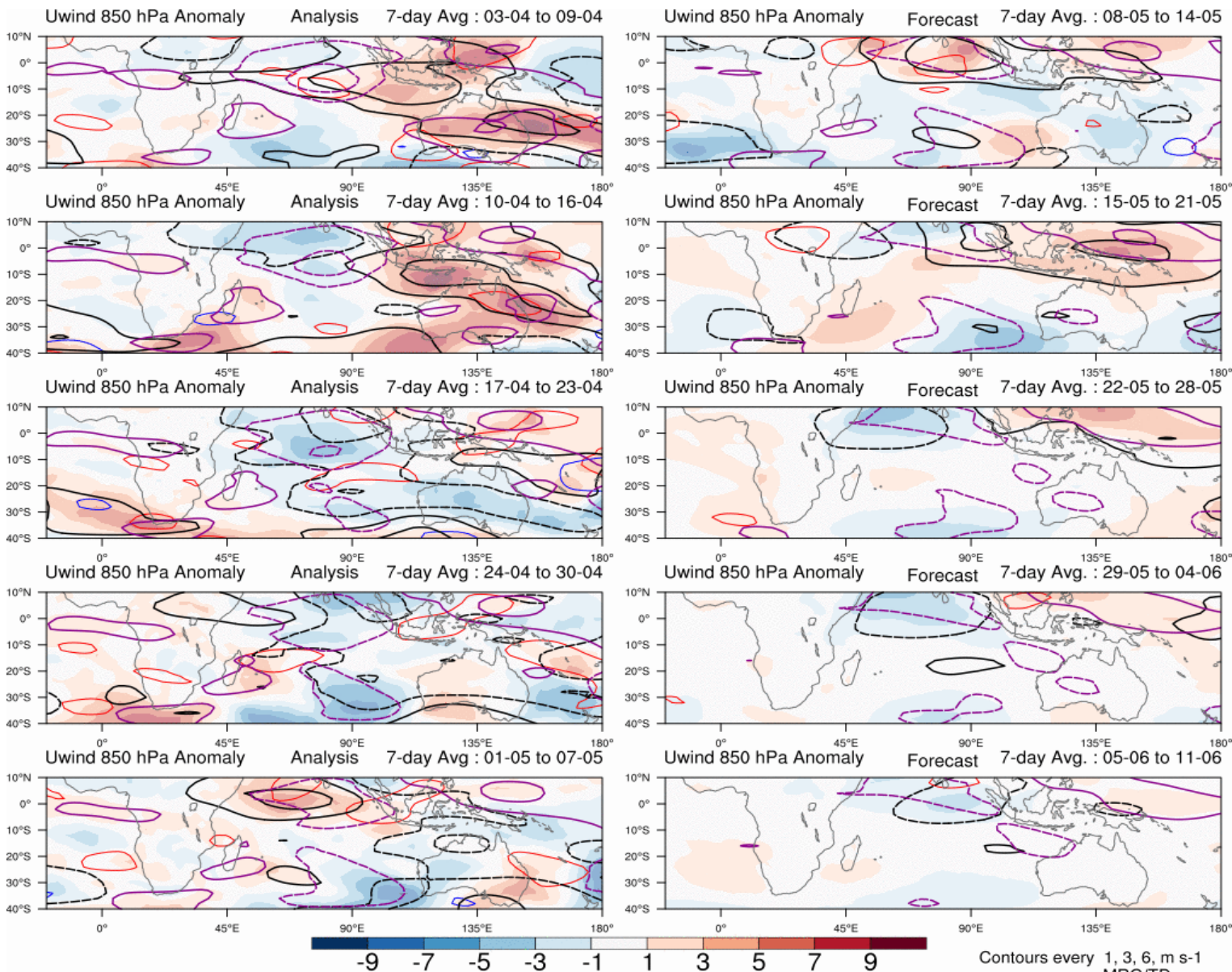
S4

S5



U850 – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

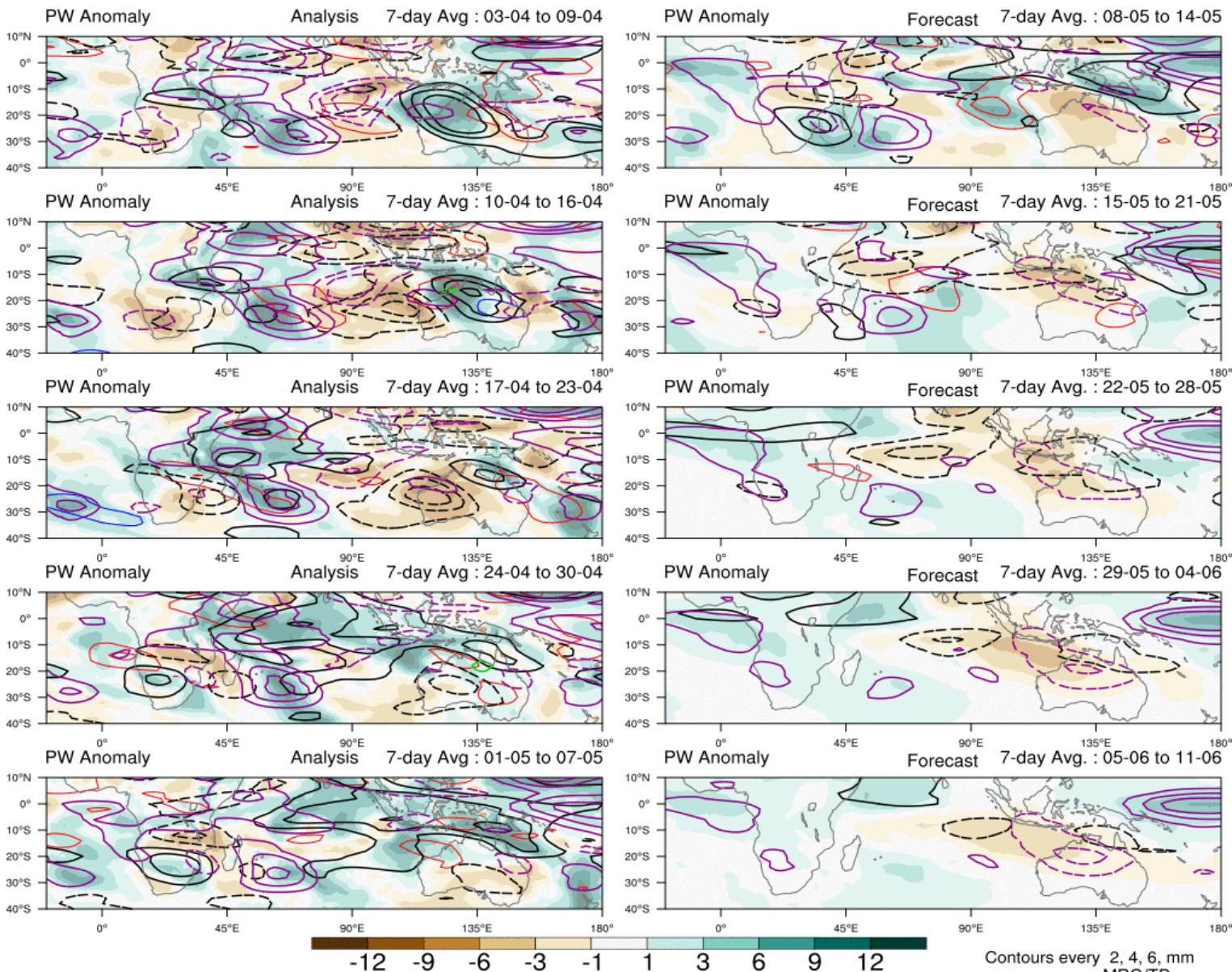
S4

S5



PW – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

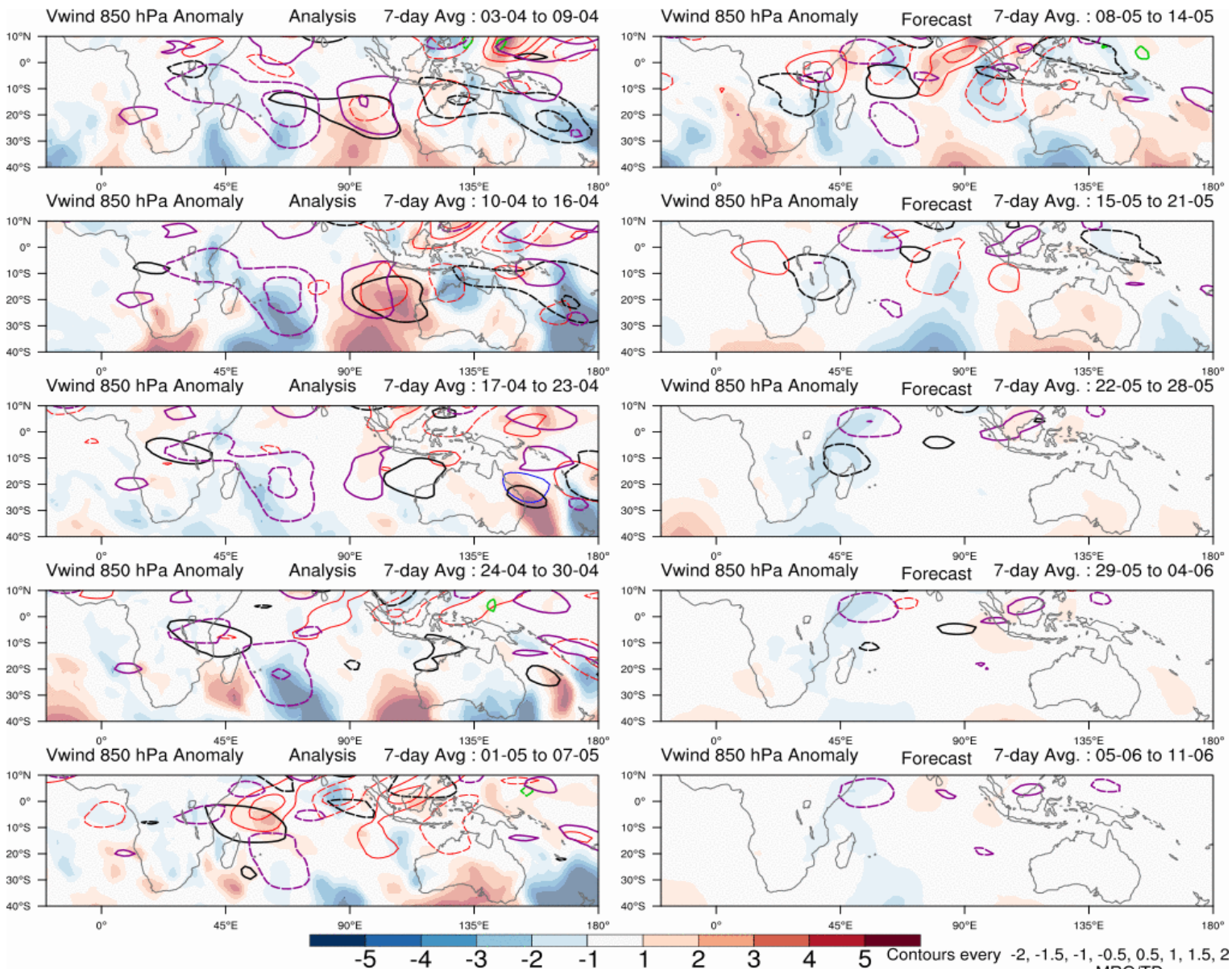
S4

S5



V850 – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

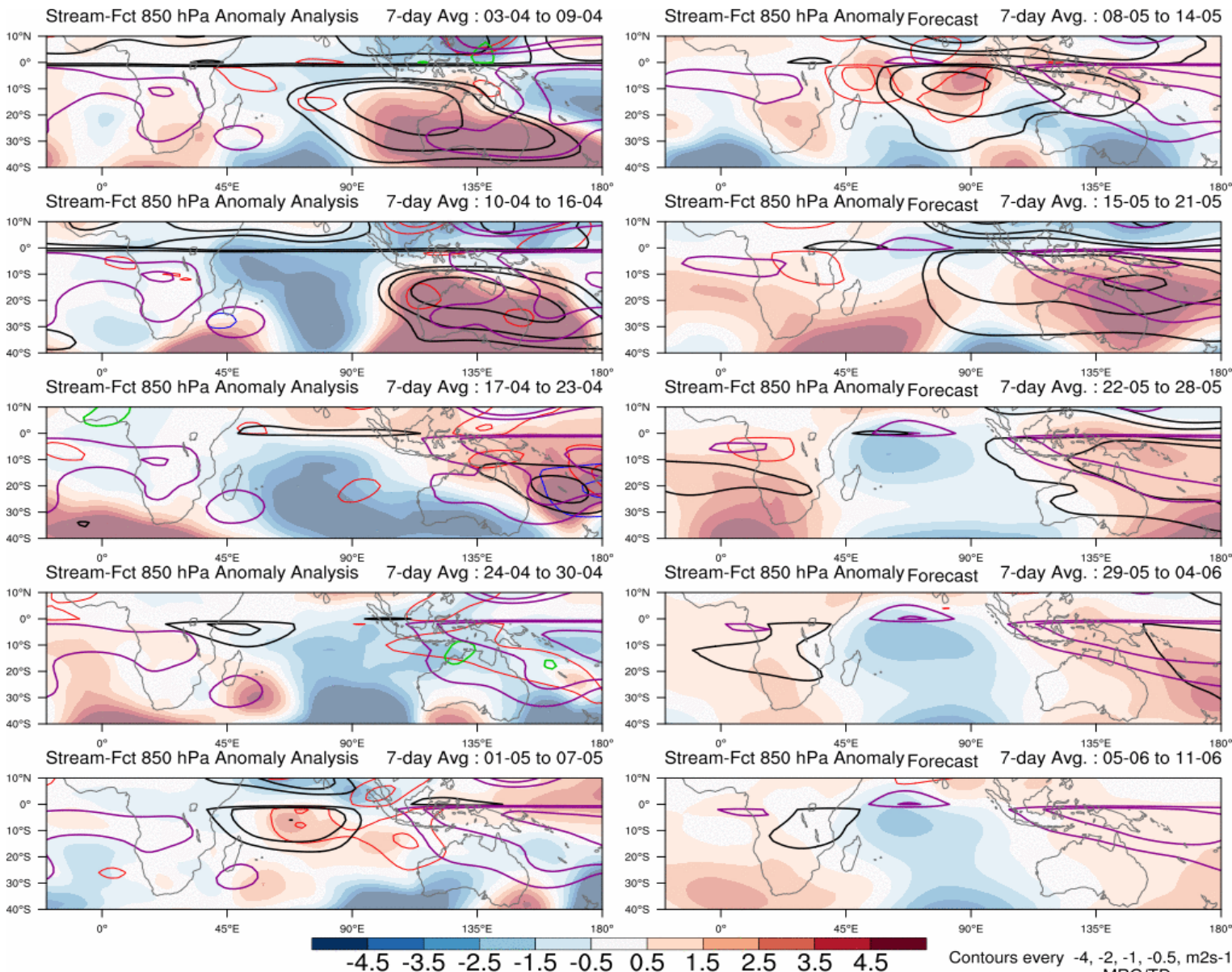
S3

S4

S5

SF850 – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

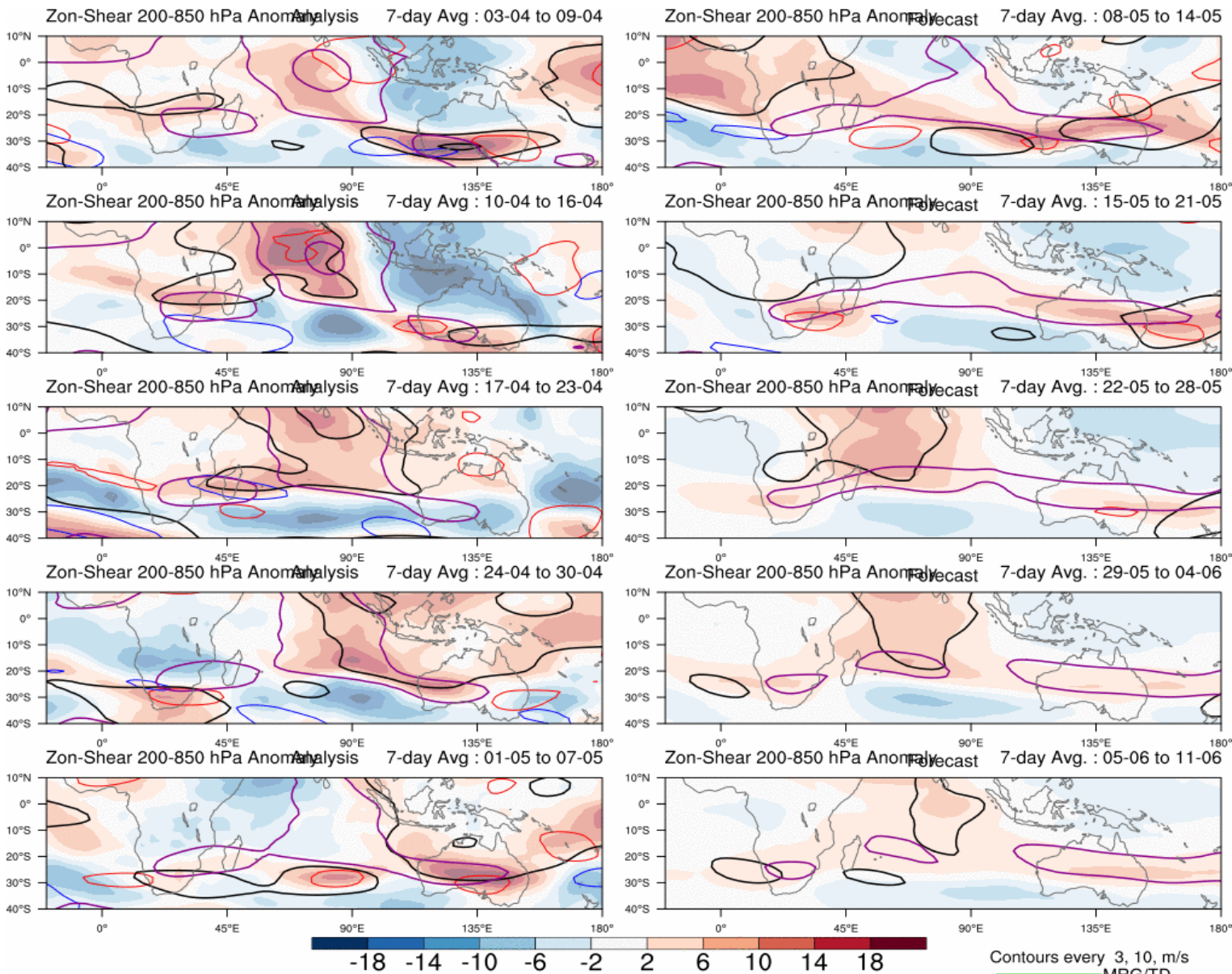
S4

S5



U_{shear} – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

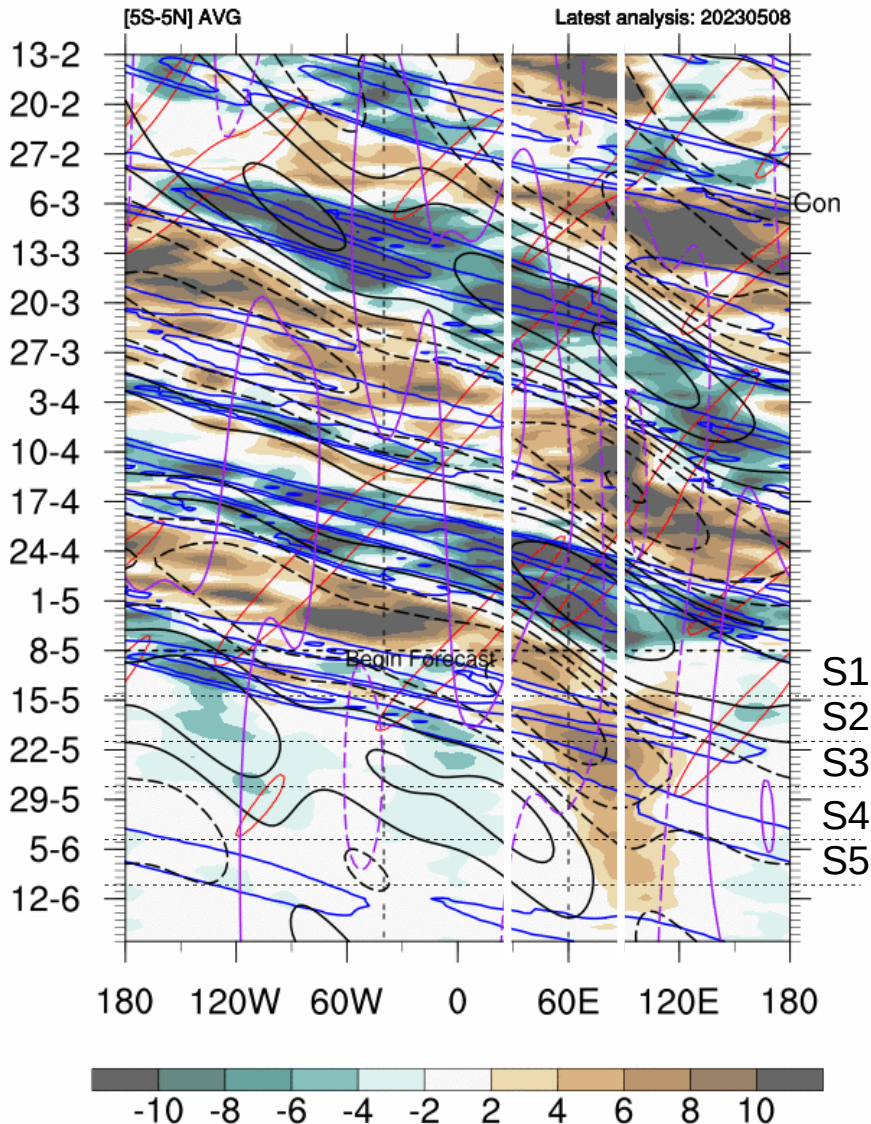
S4

S5



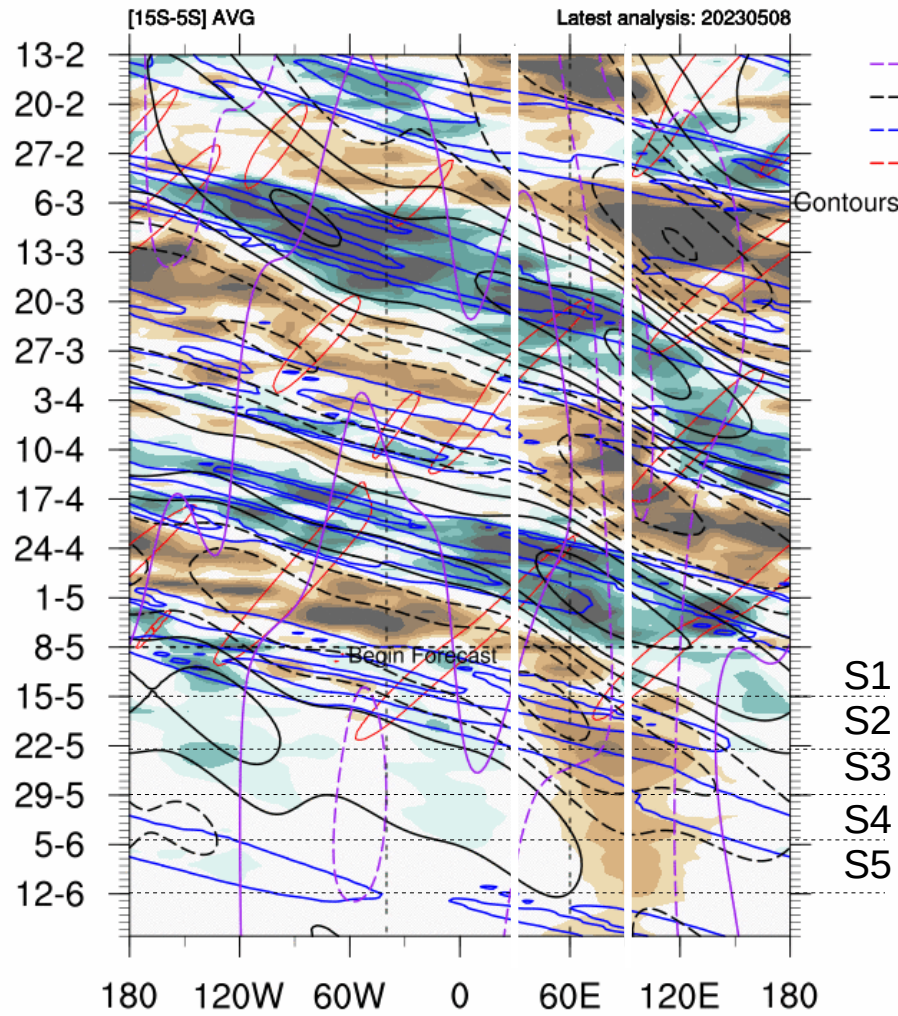
3. Ondes équatoriales

vp200 anomaly + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

vp200 anomaly + Eq. Waves filtering



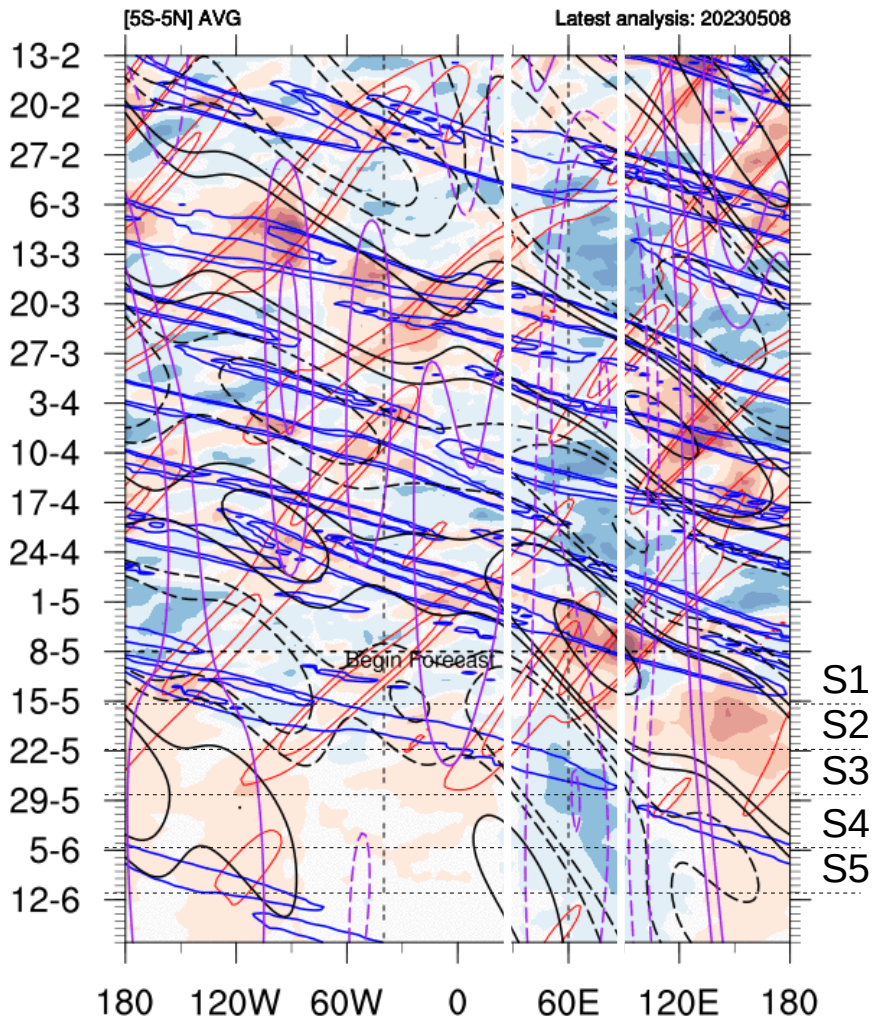
Contact: philippe.peyrille@meteo.fr

- Low freq.
 - MJO
 - Kelvin
 - Rossby
- Contours : -12 -9 -6 -3 -1 10^6 m²
- Solid contours
favour convection

S1
S2
S3
S4
S5

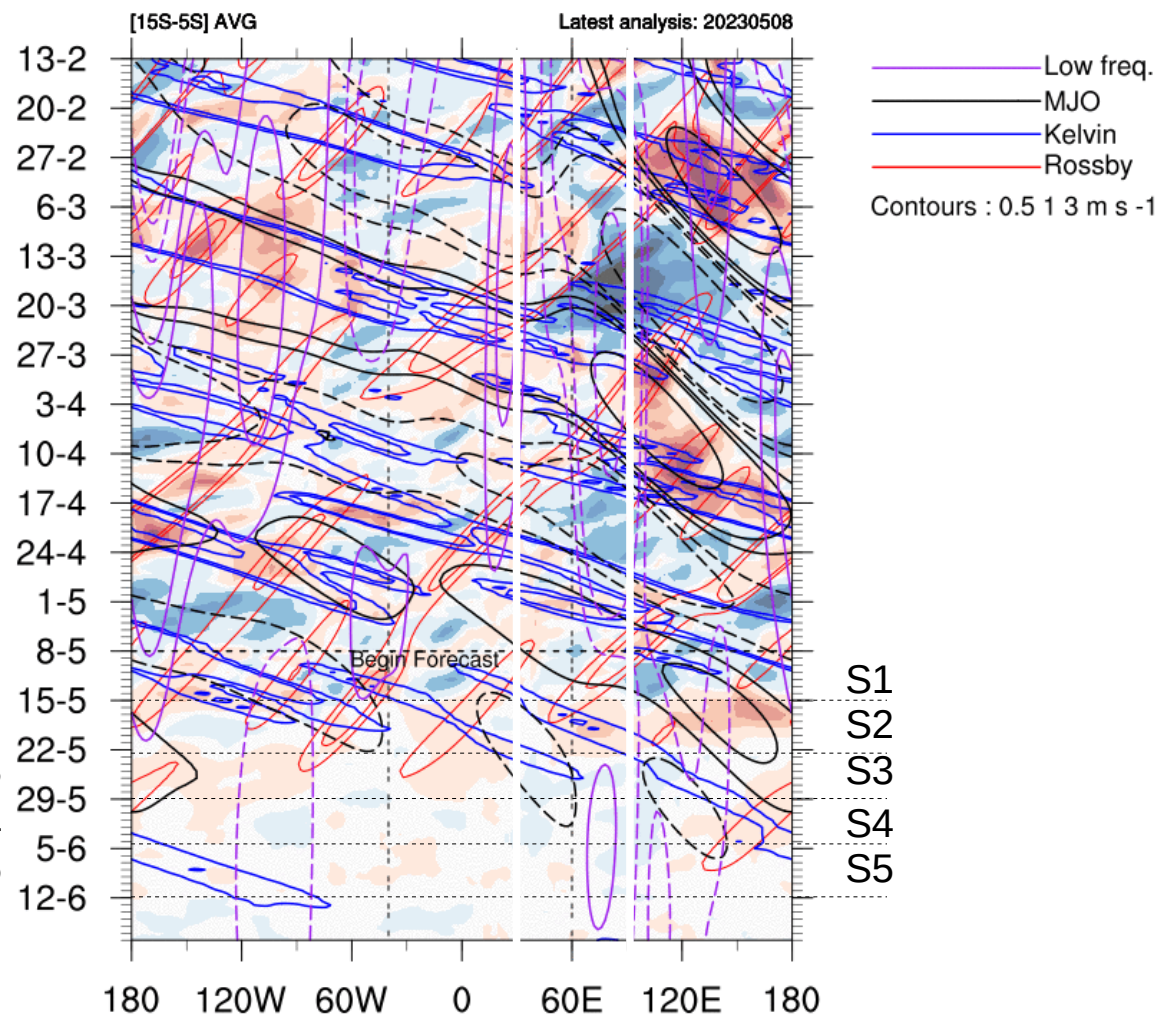
3. Ondes équatoriales

u850 anomaly + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

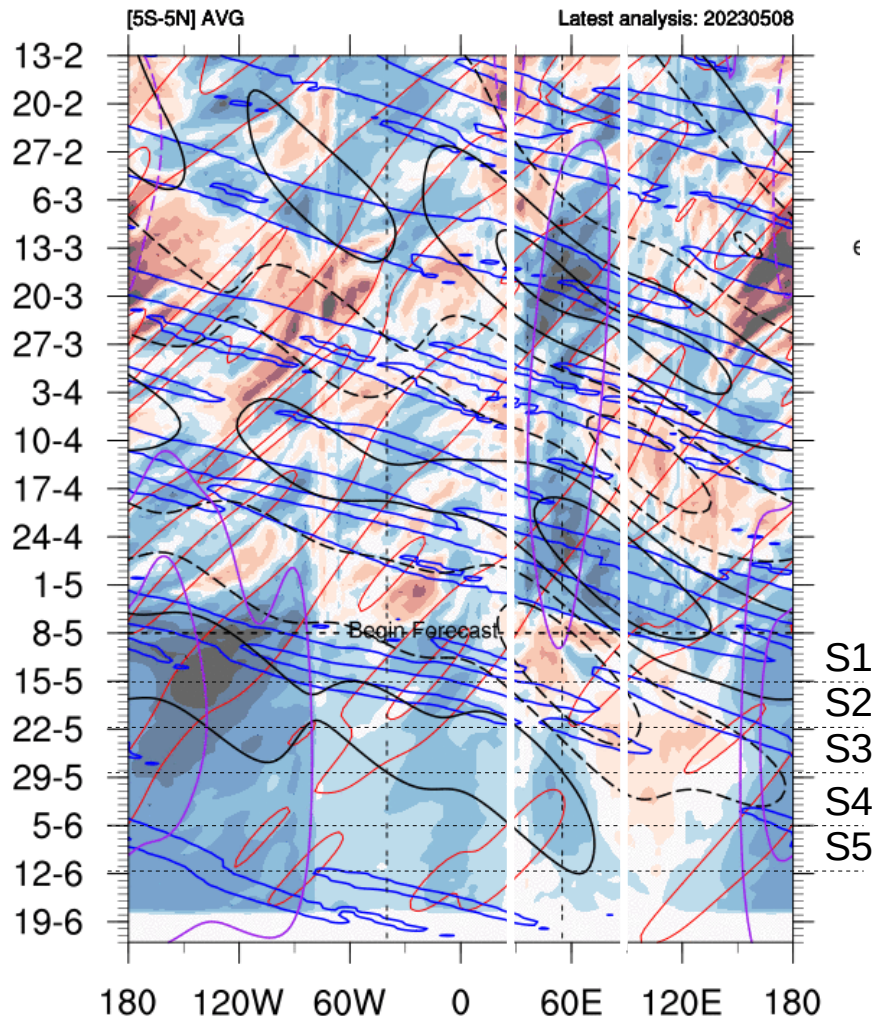
u850 anomaly + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

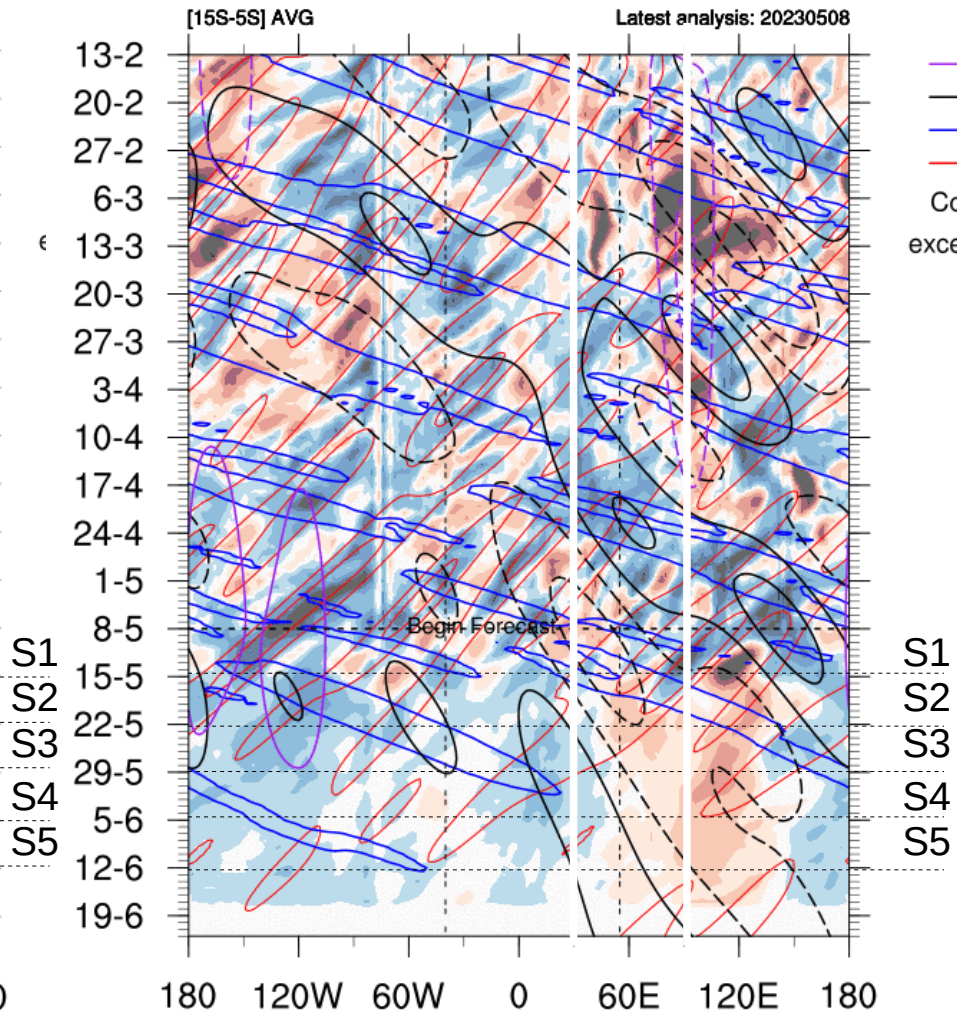
3. Ondes équatoriales

TCWV anomaly (mm) + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

TCWV anomaly (mm) + Eq. Waves filtering

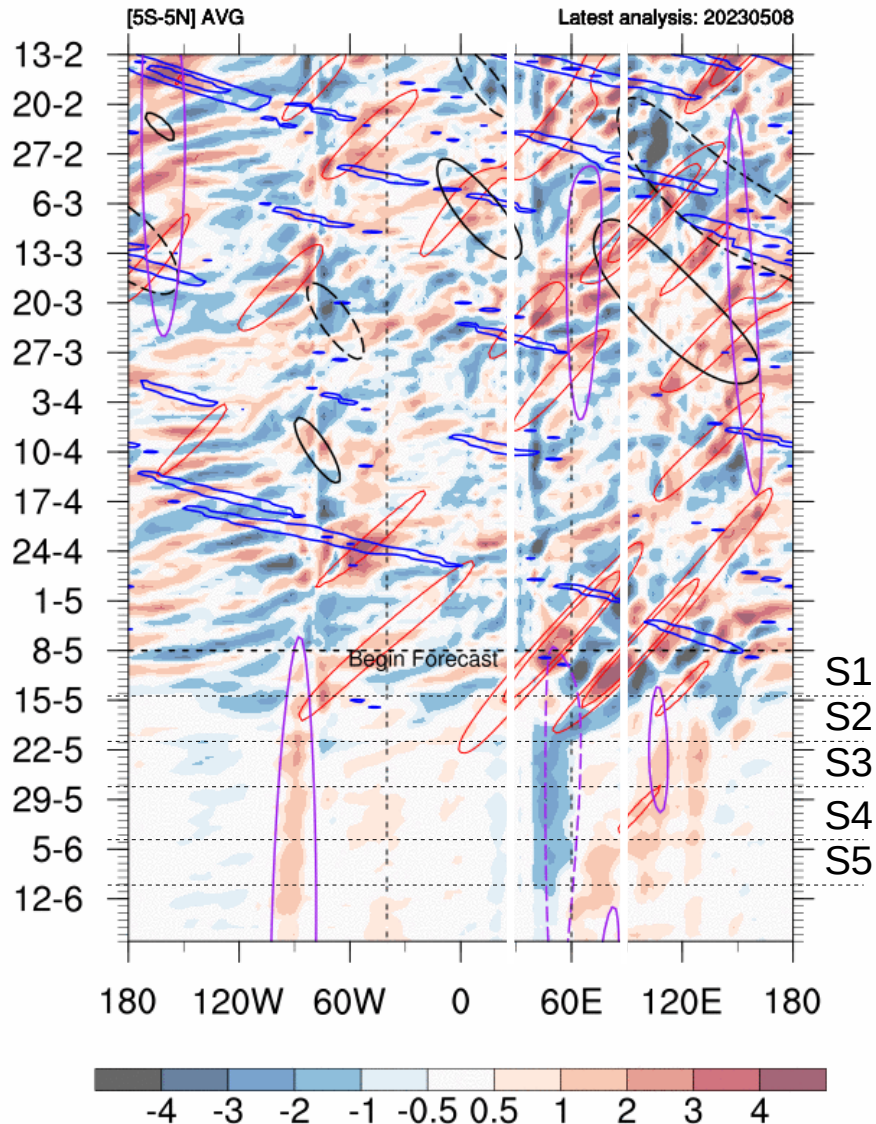


Contact: philippe.peyrille@meteo.fr

— Low freq.
 — MJO
 — Kelvin
 — Rossby
 Contours : 0.5 3 6 mm
 except Low freq, 3,6, 9 mm

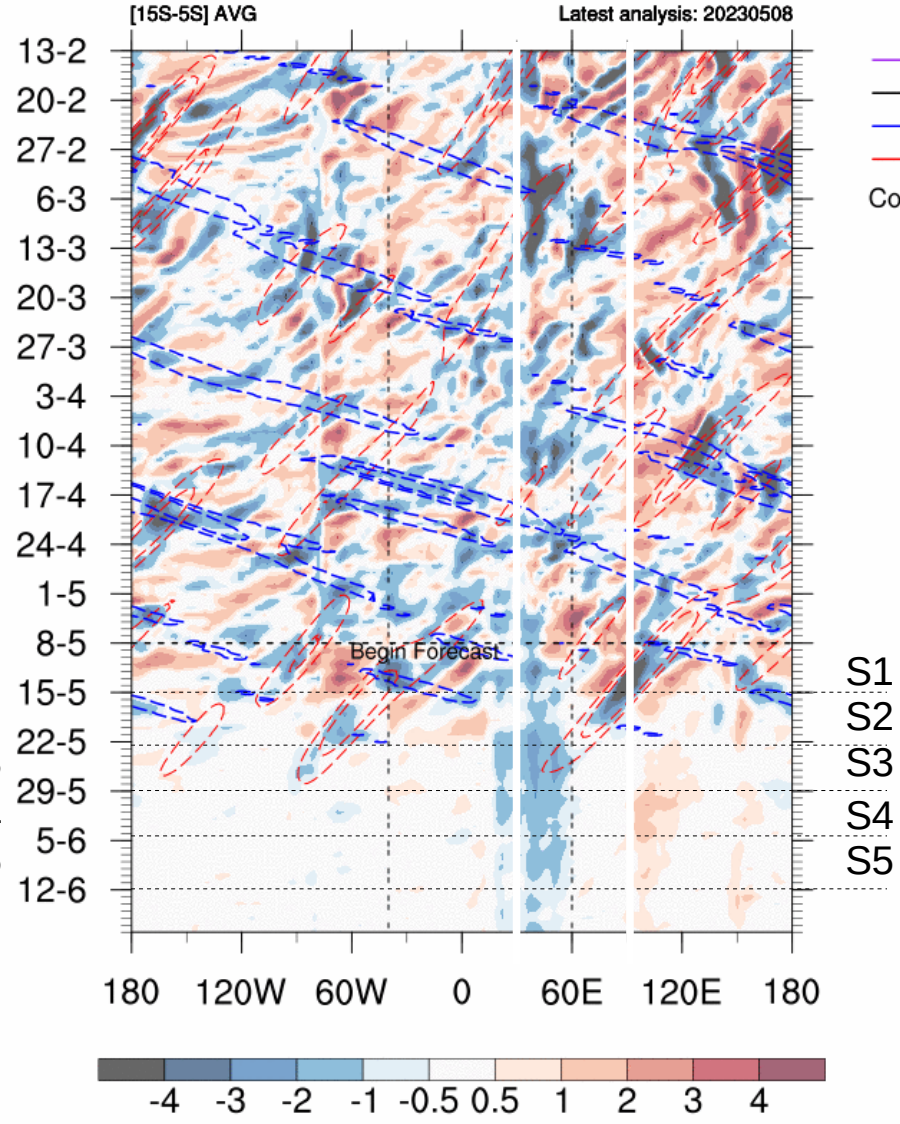
3. Ondes équatoriales

v850 anomaly + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

v850 anomaly + Eq. Waves filtering

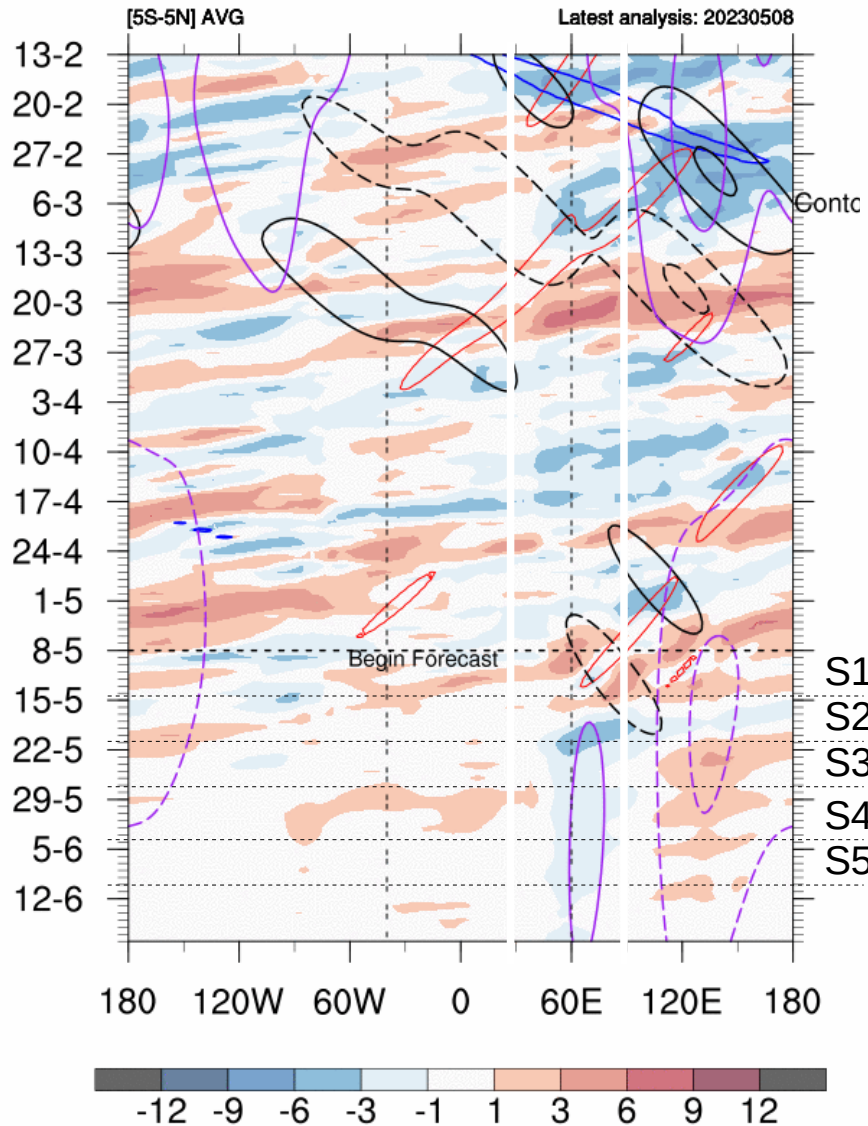


Contact: philippe.peyrille@meteo.fr

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

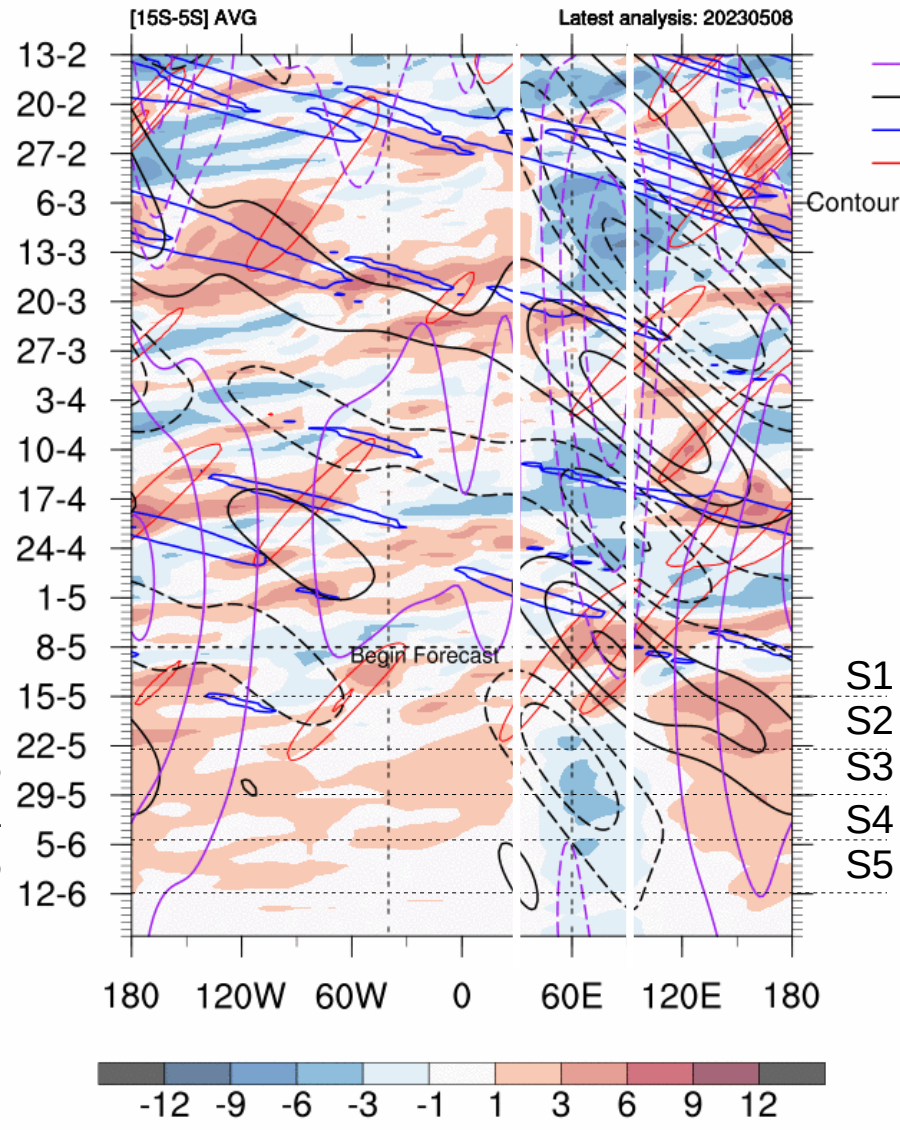
3. Ondes équatoriales

sf850 anomaly + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

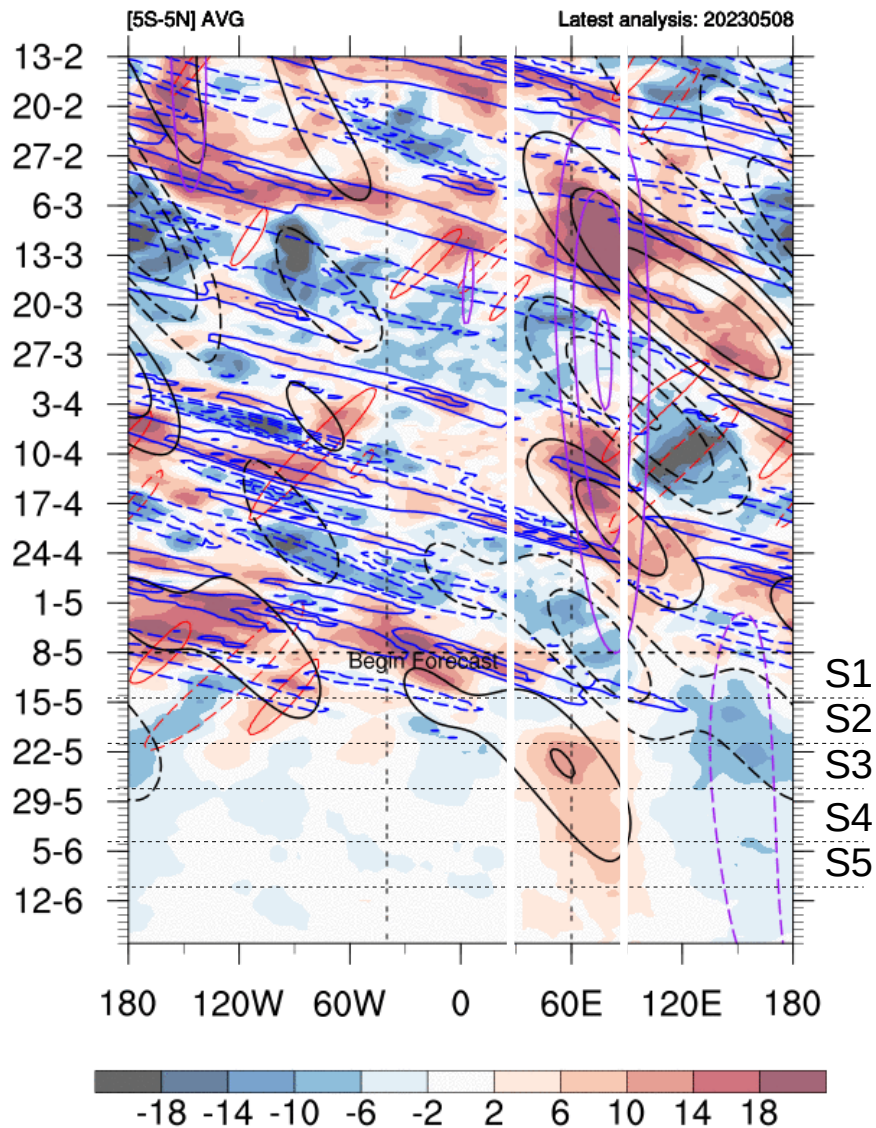
sf850 anomaly + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

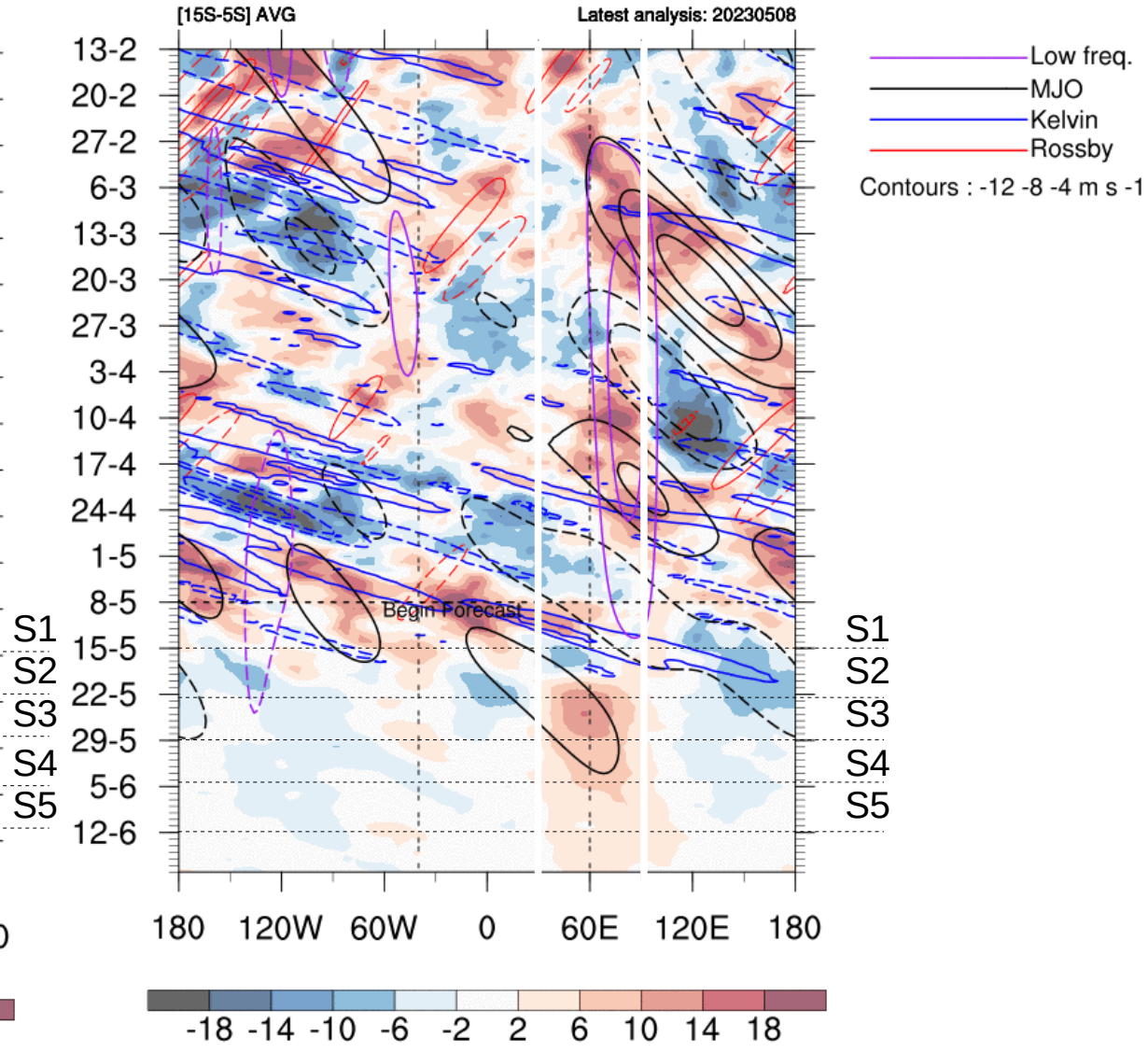
3. Ondes équatoriales

ushear200-850 anomaly + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

ushear200-850 anomaly + Eq. Waves filtering



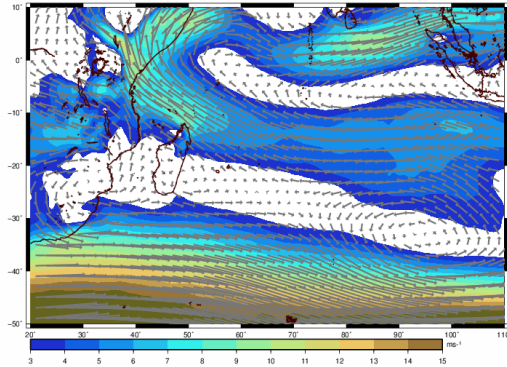
Contact: philippe.peyrille@meteo.fr

4. Impacts en temps sensible, temps sévère

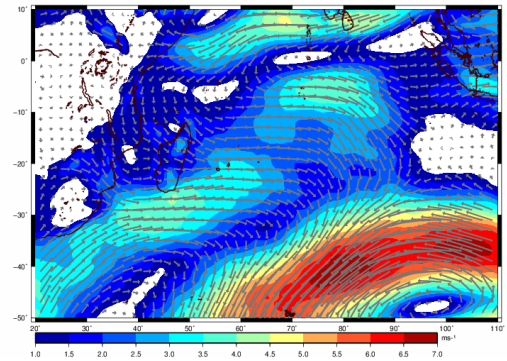
Configuration du bassin

S2

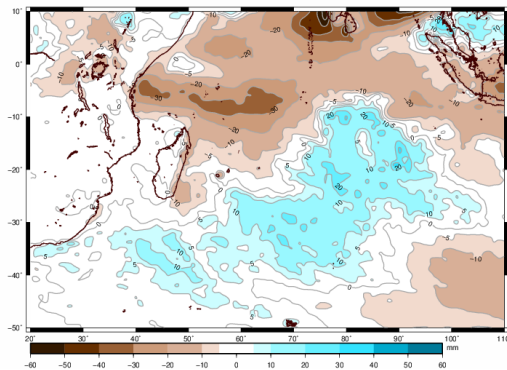
Vent 850hPa
période du 2023-05-15 au 2023-05-22
Prévision mensuelle CEPMMT base 2023-05-08



Anomalie force du vent 850hPa
période du 2023-05-15 au 2023-05-22
Prévision mensuelle CEPMMT base 2023-05-08

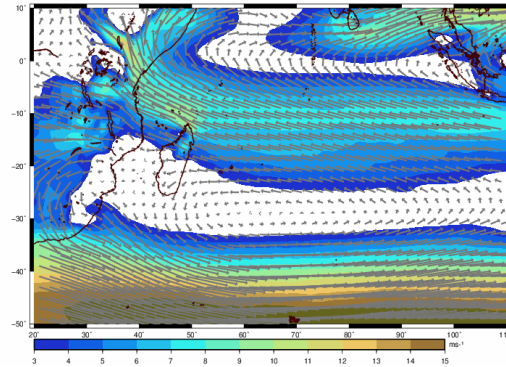


Anomalie de précipitations
période du 2023-05-15 au 2023-05-22
Prévision mensuelle CEPMMT base 2023-05-08

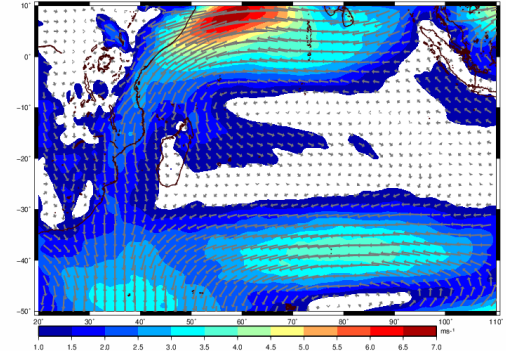


S3

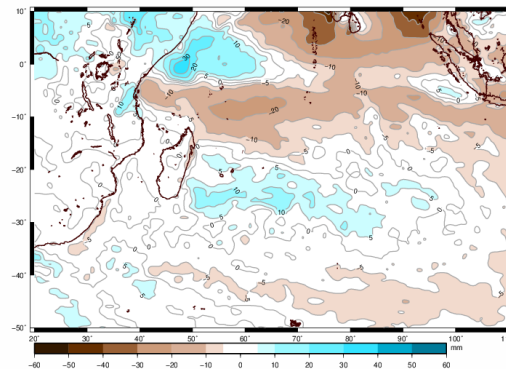
Vent 850hPa
période du 2023-05-22 au 2023-05-29
Prévision mensuelle CEPMMT base 2023-05-08



Anomalie force du vent 850hPa
période du 2023-05-22 au 2023-05-29
Prévision mensuelle CEPMMT base 2023-05-08

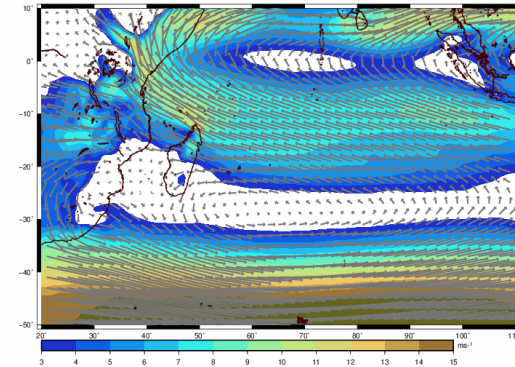


Anomalie de précipitations
période du 2023-05-22 au 2023-05-29
Prévision mensuelle CEPMMT base 2023-05-08

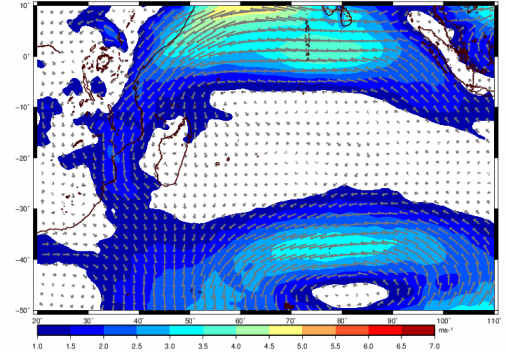


S4

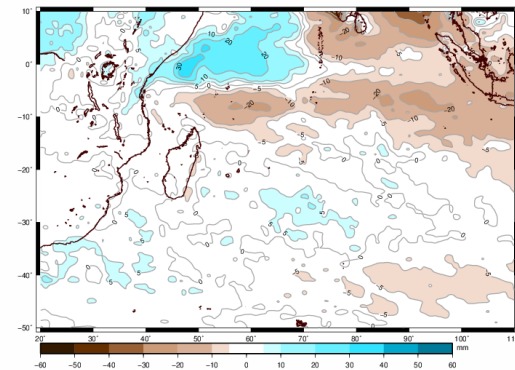
Vent 850hPa
période du 2023-05-29 au 2023-06-05
Prévision mensuelle CEPMMT base 2023-05-08



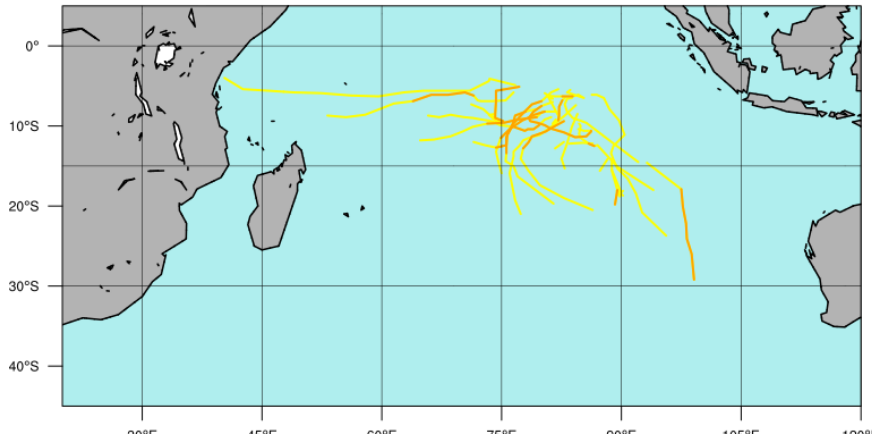
Anomalie force du vent 850hPa
période du 2023-05-29 au 2023-06-05
Prévision mensuelle CEPMMT base 2023-05-08



Anomalie de précipitations
période du 2023-05-29 au 2023-06-05
Prévision mensuelle CEPMMT base 2023-05-08

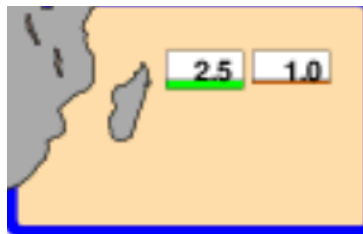
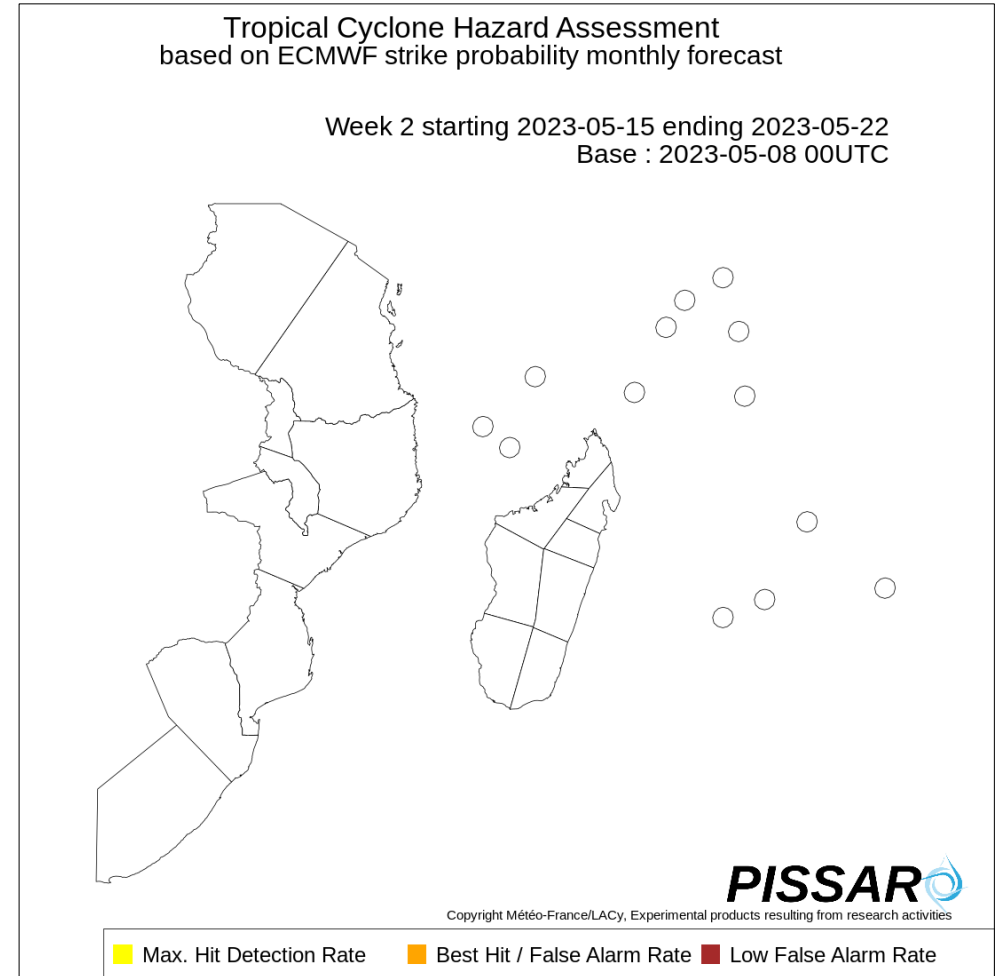
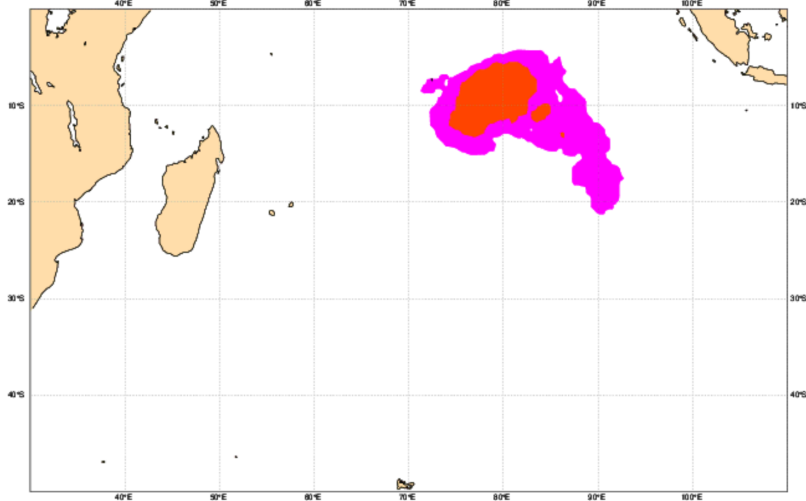


Activité cyclonique [S2]



Weekly mean Tropical Storm Strike Probability. Date: 20230508 00 UTC $t+(168-336)$
Probability of a TS passing within 300km radius

5-10 10-20 20-30 30-40 40-50 50-60 60-70 70-80 80-90 90-110

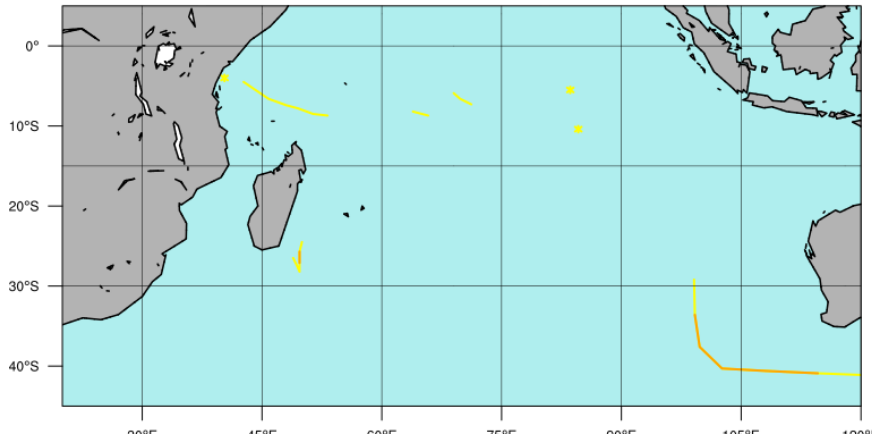


ECMWF Monthly Forecast
Accumulated Cyclone Energy

Forecast Mean Climate Mean

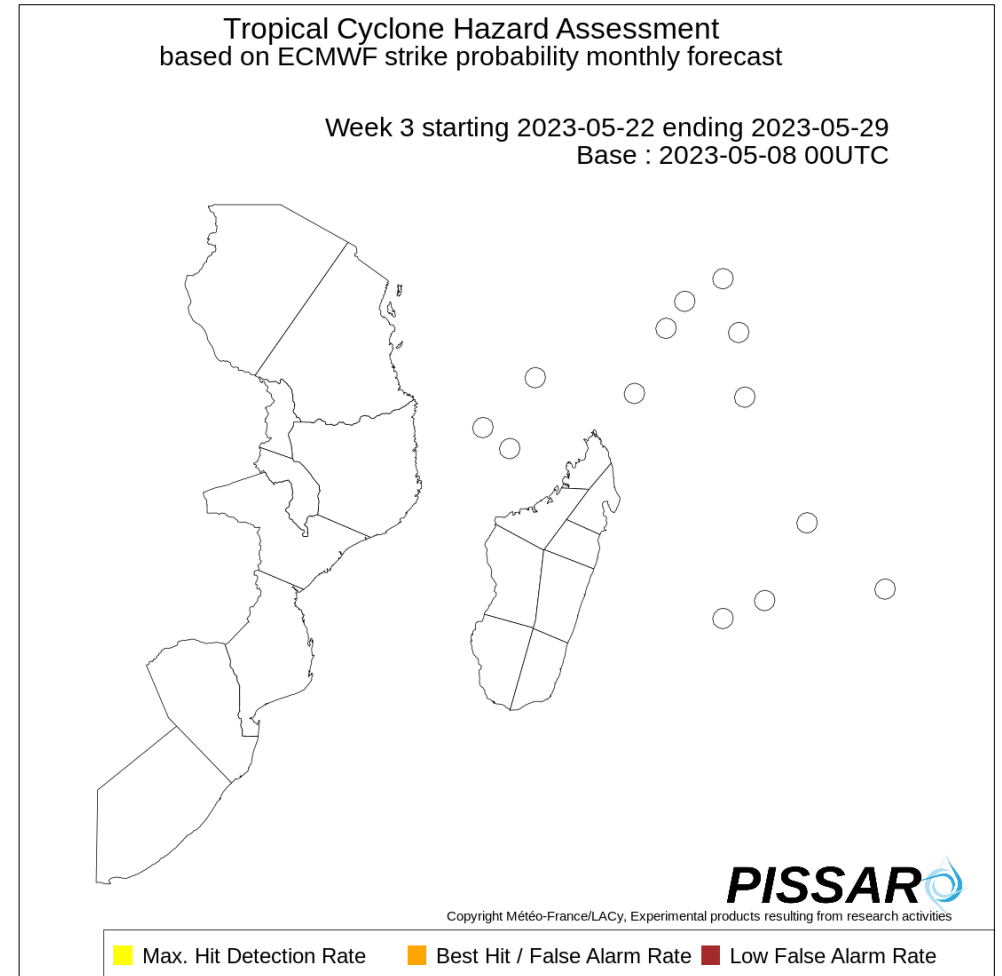
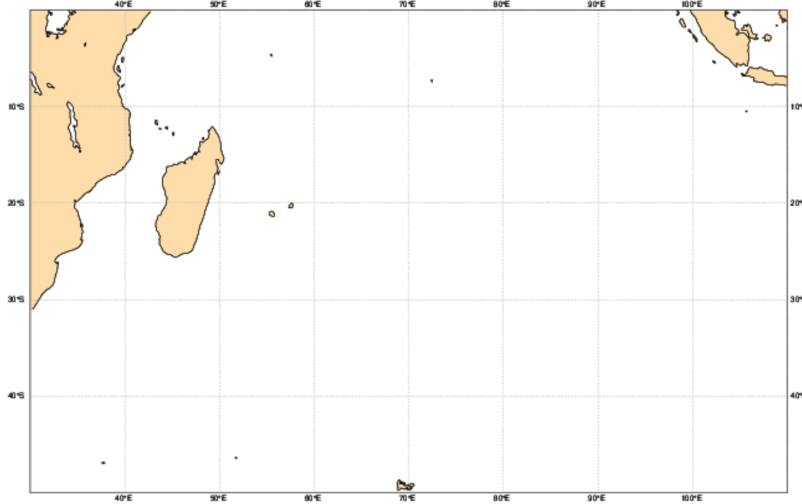
No Significant Significant at 5%

Activité cyclonique [S3]



Weekly mean Tropical Storm Strike Probability. Date: 20230508 00 UTC +- (336-504)
Probability of a TS passing within 300km radius

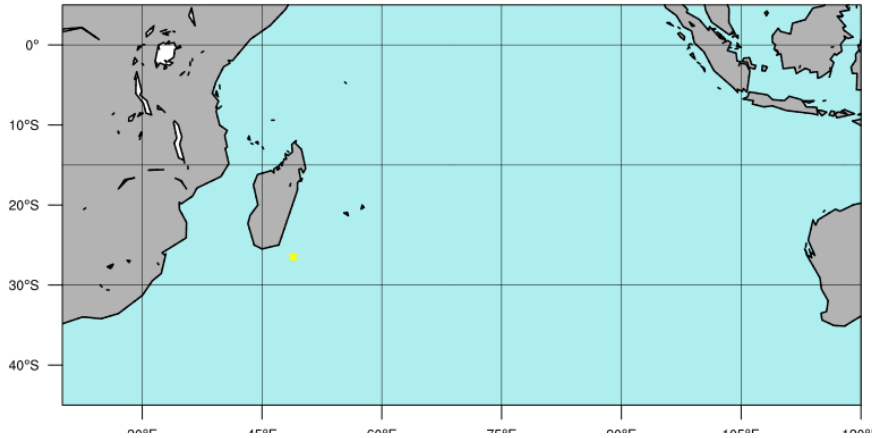
5-10 10-20 20-30 30-40 40-50 50-60 60-70 70-80 80-90 90-110



ECMWF Monthly Forecast
Accumulated Cyclone Energy

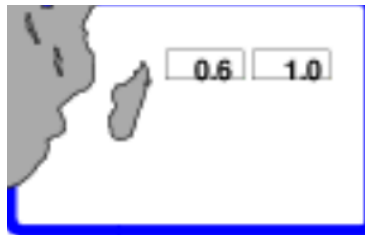
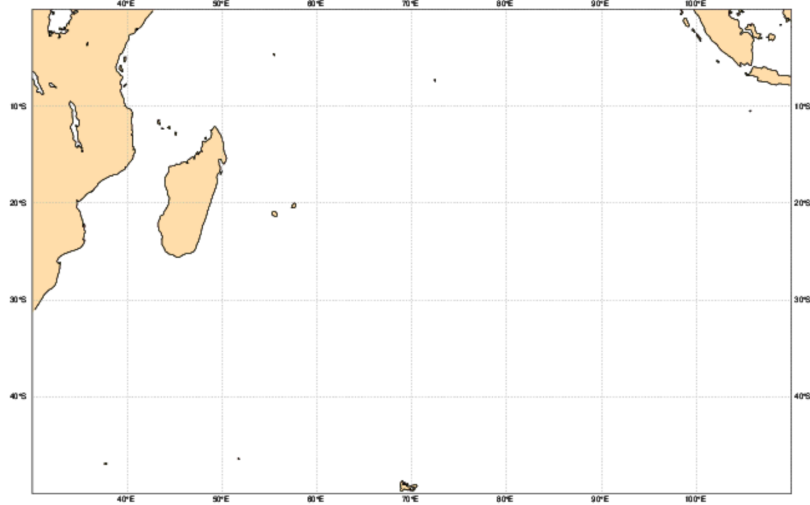
Forecast Mean Climate Mean
No Significant Significant at 5%

Activité cyclonique [S4]



Weekly mean Tropical Storm Strike Probability. Date: 20230508 0 UTC I+(504-672)
Probability of a TS passing within 300km radius

5-10 10-20 20-30 30-40 40-50 50-60 60-70 70-80 80-90 90-110



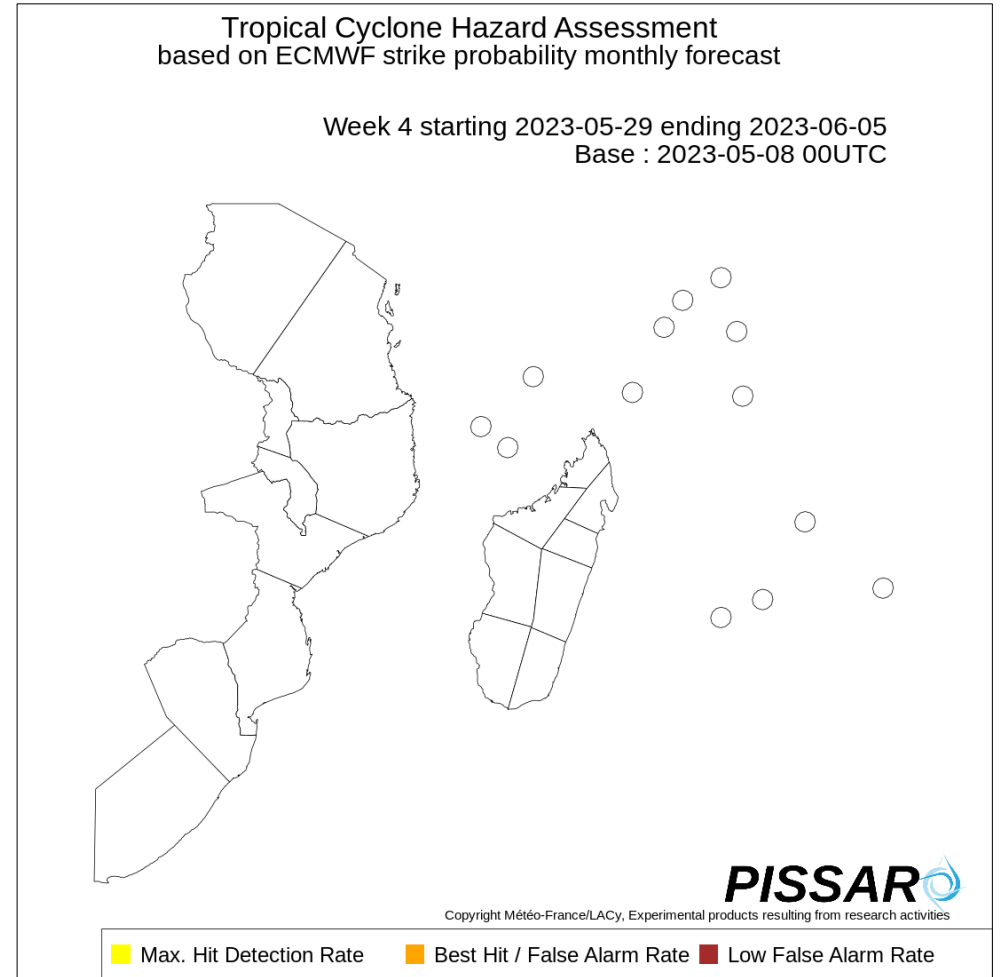
ECMWF Monthly Forecast
Accumulated Cyclone Energy

Forecast Mean Climate Mean

No Significant Significant at 5%

Tropical Cyclone Hazard Assessment based on ECMWF strike probability monthly forecast

Week 4 starting 2023-05-29 ending 2023-06-05
Base : 2023-05-08 00UTC



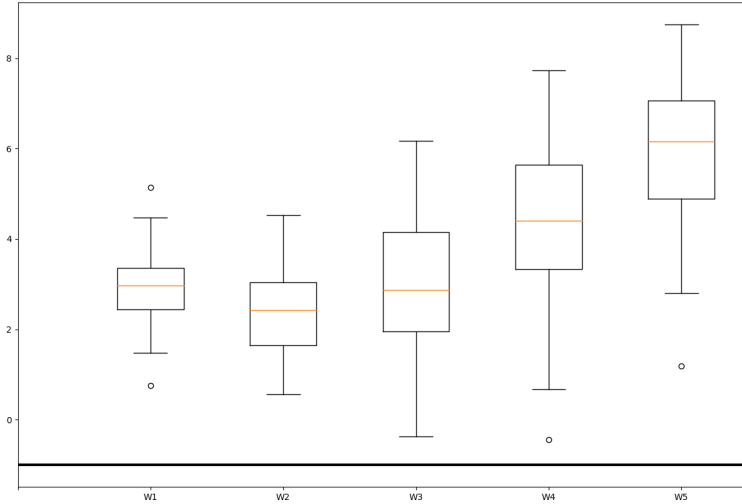
PISSAR

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

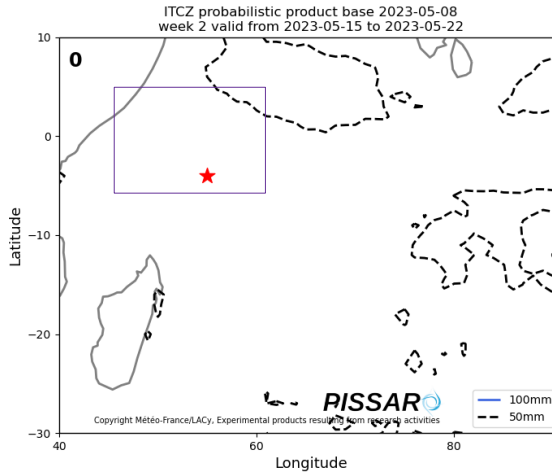
Max. Hit Detection Rate Best Hit / False Alarm Rate Low False Alarm Rate

Configuration du bassin et prévision ZCIT

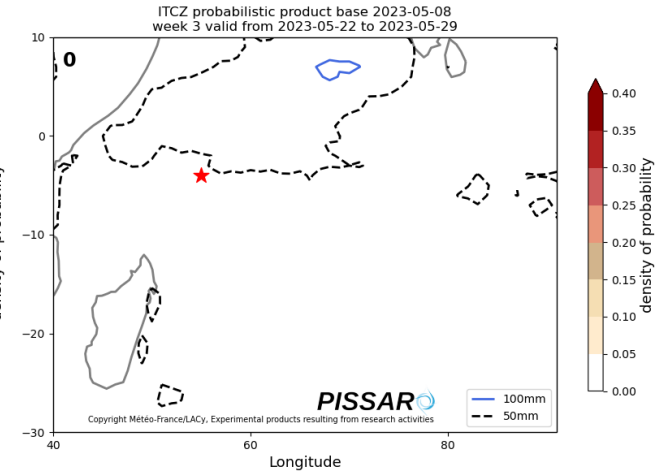
Monsoon Flux Index Monthly Forecast
base 2023-05-08



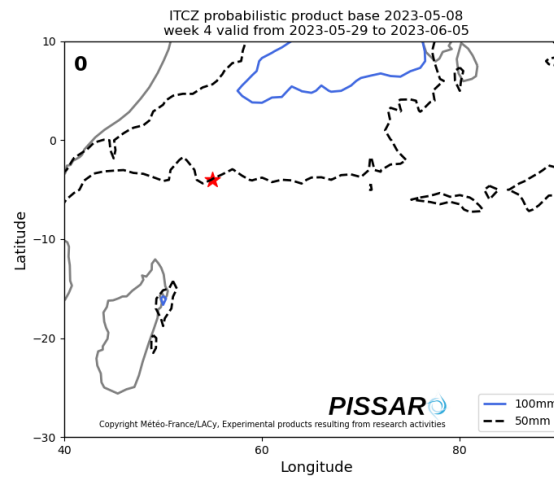
S2



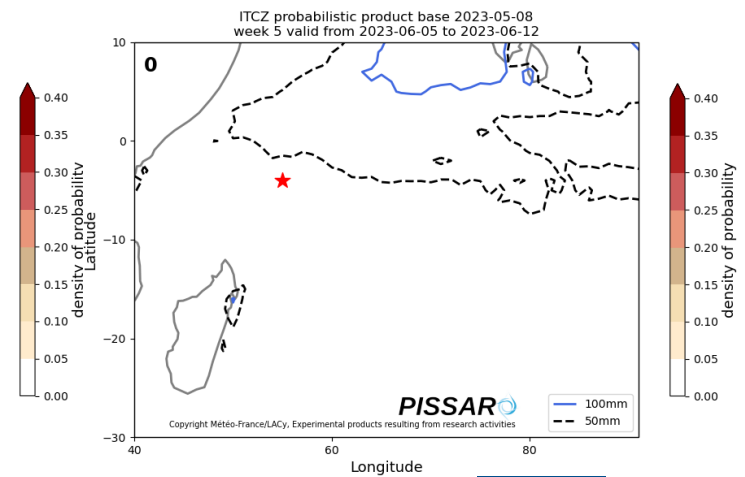
S3



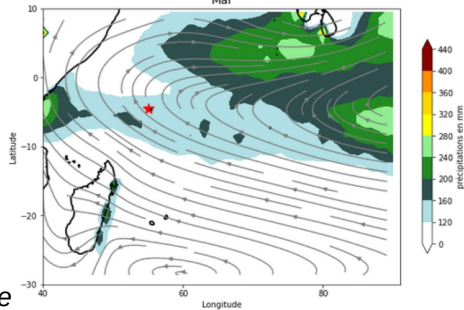
S4



S5

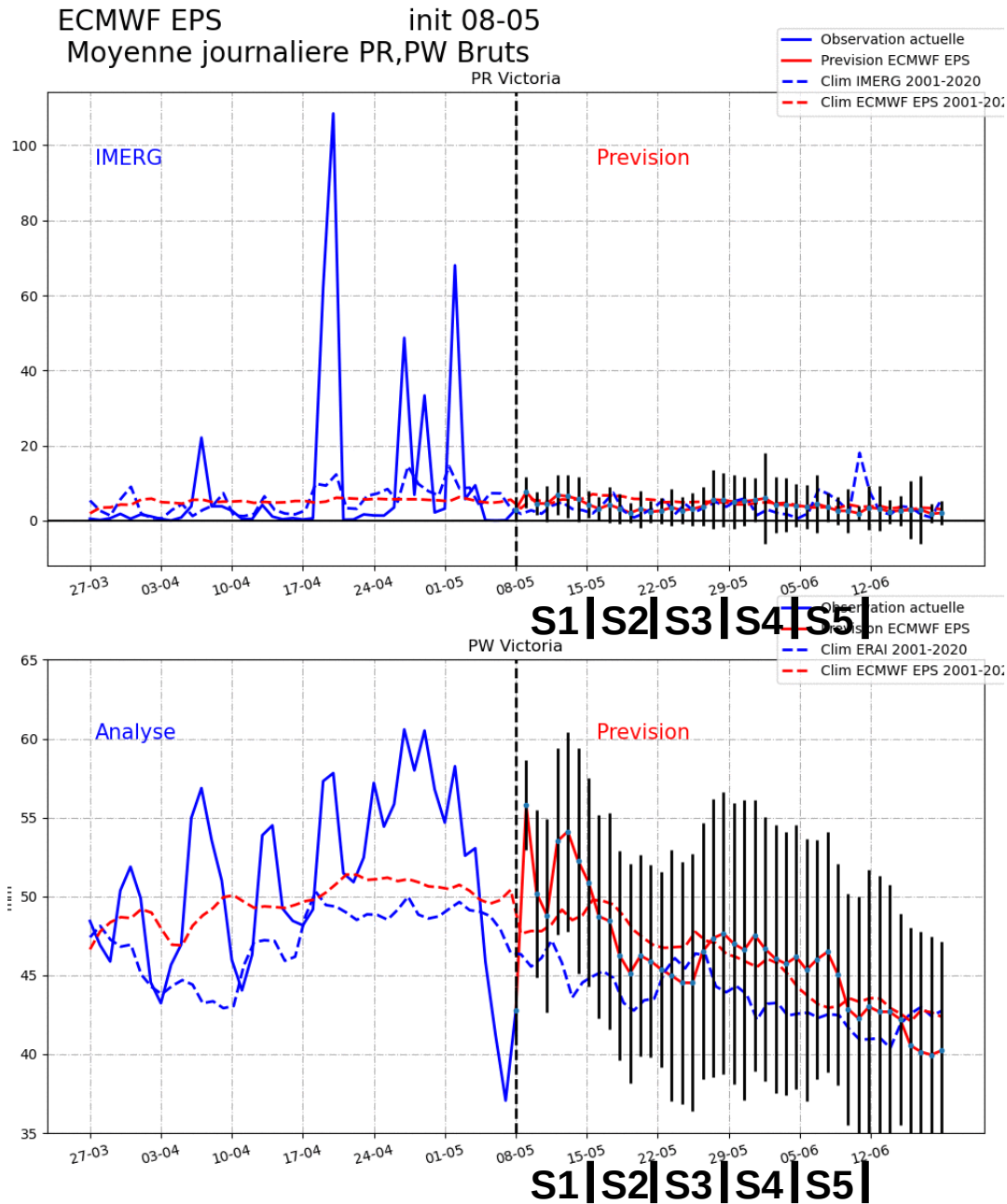


Mai



Climatologie mensuelle

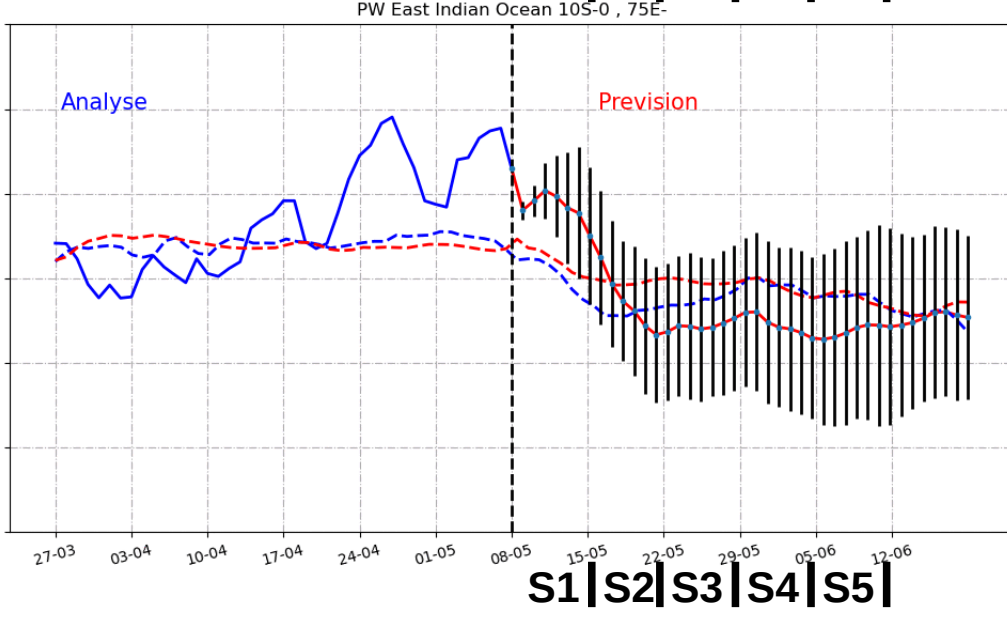
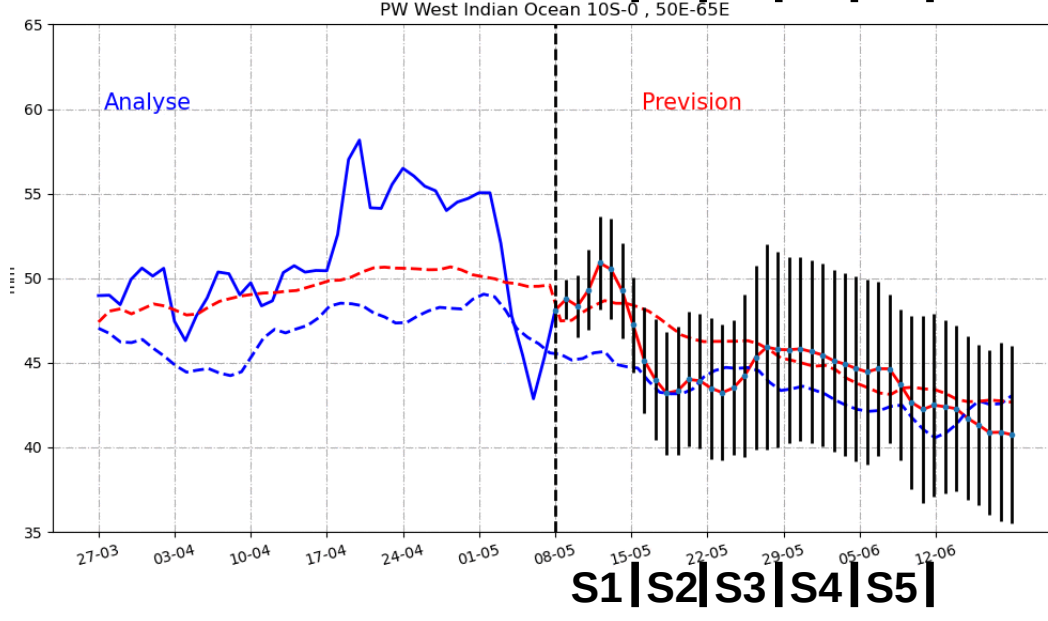
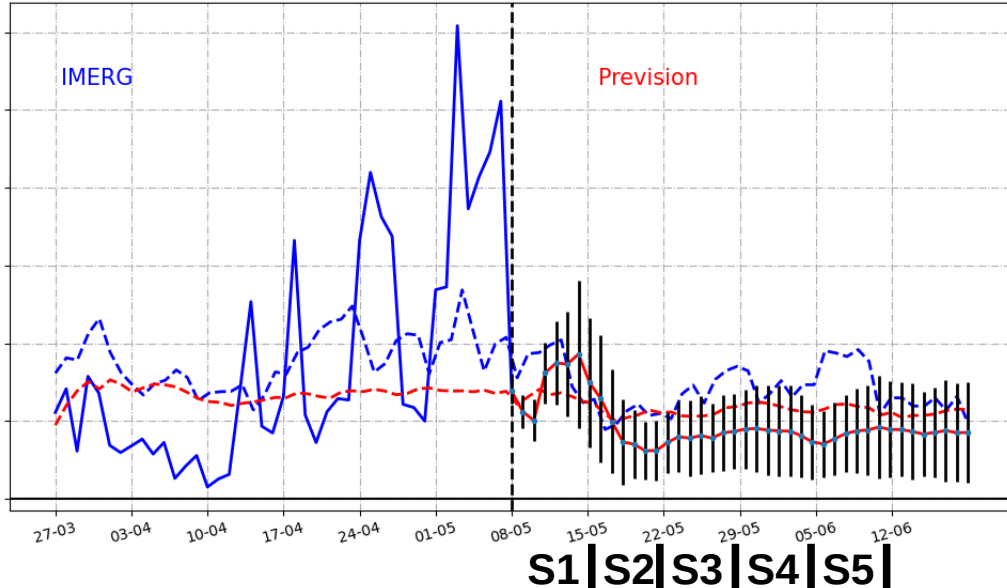
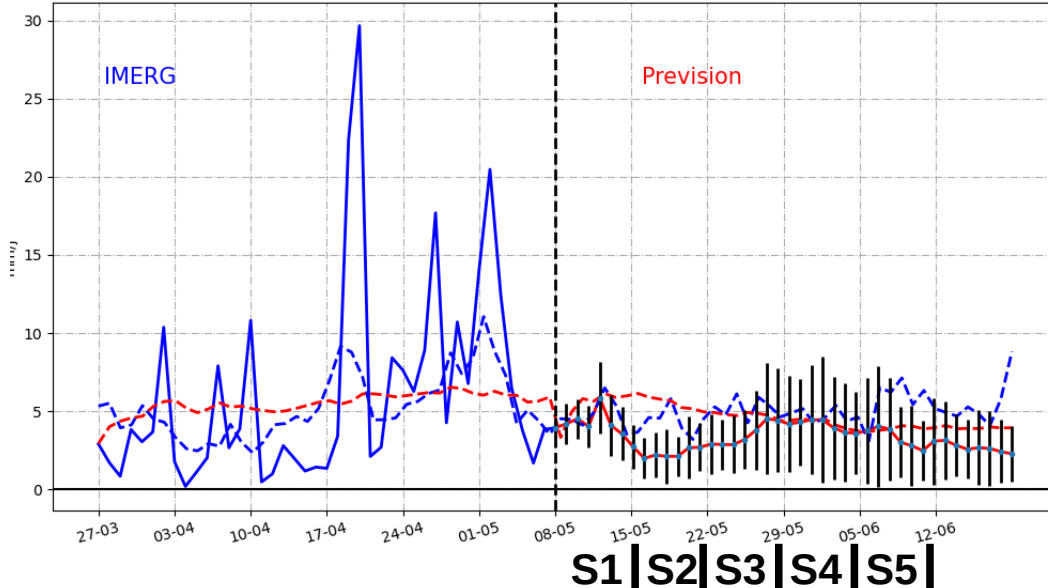
Synthèse temps sensible S2 – S4 [SEYCHELLES]



Synthèse temps sensible S2 – S4 [SEYCHELLES]

ECMWF EPS
init 08-05
Moyenne journaliere PR,PW Bruts
PR West Indian Ocean 10S-0 , 50E-65E

ECMWF EPS
init 08-05
Moyenne journaliere PR,PW Bruts
PR East Indian Ocean 10S-0 , 75E-95E



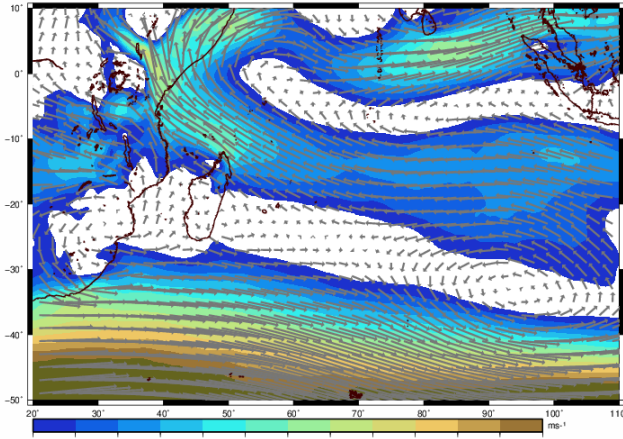
Synthèse temps sensible S2 – S4 [MAYOTTE]

S2

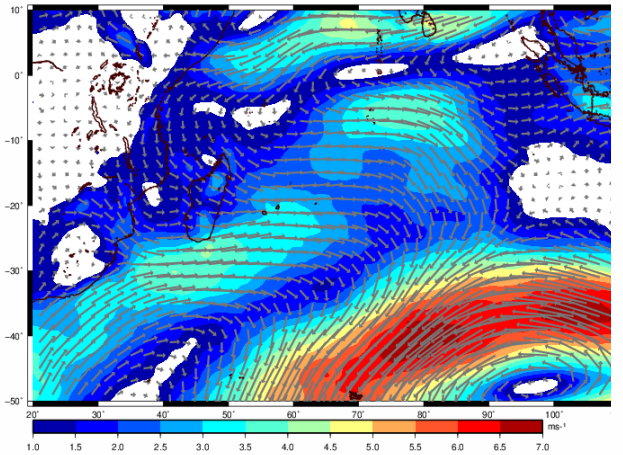
S3

S4

Vent 850hPa
période du 2023-05-15 au 2023-05-22
Prévision mensuelle CEPMMT base 2023-05-08

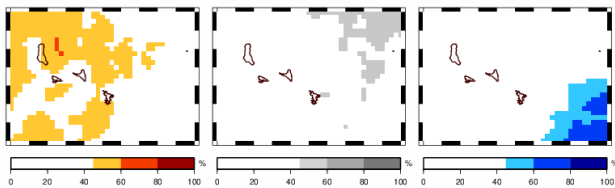


Anomalie force du vent 850hPa
période du 2023-05-15 au 2023-05-22
Prévision mensuelle CEPMMT base 2023-05-08

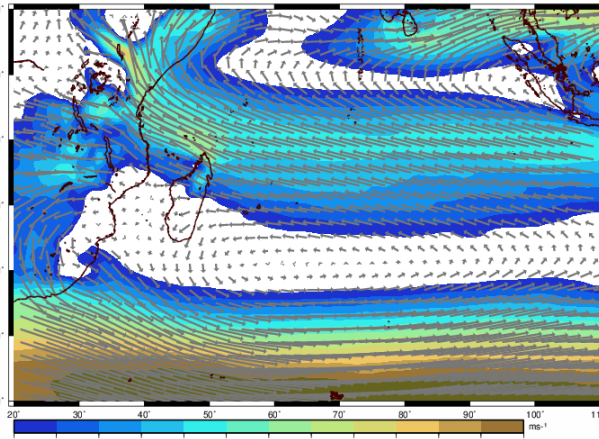


Probabilité tercile des précipitations
période du 2023-05-15 au 2023-05-22
Prévision mensuelle CEPMMT base 2023-05-08

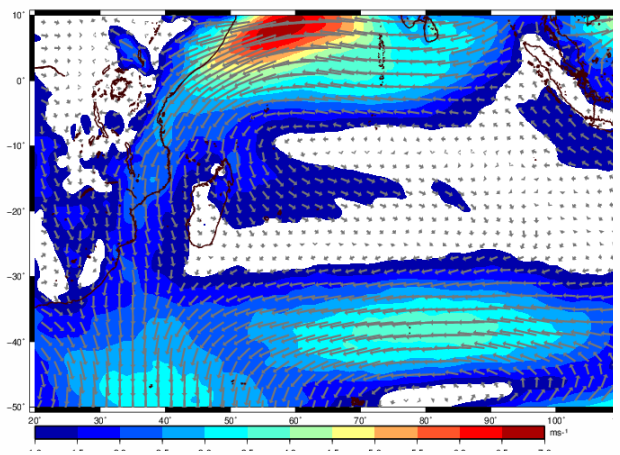
Terc. Inf Terc. Med Terc. Sup



Vent 850hPa
période du 2023-05-22 au 2023-05-29
Prévision mensuelle CEPMMT base 2023-05-08

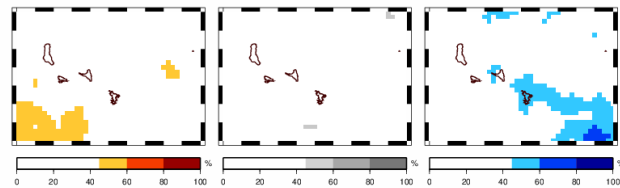


Anomalie force du vent 850hPa
période du 2023-05-22 au 2023-05-29
Prévision mensuelle CEPMMT base 2023-05-08

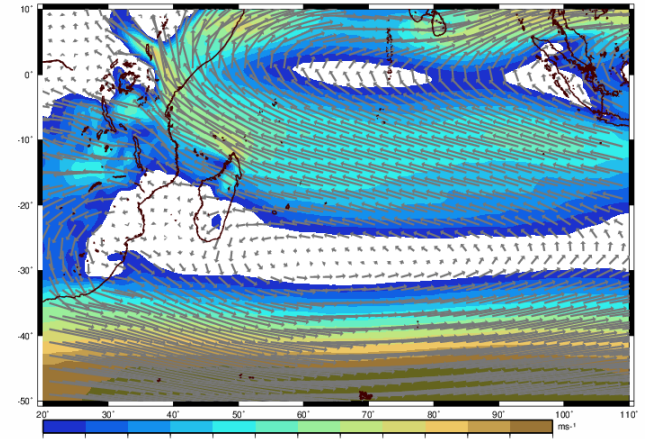


Probabilité tercile des précipitations
période du 2023-05-22 au 2023-05-29
Prévision mensuelle CEPMMT base 2023-05-08

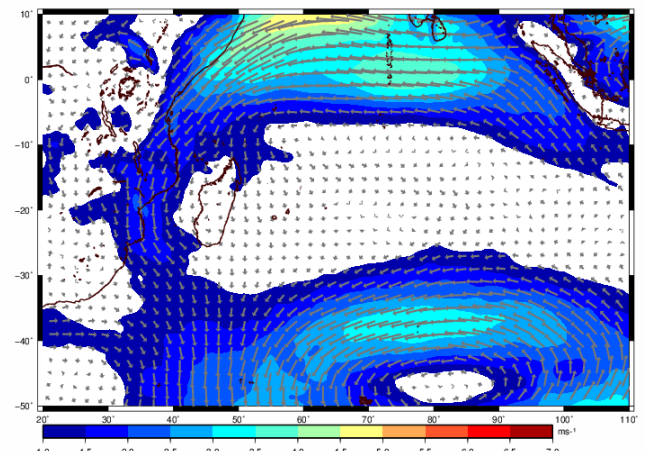
Terc. Inf Terc. Med Terc. Sup



Vent 850hPa
période du 2023-05-29 au 2023-06-05
Prévision mensuelle CEPMMT base 2023-05-08

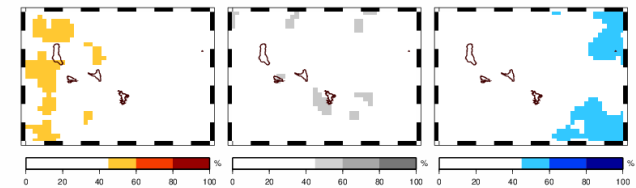


Anomalie force du vent 850hPa
période du 2023-05-29 au 2023-06-05
Prévision mensuelle CEPMMT base 2023-05-08



Probabilité tercile des précipitations
période du 2023-05-29 au 2023-06-05
Prévision mensuelle CEPMMT base 2023-05-08

Terc. Inf Terc. Med Terc. Sup



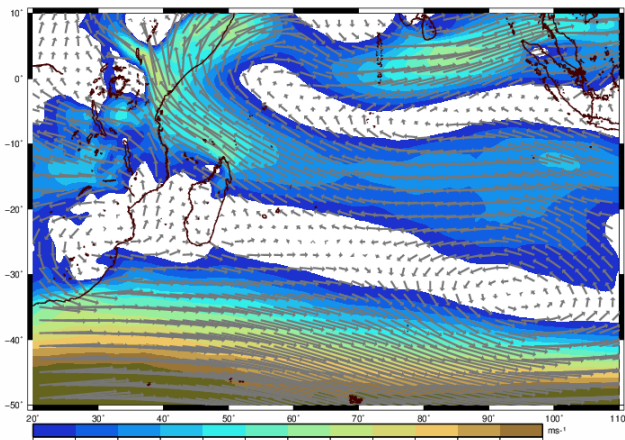
Synthèse temps sensible S2 – S4 [LA REUNION]

S2

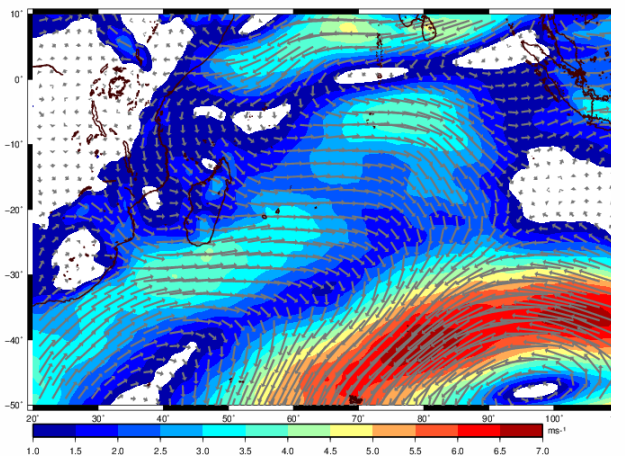
S3

S4

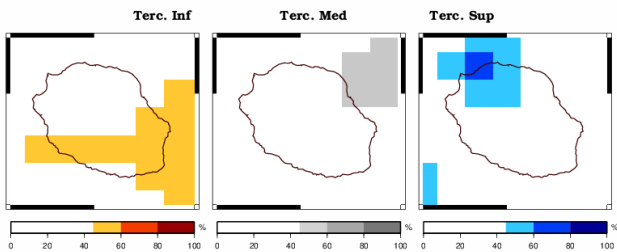
Vent 850hPa
 période du 2023-05-15 au 2023-05-22
 Prévision mensuelle CEPMMT base 2023-05-08



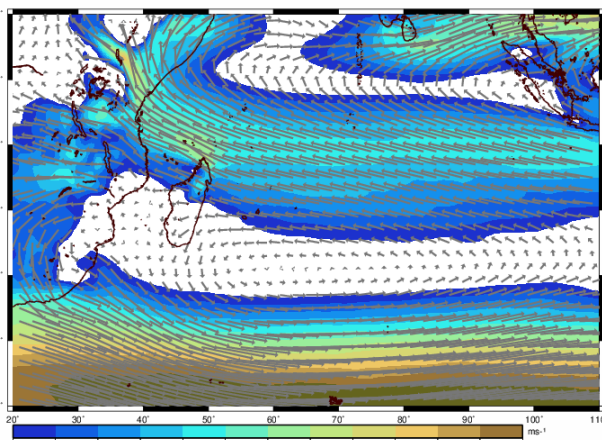
Anomalie force du vent 850hPa
 période du 2023-05-15 au 2023-05-22
 Prévision mensuelle CEPMMT base 2023-05-08



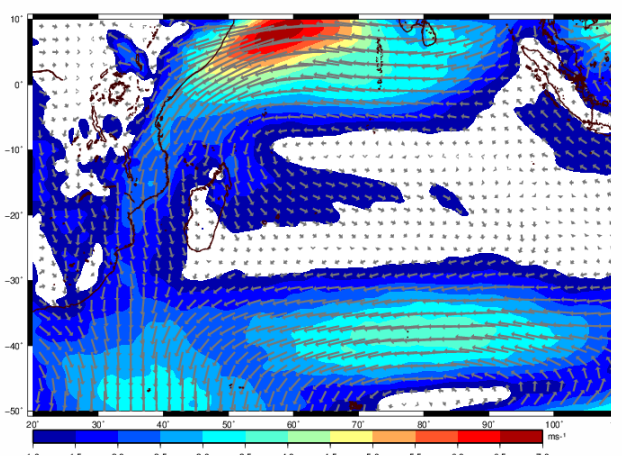
Probabilité tercile des précipitations
 période du 2023-05-15 au 2023-05-22
 Prévision mensuelle CEPMMT base 2023-05-08



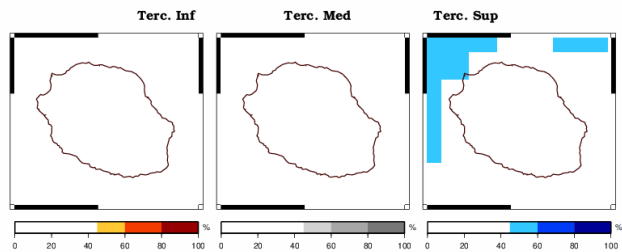
Vent 850hPa
 période du 2023-05-22 au 2023-05-29
 Prévision mensuelle CEPMMT base 2023-05-08



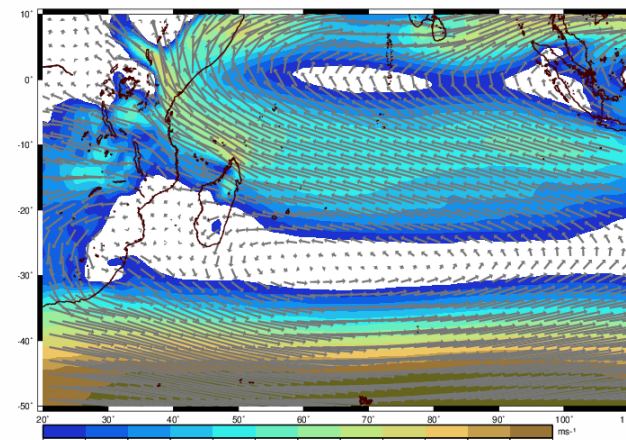
Anomalie force du vent 850hPa
 période du 2023-05-22 au 2023-05-29
 Prévision mensuelle CEPMMT base 2023-05-08



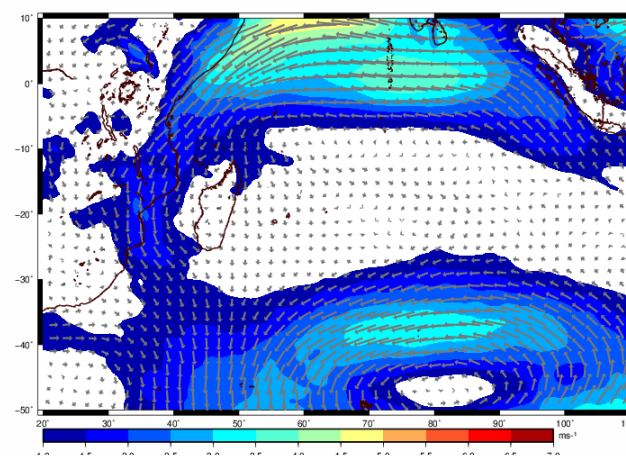
Probabilité tercile des précipitations
 période du 2023-05-22 au 2023-05-29
 Prévision mensuelle CEPMMT base 2023-05-08



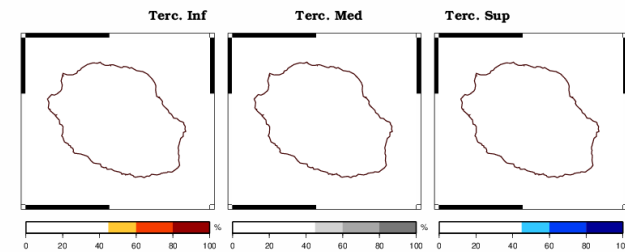
Vent 850hPa
 période du 2023-05-29 au 2023-06-05
 Prévision mensuelle CEPMMT base 2023-05-08



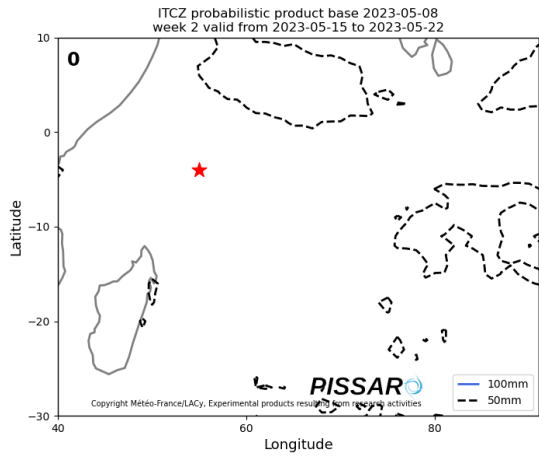
Anomalie force du vent 850hPa
 période du 2023-05-29 au 2023-06-05
 Prévision mensuelle CEPMMT base 2023-05-08



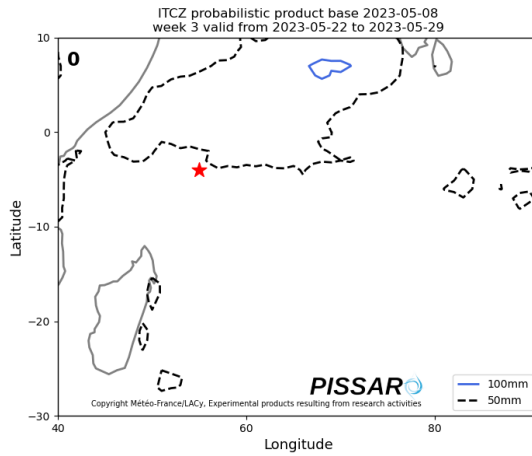
Probabilité tercile des précipitations
 période du 2023-05-29 au 2023-06-05
 Prévision mensuelle CEPMMT base 2023-05-08



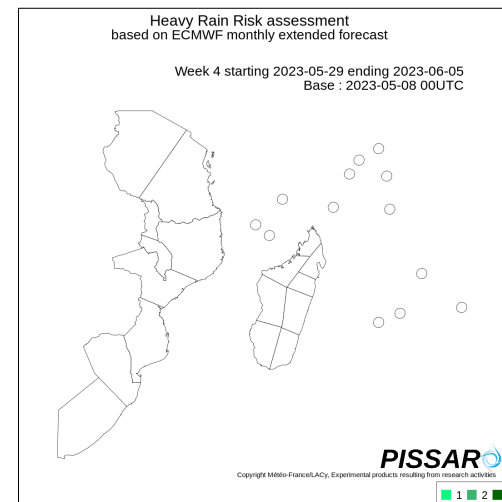
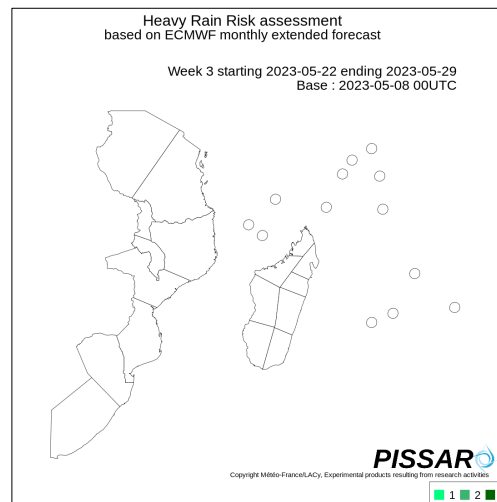
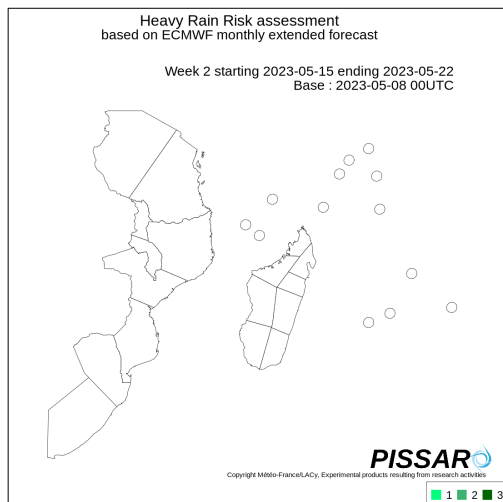
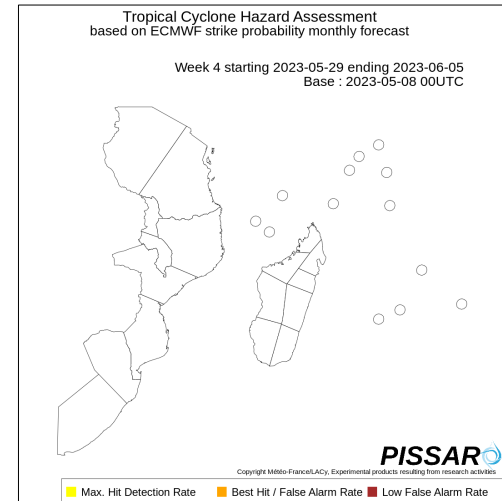
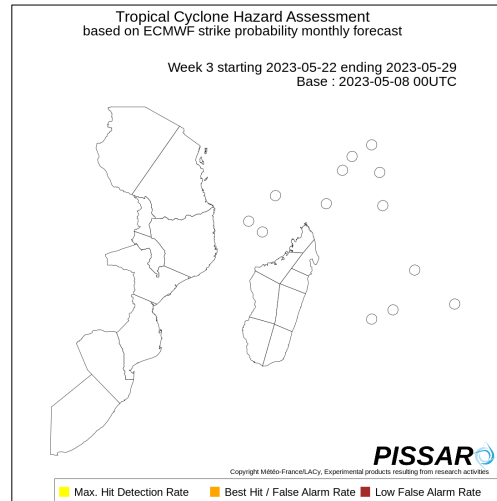
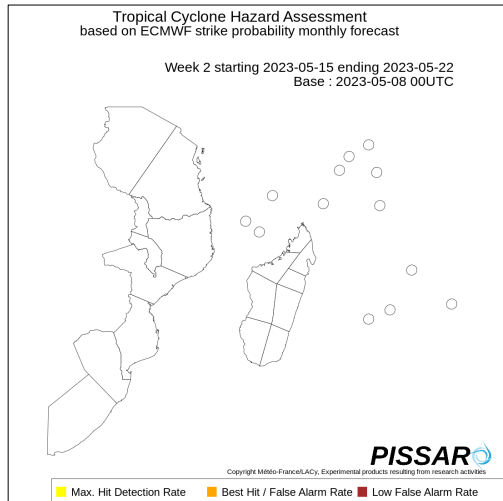
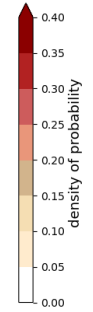
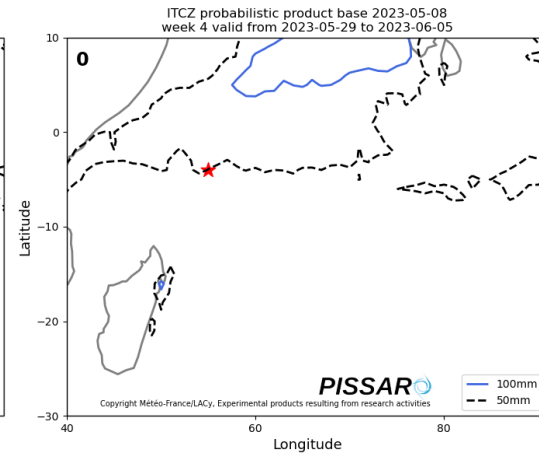
S2



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/>

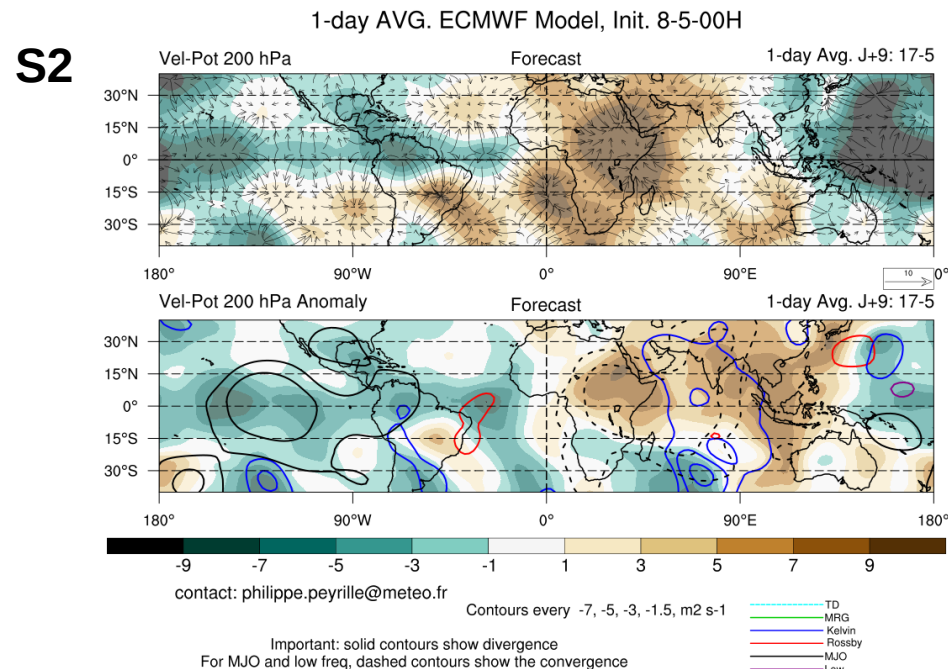
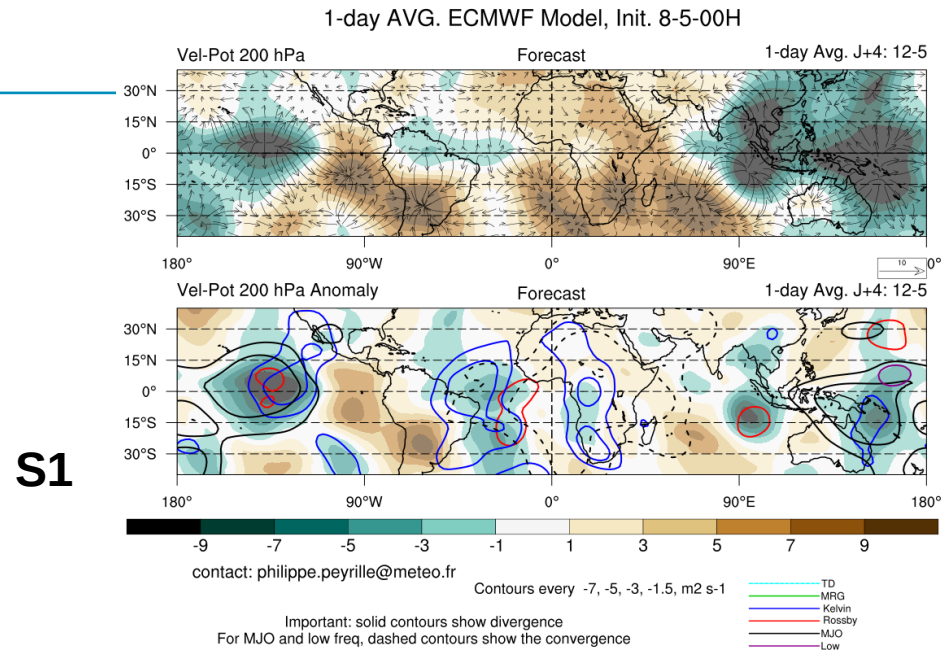
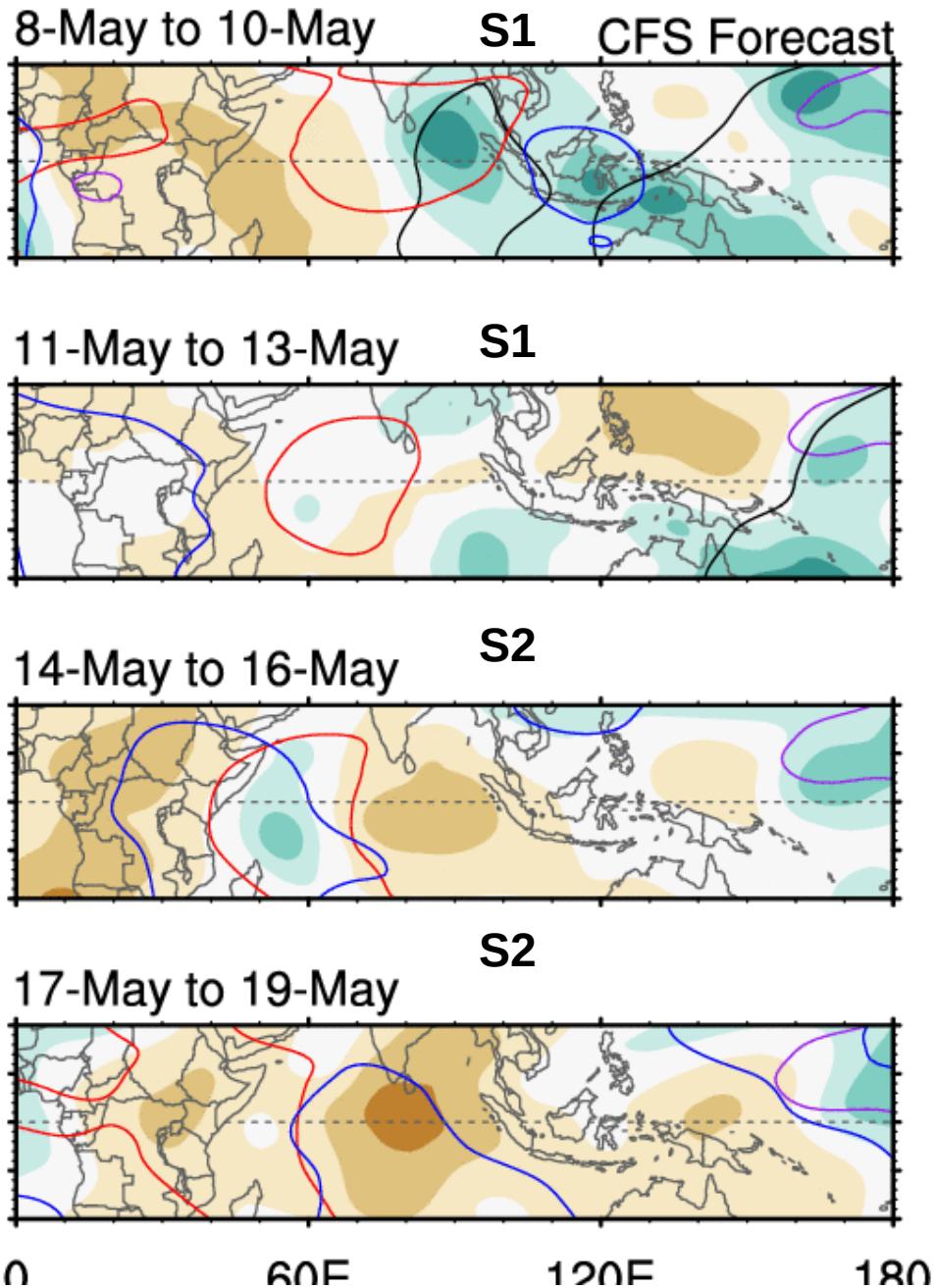
https://apps.ecmwf.int/plots/product-download/mofc_multi/mofc_multi_tcyc_family_forecast/

<http://mikeventrice.weebly.com/mjo.html>

http://www.atmos.albany.edu/student/ventrice/real_time/

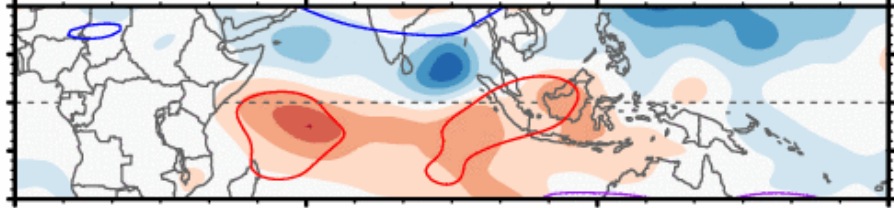
<https://misva.aeris-data.fr/products/>

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

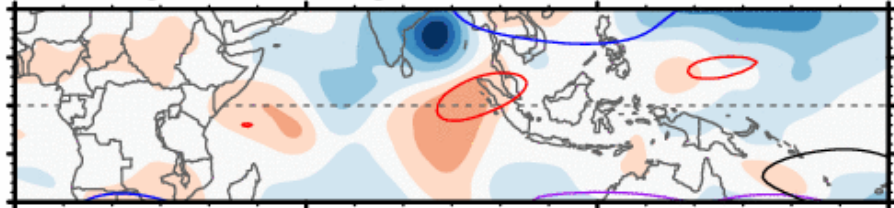


S1 / S2 – SF 850 – MJO, ER et Kelvin dans l'Indien

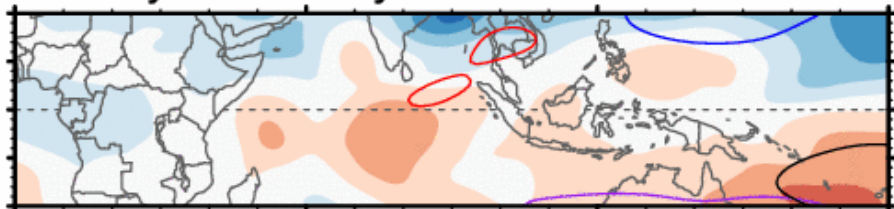
8-May to 10-May S1 CFS Forecast



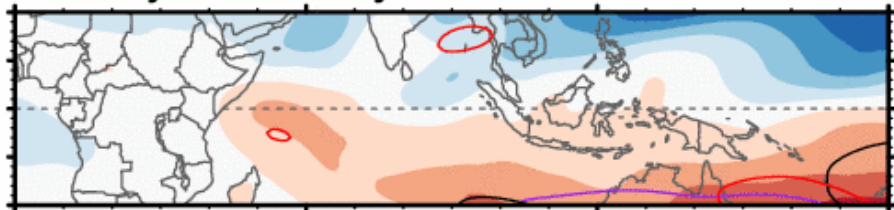
11-May to 13-May S1



14-May to 16-May S2



17-May to 19-May S2

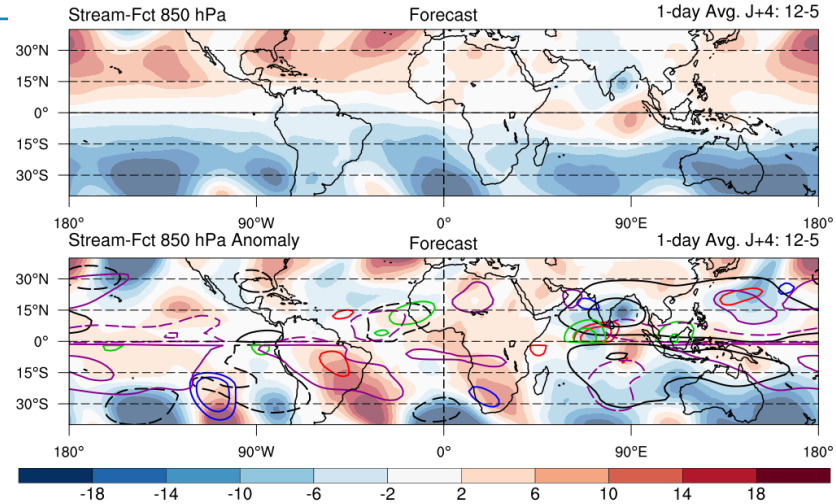


0 60E 120E 180

S1

S2

1-day AVG. ECMWF Model, Init. 8-5-00H



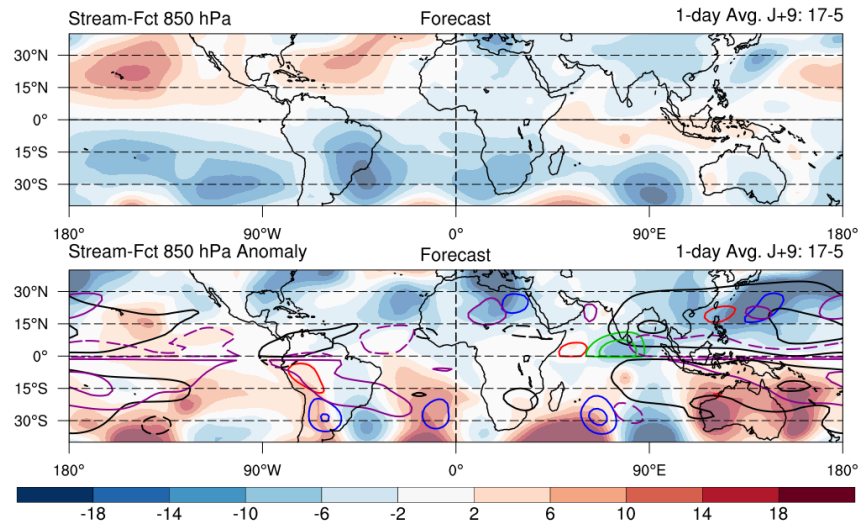
contact: philippe.peyrille@meteo.fr

Important: solid contours show CYCLONIC vorticity in both hemispheres
For MJO and low freq, dashed contours show the anticyclonic vorticity

Caution: a factor $\cos(\text{lat}/40)^4$ is applied to waves anomalies to highlight tropical circulation

Legend:
TD (red)
MRG (green)
Kelvin (blue)
Rossby (purple)
MJO (orange)
Low (yellow)

1-day AVG. ECMWF Model, Init. 8-5-00H



contact: philippe.peyrille@meteo.fr

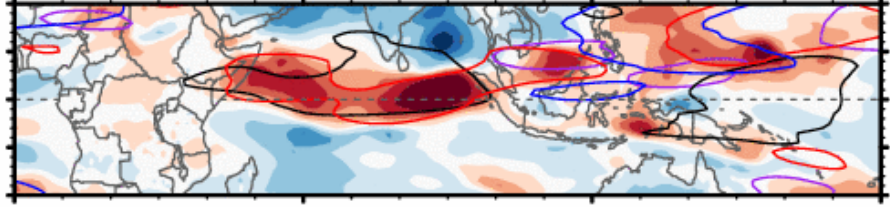
Important: solid contours show CYCLONIC vorticity in both hemispheres
For MJO and low freq, dashed contours show the anticyclonic vorticity

Caution: a factor $\cos(\text{lat}/40)^4$ is applied to waves anomalies to highlight tropical circulation

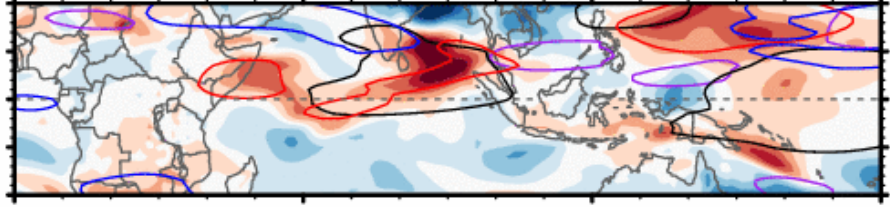
Legend:
TD (red)
MRG (green)
Kelvin (blue)
Rossby (purple)
MJO (orange)
Low (yellow)

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

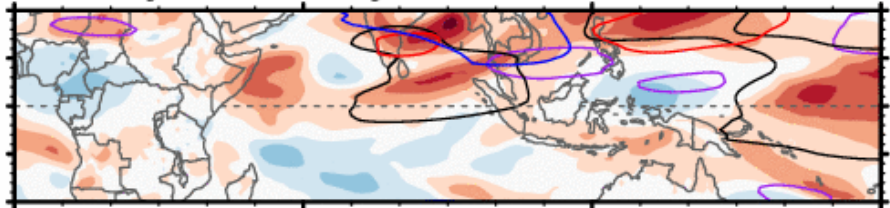
8-May to 10-May S1 CFS Forecast



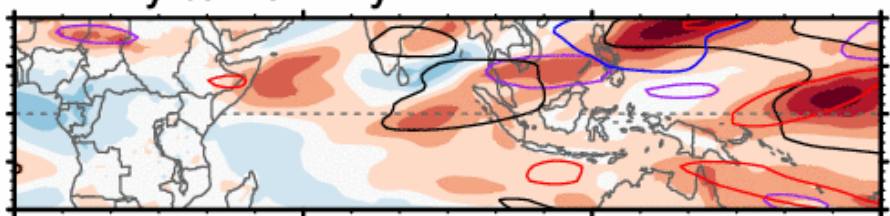
11-May to 13-May S1



14-May to 16-May S2

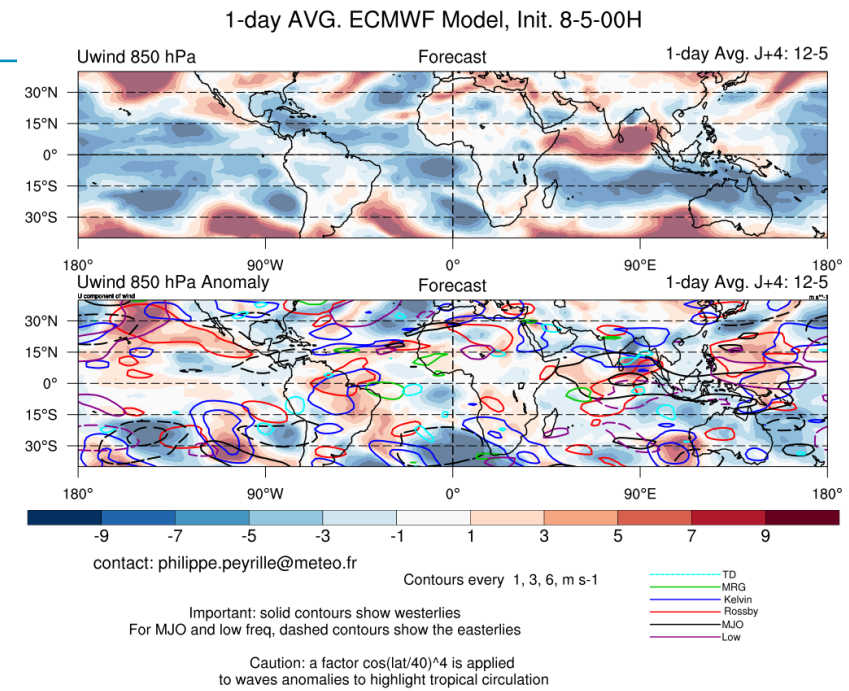


17-May to 19-May S2

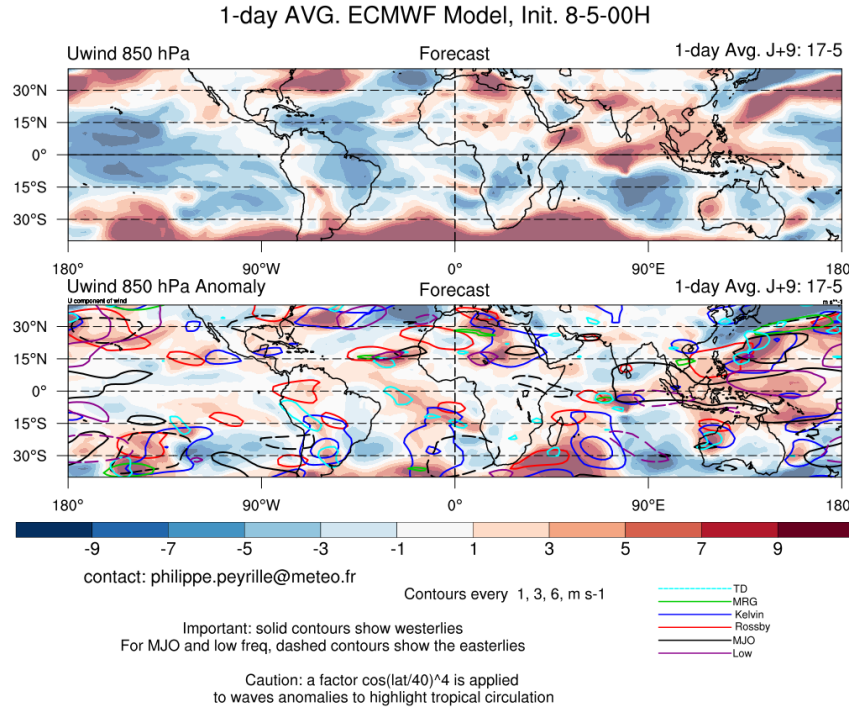


0 60E 120E 180

S1

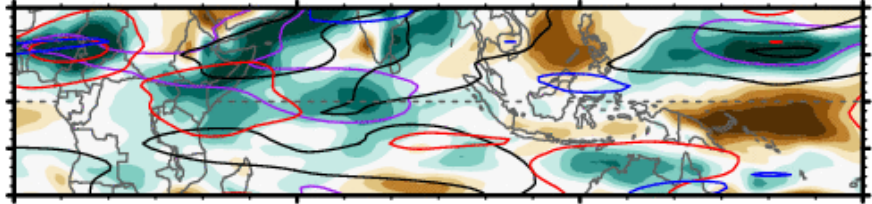


S2

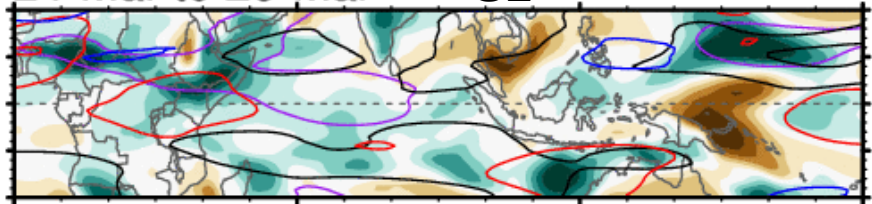


S1 / S2 – PW - MJO, ER, Kelvin dans l'Indien

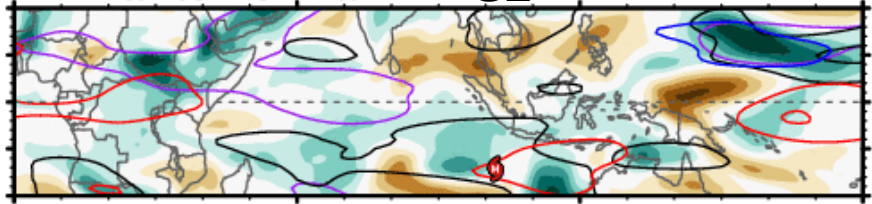
21-Mar to 23-Mar S1 CFS Forecast



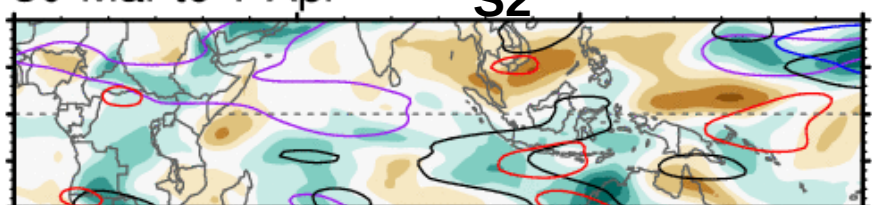
24-Mar to 26-Mar S1



27-Mar to 29-Mar S2



30-Mar to 1-Apr S2

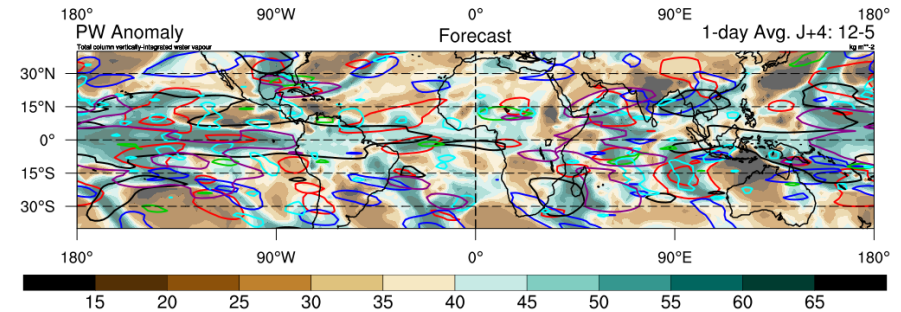
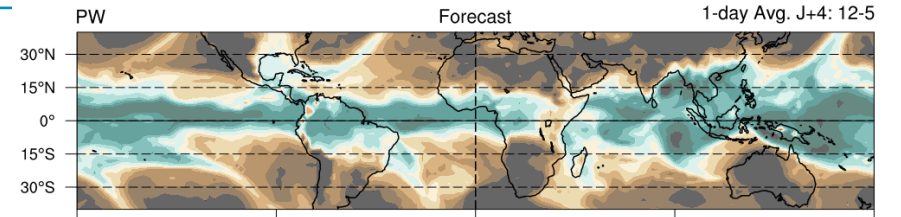


0 60E 120E 180

S1

S2

1-day AVG. ECMWF Model, Init. 8-5-00H



contact: philippe.peyrille@meteo.fr

Contours every 2, 6, 9, mm

Important: solid contours show moist phases
For MJO and low freq, dashed contours show the dry phases

- TD
- MRG
- Kelvin
- Rossby
- MJO
- Low

contact: philippe.peyrille@meteo.fr

Contours every 2, 6, 9, mm

Important: solid contours show moist phases
For MJO and low freq, dashed contours show the dry phases

- TD
- MRG
- Kelvin
- Rossby
- MJO
- Low