

Briefing mensuel

Suivi MJO et ondes équatoriales pour le bassin SOOI

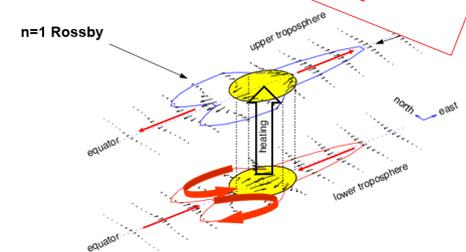
DATE : 20/04/2023

S. Langlade, H. Vérèmes, E. Kapikian, P. Peyrillé et A. Colomb.

support produit le 18/04/2023
sur bulletin ECMWF du 17/04
et figures du 17/04

S1 : 17 avril-23 avril
S2 : 24 avril-30 avril
S3 : 01 mai-07 mai
S4 : 08 mai-14 mai
S5 : 15 mai-21 mai

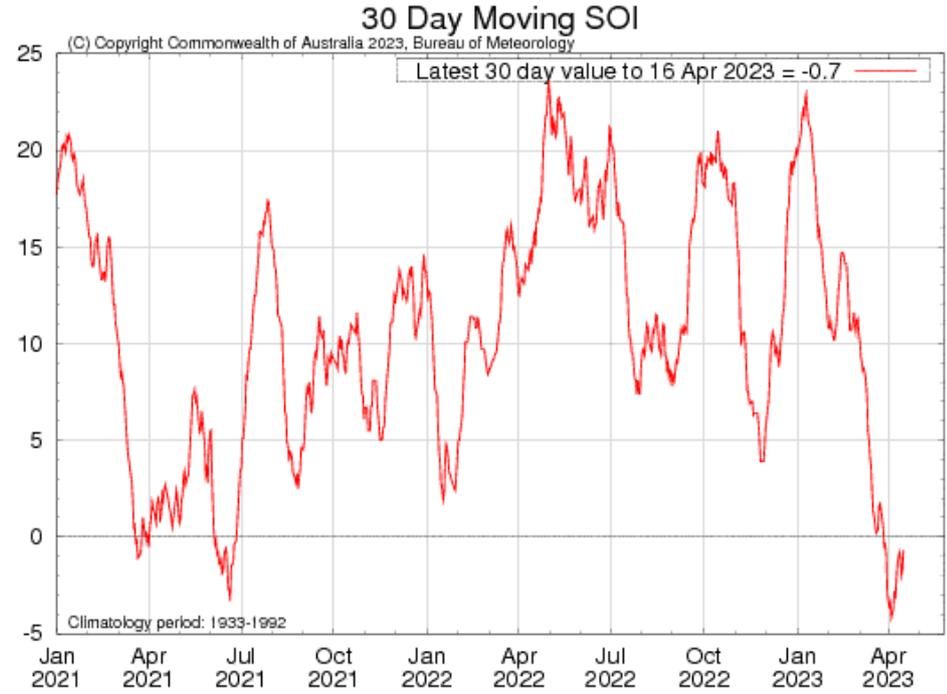
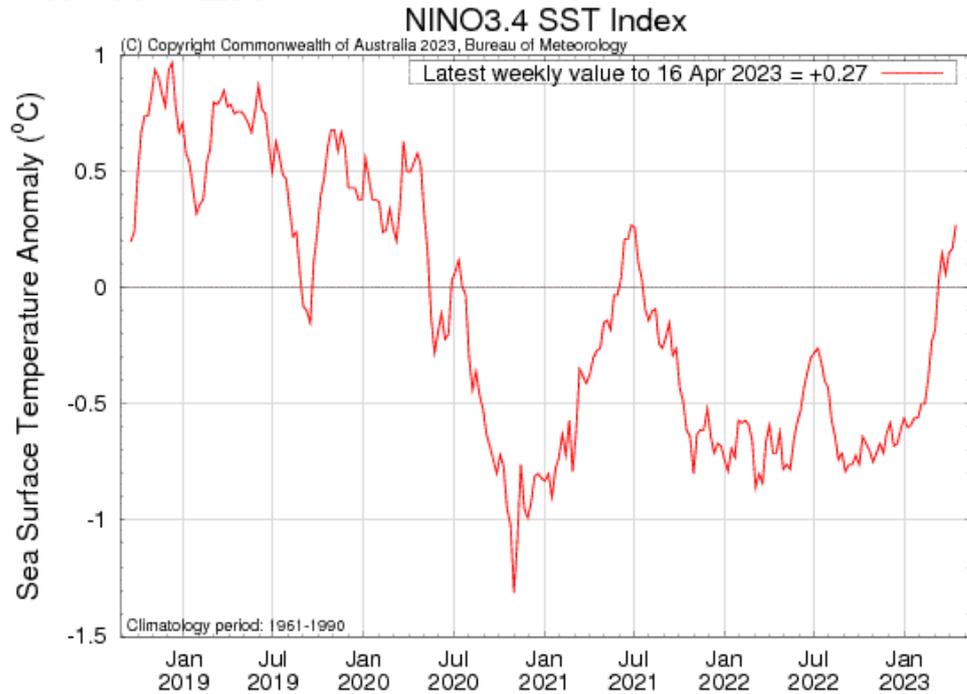
ATTENTION :
Changement de
formalisme des
semaines !!!!
S0 est devenu S1 mais
correspond toujours à la
semaine en cours.



1. Prévision - Basse fréquence

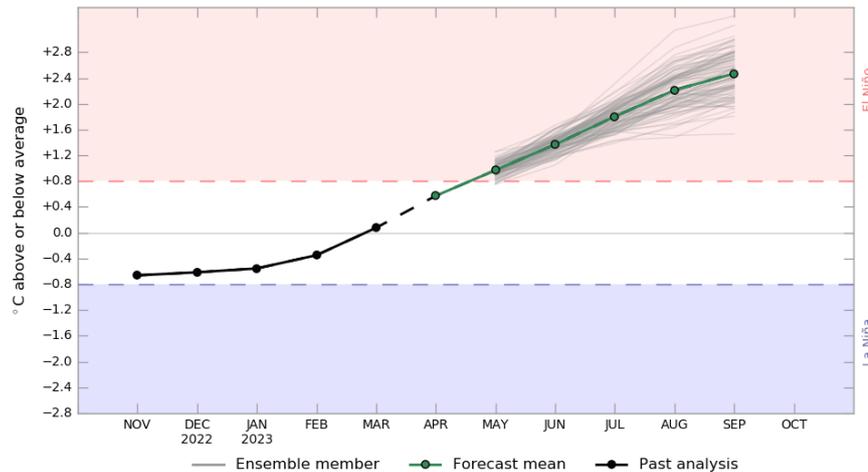
Signal Basse Fréquence

Contexte ENSO



Prévision ENSO

Monthly sea surface temperature anomalies for NINO3.4 region

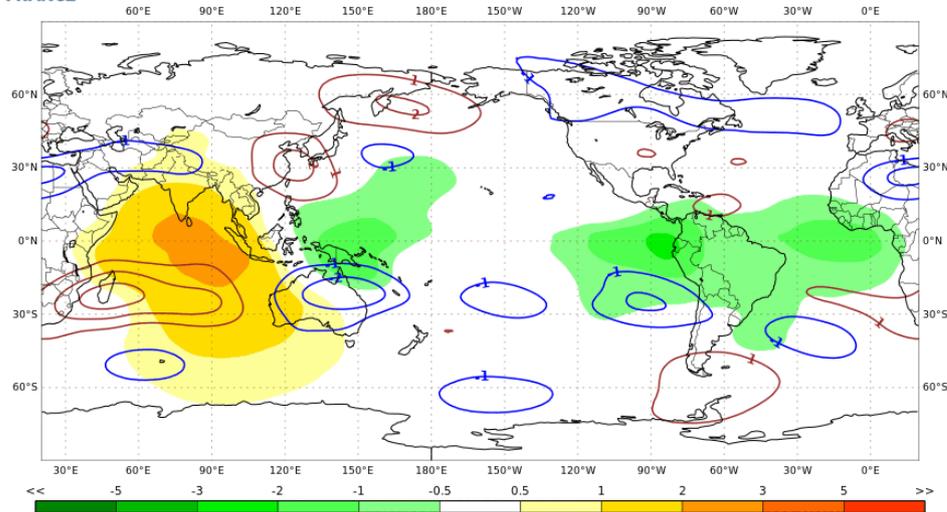


Signal Basse Fréquence

VP 200 prévu



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

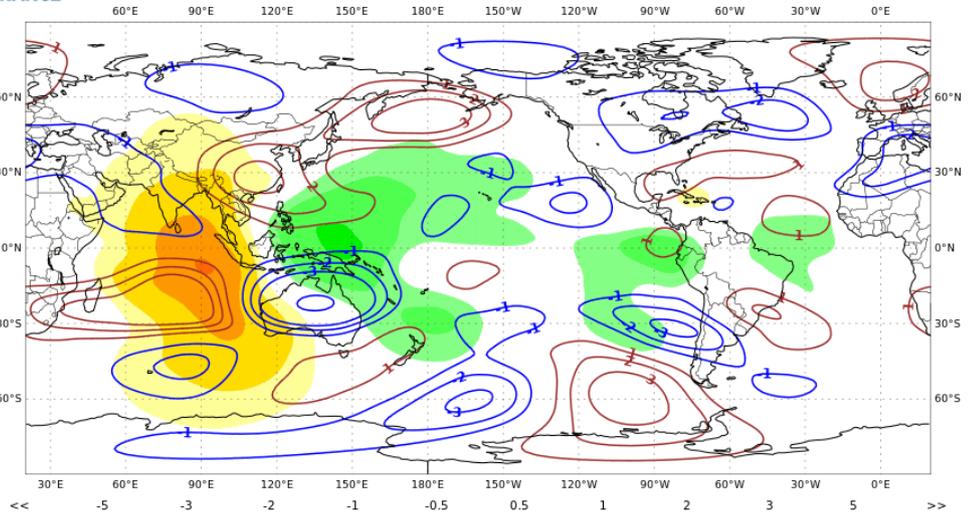


200hPa velocity potential and 200hPa streamfunction - zonal mean
3-months ensemble mean anomaly

unit : km2/s



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

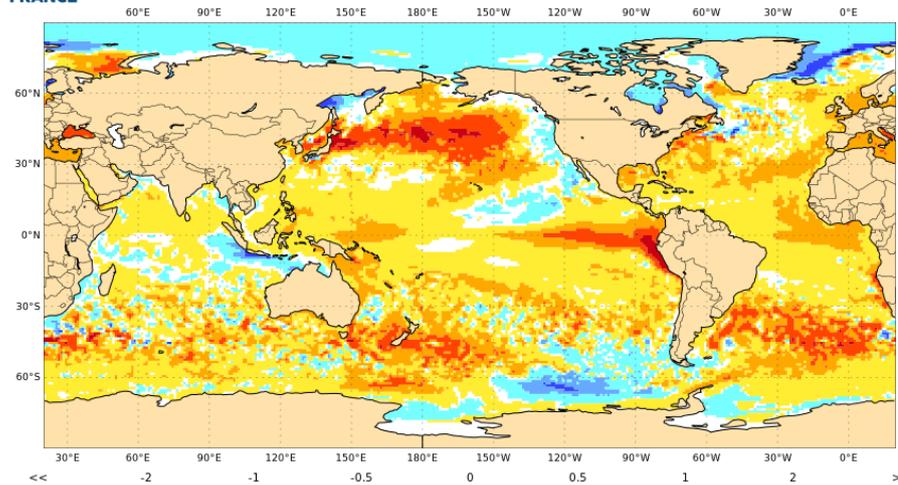


200hPa velocity potential and 200hPa streamfunction - zonal mean
3-months ensemble mean anomaly

unit : km2/s



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



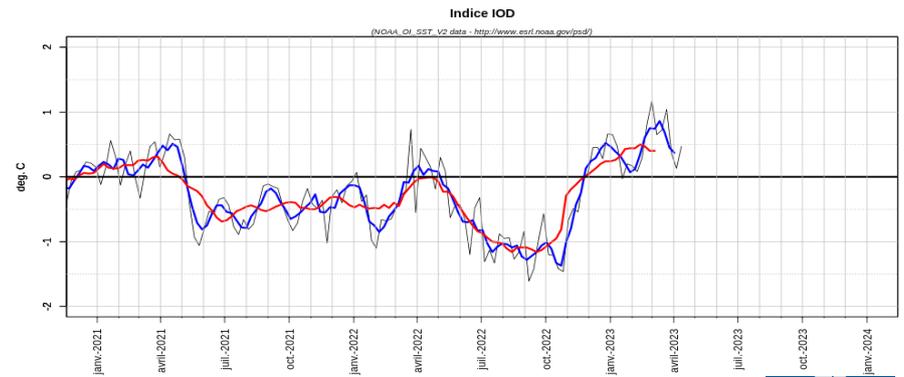
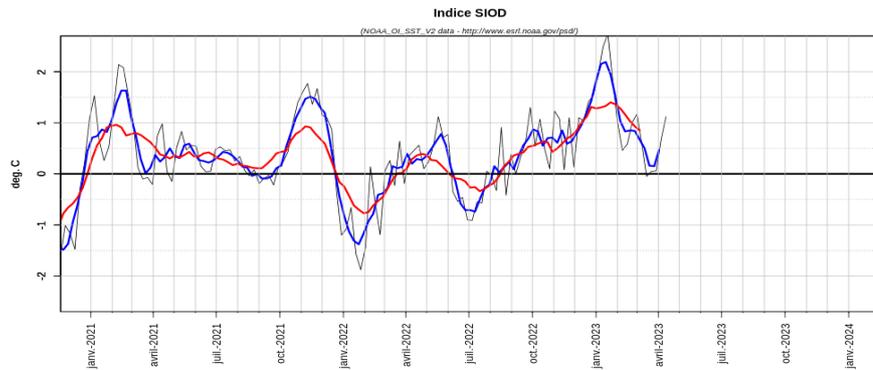
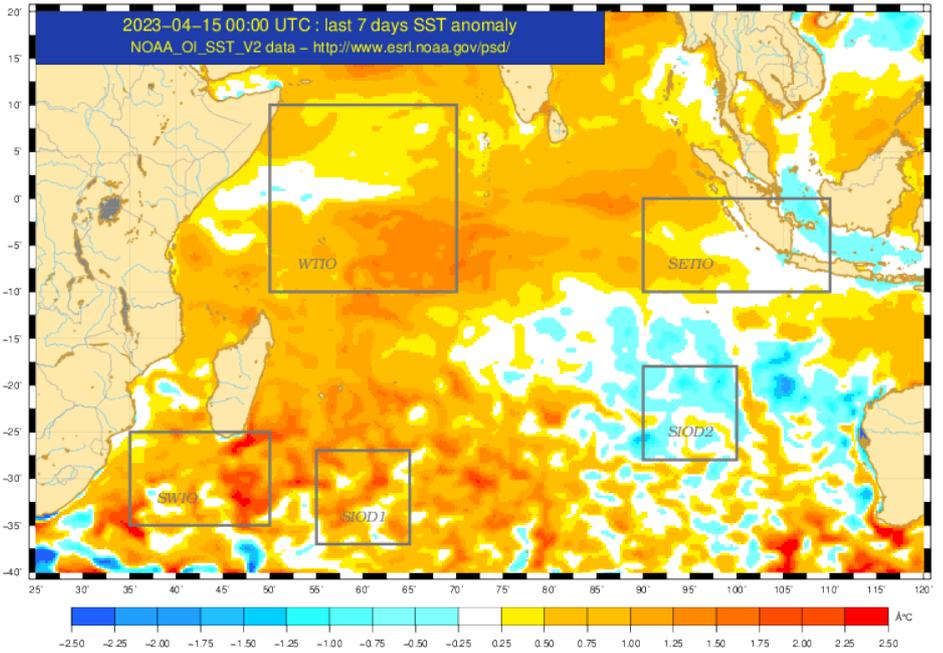
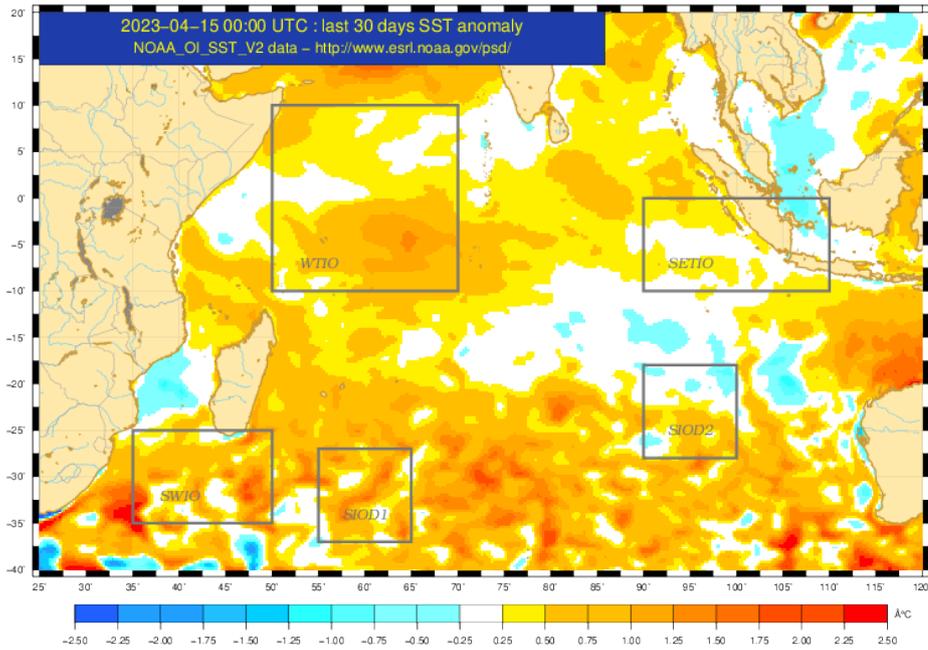
SST prévue

sea surface temperature
3-months ensemble mean anomaly

unit : °C (white = no signal)



Signal Basse Fréquence - Zoom sur l'OI



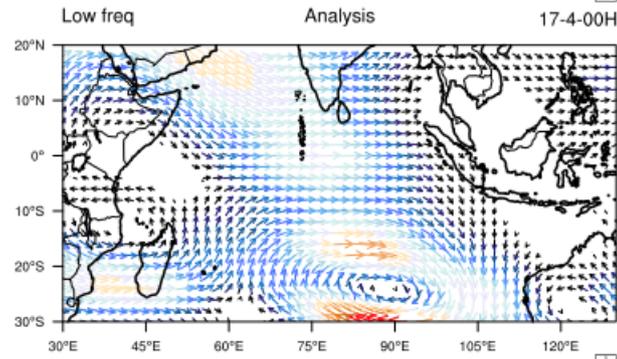
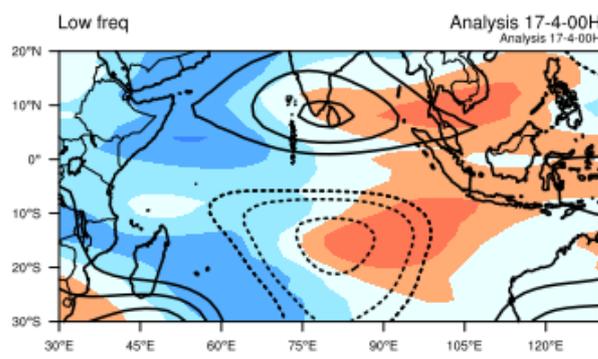
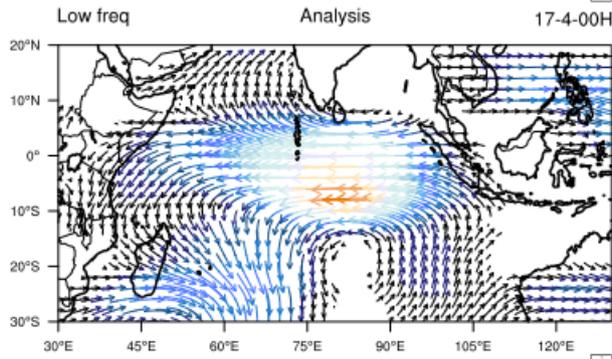
Signal Basse Fréquence - Zoom sur l'OI

J0

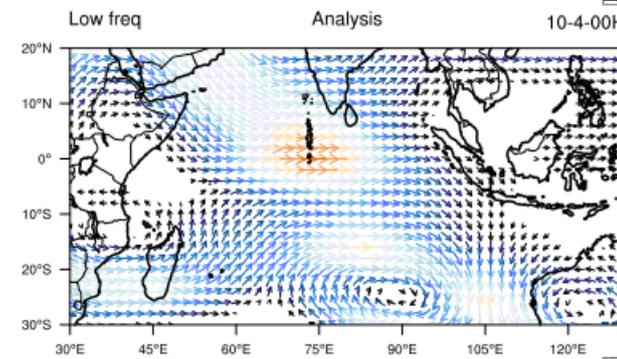
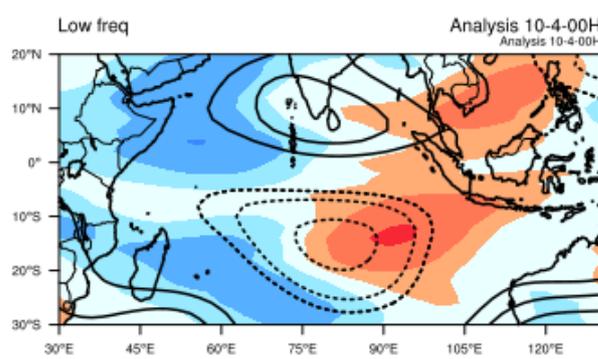
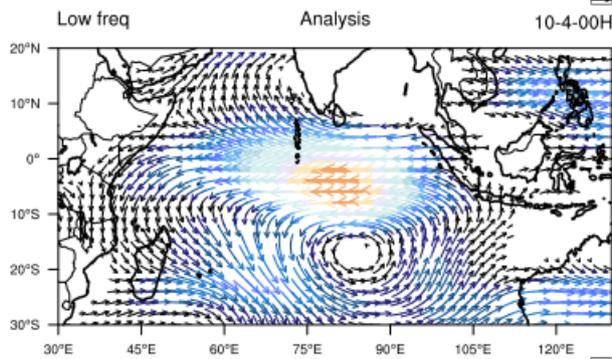
U850

PW+SF850

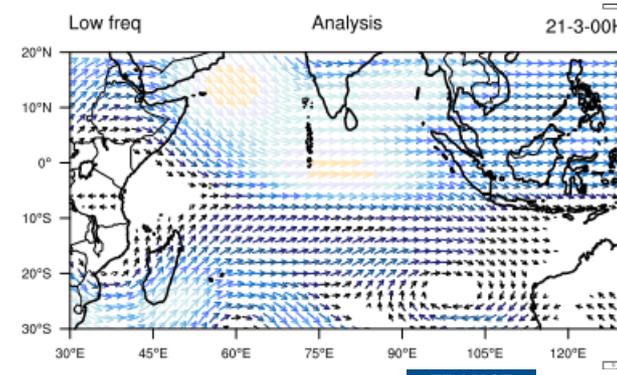
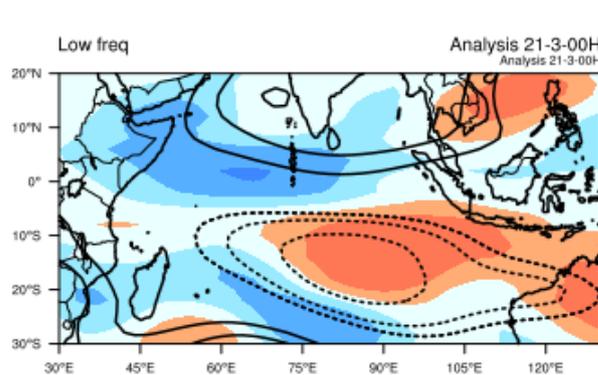
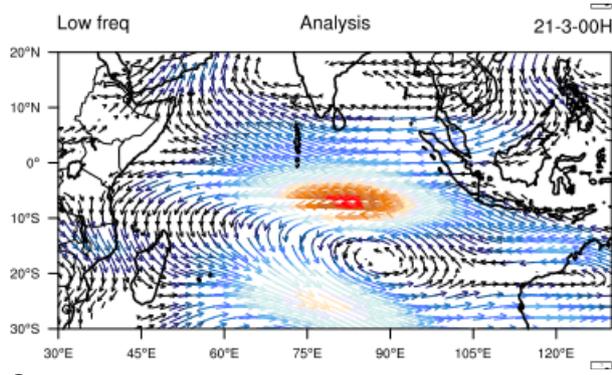
U200



J-7

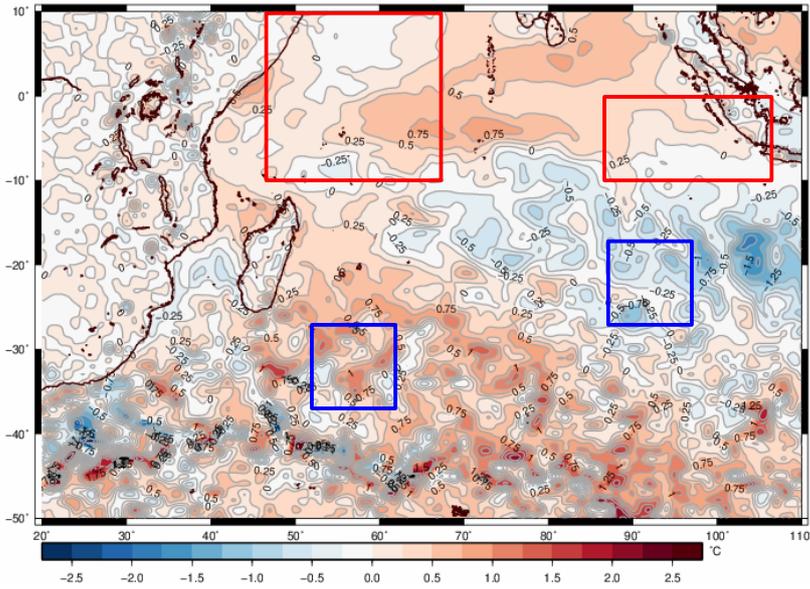


J-28

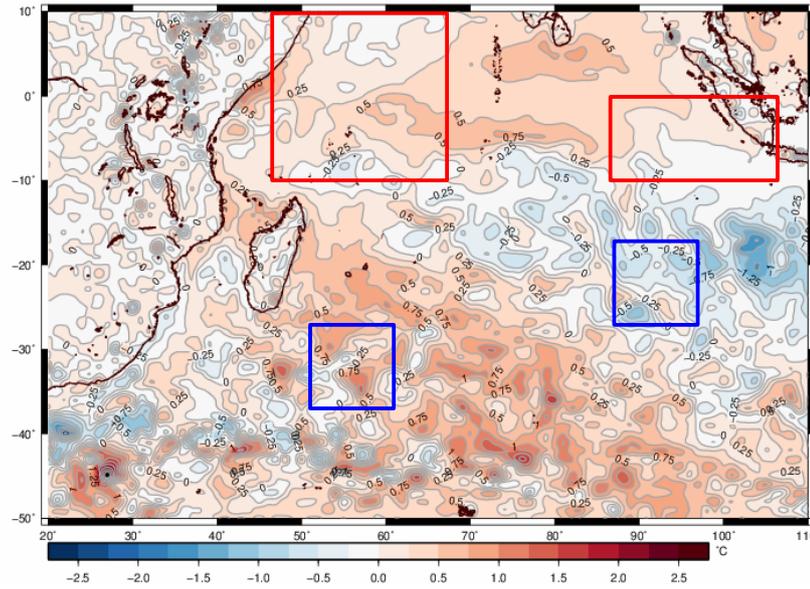


Signal Basse Fréquence – Prévission SST OI

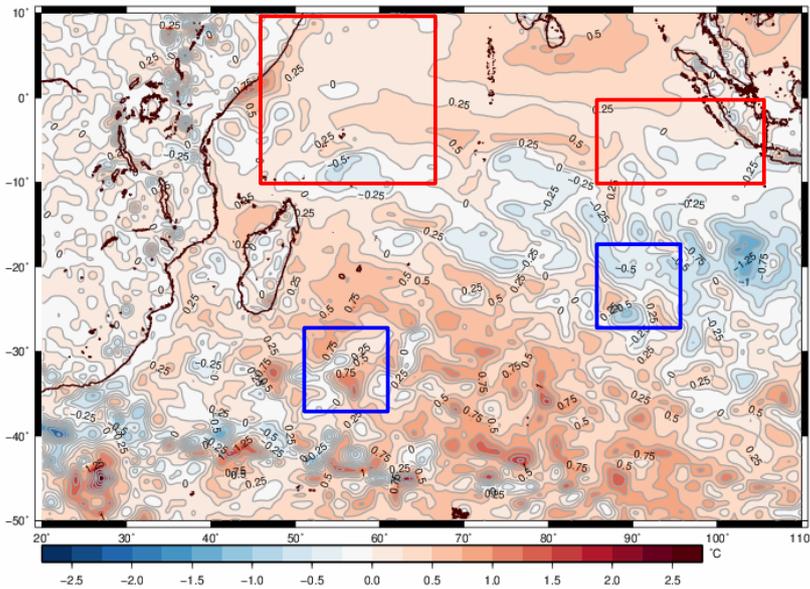
Anomalie de température de surface océanique
période du 2023-04-17 au 2023-04-24
Prévission mensuelle CEPMMT base 2023-04-17



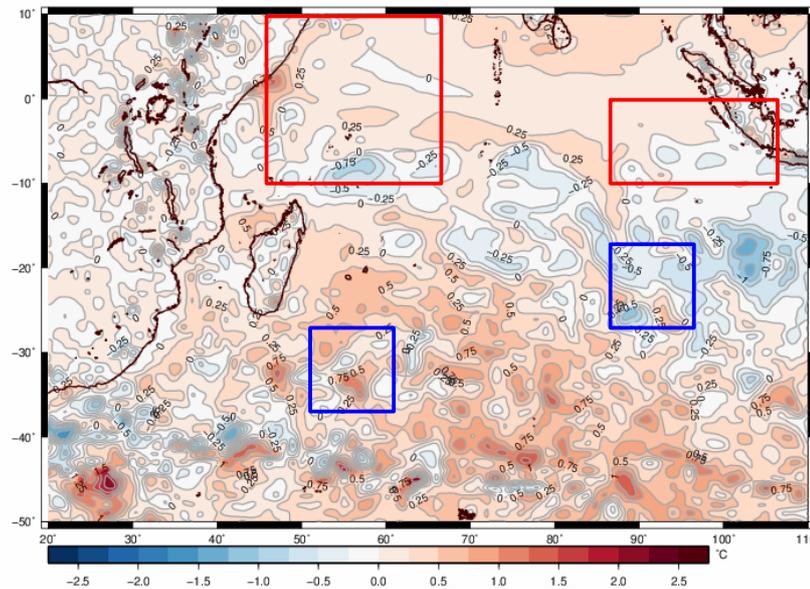
Anomalie de température de surface océanique
période du 2023-04-24 au 2023-05-01
Prévission mensuelle CEPMMT base 2023-04-17



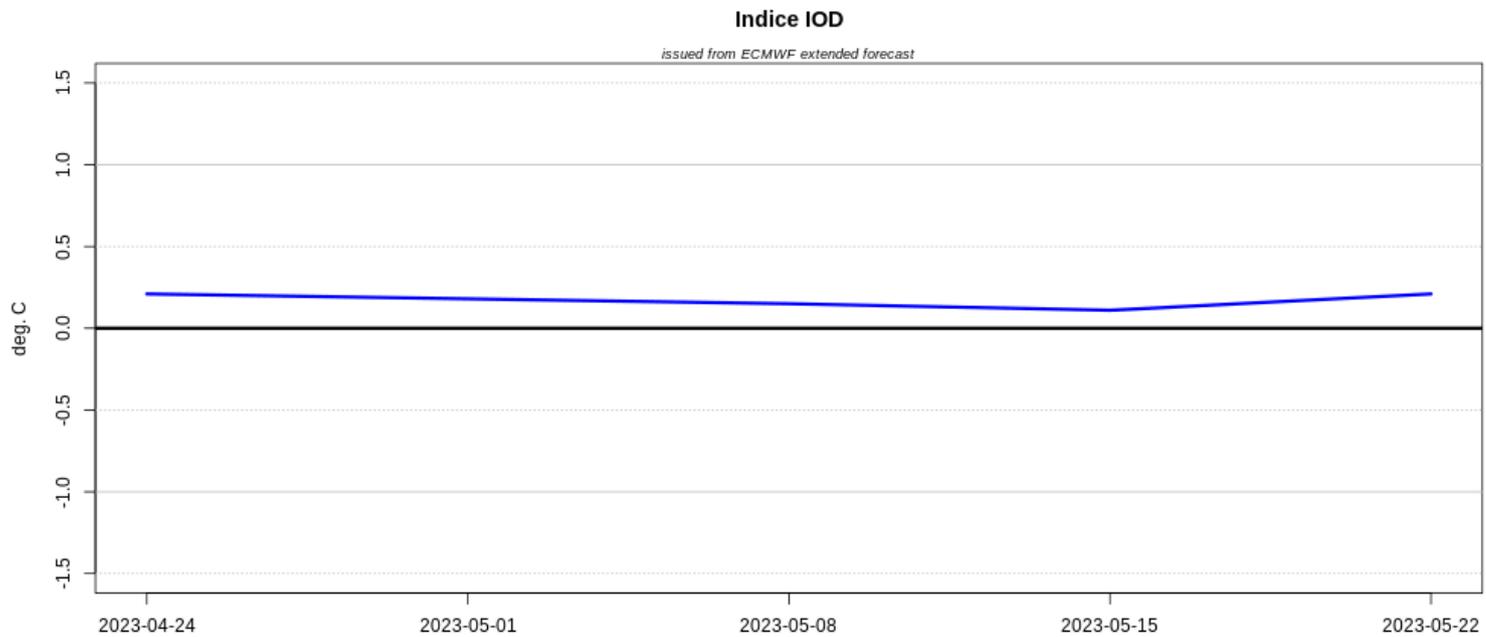
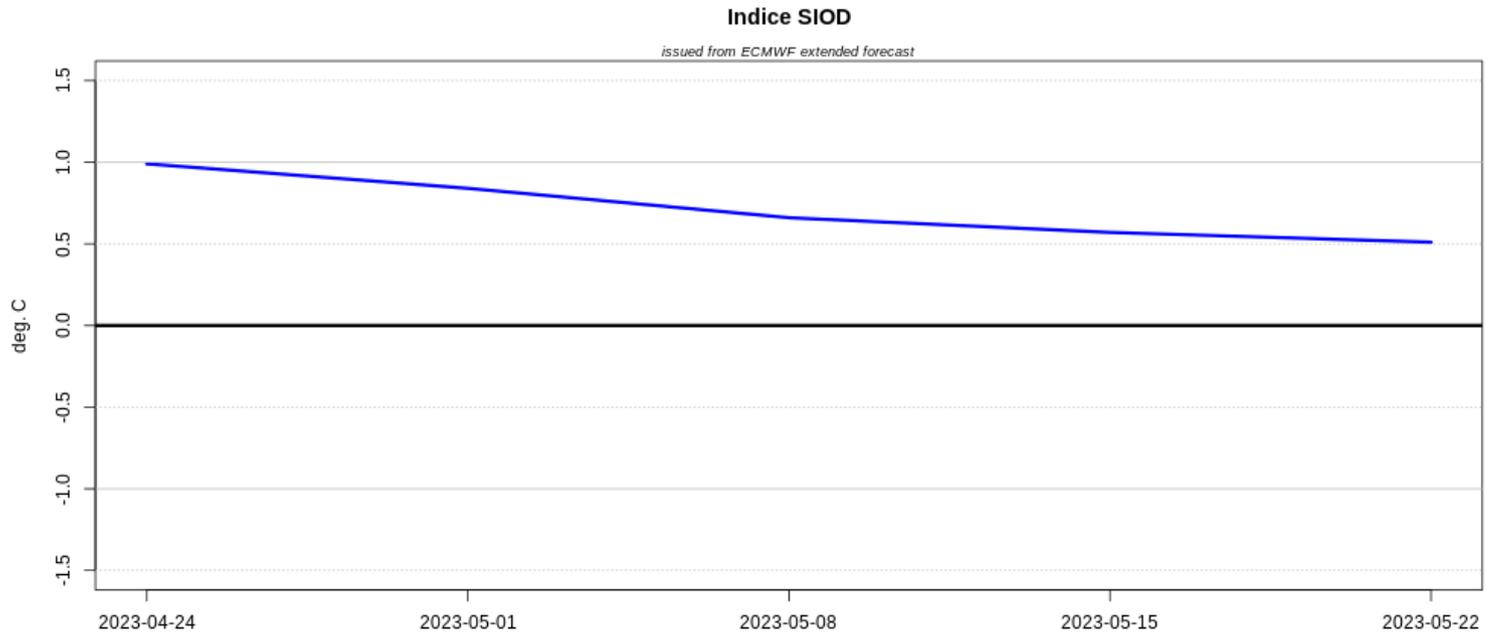
Anomalie de température de surface océanique
période du 2023-05-01 au 2023-05-08
Prévission mensuelle CEPMMT base 2023-04-17



Anomalie de température de surface océanique
période du 2023-05-08 au 2023-05-15
Prévission mensuelle CEPMMT base 2023-04-17

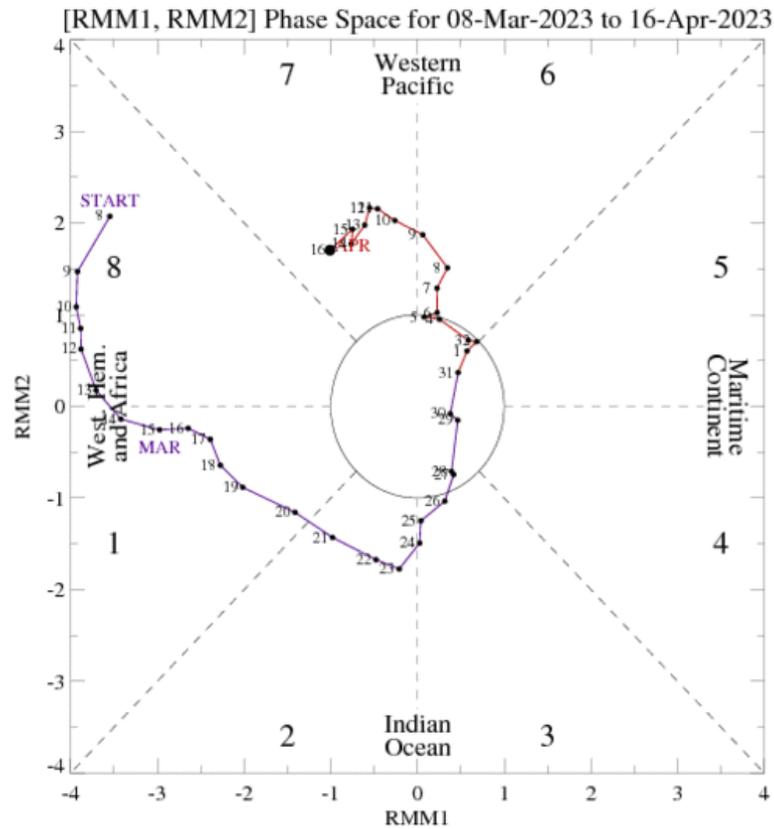


Signal Basse Fréquence – Prévision SST OI



2. Prévision - MJO

2. MJO observée, indice RMM



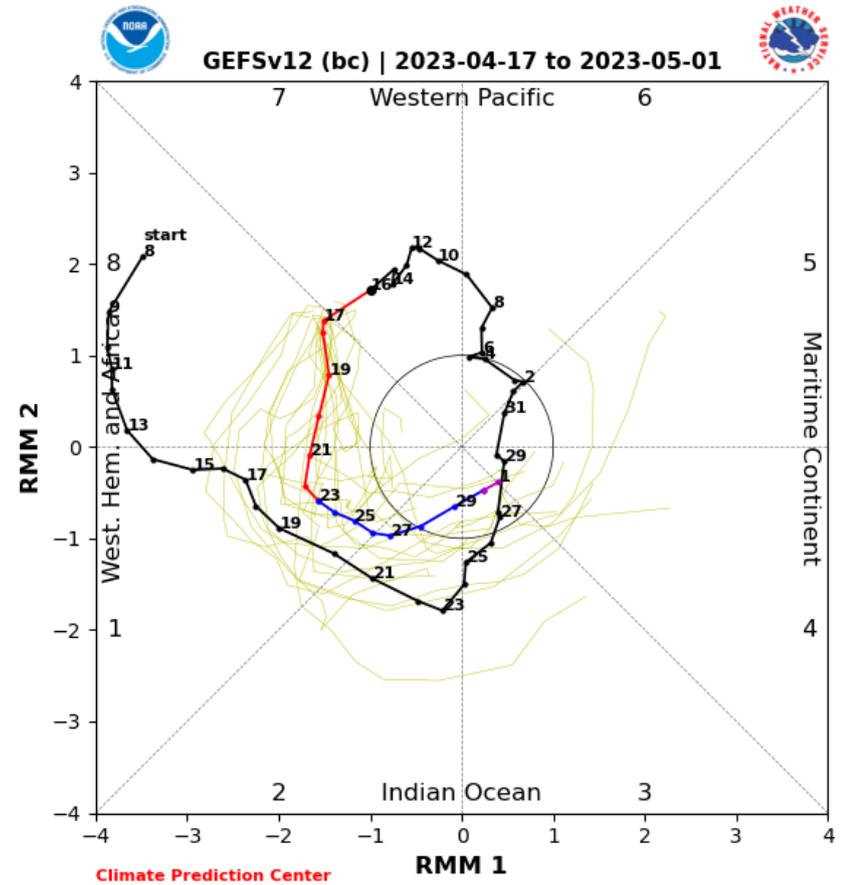
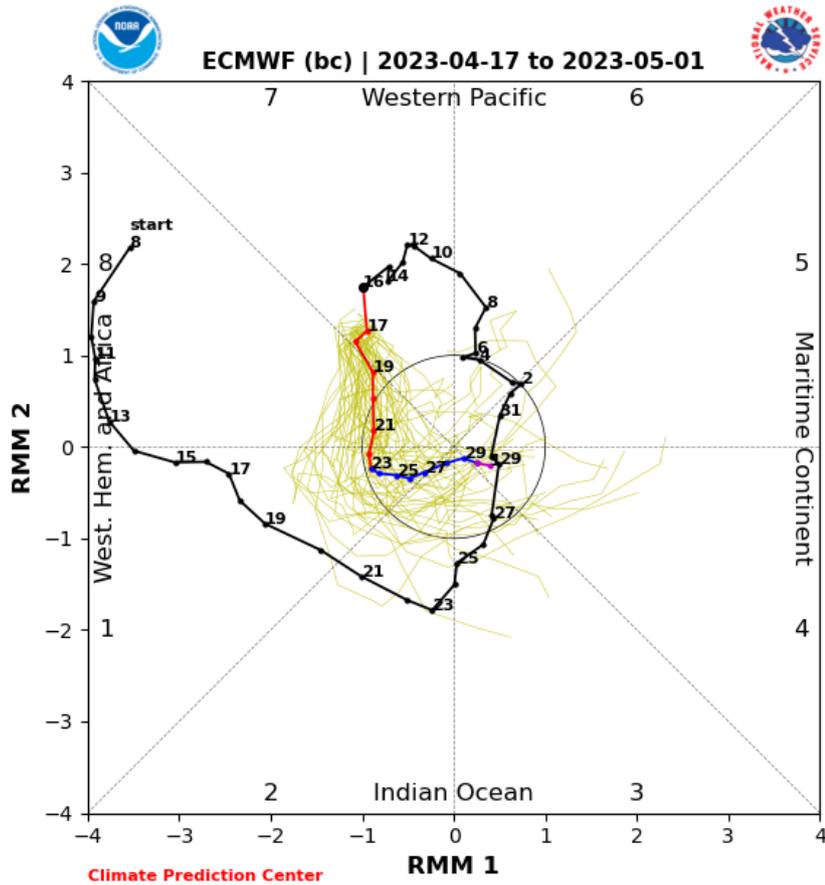
Retour sur les derniers briefings :

⁽⁻¹⁾ briefing du 28/02
⁽⁻²⁾ briefing du 28/03

	6 - 12 mars	13 - 19 mars	20 - 26 mars	27 mars - 2 avr.	3 - 9 avr.	10 - 16 avr.
Phase MJO observée	7/8	8/1	1/2/3	3/4/5	6	7
Intensité	Forte	Forte	Mod. à faible	Mod. À faible	Faible	Mod. À forte
Phase MJO prévue	8	8/1	1/2	3/4/5	6	7
Intensité	Faible à mod.	Forte	Mod. À forte	Faible	Faible	Faible ou mod.
Confiance	Bonne ⁽⁻¹⁾	Moyenne ⁽⁻¹⁾	Moyenne ⁽⁻¹⁾	Moyenne ⁽⁻²⁾	Faible ⁽⁻²⁾	Faible ⁽⁻²⁾

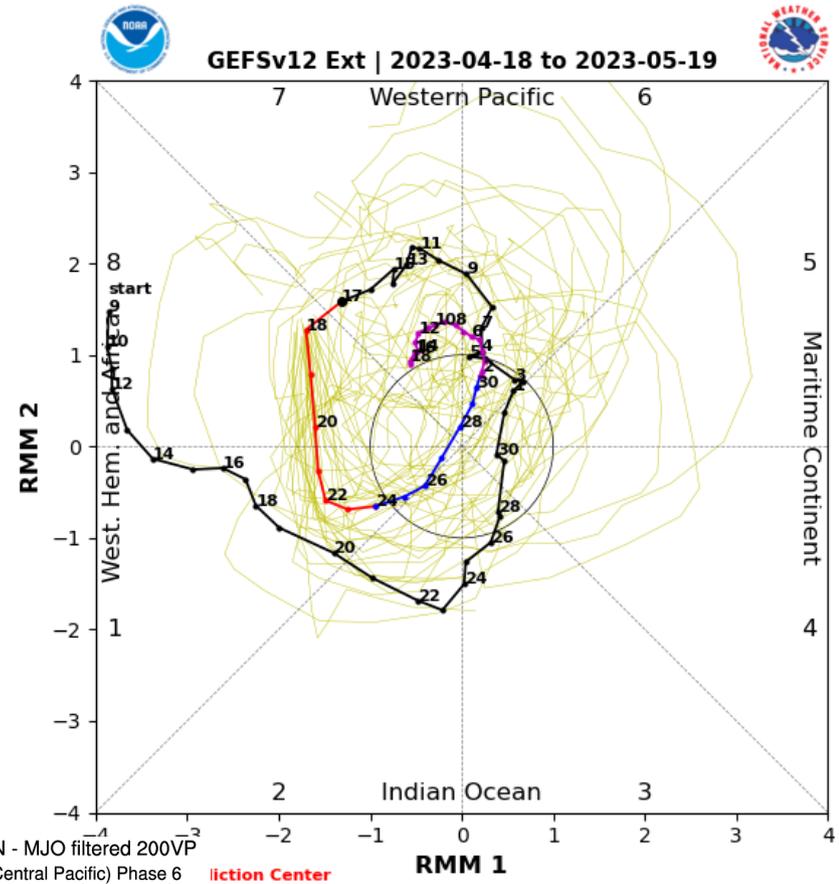
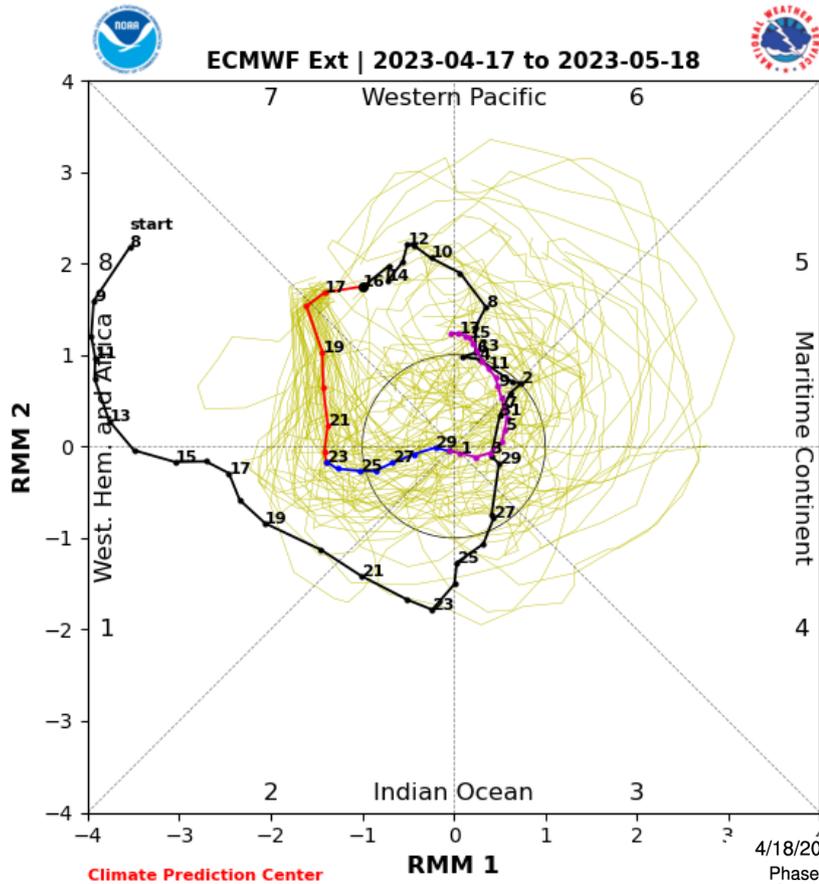
MJO prévue

indice RMM multi modèles



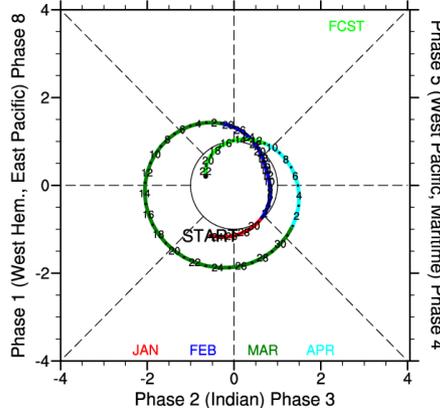
MJO prévue

indice RMM multi modèles



4/18/2023/1Z: 15S-15N - MJO filtered 200VP

Phase 7 (East Pacific, Central Pacific) Phase 6



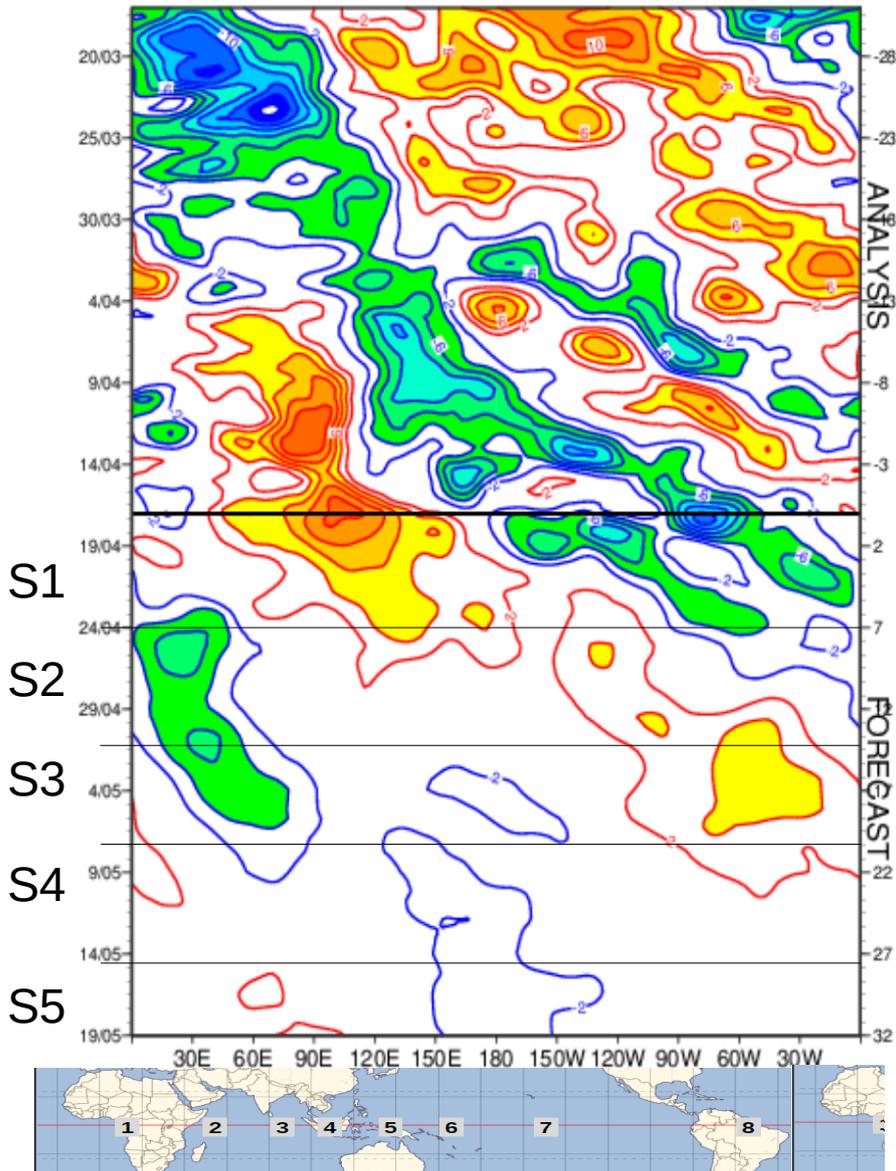
Indice VPM



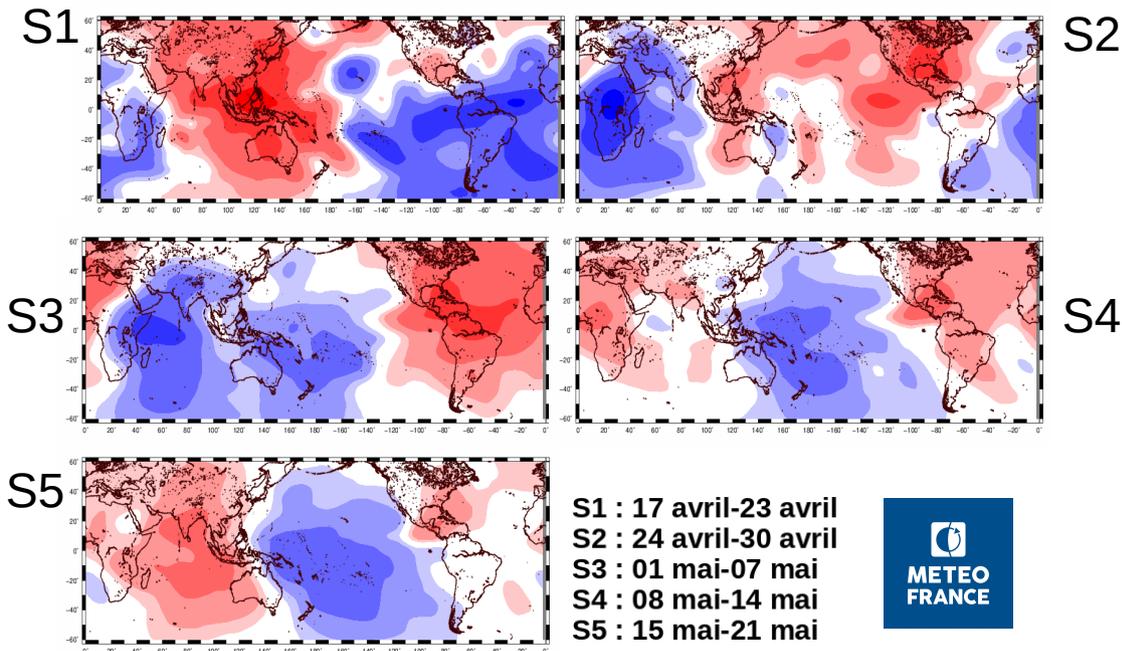
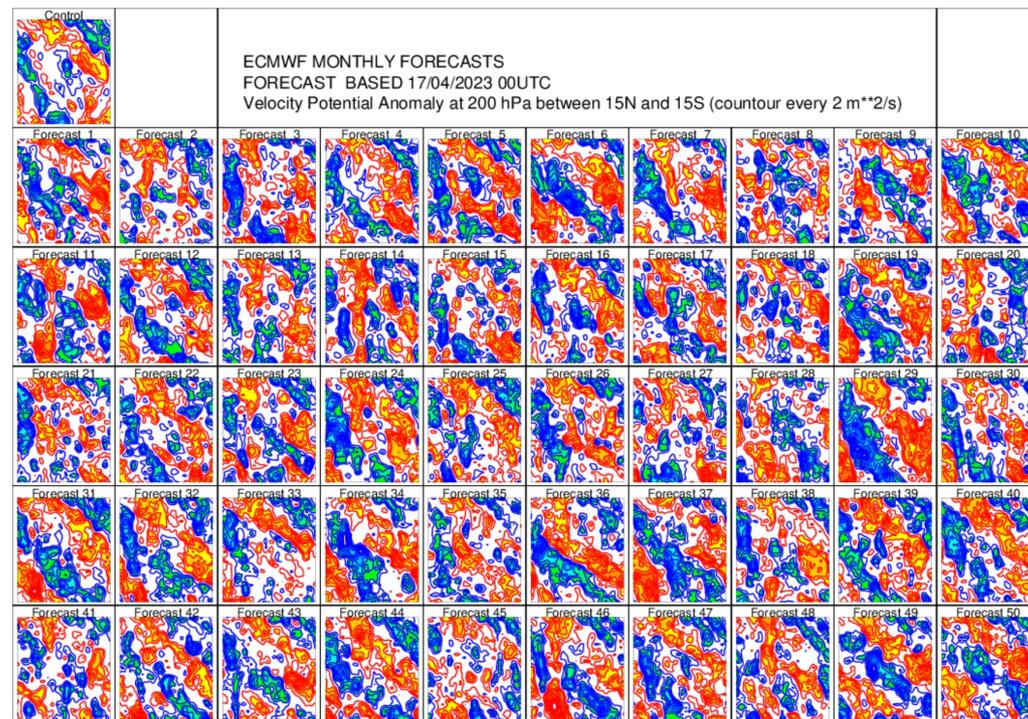
VP200 – EPS mensuel

Moyenne EPS

VELOCITY POTENTIAL AT 200 HPA
Ensemble mean between Lat 15S and 15N
FORECAST BASED 17/04/2023 00UTC



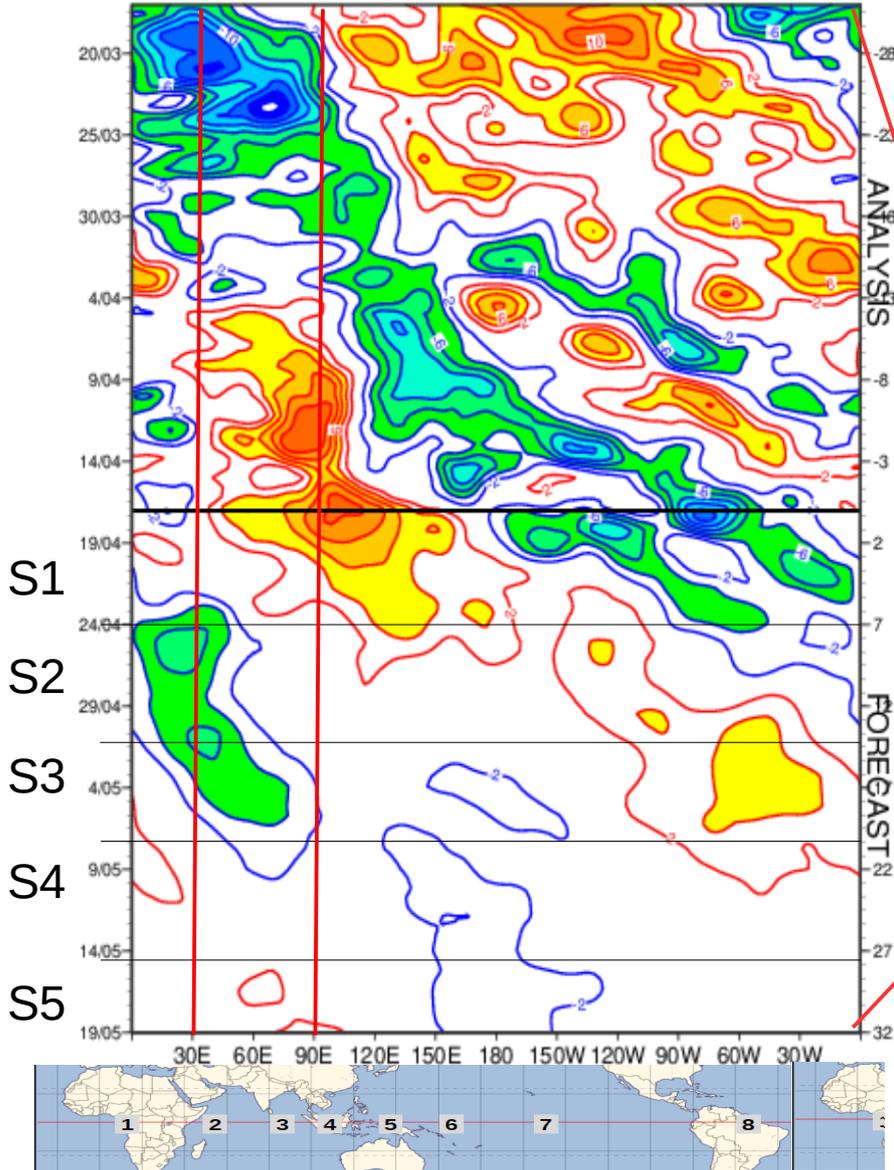
Prévisions 51 membres



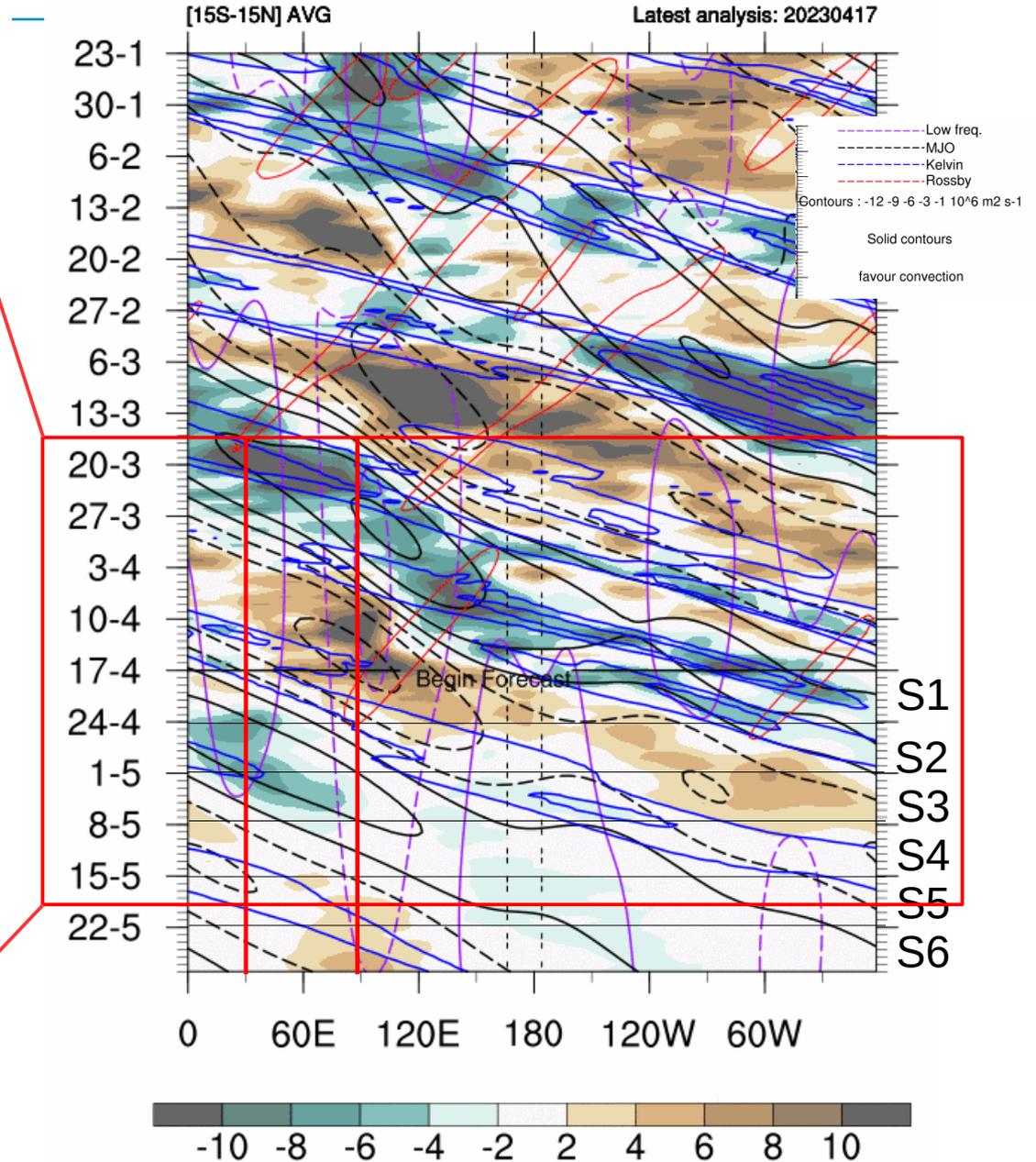
VP200 – EPS mensuel

Moyenne EPS

VELOCITY POTENTIAL AT 200 HPA
Ensemble mean between Lat 15S and 15N
FORECAST BASED 17/04/2023 00UTC



vp200 anomaly + Eq. Waves filtering

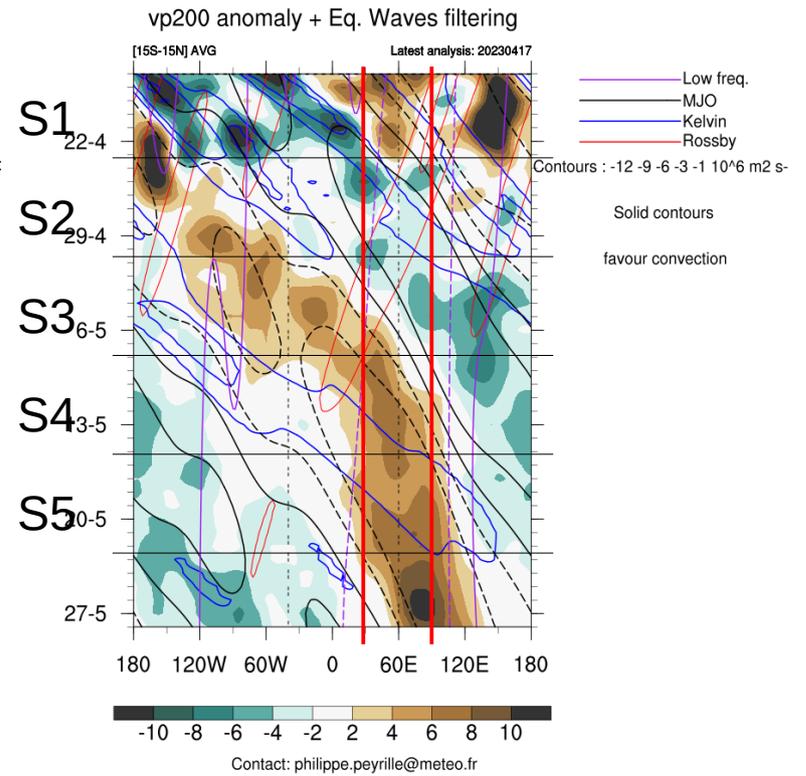
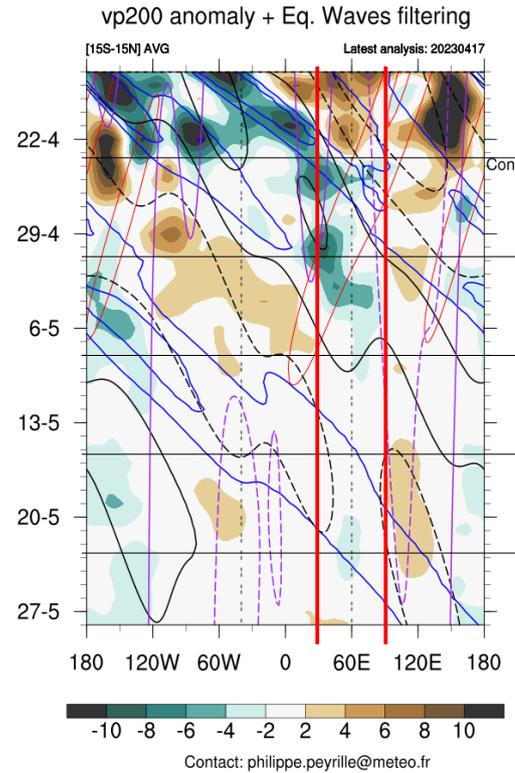
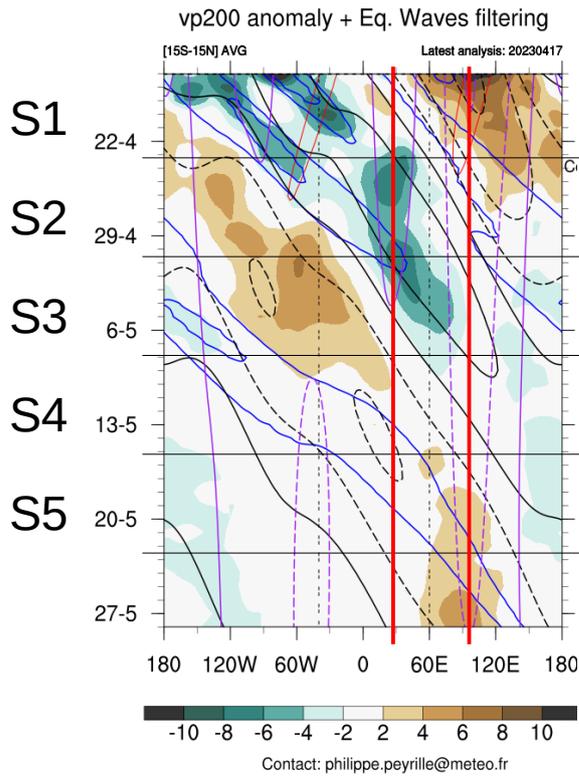


Clustering MJO

Moy 51 membres

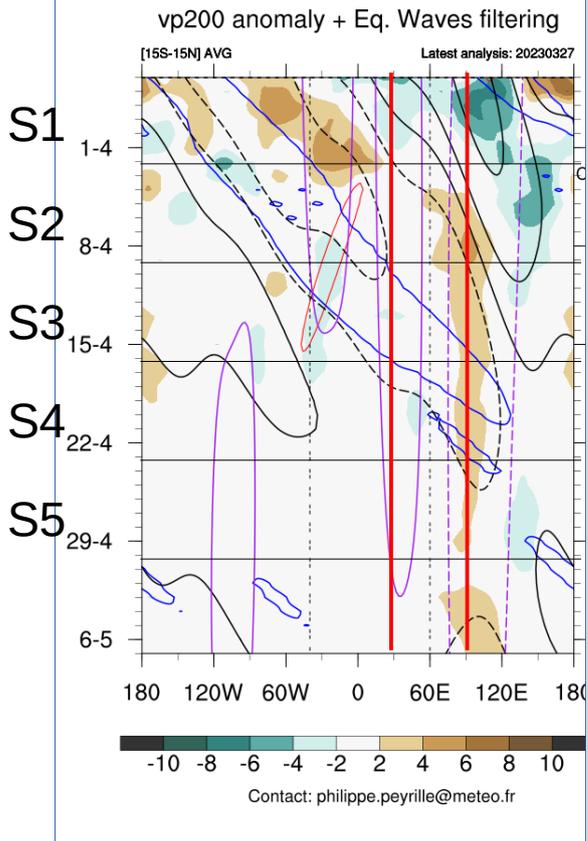
29 membres

22 membres

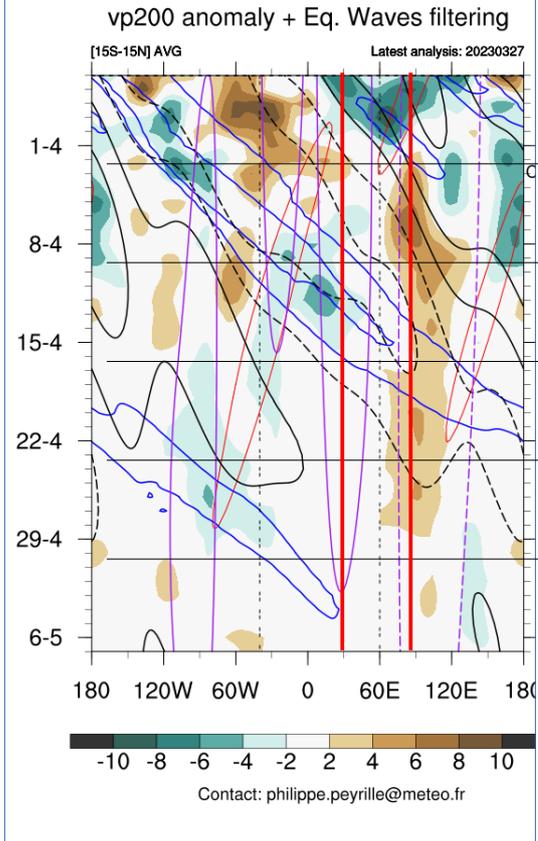


Clustering MJO [DERNIER BRIEFING]

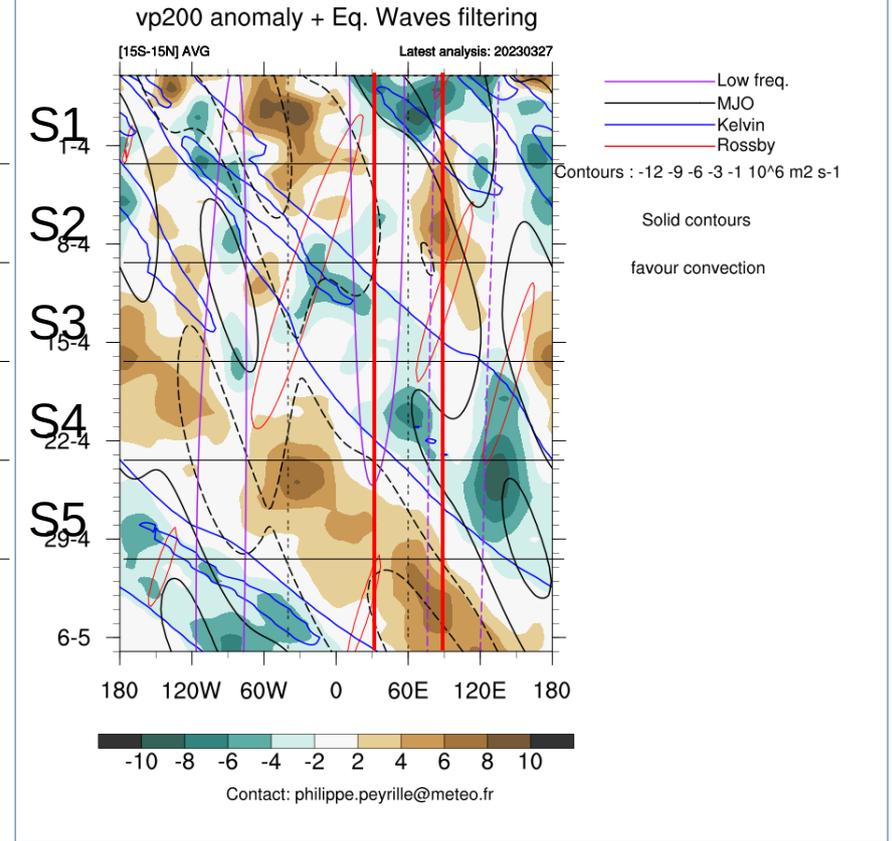
Moy 51 mbres



34 membres



17 membres

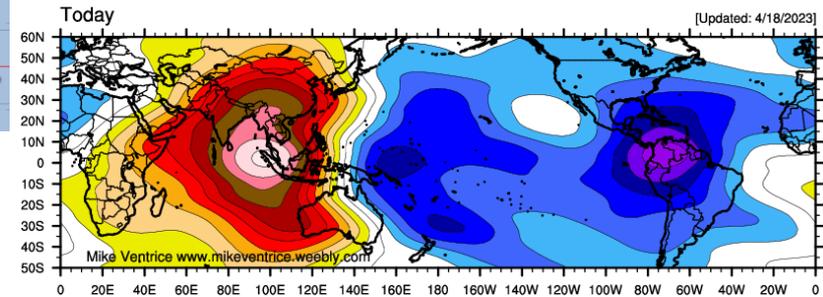


Synthèse MJO

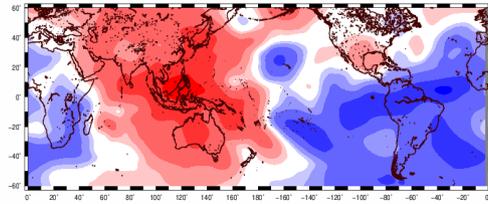
	S1	S2	S3	S4	S5
Phase MJO prévue	7/8/1	1/2	3/4	5/6	6/7
Intensité	Forte à modérée	Modérée	Modérée	Faible	Faible
Confiance	Bonne	Bonne	Moyenne	Moyenne	Moyenne



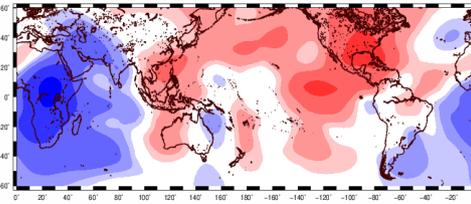
MJO filtered VP200 Forecast



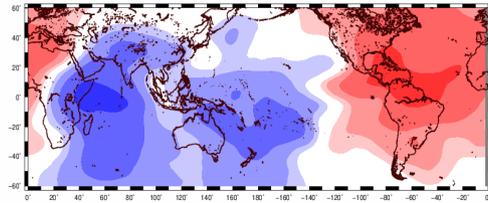
S1



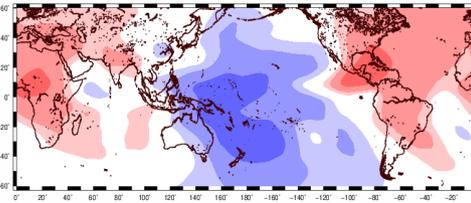
S2



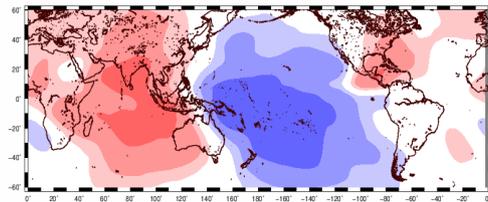
S3



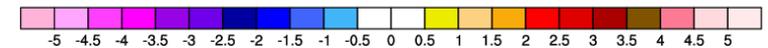
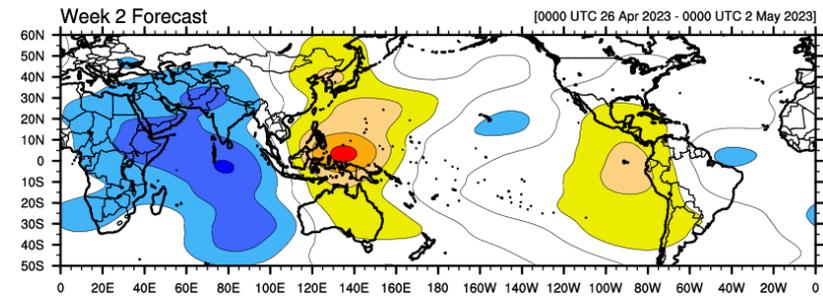
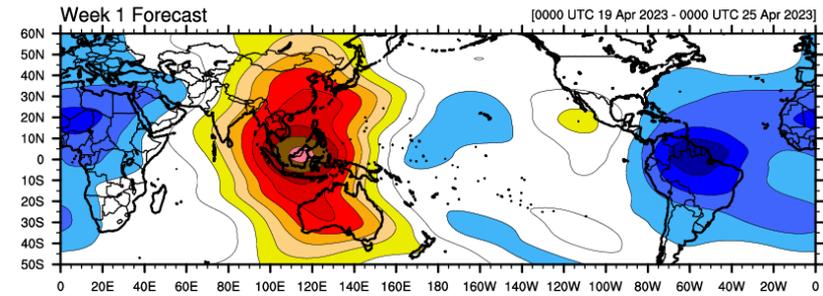
S4



S5

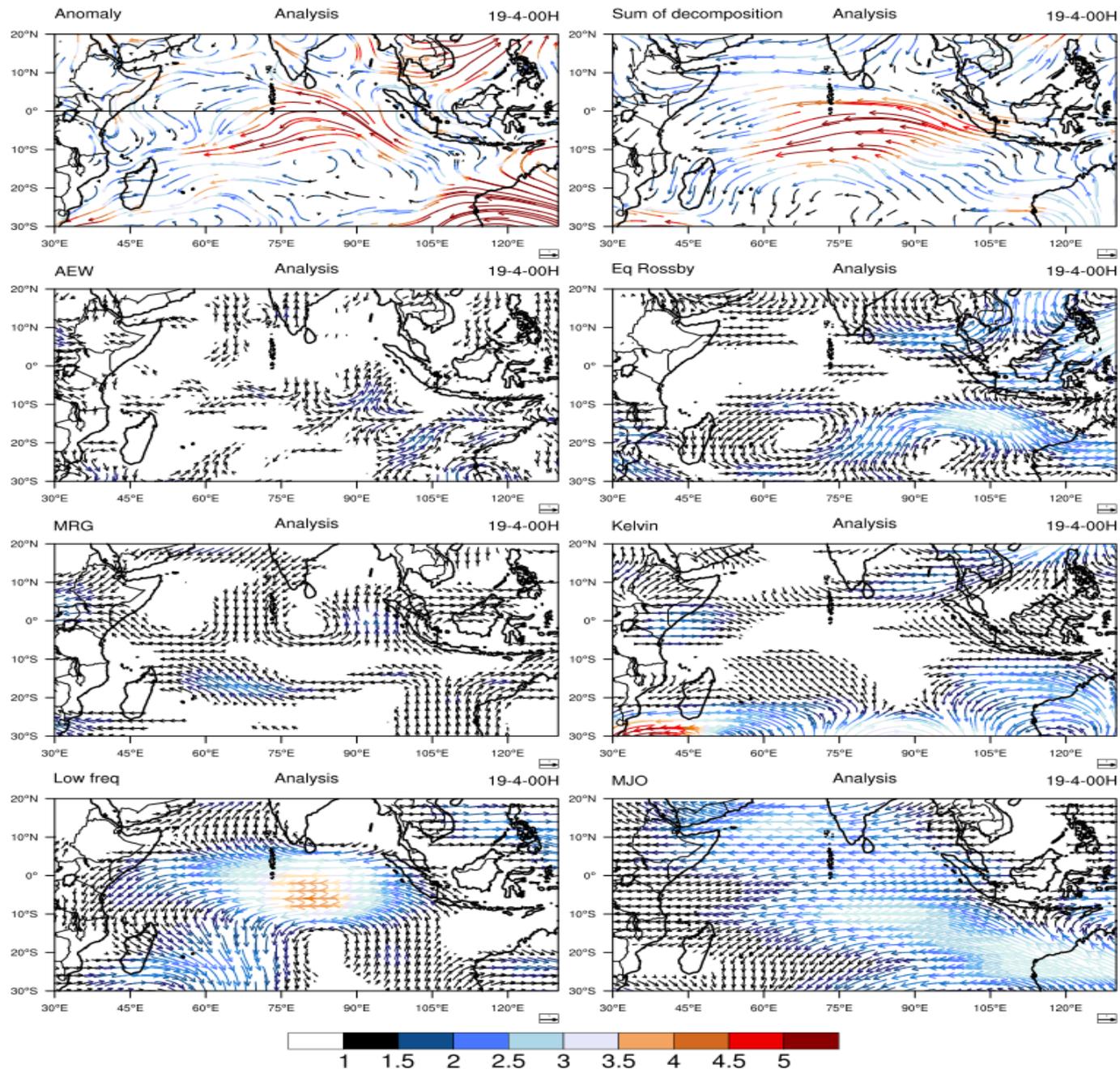


S1 : 17 avril-23 avril
 S2 : 24 avril-30 avril
 S3 : 01 mai-07 mai
 S4 : 08 mai-14 mai
 S5 : 15 mai-21 mai



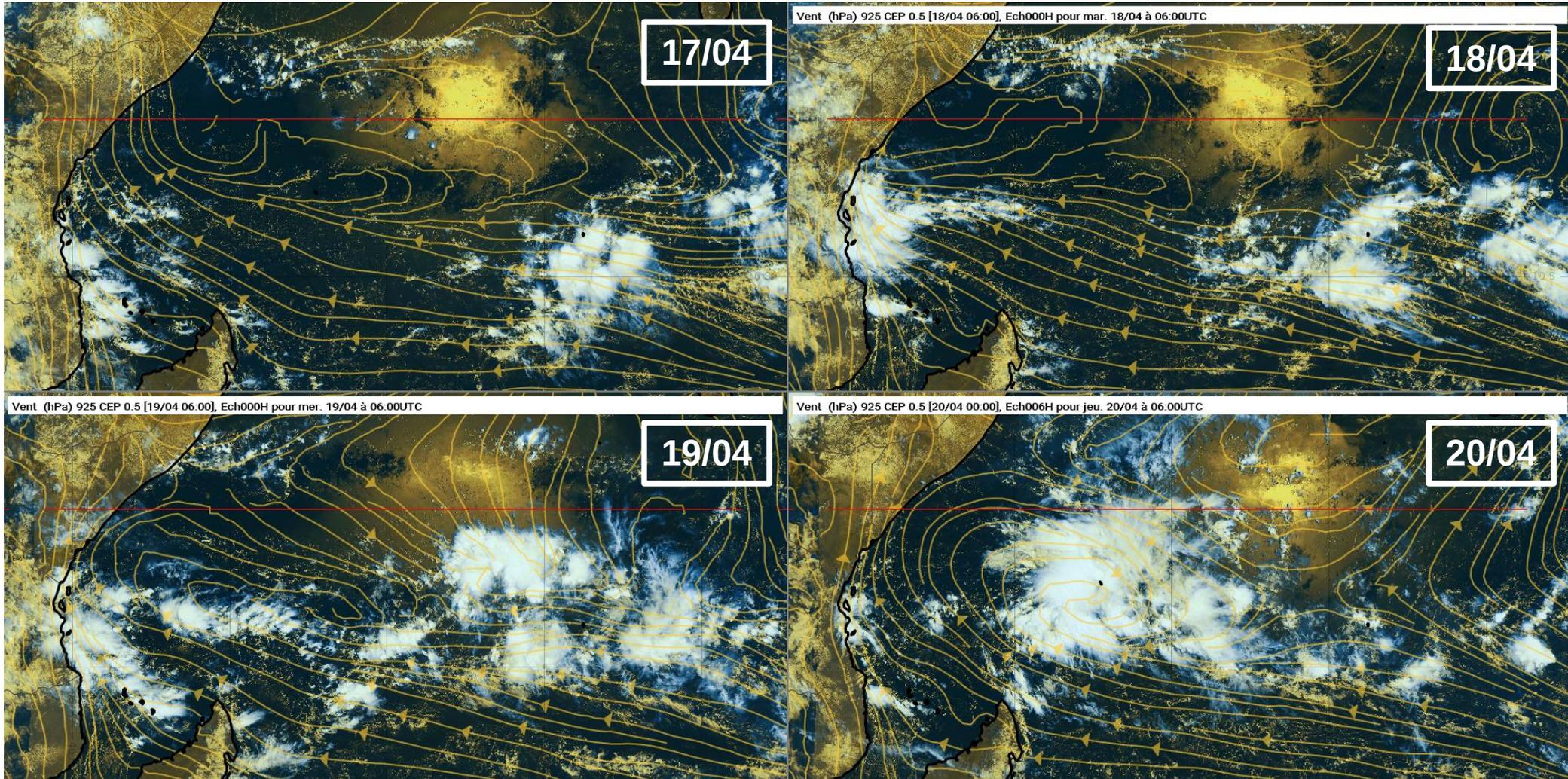
3. Prévision – Ondes équatoriales

3. Ondes équatoriales



3. Ondes équatoriales (Kelvin)

Observations



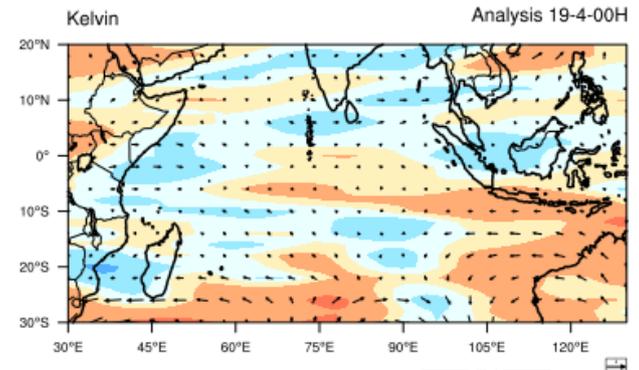
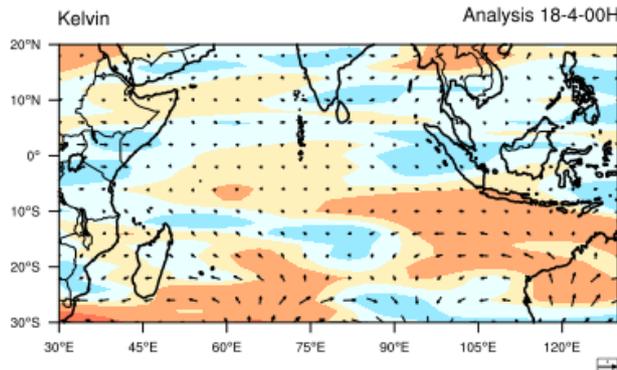
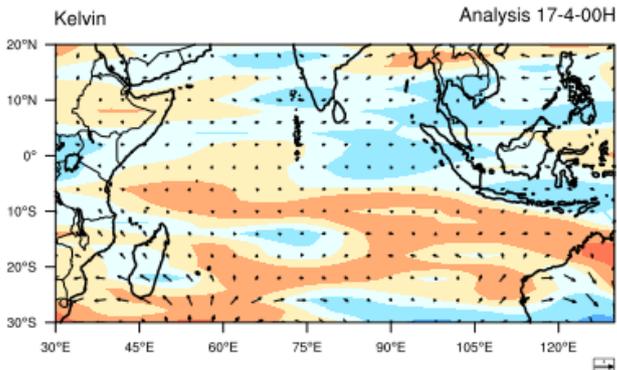
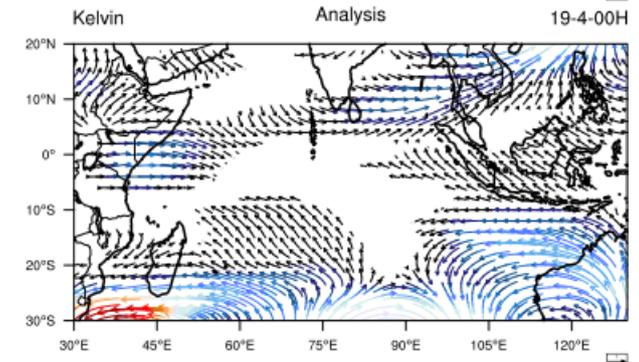
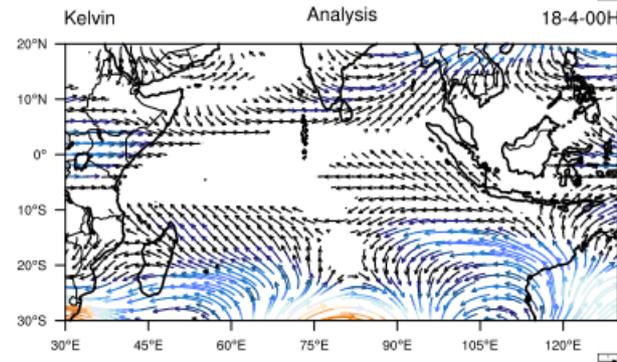
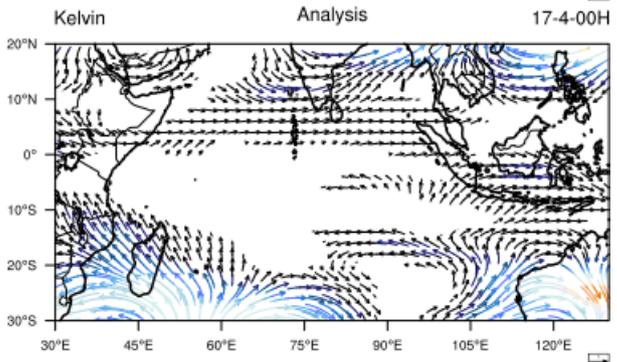
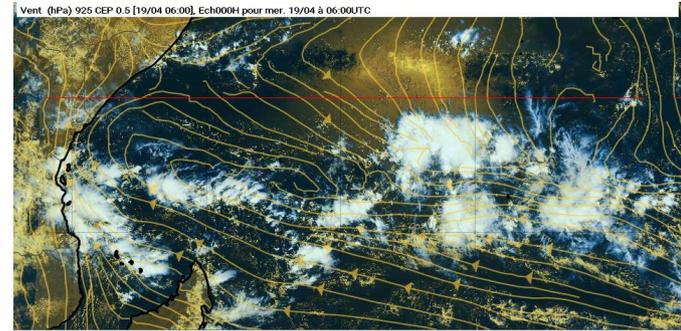
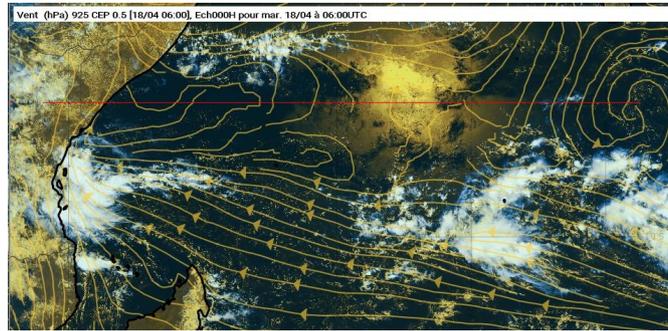
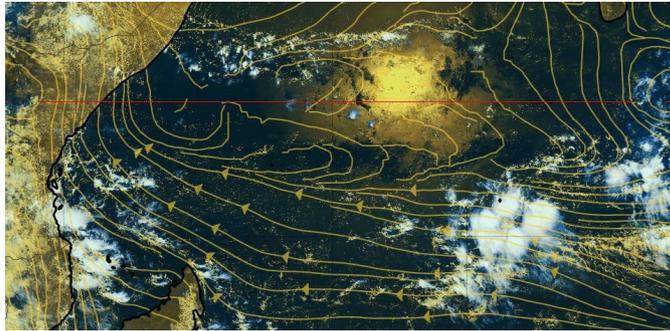
3. Ondes équatoriales (Kelvin)

Obs. + analyses

17/04

18/04

19/04



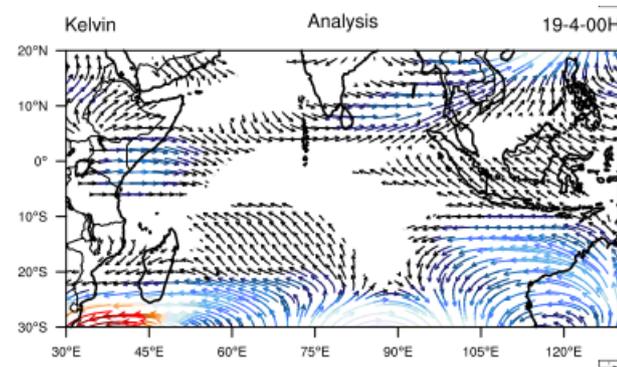
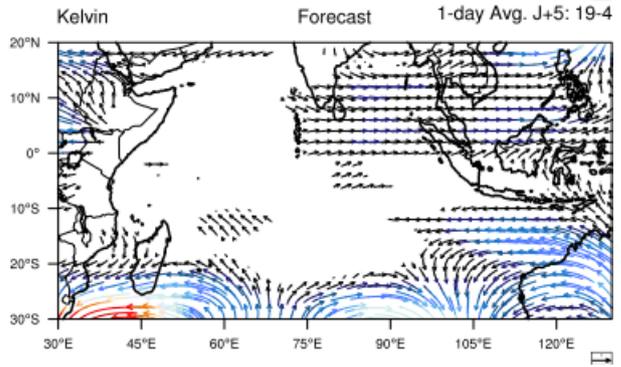
3. Ondes équatoriales (Kelvin)

Prévisibilité

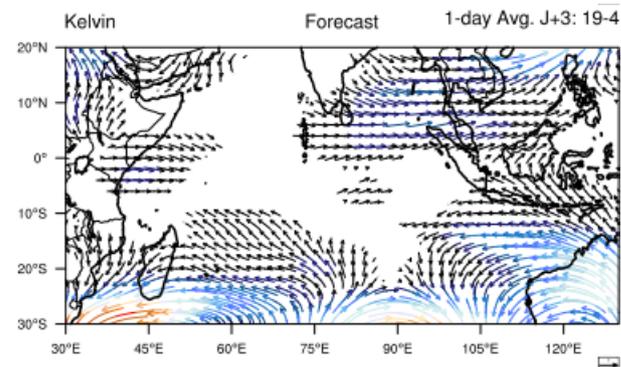
Prévisions du 19/04

Analyse du 19/04

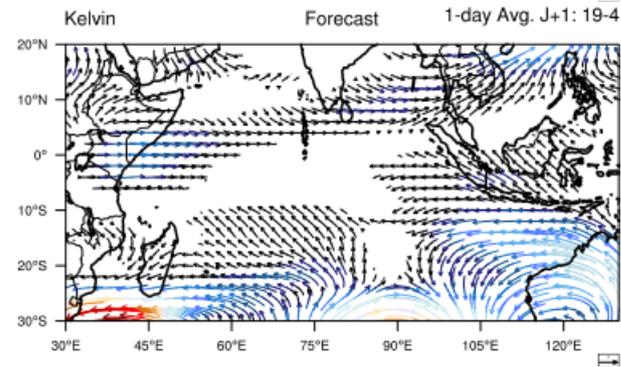
Run du 14/04



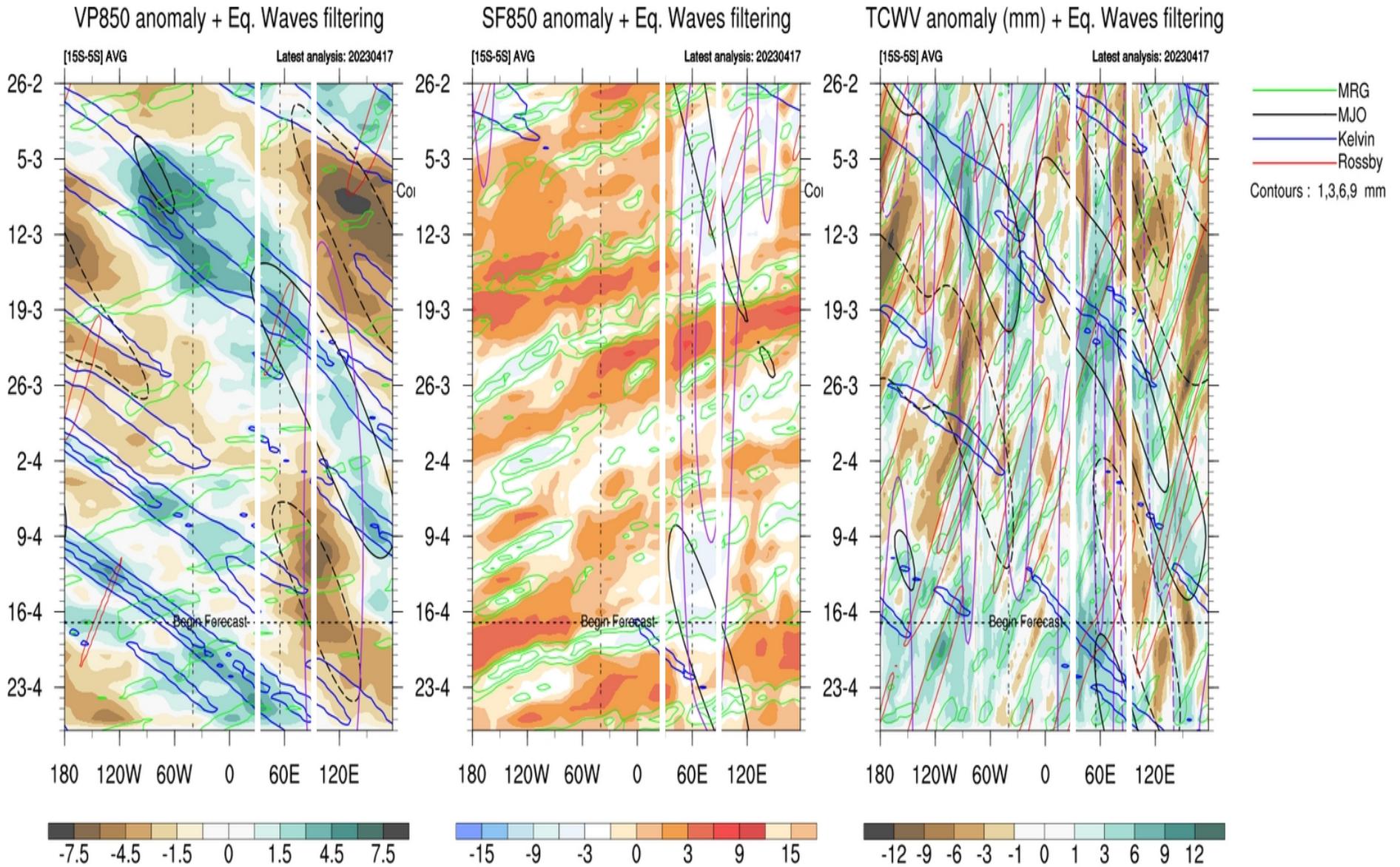
Run du 16/04



Run du 18/04



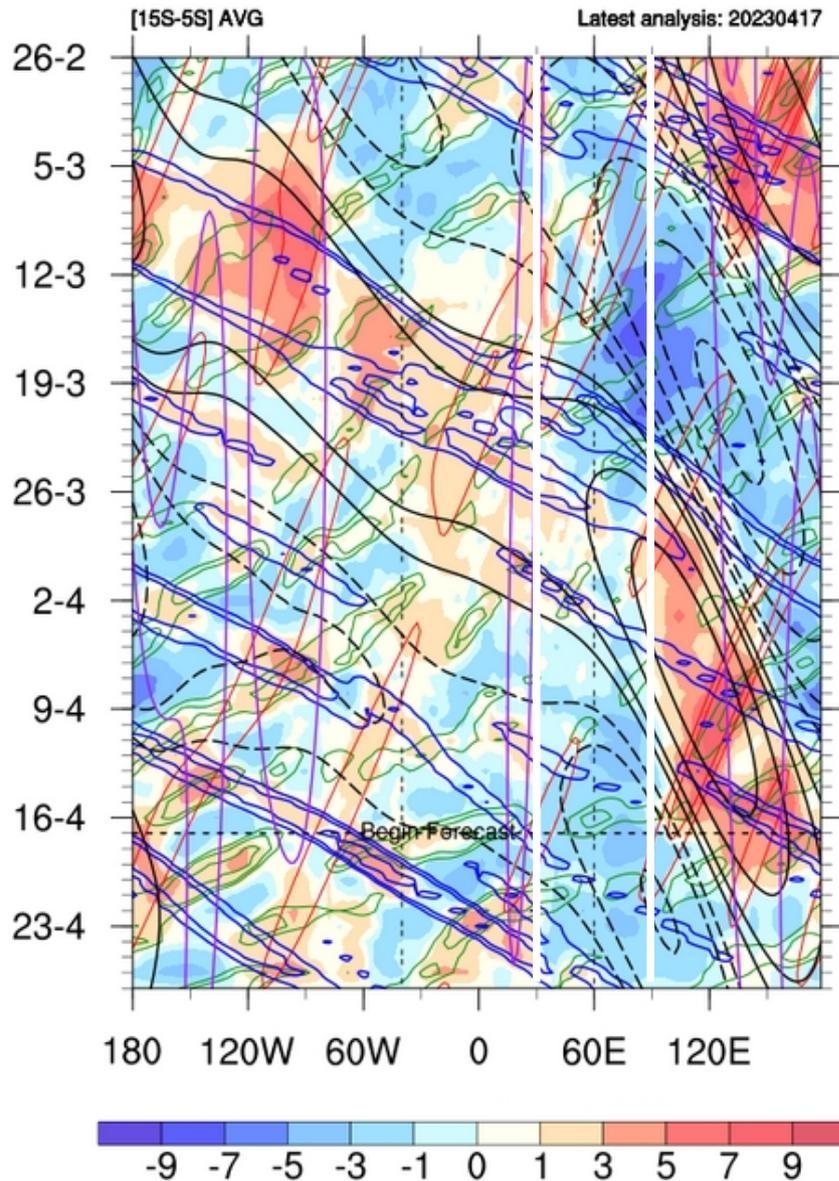
3. Ondes équatoriales



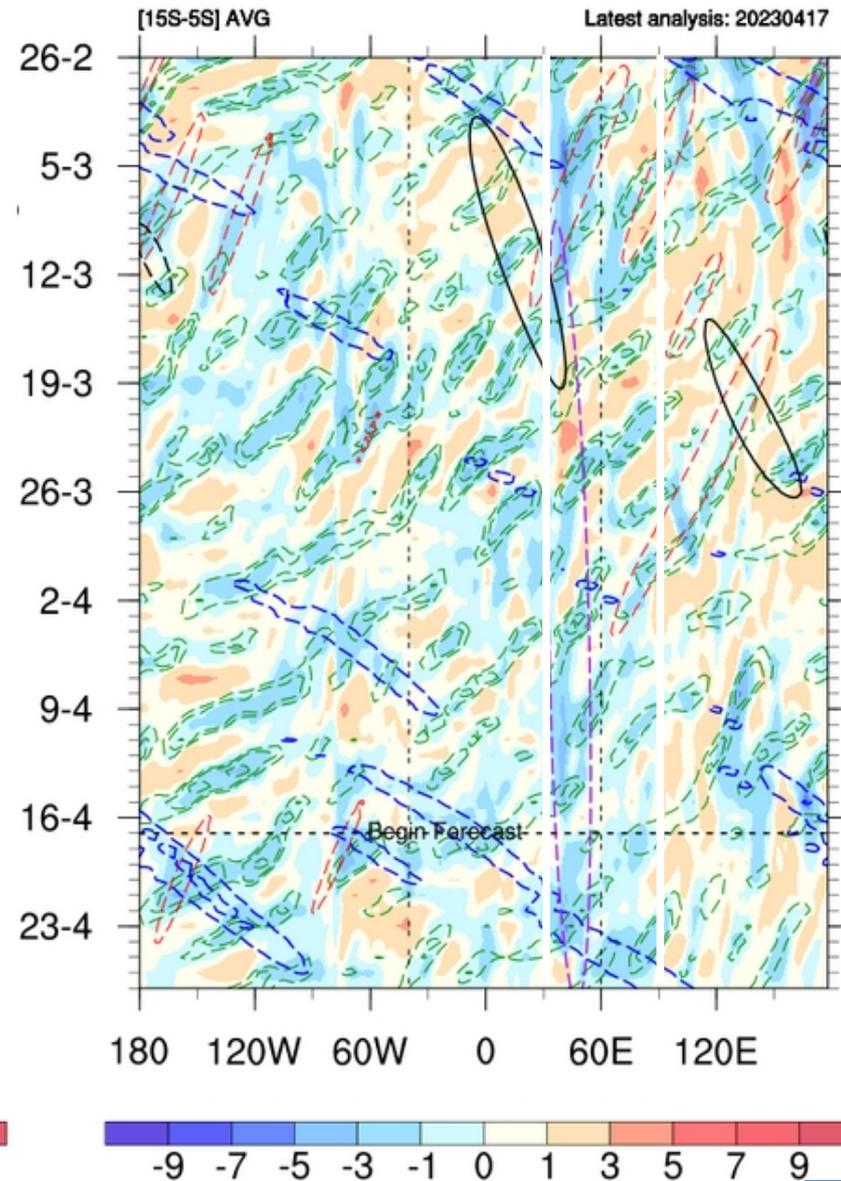
Contact: philippe.peyrille@meteo.fr

3. Ondes équatoriales

u850 anomaly + Eq. Waves filtering

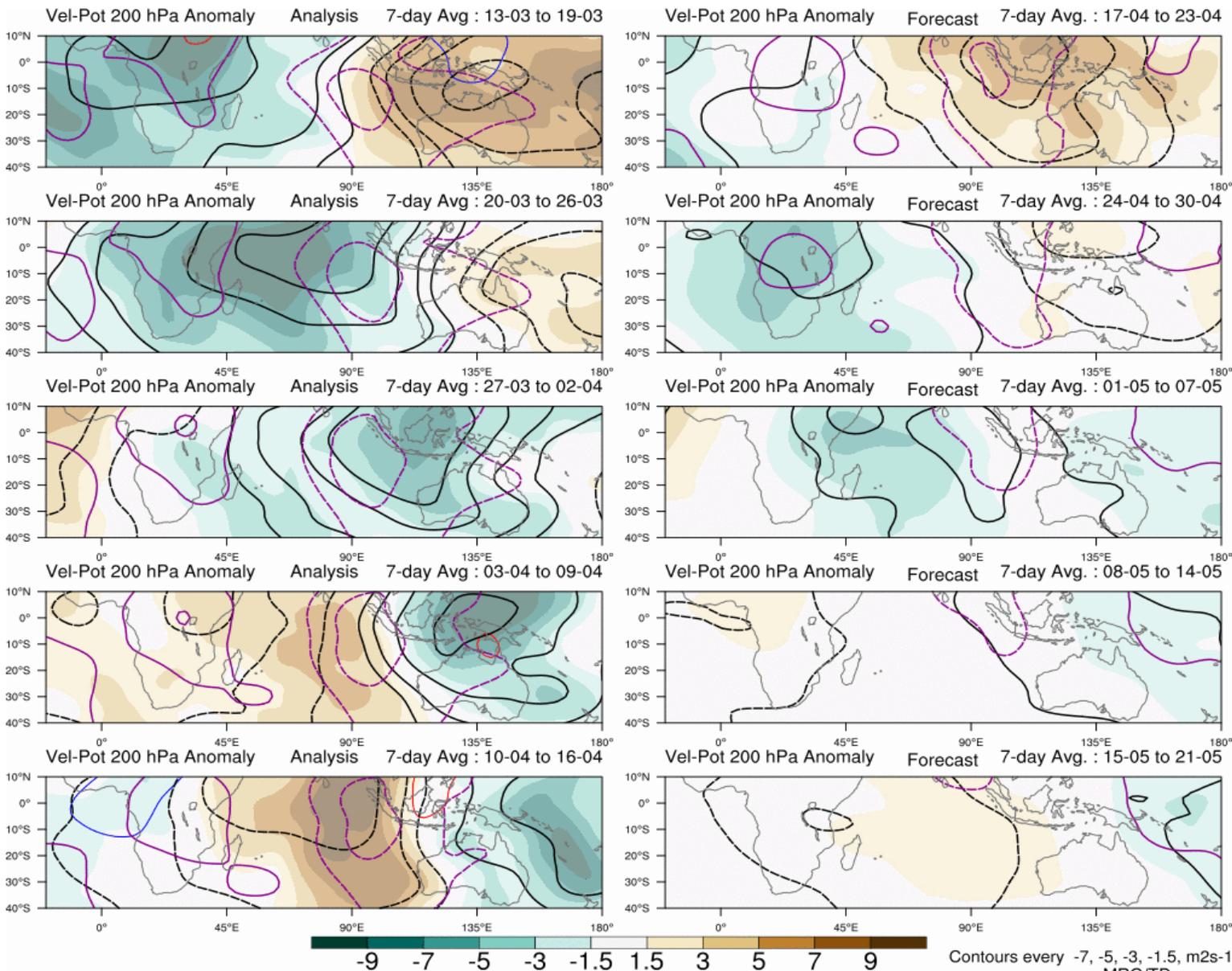


v850 anomaly + Eq. Waves filtering



VP200 – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

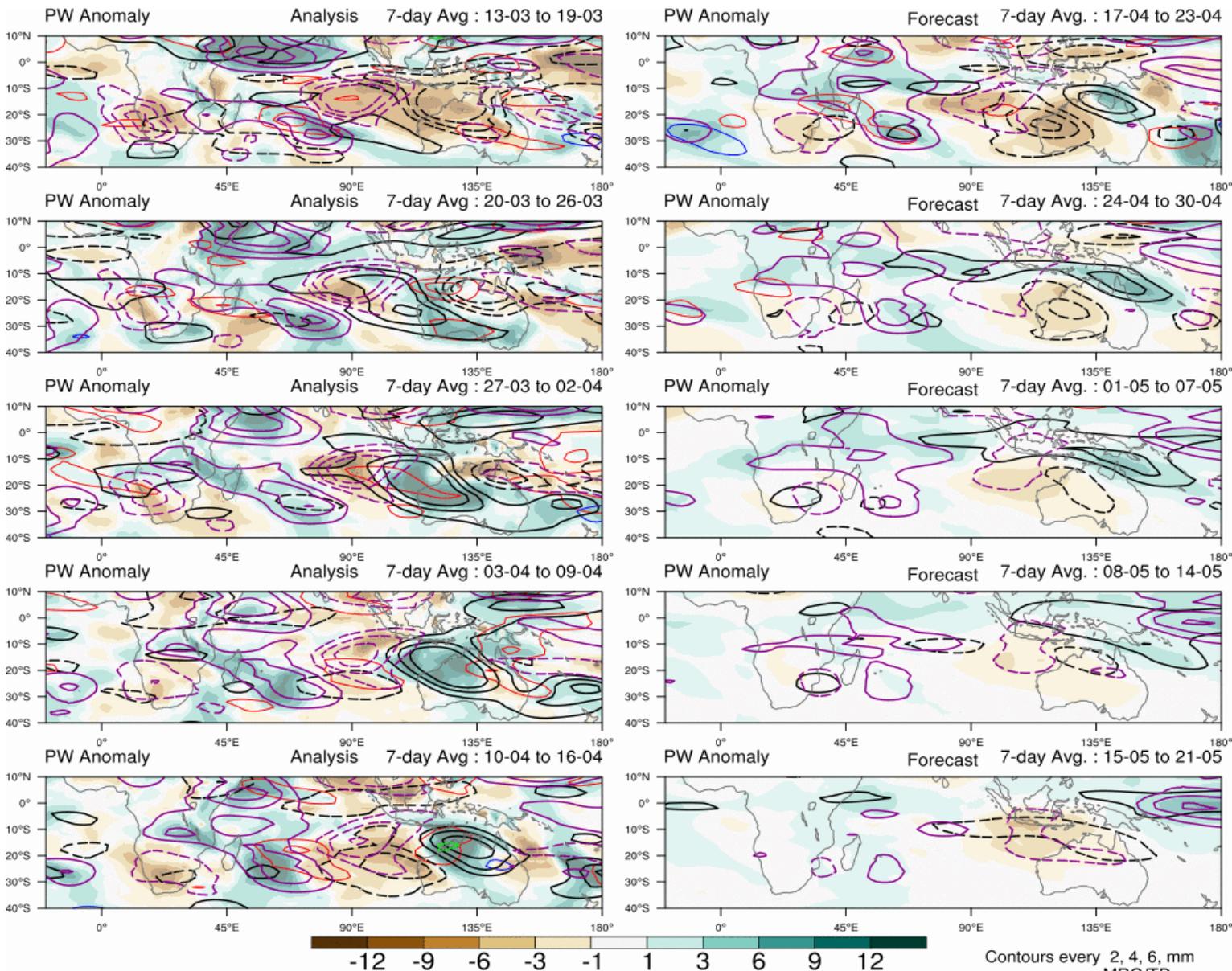
S4

S5



PW – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

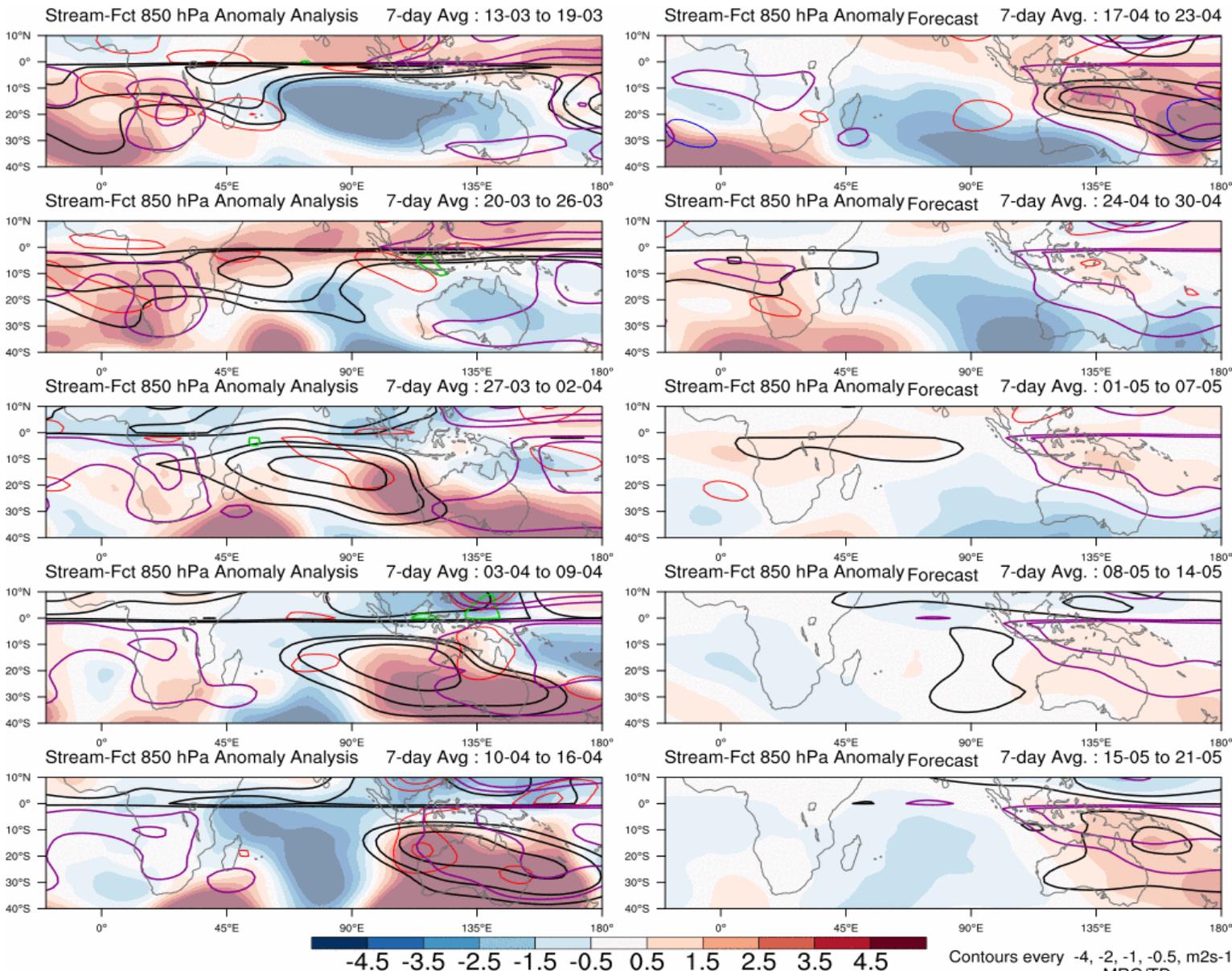
S3

S4

S5

SF850 – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

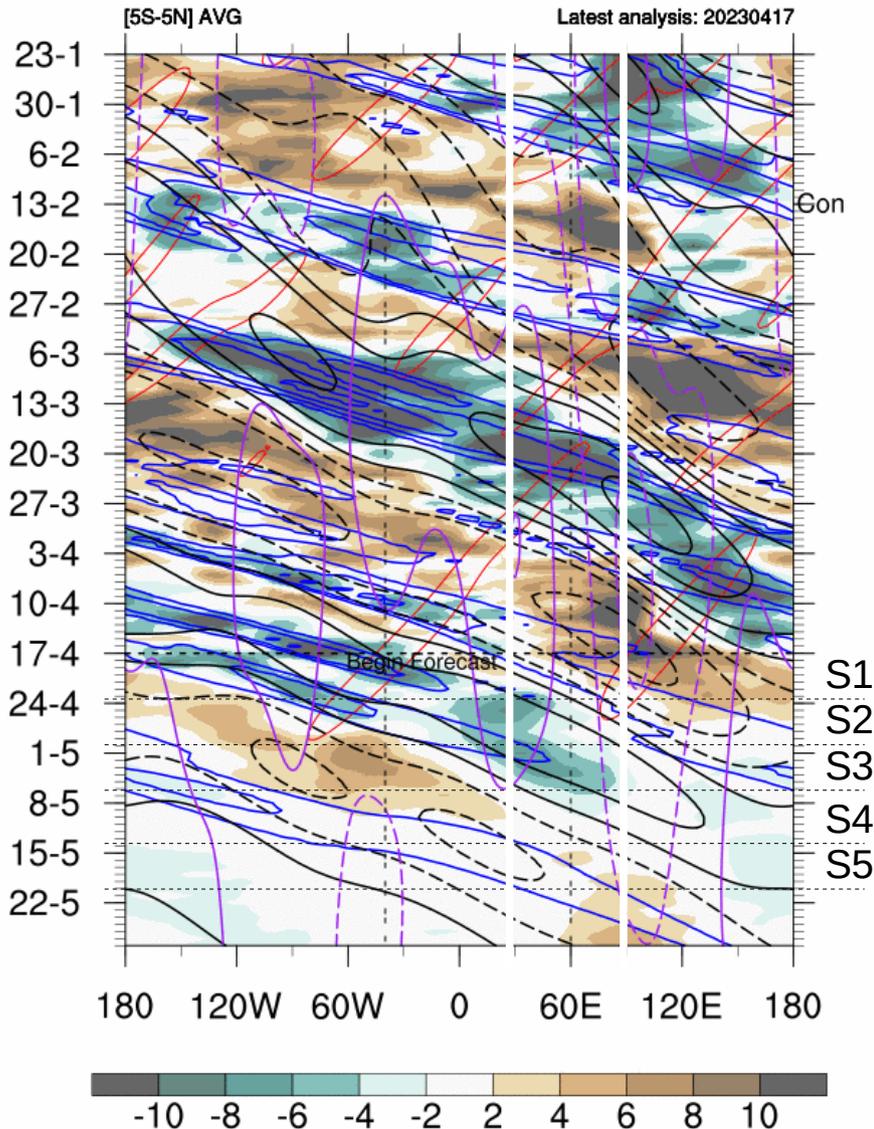
S3

S4

S5

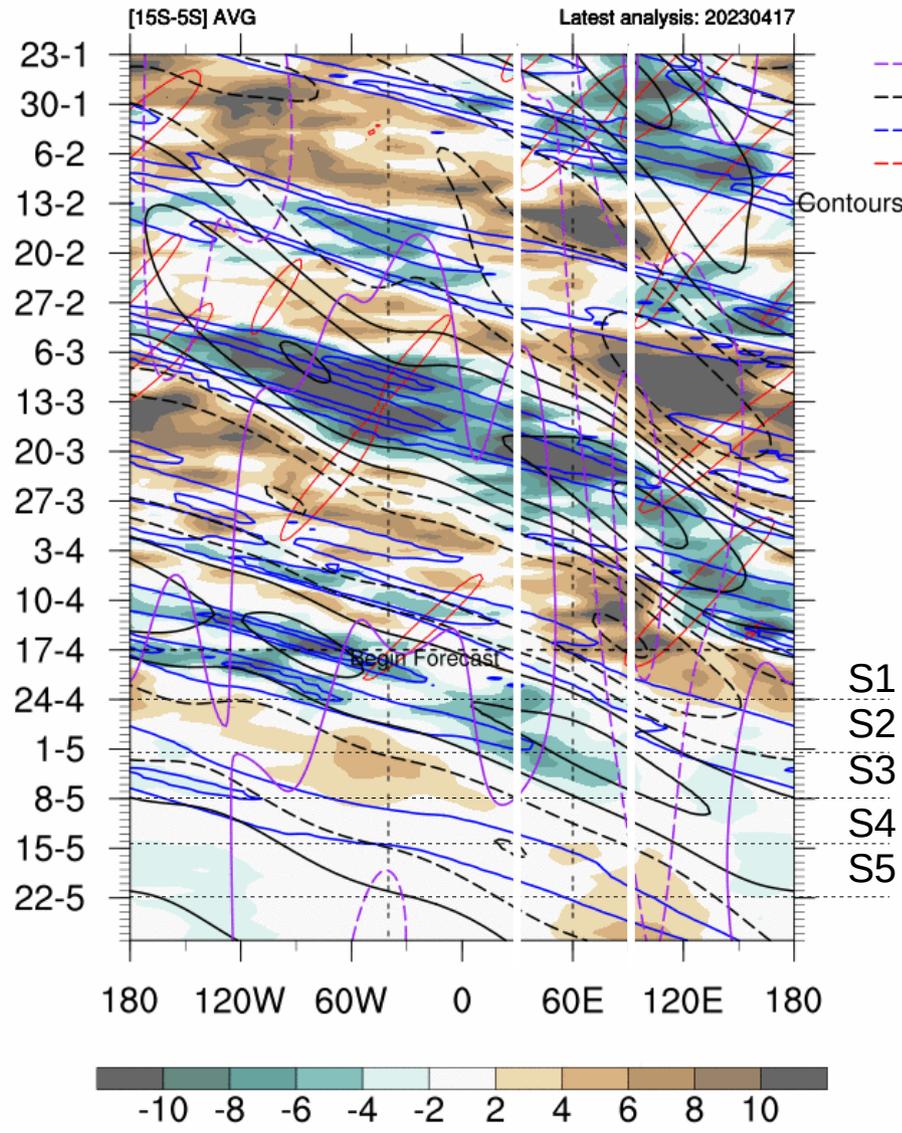
3. Ondes équatoriales

vp200 anomaly + Eq. Waves filtering



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vp200 anomaly + Eq. Waves filtering

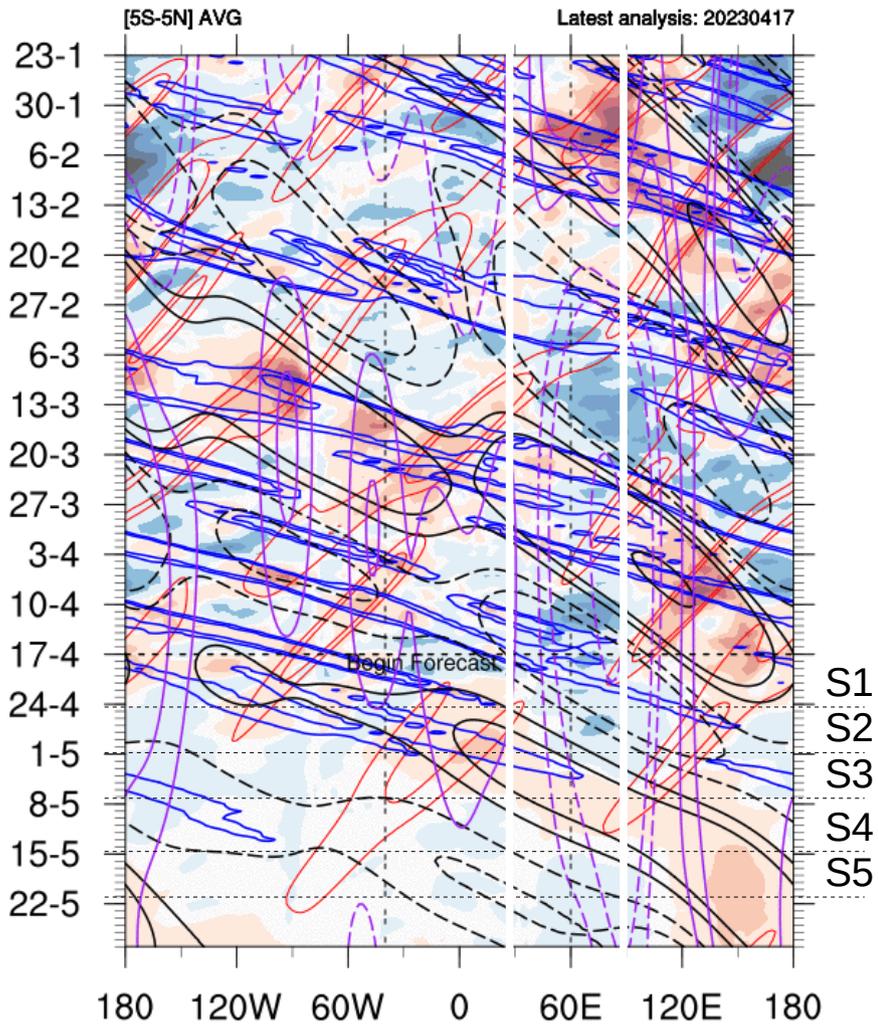


Contact: philippe.peyrille@meteo.fr

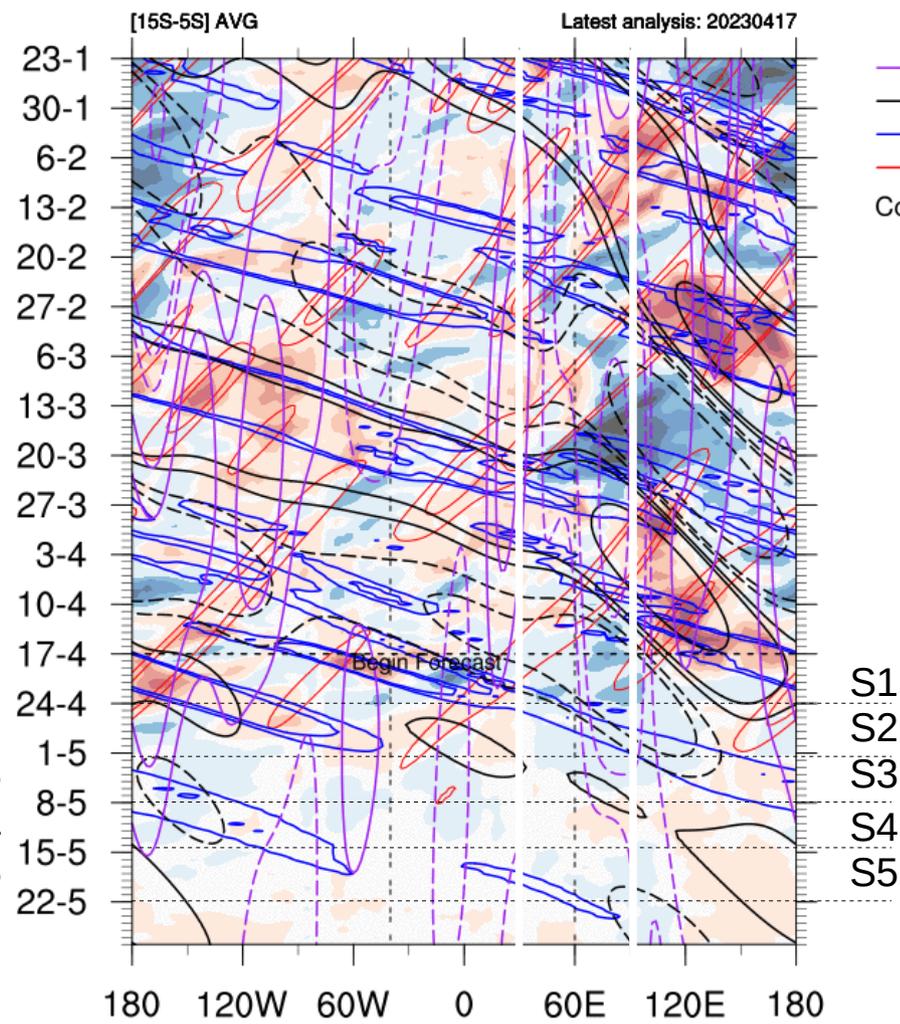
- Low freq.
 - MJO
 - Kelvin
 - Rossby
- Contours : -12 -9 -6 -3 -1 10^6 m²
- Solid contours
favour convection

3. Ondes équatoriales

u850 anomaly + Eq. Waves filtering



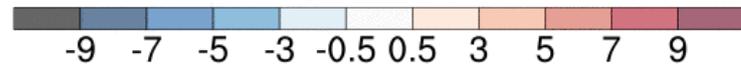
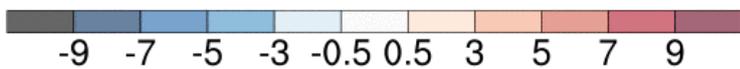
u850 anomaly + Eq. Waves filtering



- Low freq.
 - MJO
 - Kelvin
 - Rossby
- Contours : 0.5 1 3 m s⁻¹

S1
S2
S3
S4
S5

S1
S2
S3
S4
S5

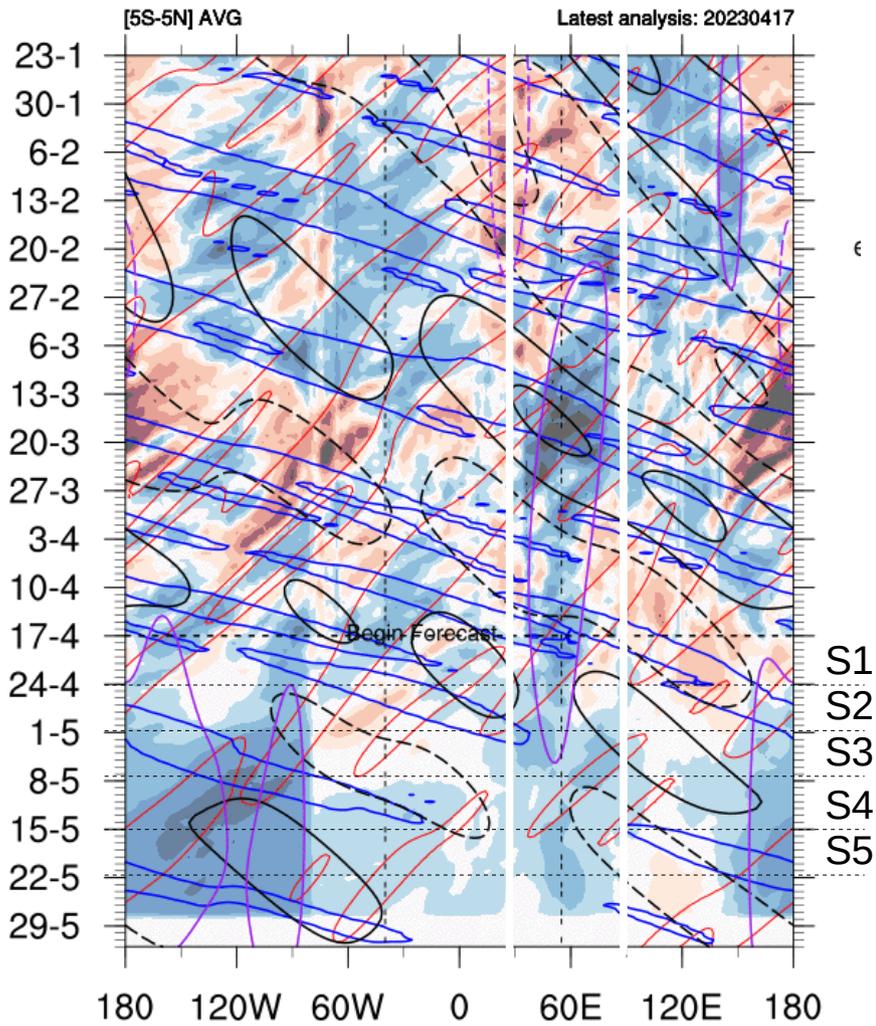


Contact: philippe.peyrille@meteo.fr

Contact: philippe.peyrille@meteo.fr

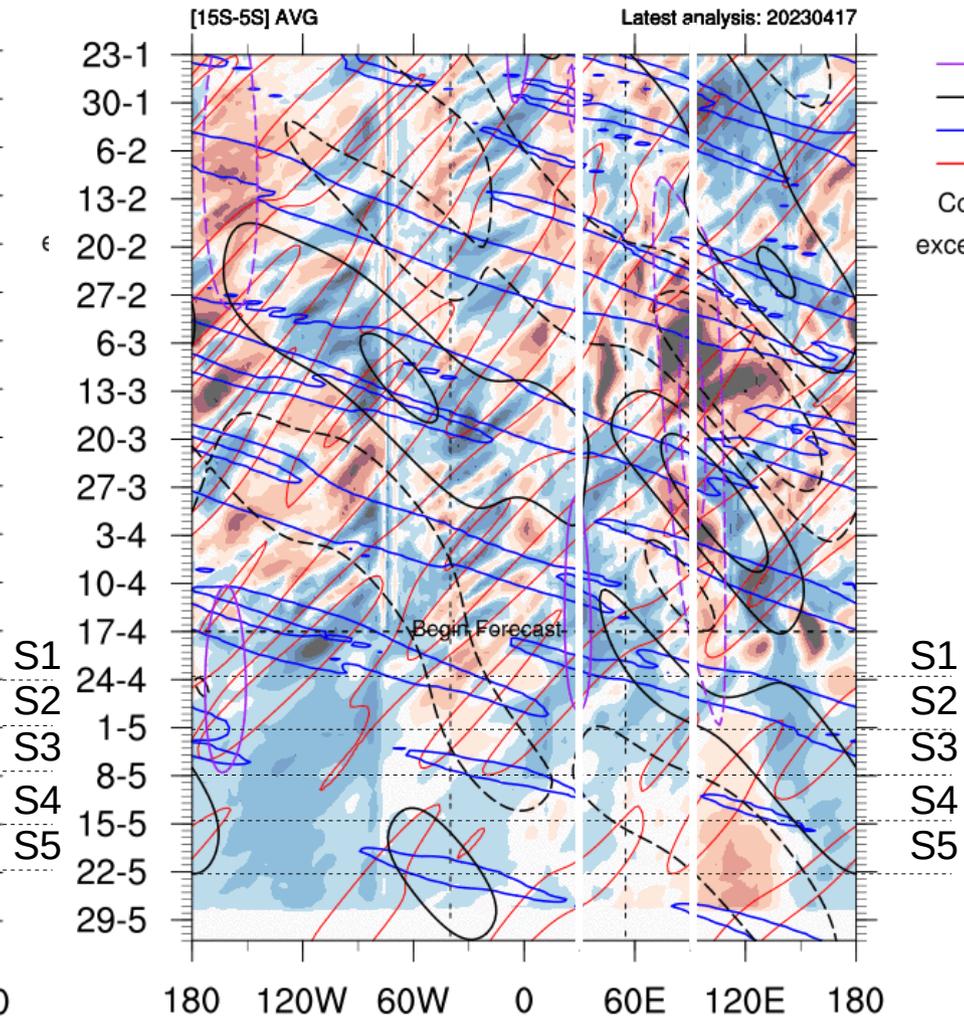
3. Ondes équatoriales

TCWV anomaly (mm) + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

TCWV anomaly (mm) + Eq. Waves filtering



Contact: philippe.peyrille@meteo.fr

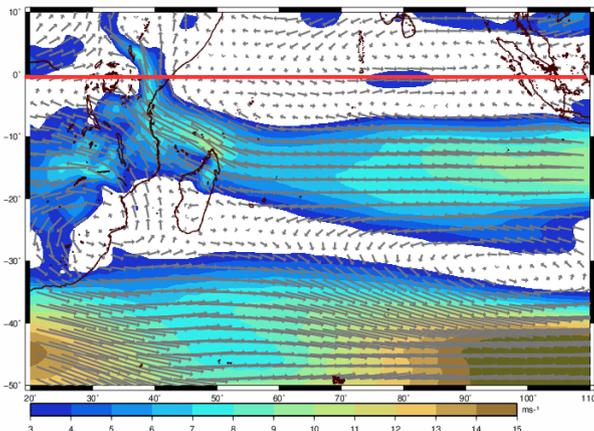
— Low freq.
 — MJO
 — Kelvin
 — Rossby
 Contours : 0.5 3 6 mm
 except Low freq, 3,6, 9 mm

4. Impacts en temps sensible, temps sévère

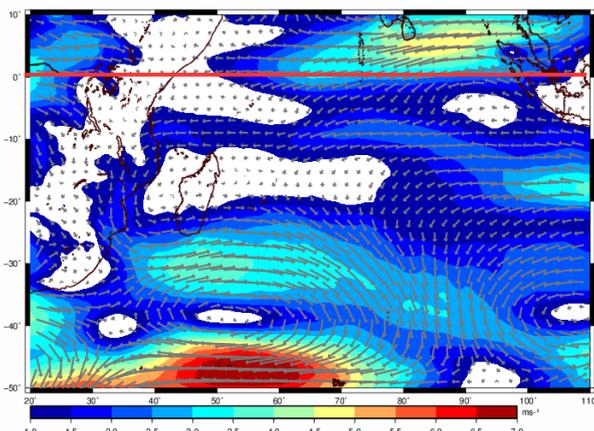
Configuration du bassin

S2

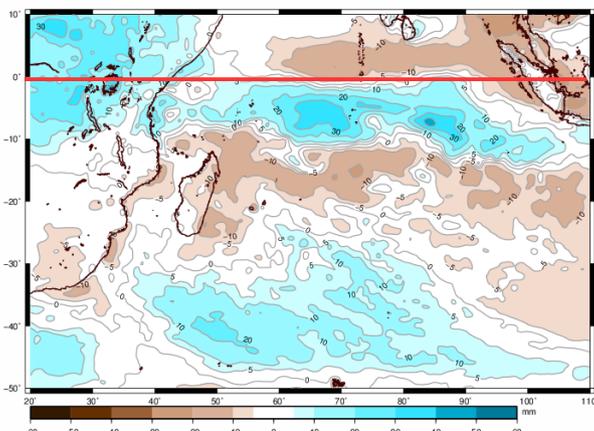
Vent 850hPa
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17



Anomalie force du vent 850hPa
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17

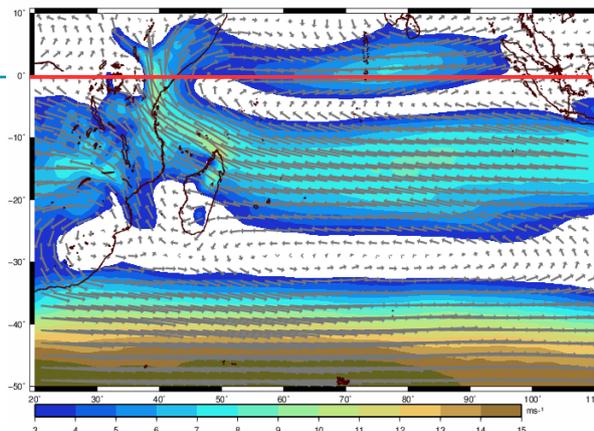


Anomalie de précipitations
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17

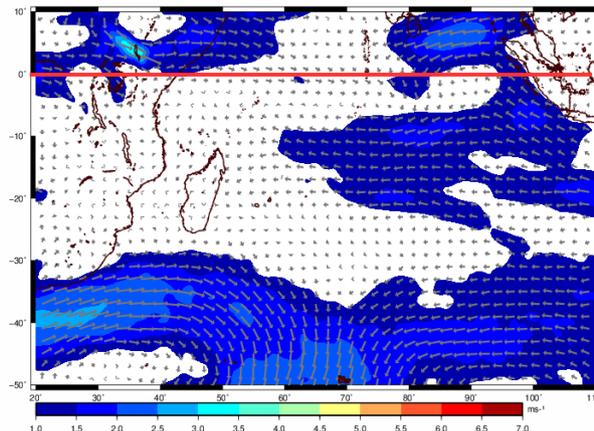


S3

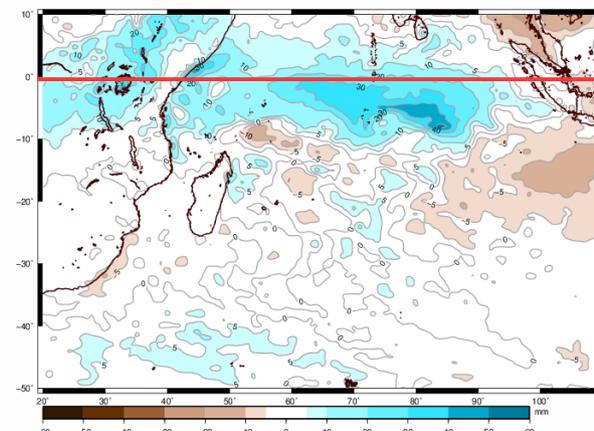
Vent 850hPa
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17



Anomalie force du vent 850hPa
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17

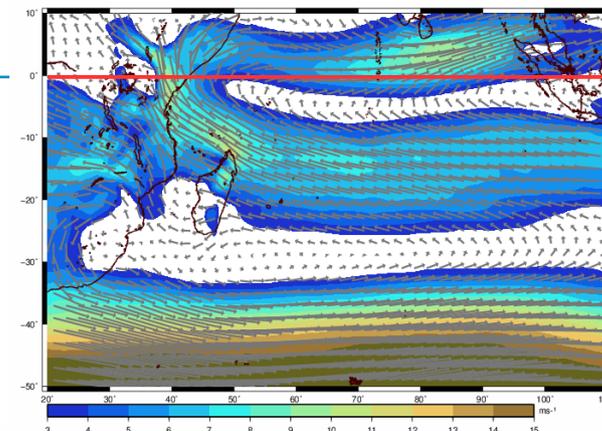


Anomalie de précipitations
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17

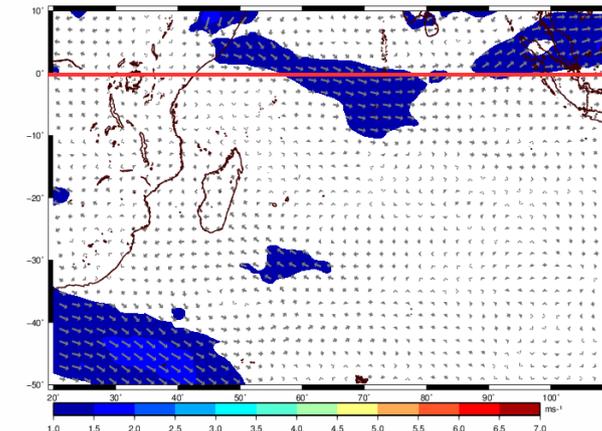


S4

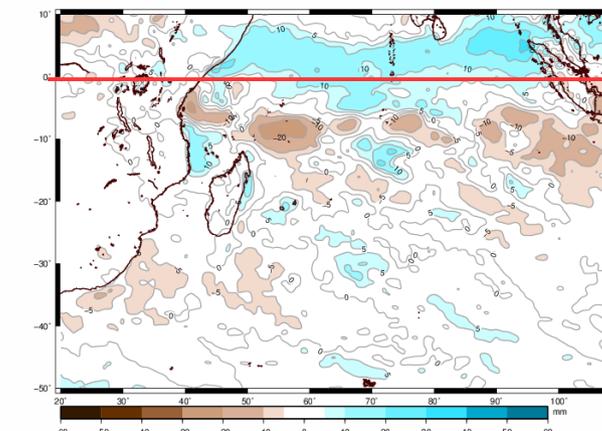
Vent 850hPa
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17



Anomalie force du vent 850hPa
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17



Anomalie de précipitations
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17

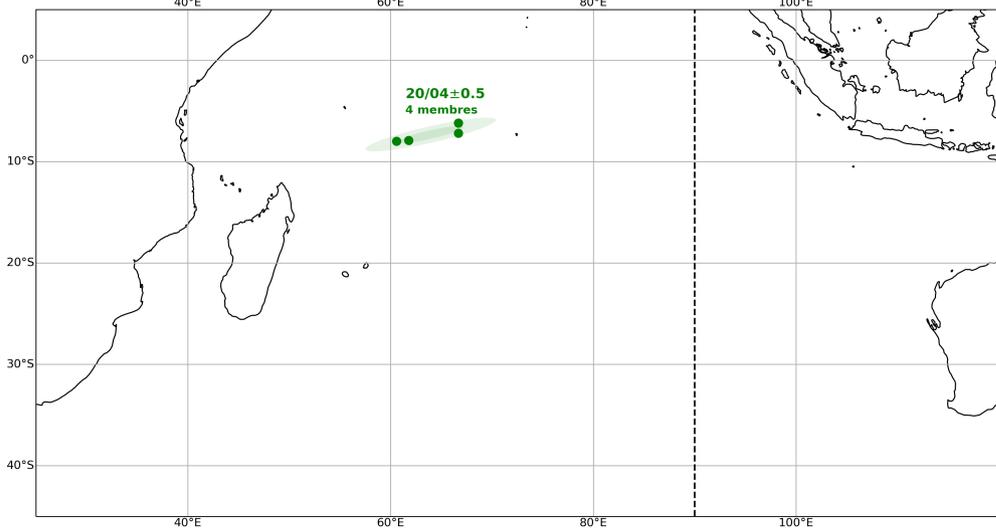


Activité cyclonique [S1-S4]

WEEK 1

Potential cyclogenesis start areas, from 19-04-2023 to 26-04-2023, run:19-04-2023

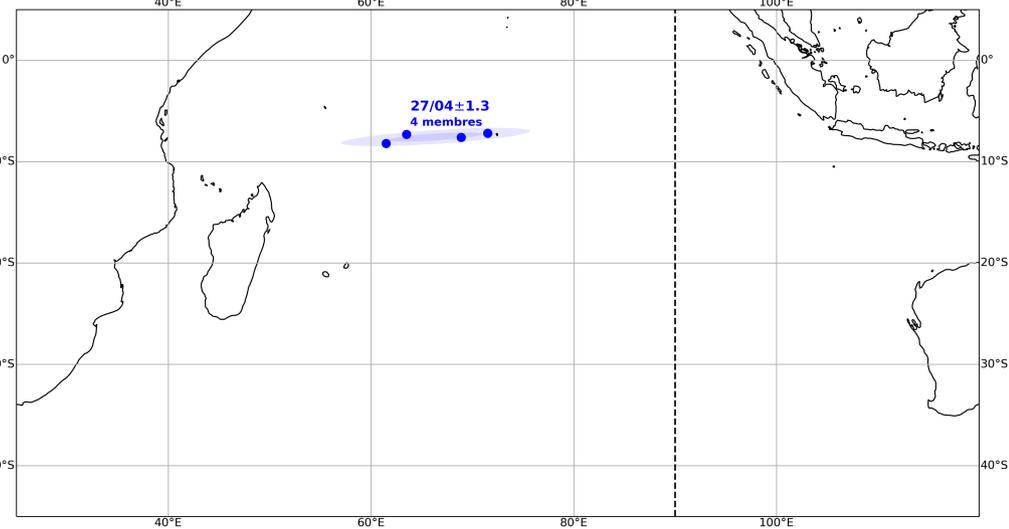
EPS 15j.



WEEK 2

Potential cyclogenesis start areas, from 26-04-2023 to 03-05-2023, run:19-04-2023

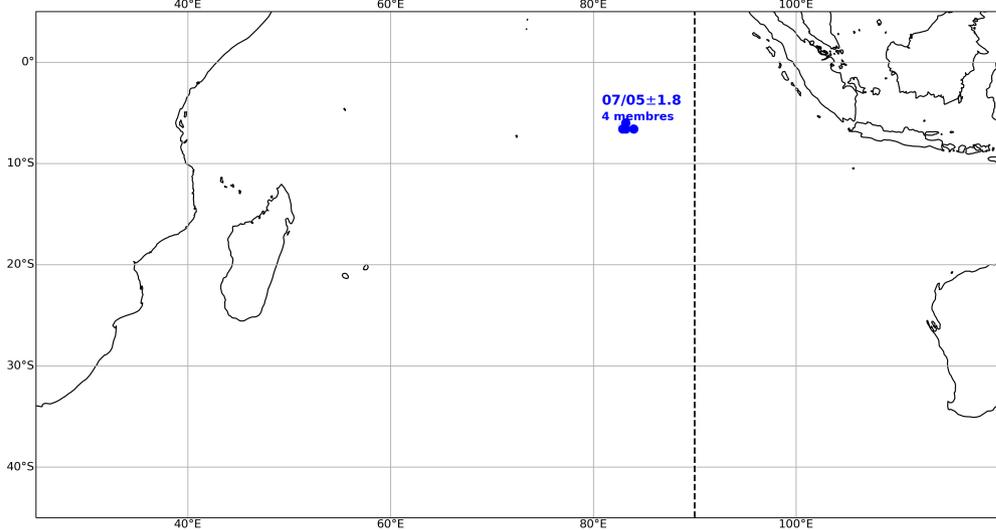
EPS 15j.



WEEK 3

Potential cyclogenesis start areas, from 01-05-2023 to 08-05-2023, run:17-04-2023

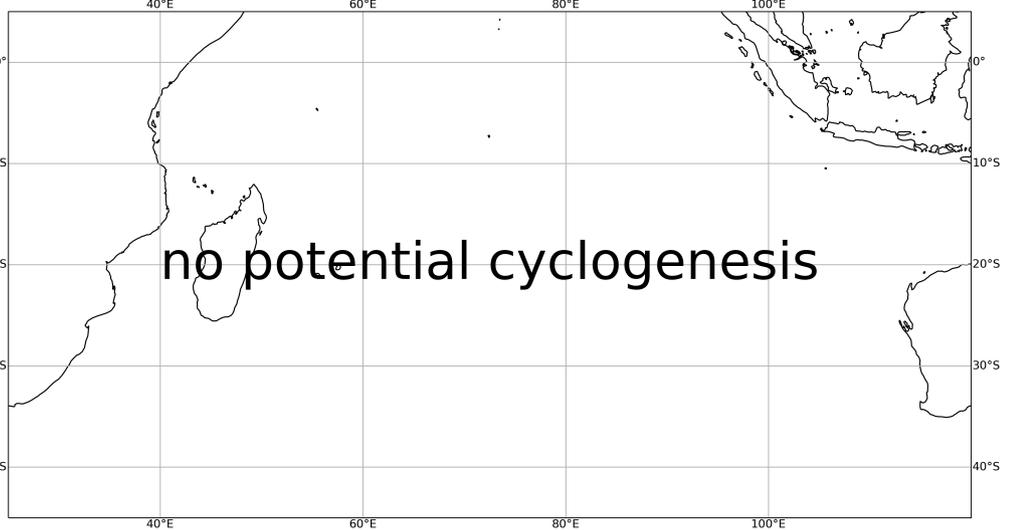
extended



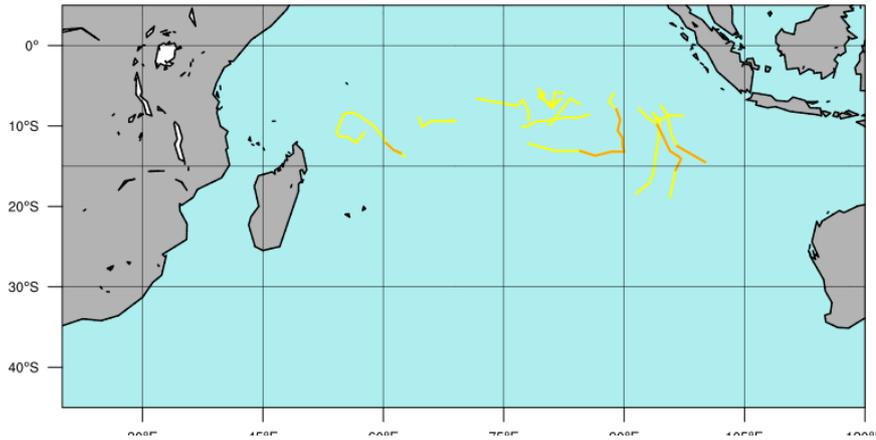
WEEK 4

Potential cyclogenesis start areas, from 08-05-2023 to 15-05-2023, run:17-04-2023

extended

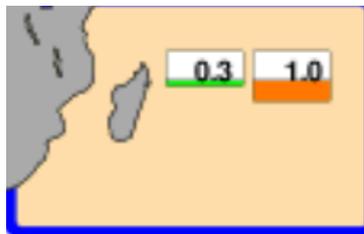
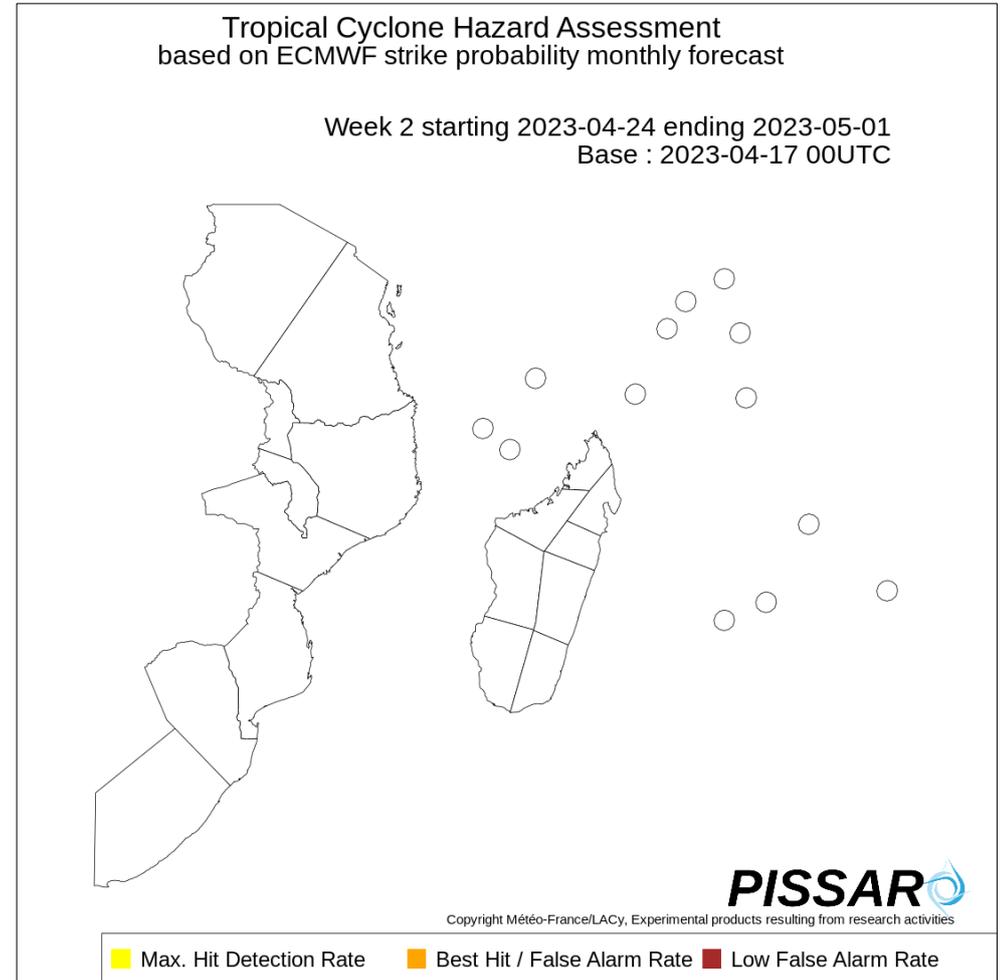
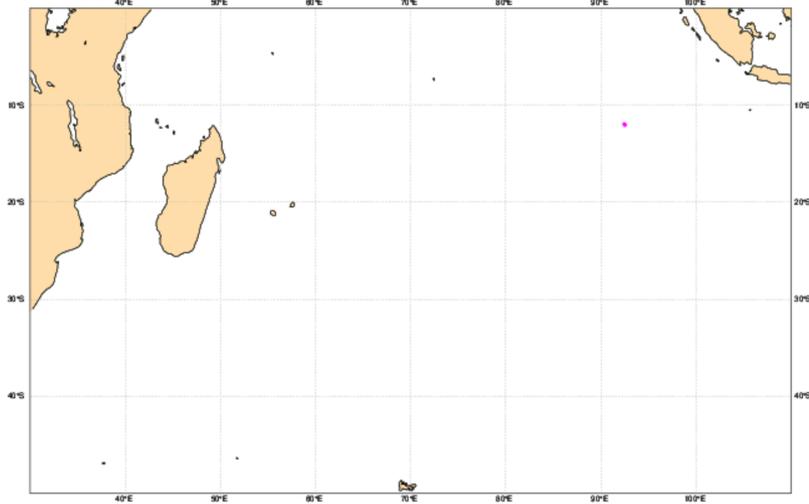


Activité cyclonique [S2]



Weekly mean Tropical Storm Strike Probability. Date: 20230417 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

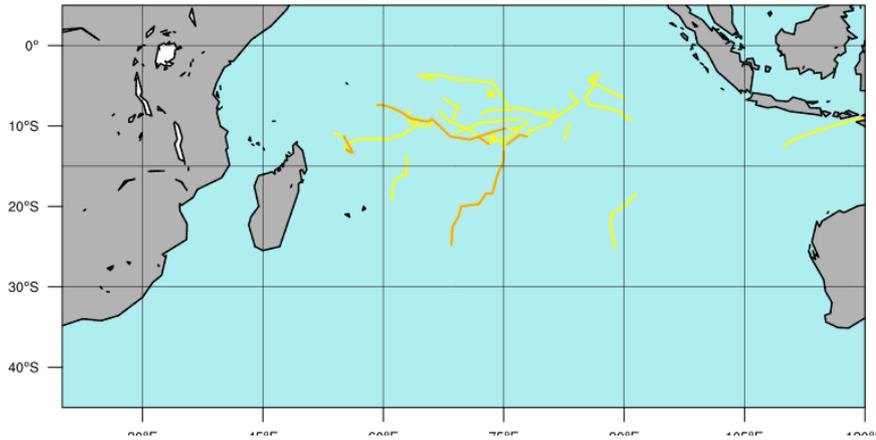


ECMWF Monthly Forecast
Accumulated Cyclone Energy

Forecast Mean Climate Mean

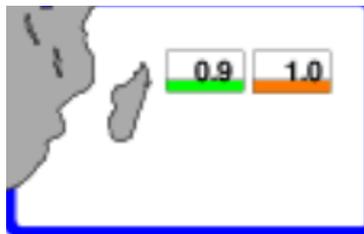
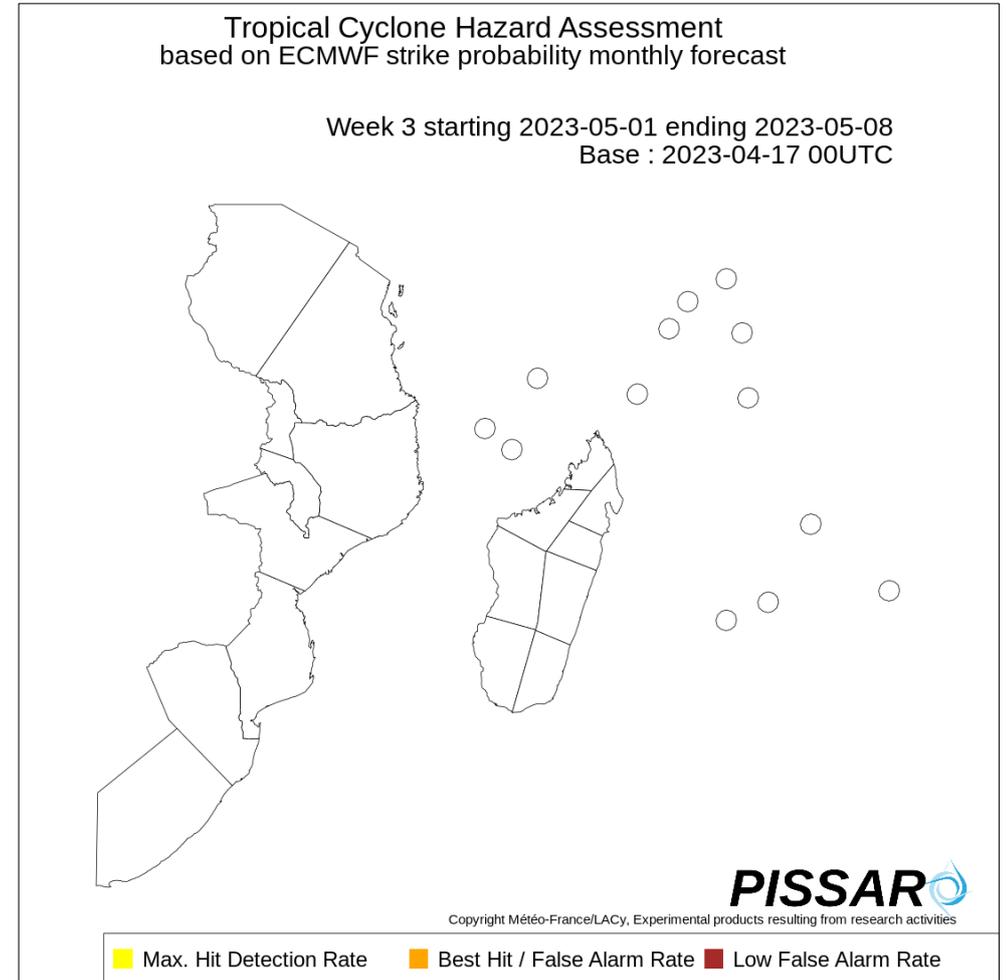
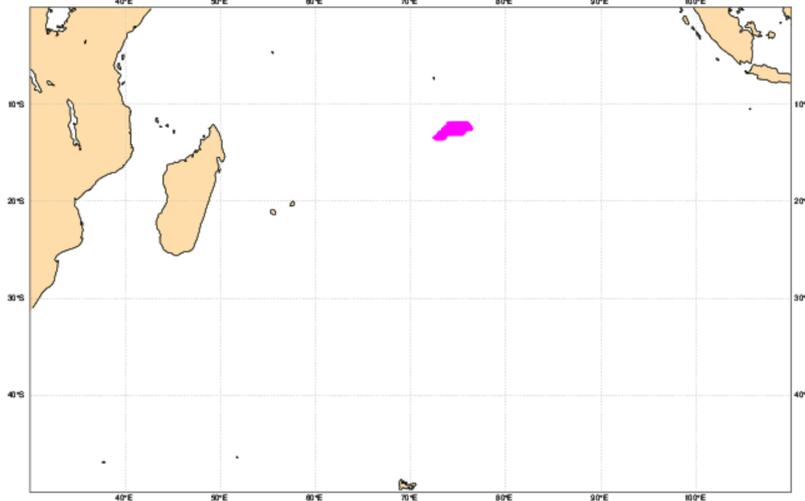
No Significant Significant at 5%

Activité cyclonique [S3]



Weekly mean Tropical Storm Strike Probability. Date: 20230417 00 UTC t+(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



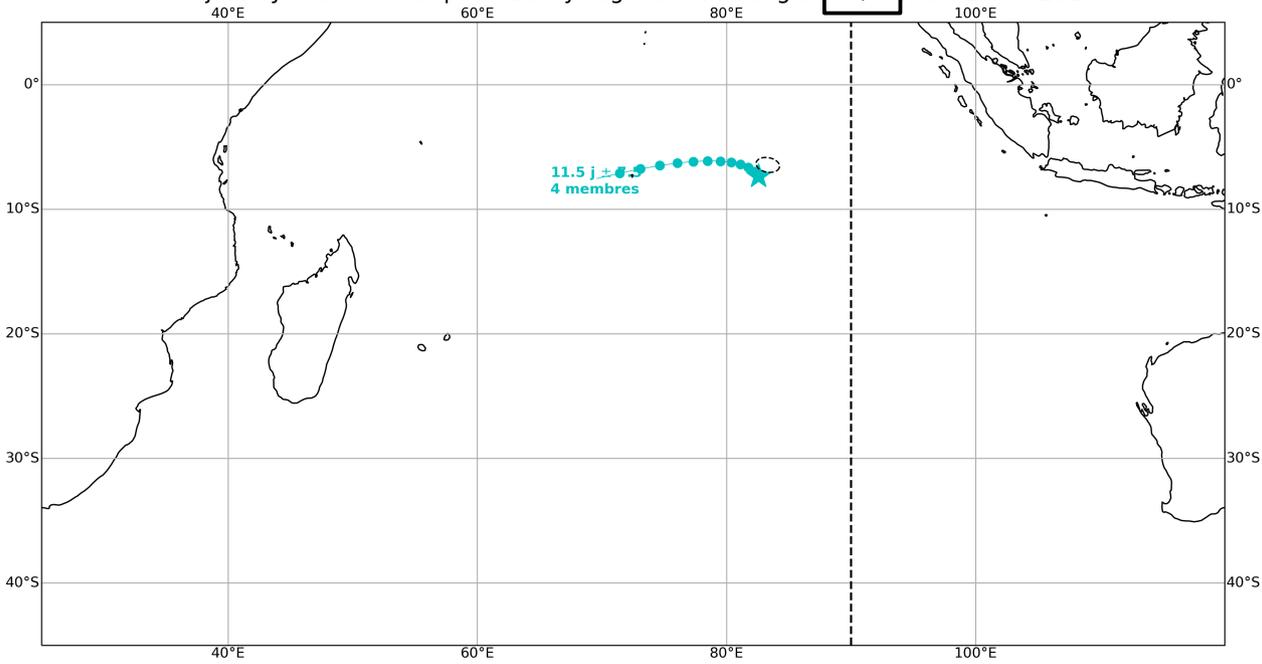
ECMWF Monthly Forecast
Accumulated Cyclone Energy

Forecast Mean Climate Mean

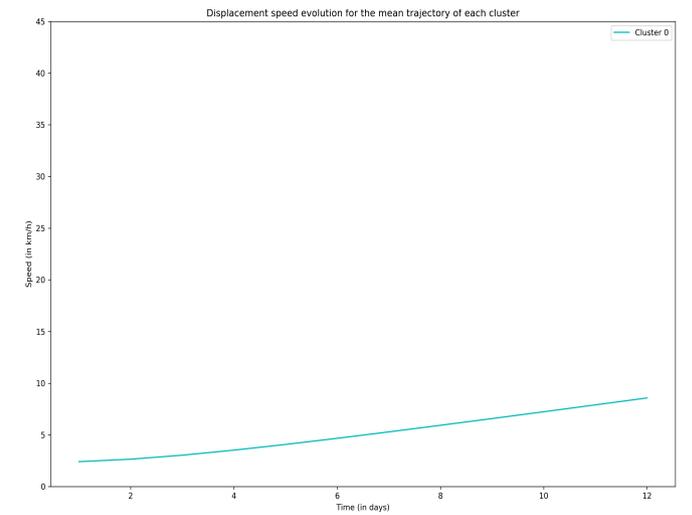
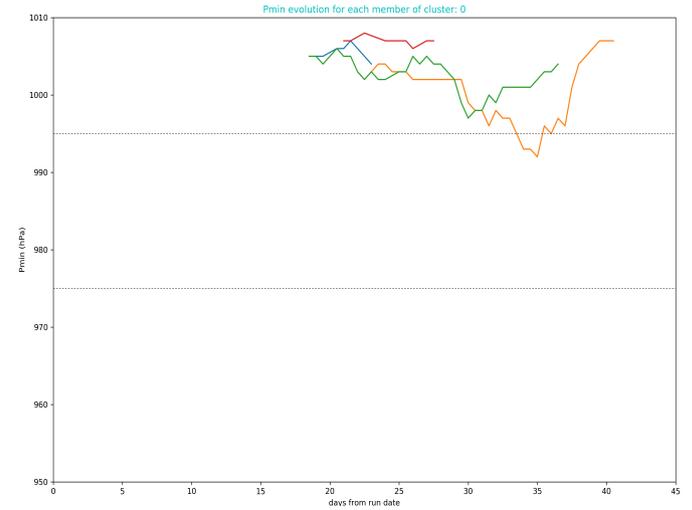
No Significant Significant at 5%

Activité cyclonique [S3]

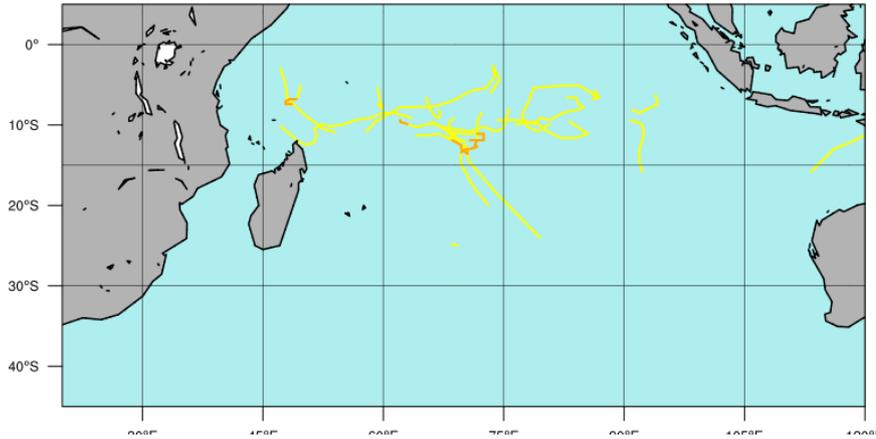
Trajectory scenarios for potential cyclogenesis starting on 07/05, run: 17-04-2023



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

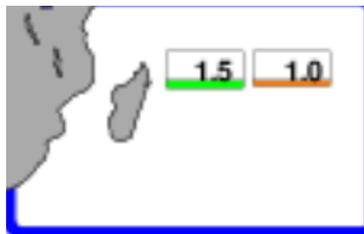
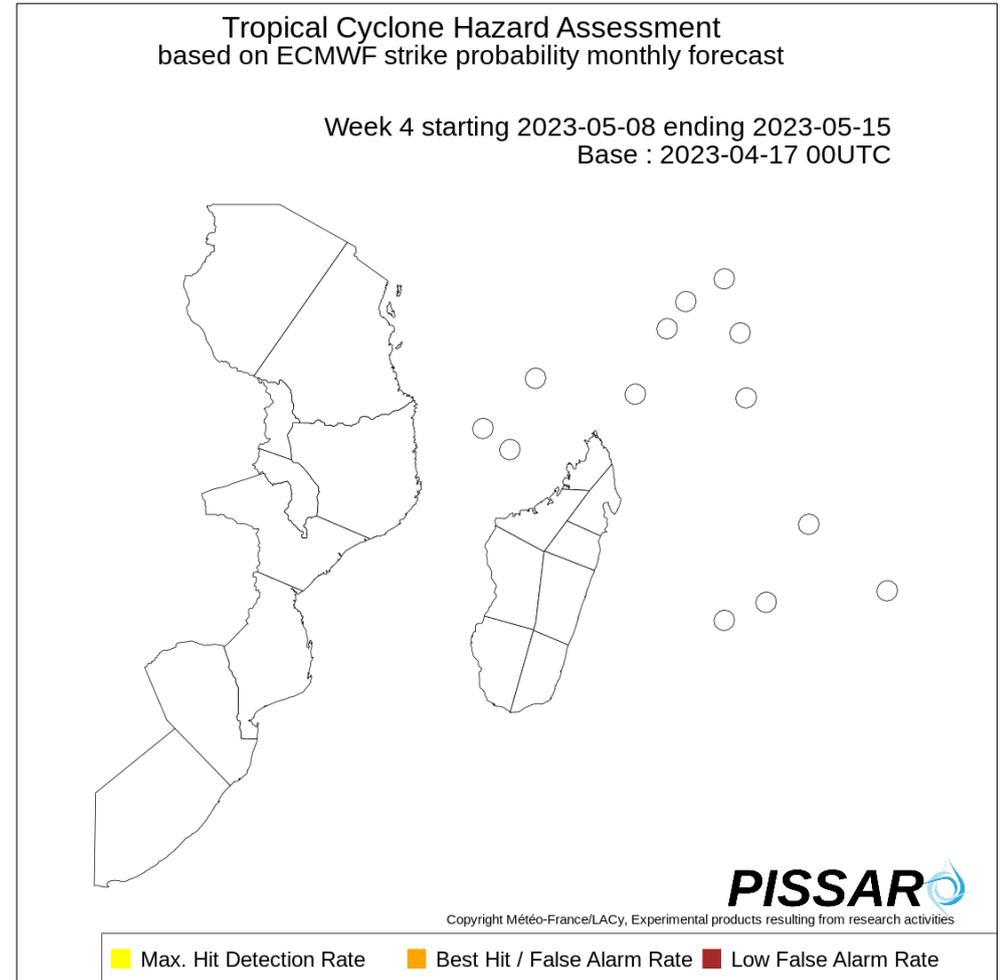
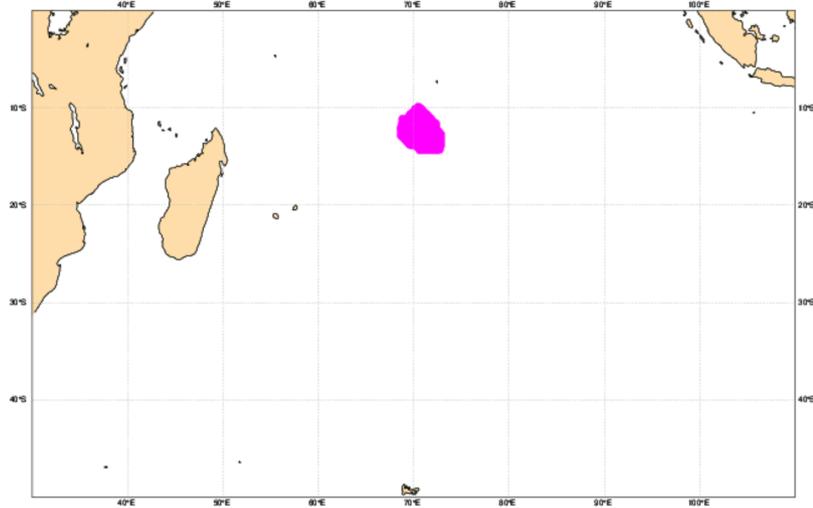


Activité cyclonique [S4]



Weekly mean Tropical Storm Strike Probability. Date: 20230417 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



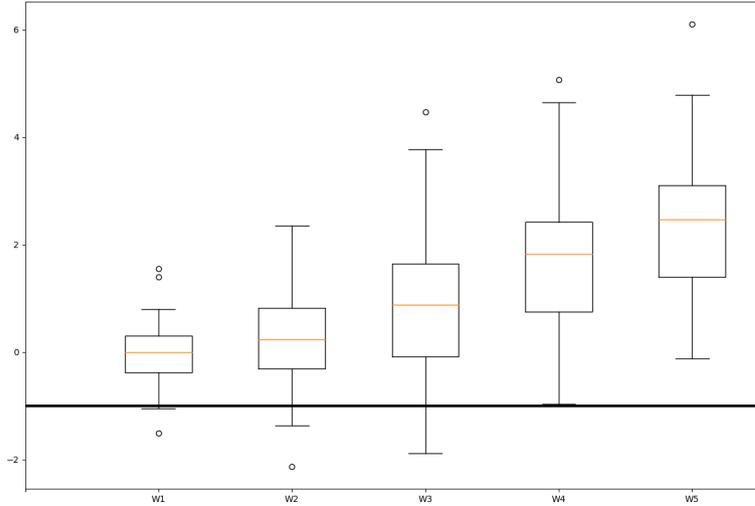
ECMWF Monthly Forecast
Accumulated Cyclone Energy

Forecast Mean Climate Mean

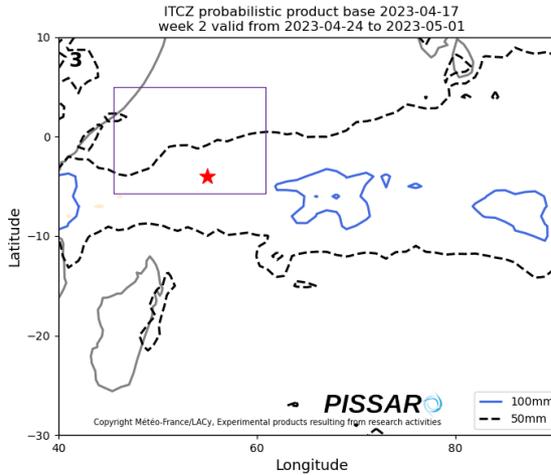
No Significant Significant at 5%

Configuration du bassin et prévision ZCIT

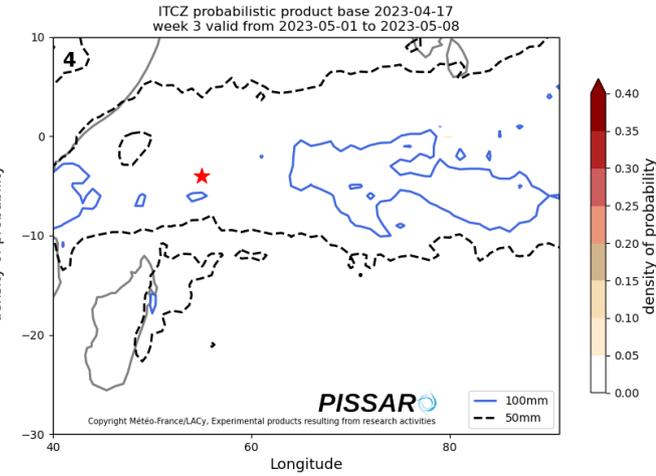
Monsoon Flux Index Monthly Forecast
base 2023-04-17



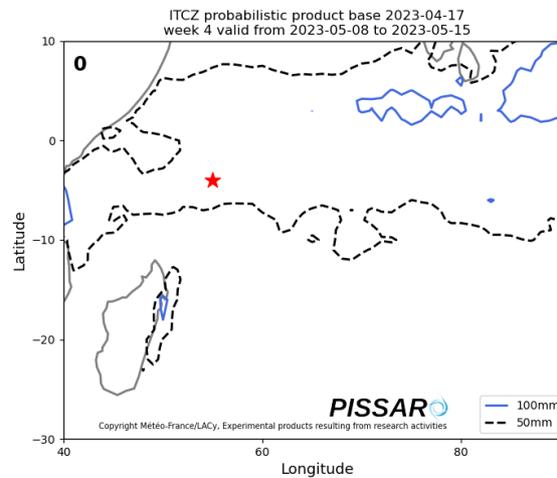
S2



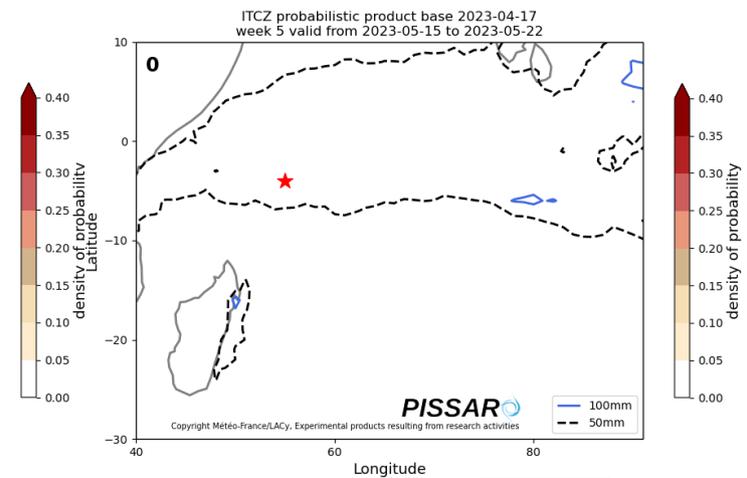
S3



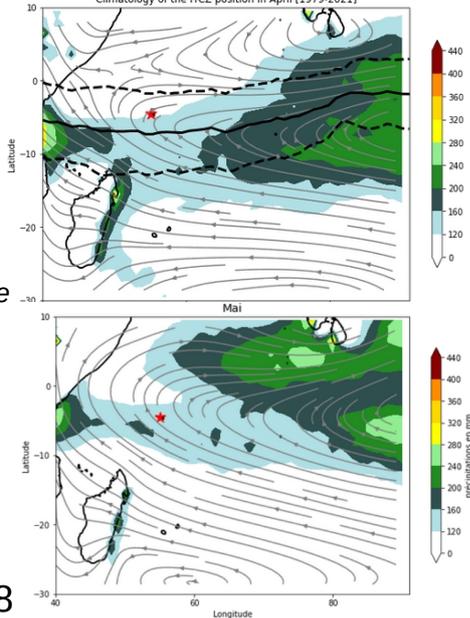
S4



S5

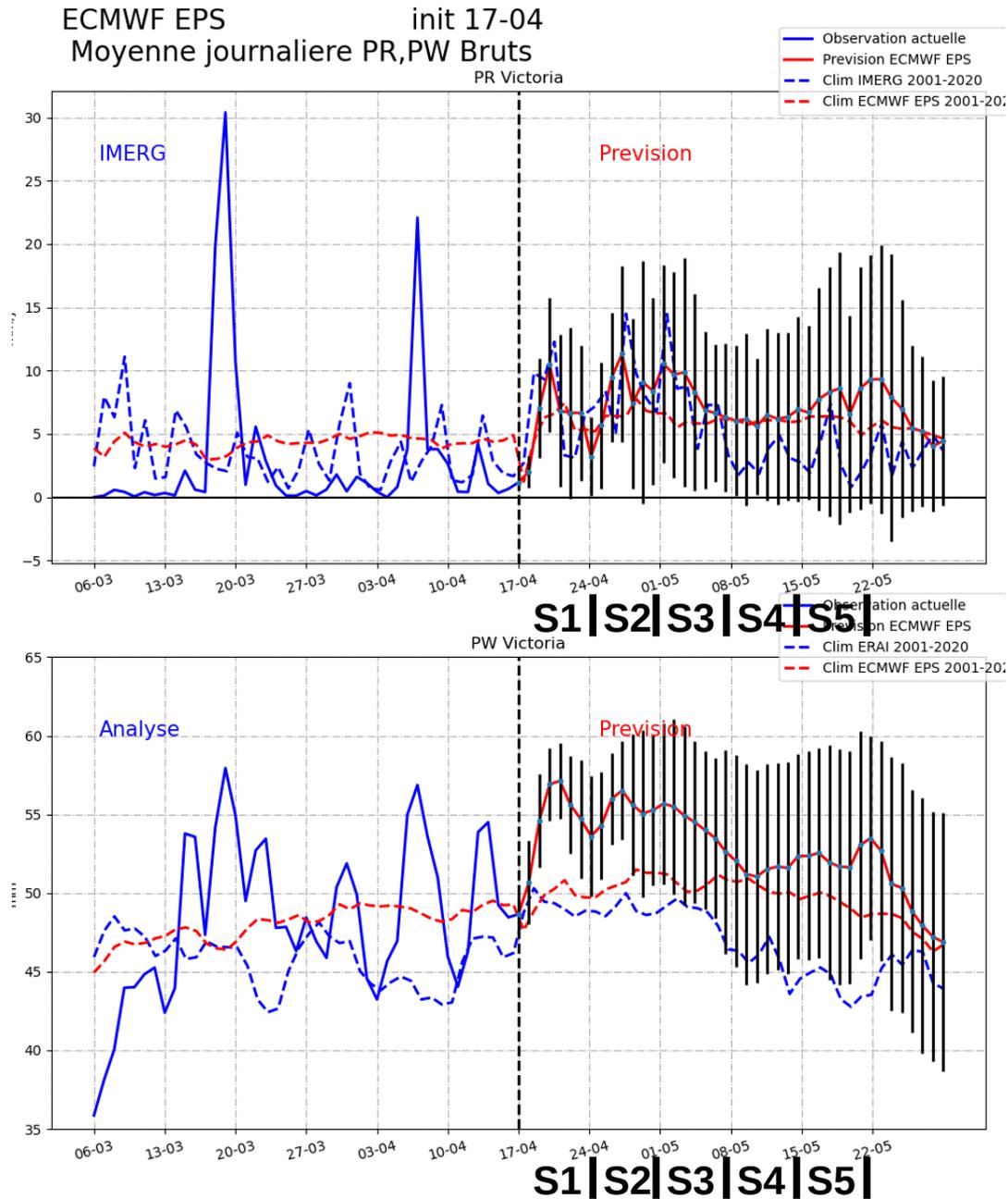


Climatology of the ITCZ position in April [1979-2021]



Climatologie
mensuelle

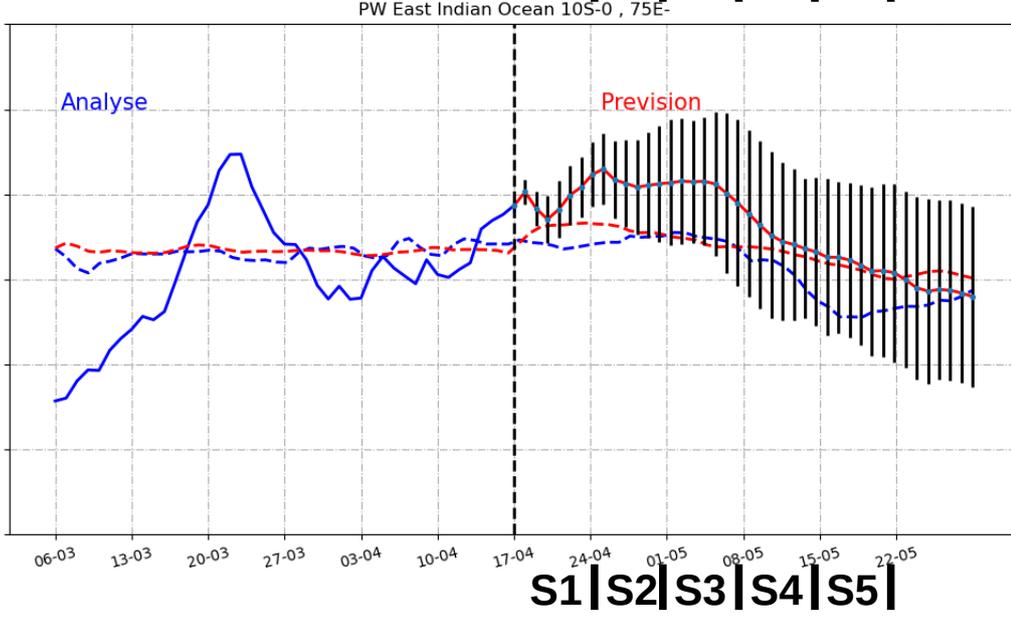
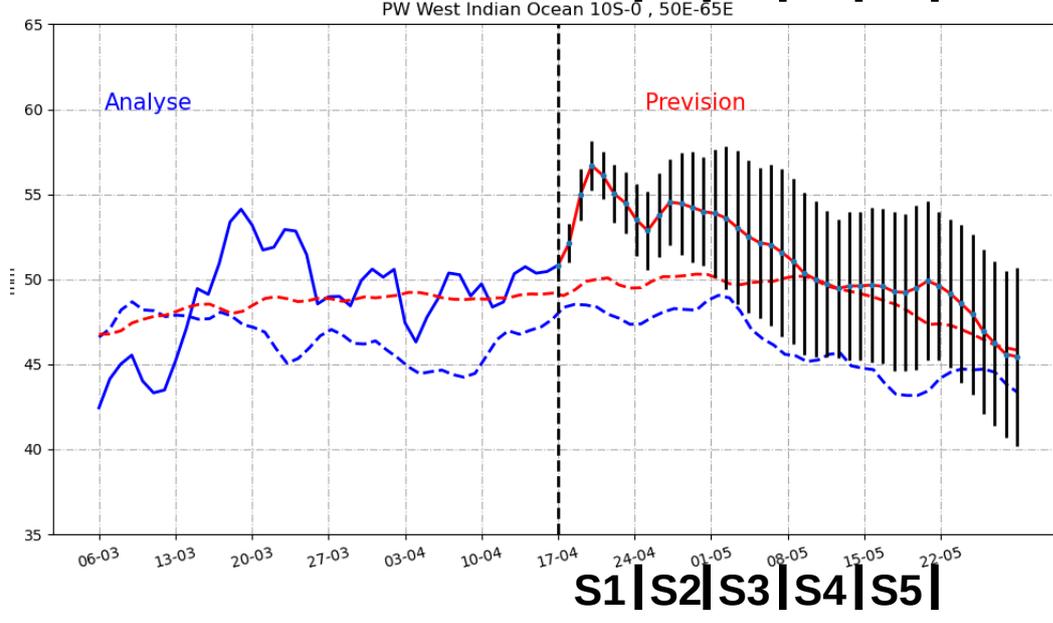
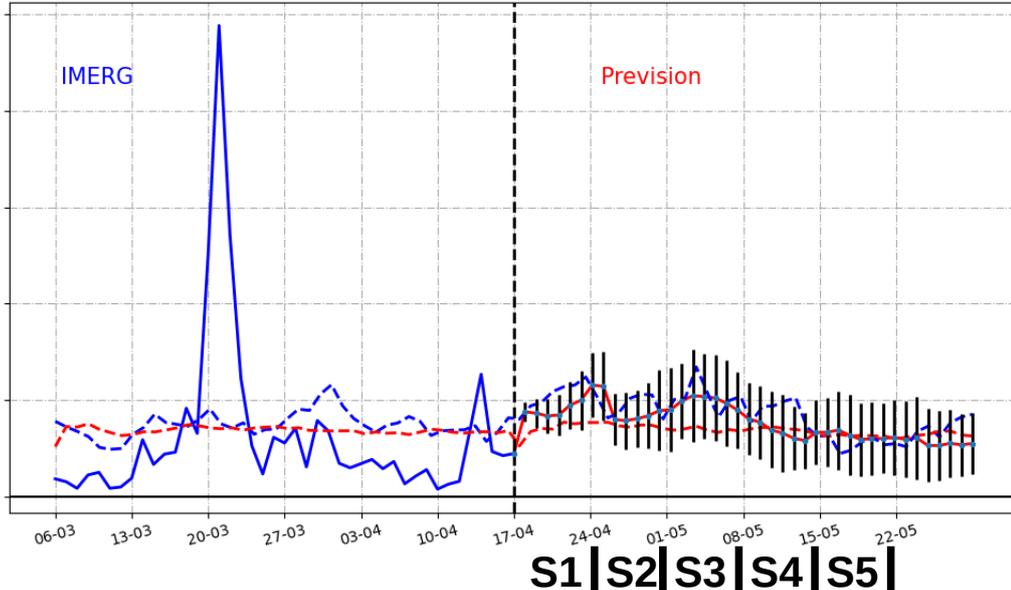
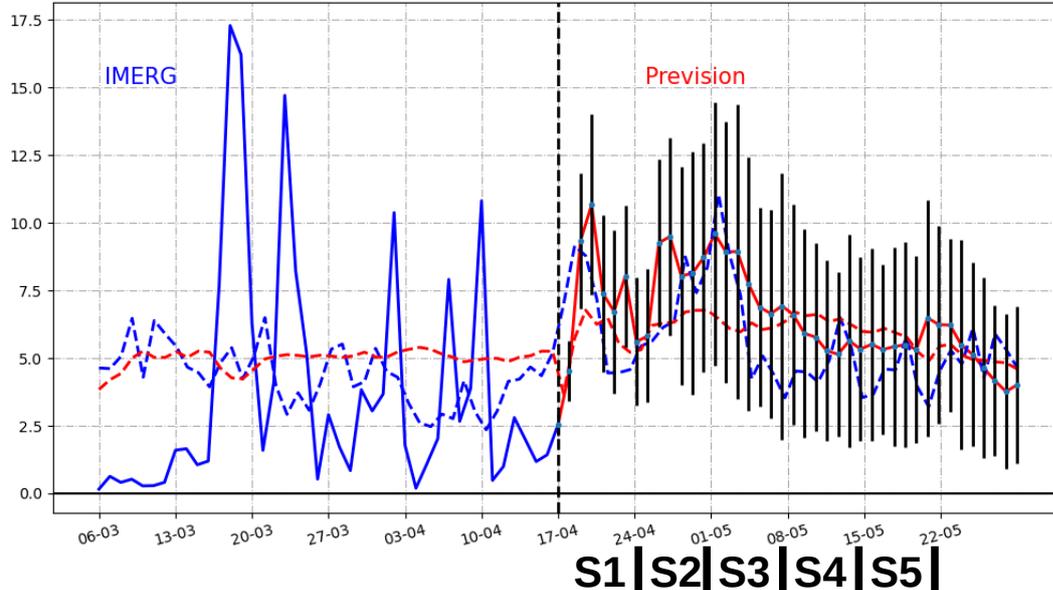
Synthèse temps sensible S2 – S4 [SEYCHELLES]



Synthèse temps sensible S2 – S4 [SEYCHELLES]

ECMWF EPS
init 17-04
Moyenne journaliere PR,PW Bruts
PR West Indian Ocean 10S-0 , 50E-65E

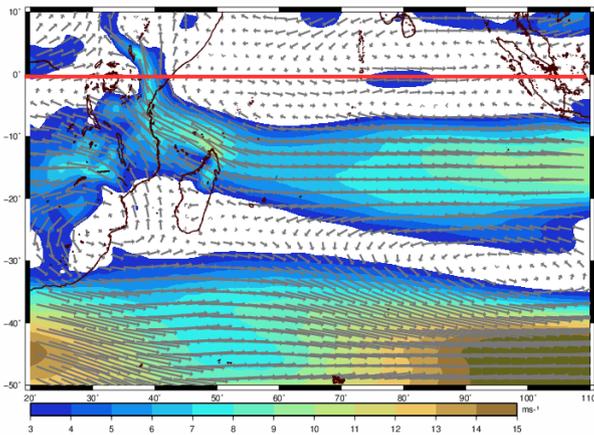
ECMWF EPS
init 17-04
Moyenne journaliere PR,PW Bruts
PR East Indian Ocean 10S-0 , 75E-95E



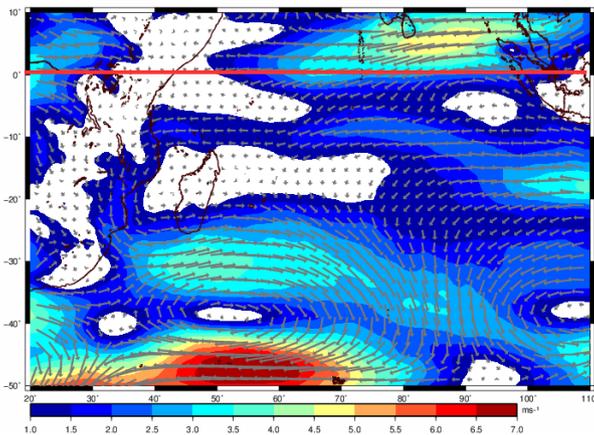
Synthèse temps sensible S2 – S4 [MAYOTTE]

S2

Vent 850hPa
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17

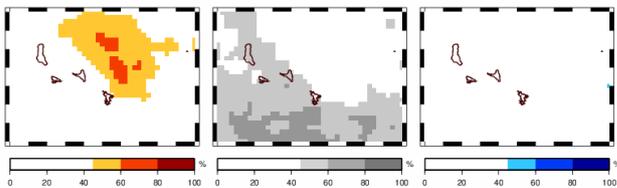


Anomalie force du vent 850hPa
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17



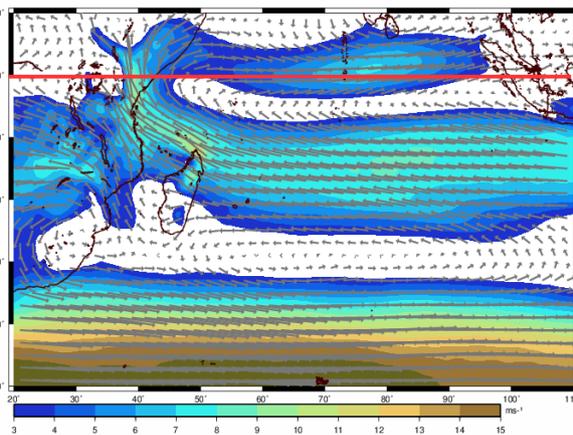
Probabilité tercile des précipitations
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17

Terc. Inf Terc. Med Terc. Sup

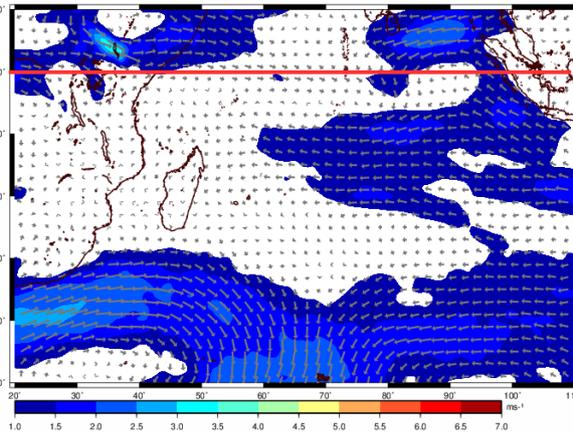


S3

Vent 850hPa
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17

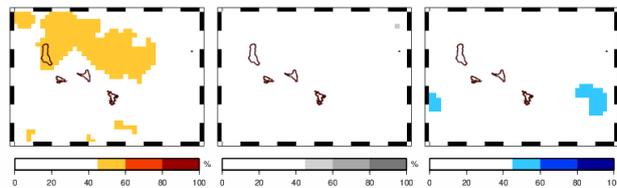


Anomalie force du vent 850hPa
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17



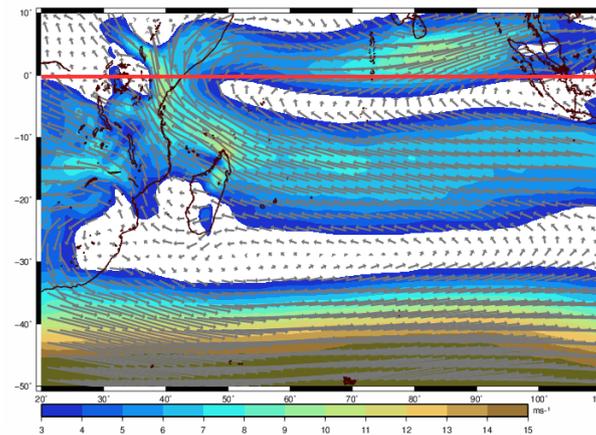
Probabilité tercile des précipitations
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17

Terc. Inf Terc. Med Terc. Sup

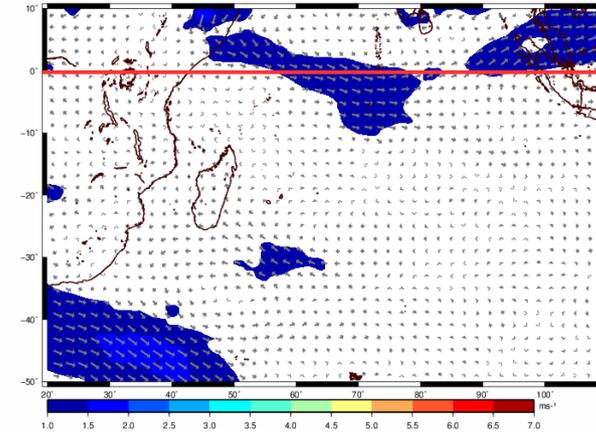


S4

Vent 850hPa
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17

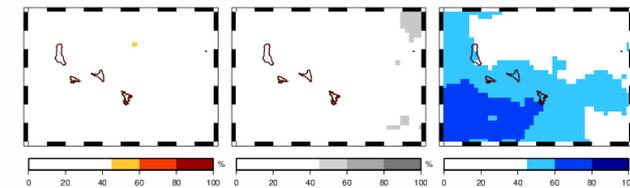


Anomalie force du vent 850hPa
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17



Probabilité tercile des précipitations
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17

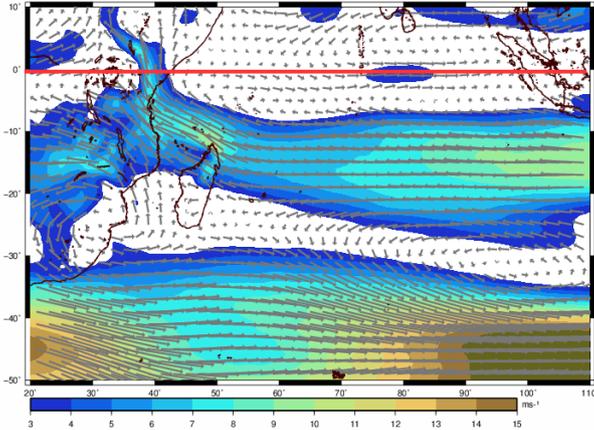
Terc. Inf Terc. Med Terc. Sup



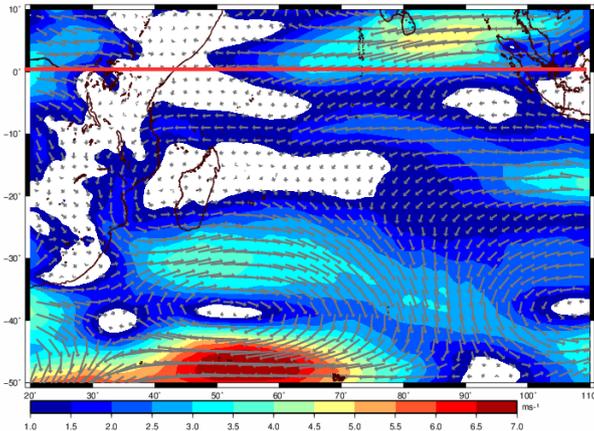
Synthèse temps sensible S2 – S4 [LA REUNION]

S2

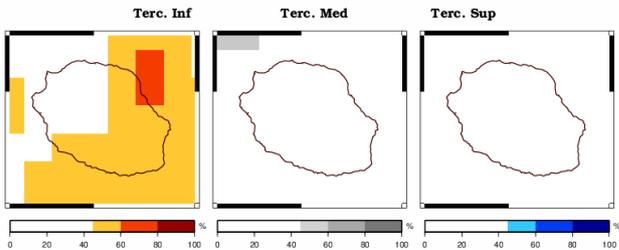
Vent 850hPa
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17



Anomalie force du vent 850hPa
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17

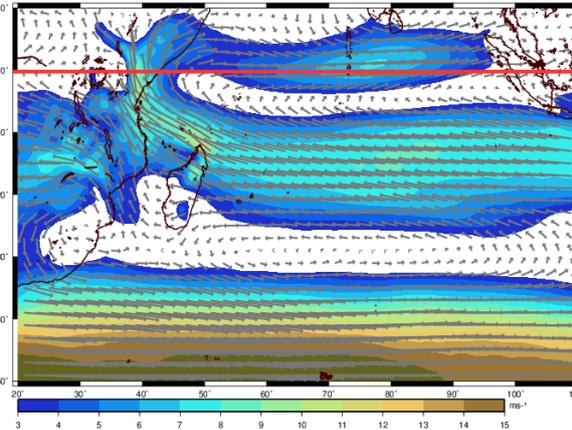


Probabilité tercile des précipitations
période du 2023-04-24 au 2023-05-01
Prévision mensuelle CEPMMT base 2023-04-17

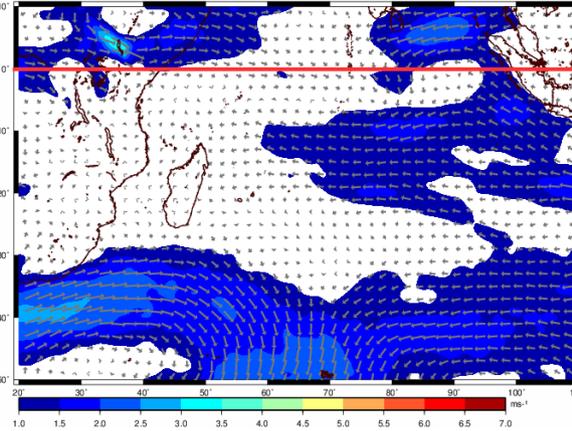


S3

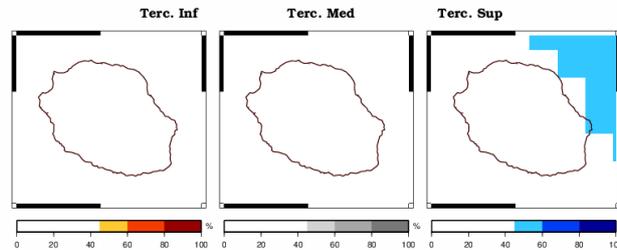
Vent 850hPa
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17



Anomalie force du vent 850hPa
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17

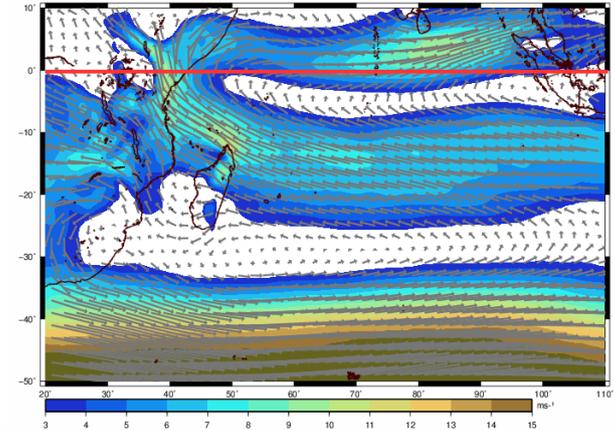


Probabilité tercile des précipitations
période du 2023-05-01 au 2023-05-08
Prévision mensuelle CEPMMT base 2023-04-17

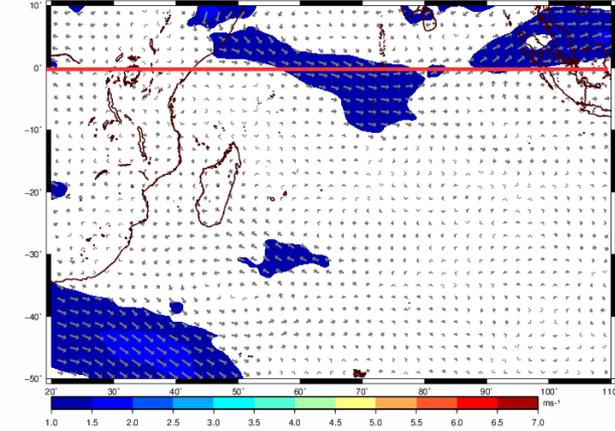


S4

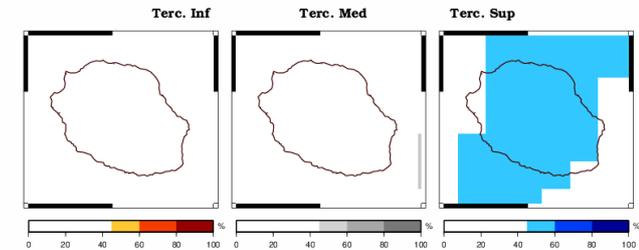
Vent 850hPa
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17



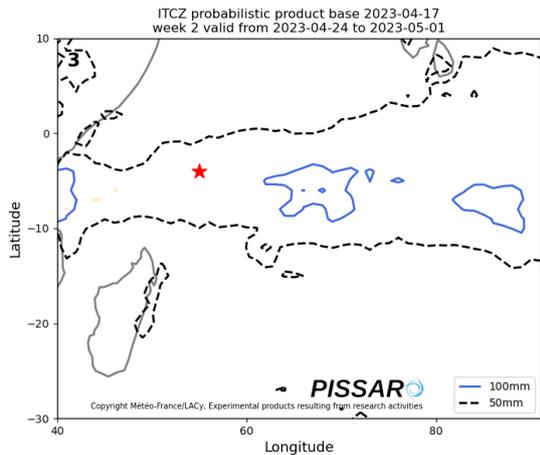
Anomalie force du vent 850hPa
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17



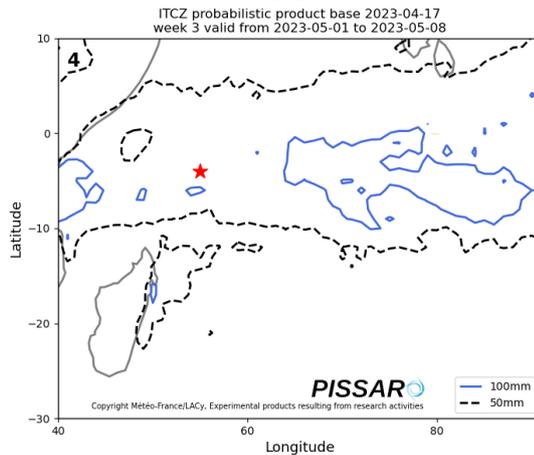
Probabilité tercile des précipitations
période du 2023-05-08 au 2023-05-15
Prévision mensuelle CEPMMT base 2023-04-17



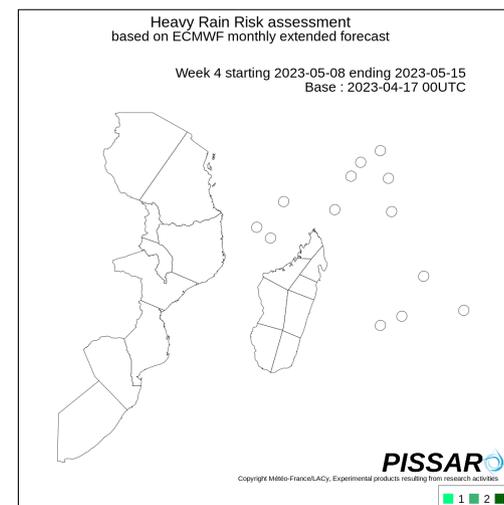
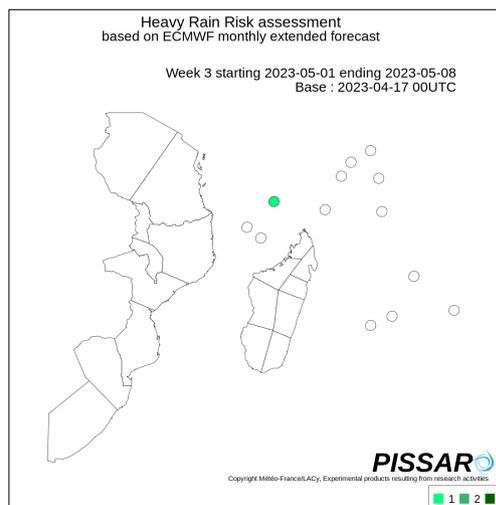
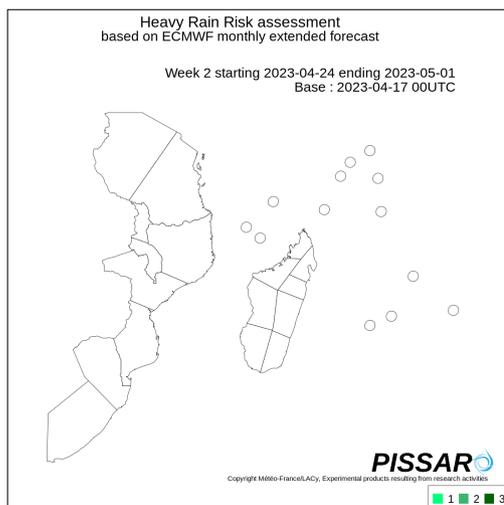
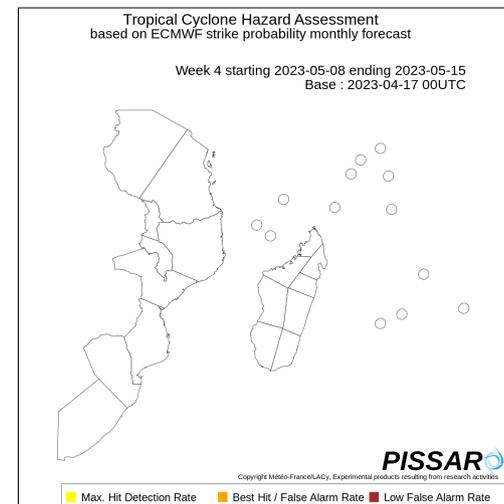
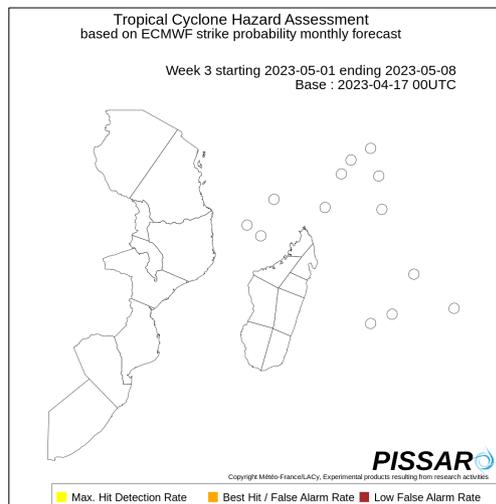
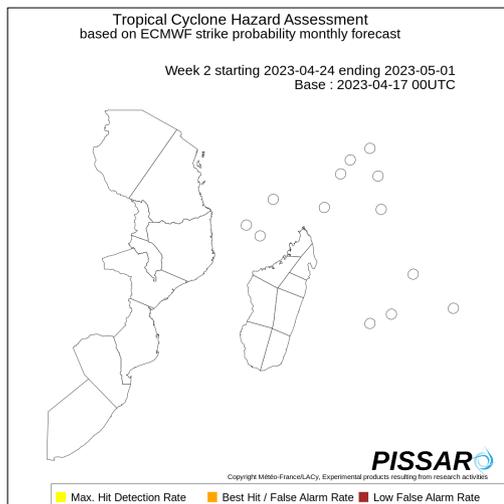
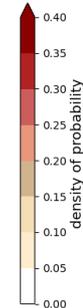
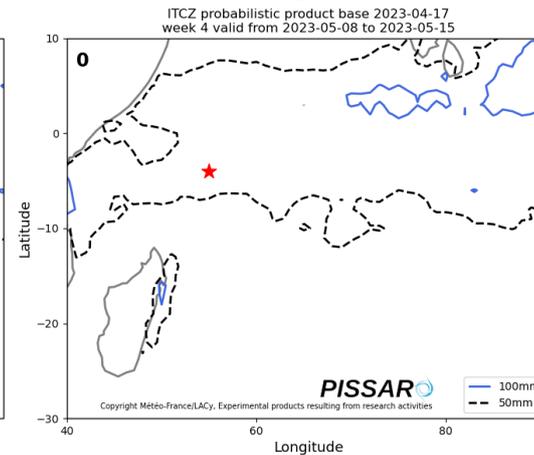
S2



S3



S4





Briefing mensuel

Suivi MJO et ondes équatoriales pour le bassin SOOI

Sources :

<http://www.bom.gov.au/climate/enso/>

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<https://cds.climate.copernicus.eu/#!/home>

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<https://ncics.org/pub/mjo/v2/map/>

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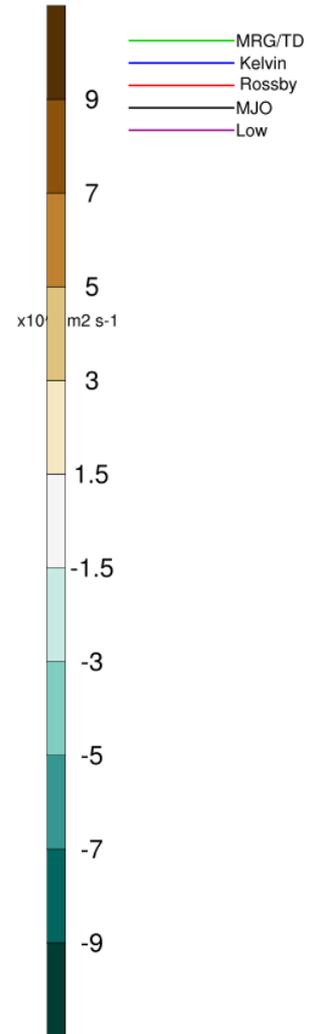
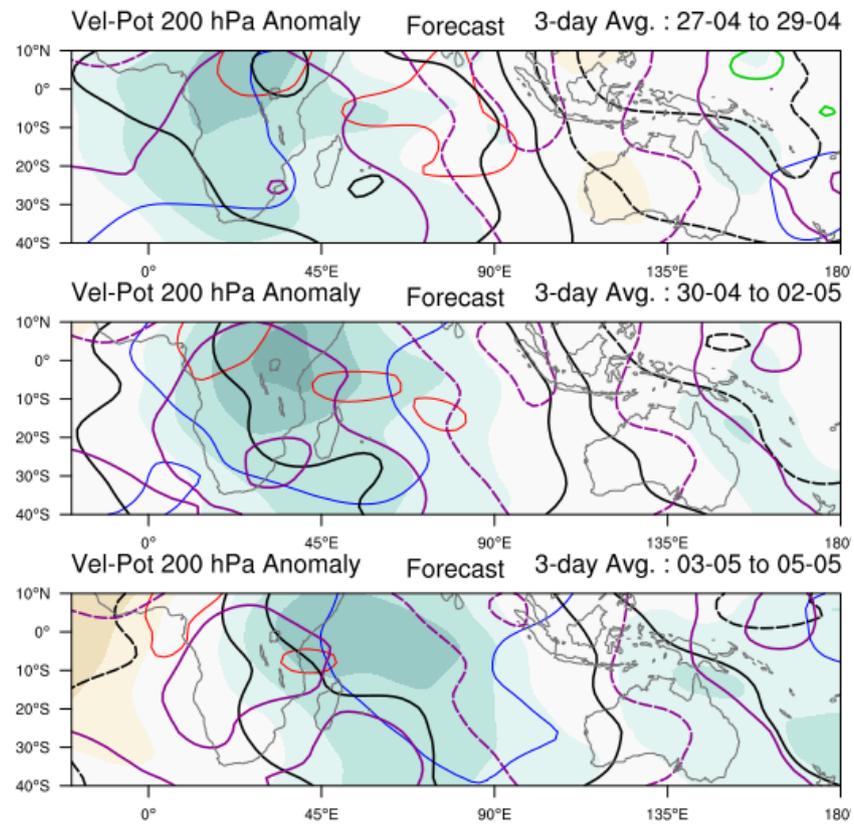
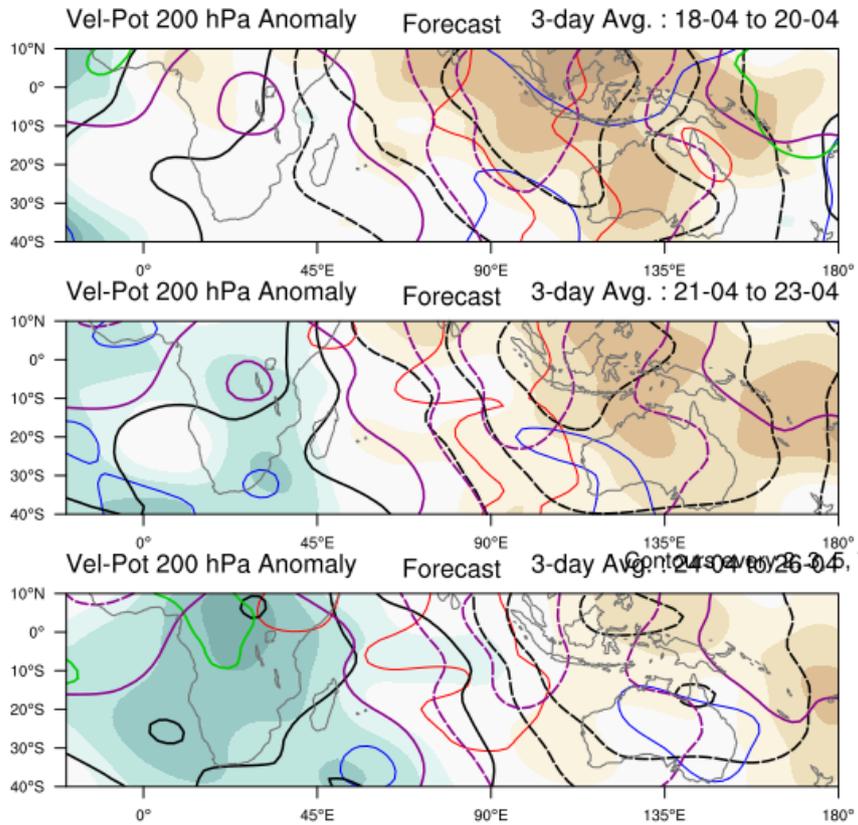
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<http://mikeventrice.weebly.com/mjo.html>

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

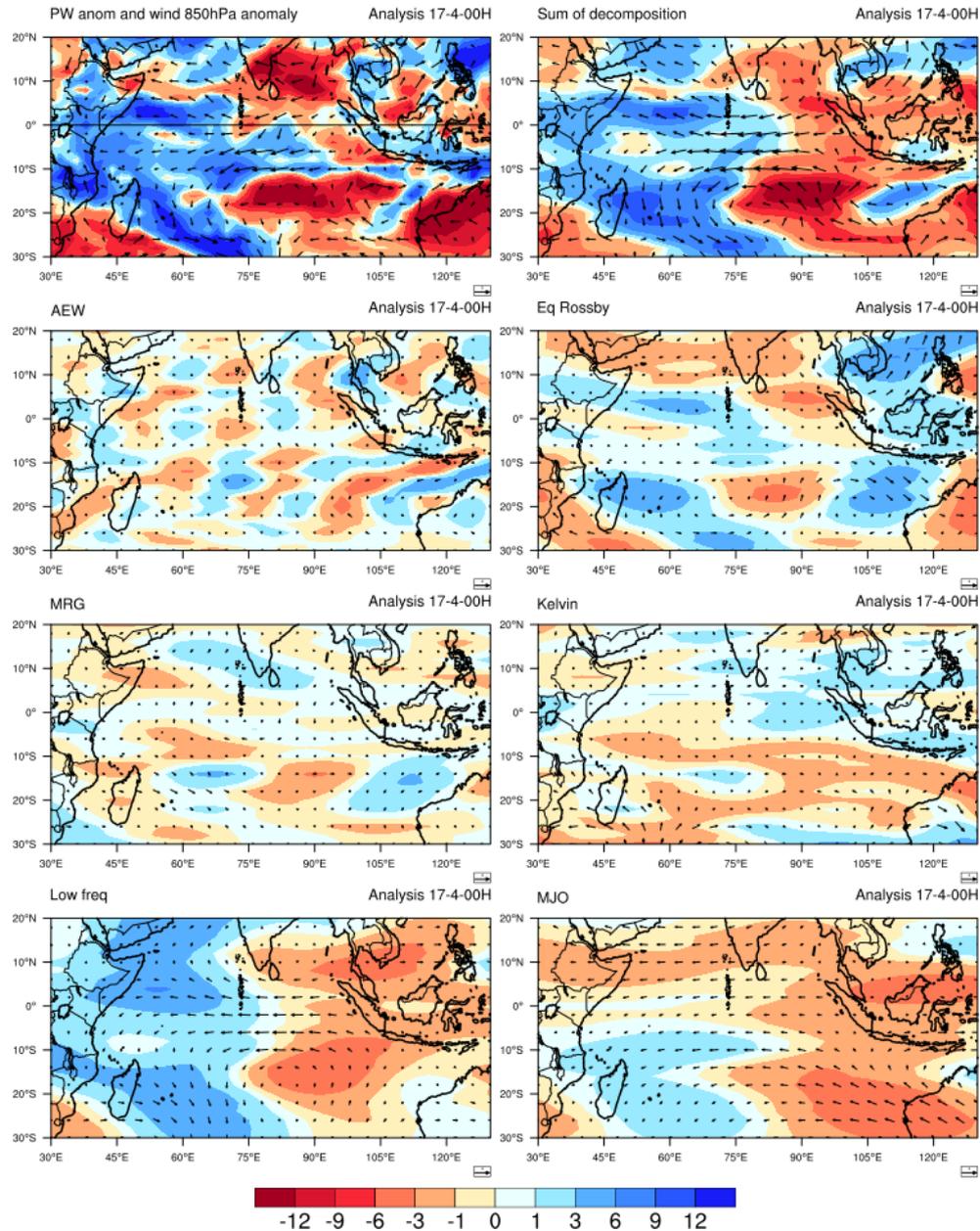
<https://misva.aeris-data.fr/products/>

3. Ondes équatoriales



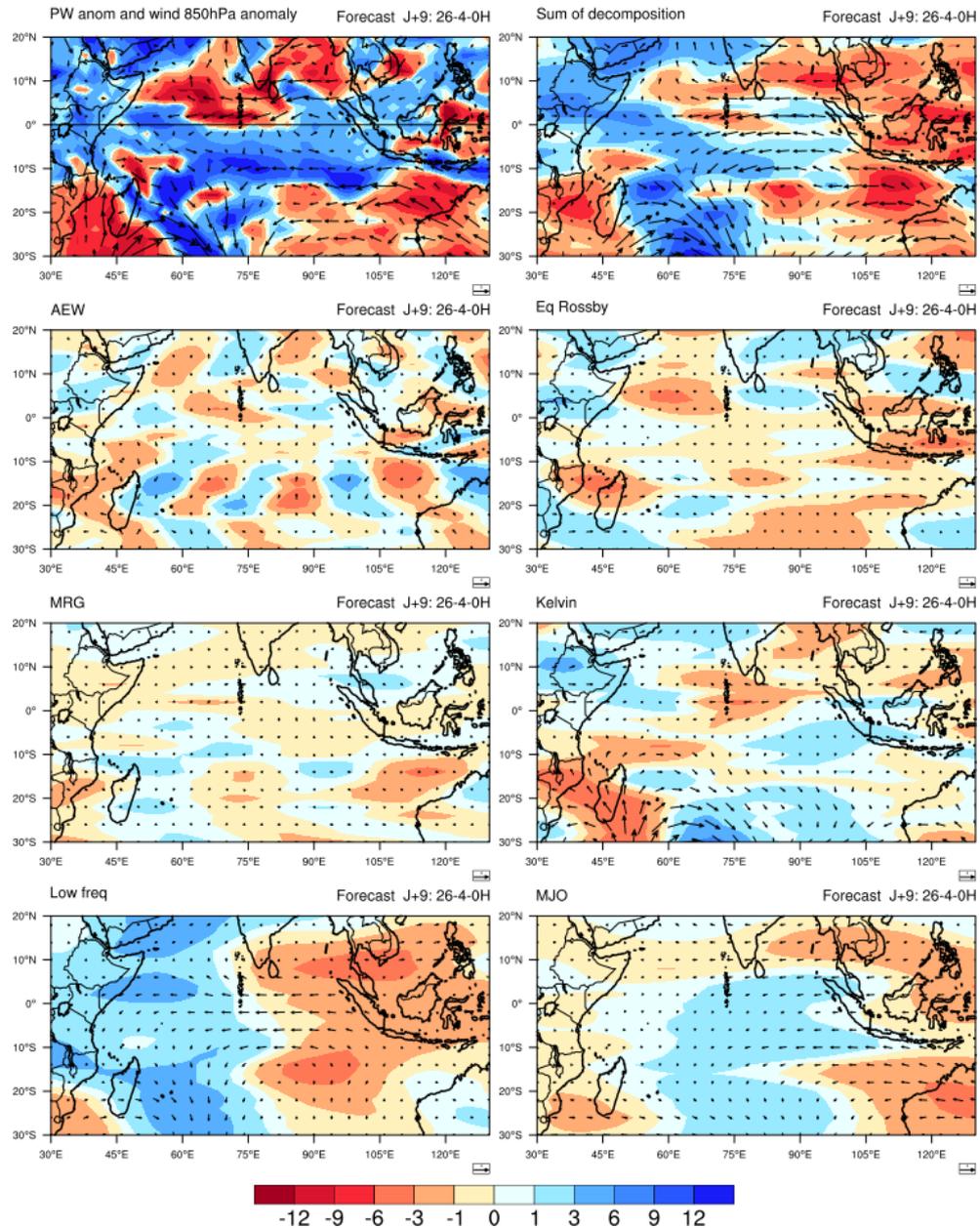
3. Ondes équatoriales

PW and 850hPa wind anomalies

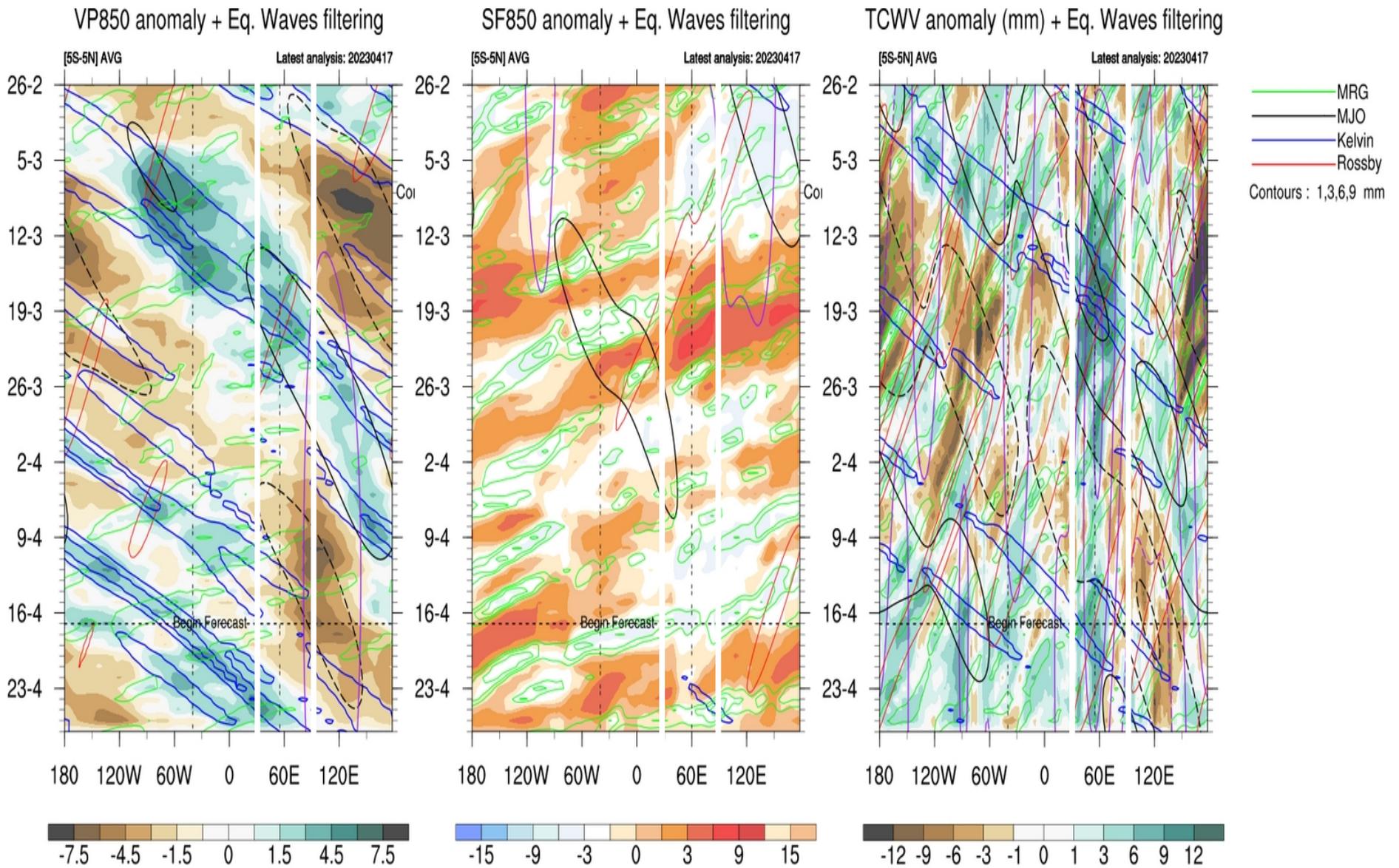


3. Ondes équatoriales

PW and 850hPa wind anomalies



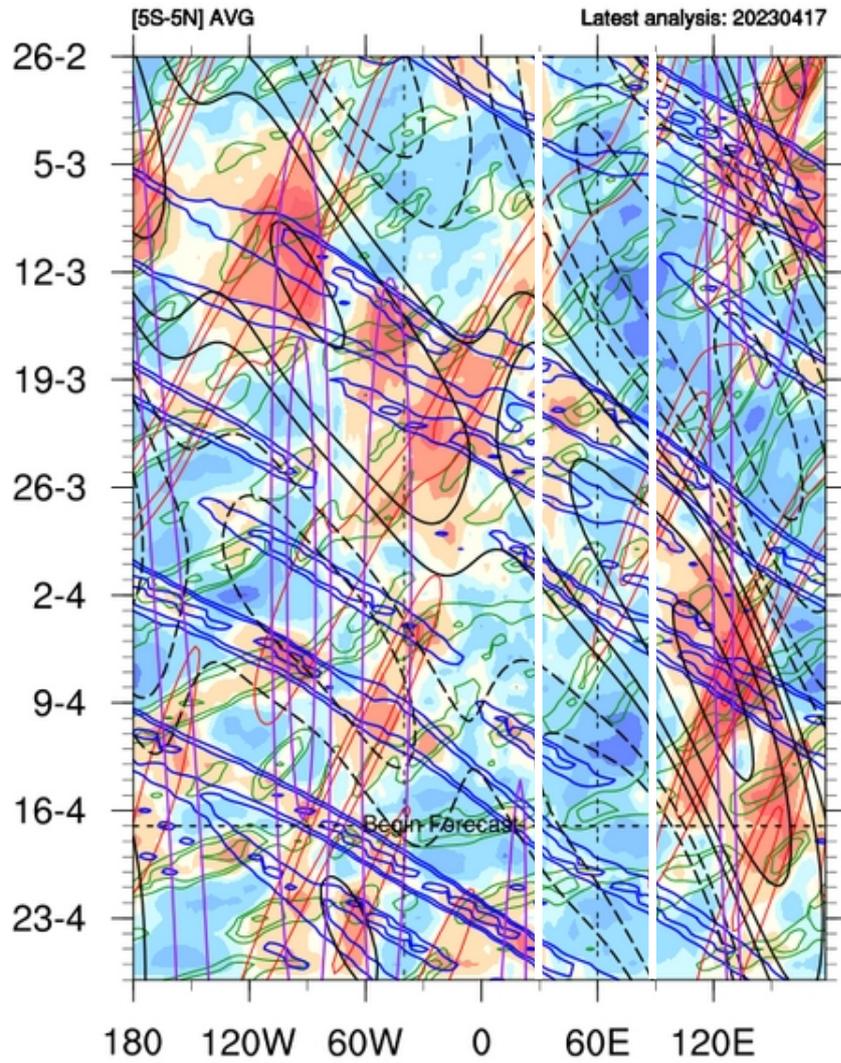
3. Ondes équatoriales



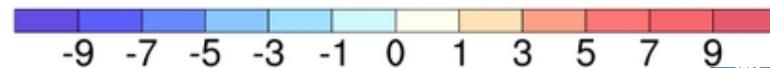
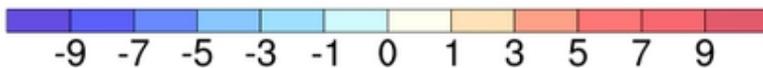
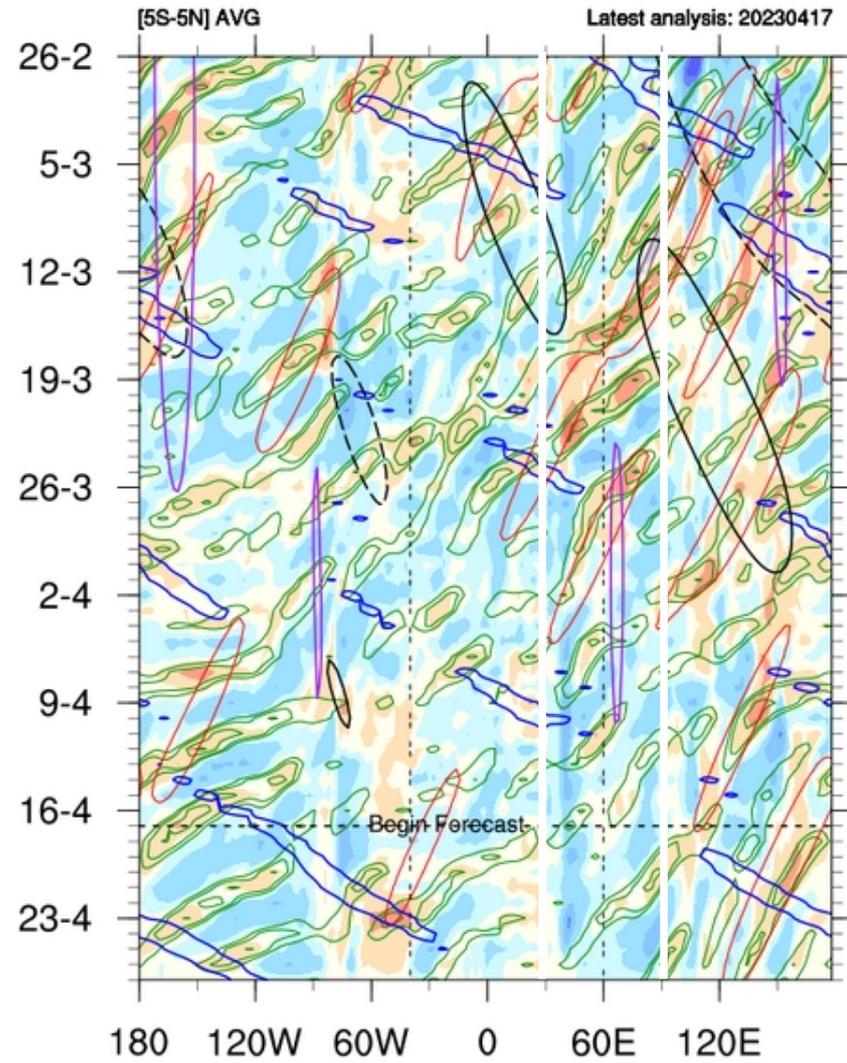
Contact: philippe.peyrille@meteo.fr

3. Ondes équatoriales

u850 anomaly + Eq. Waves filtering

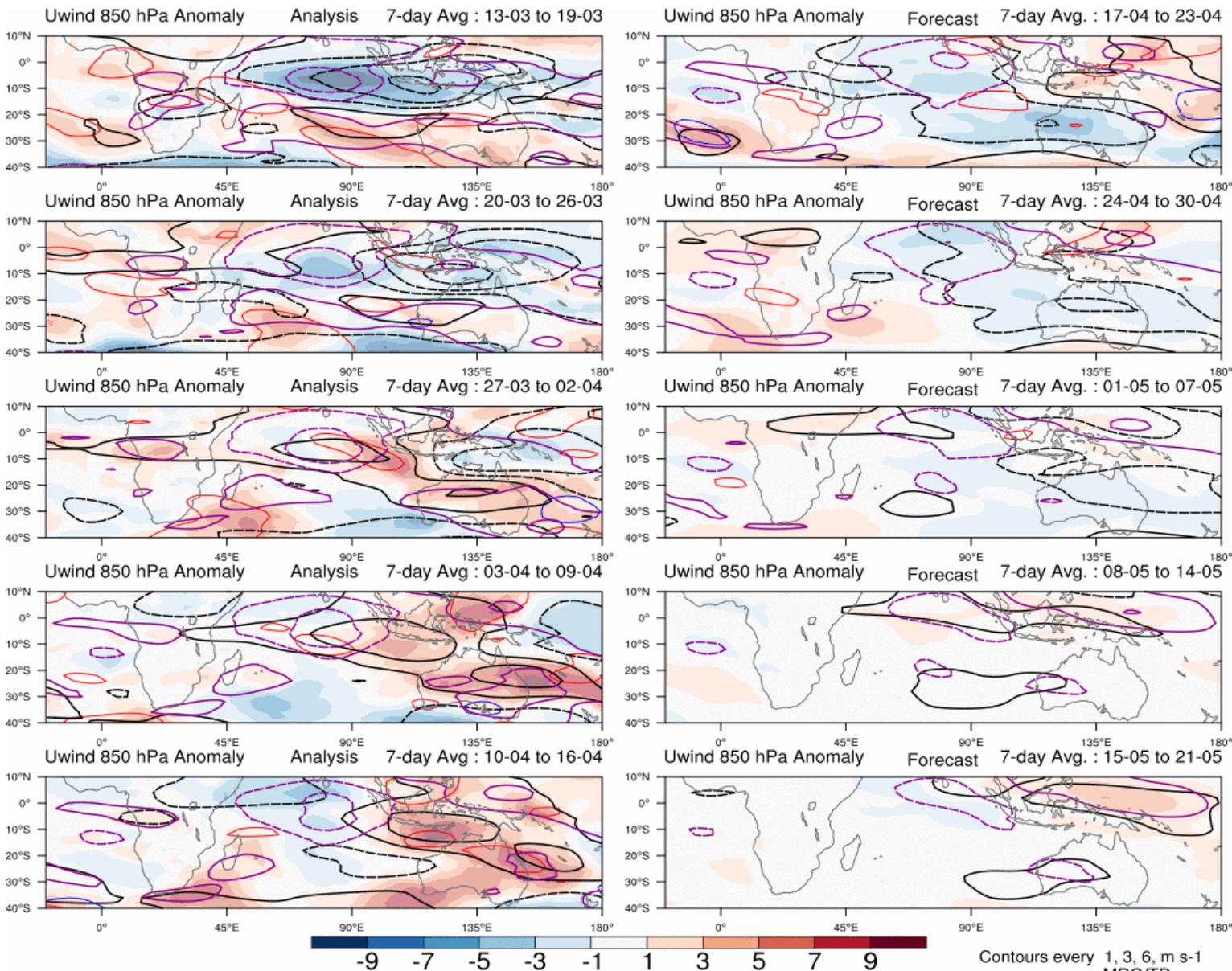


v850 anomaly + Eq. Waves filtering



U850 – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

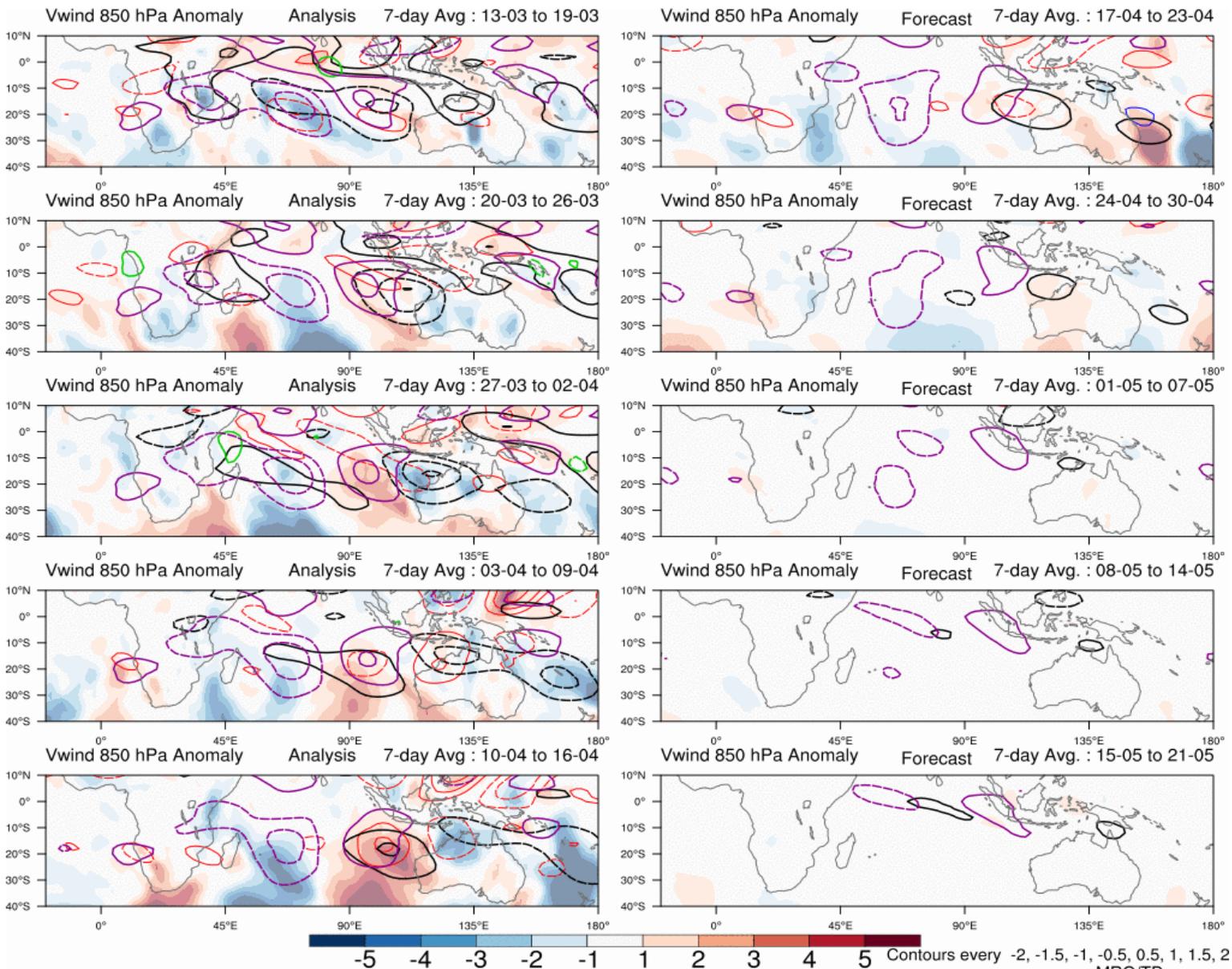
S4

S5



V850 – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

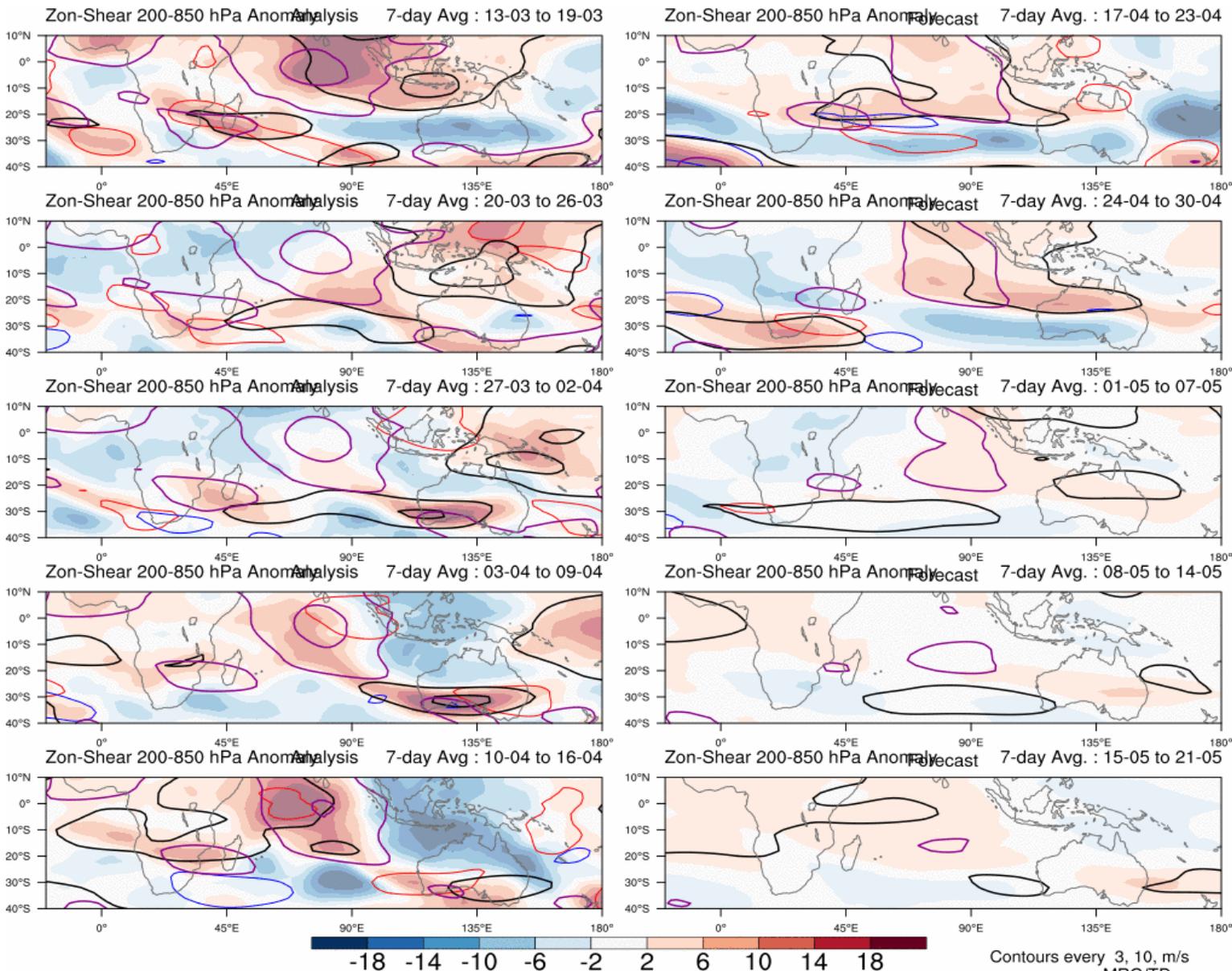
S4

S5



U_{shear} – MJO, ER dans l'Indien

Analyse



S1 à S4

S1

S2

S3

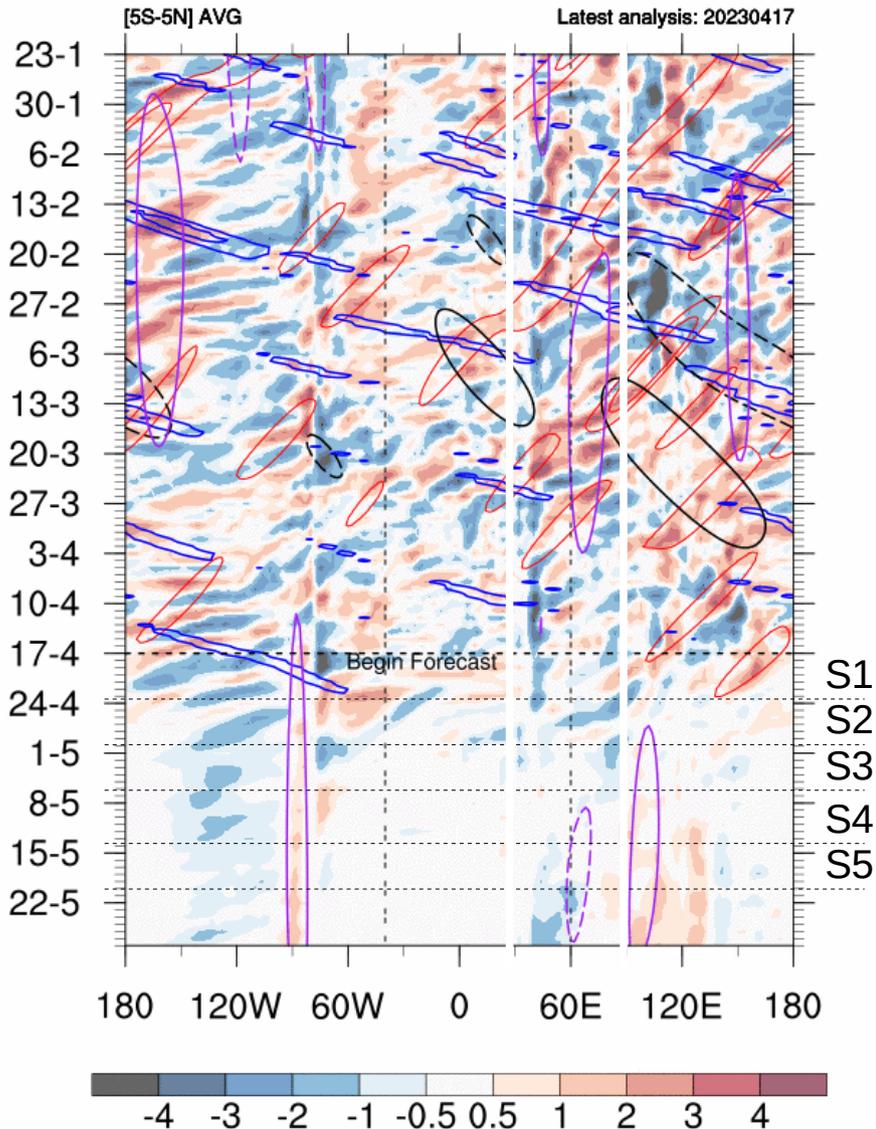
S4

S5



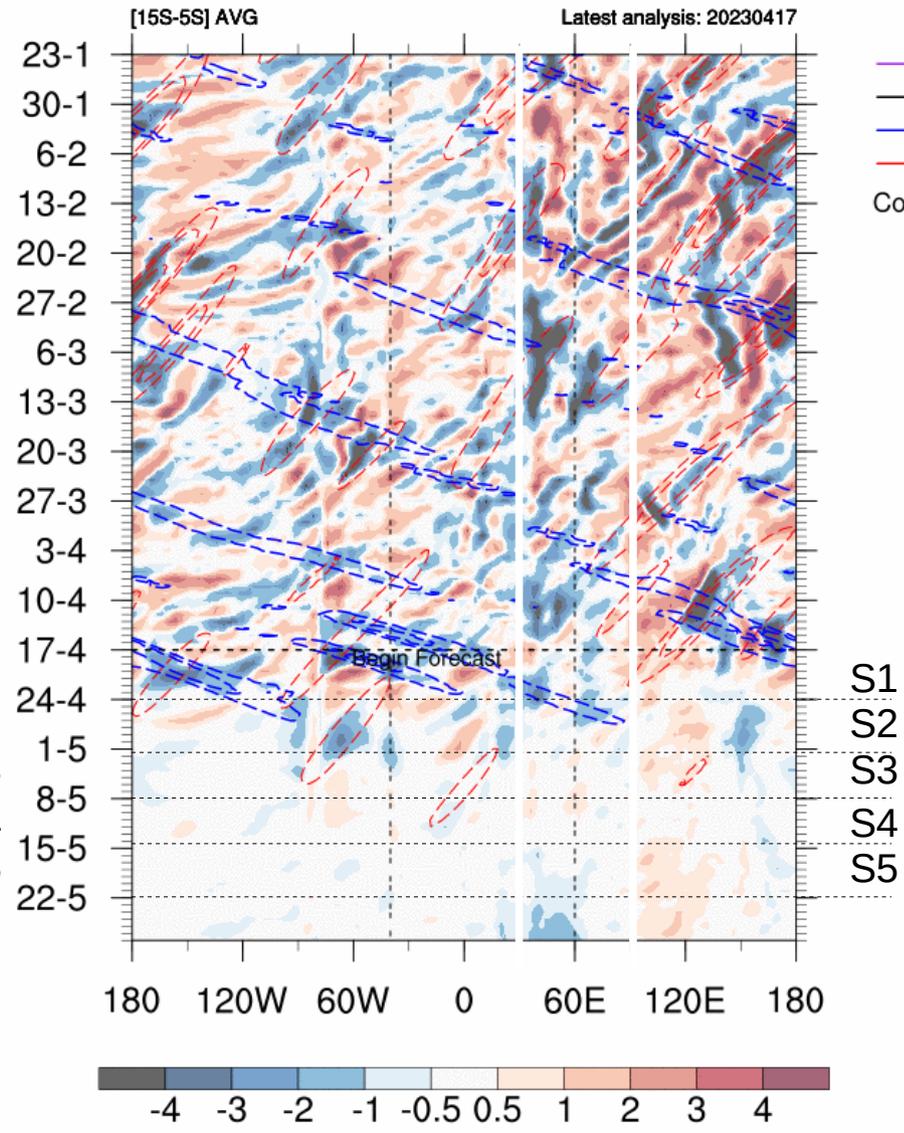
3. Ondes équatoriales

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v850 anomaly + Eq. Waves filtering

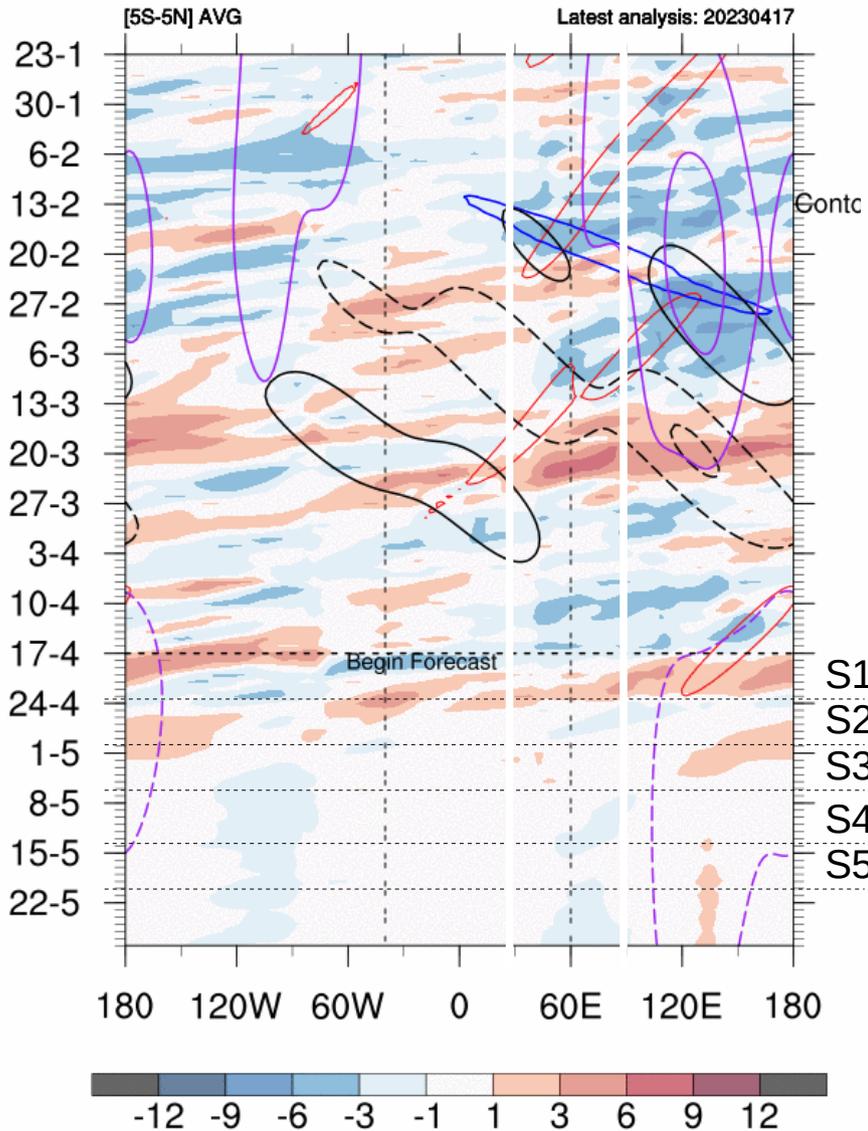


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— Low freq.
— MJO
— Kelvin
— Rossby
Contours : -5 -4 -3 m s⁻¹

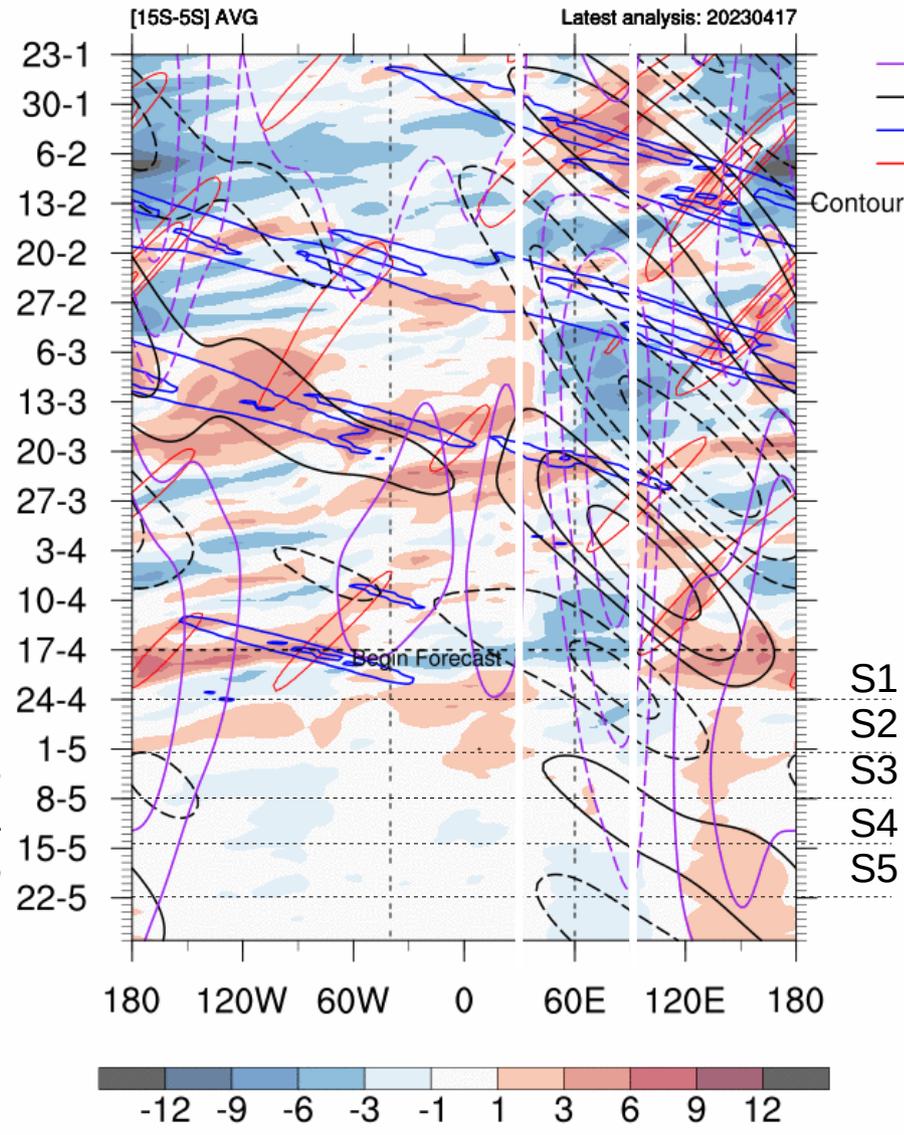
3. Ondes équatoriales

sf850 anomaly + Eq. Waves filtering



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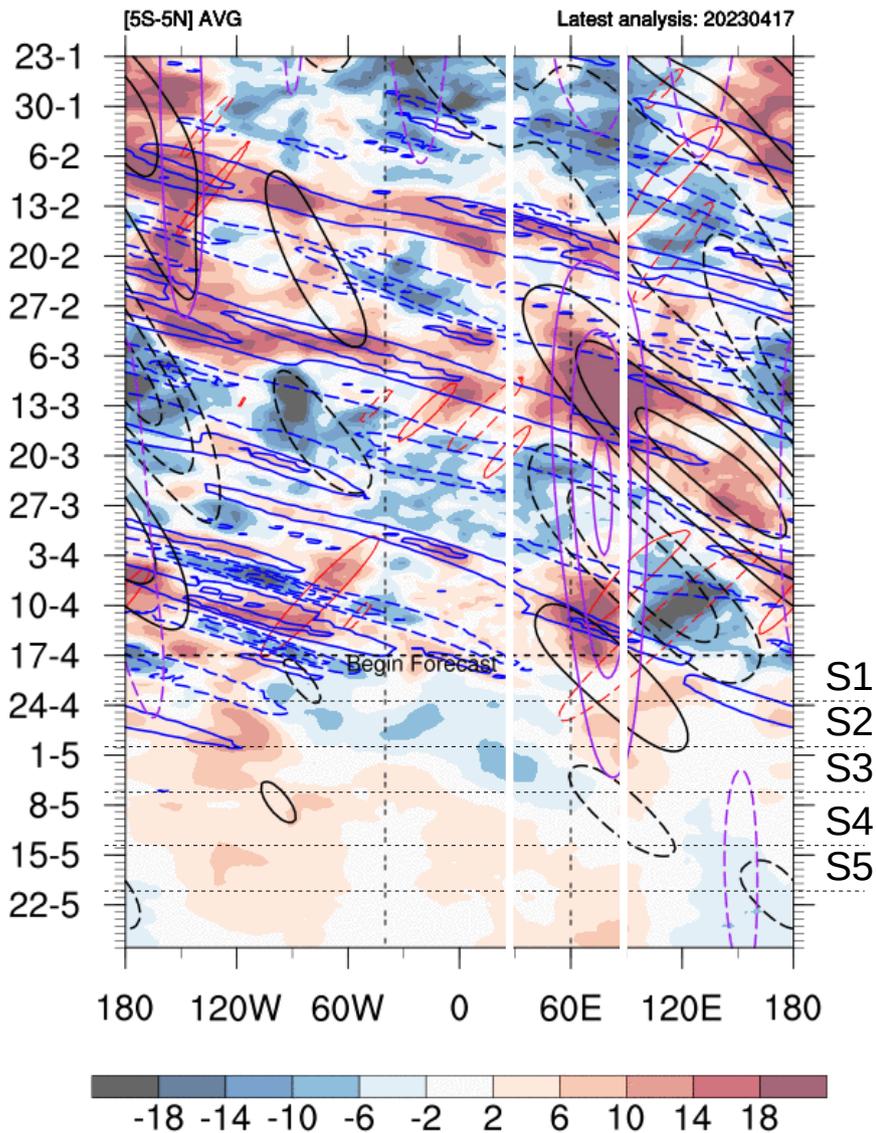
sf850 anomaly + Eq. Waves filtering



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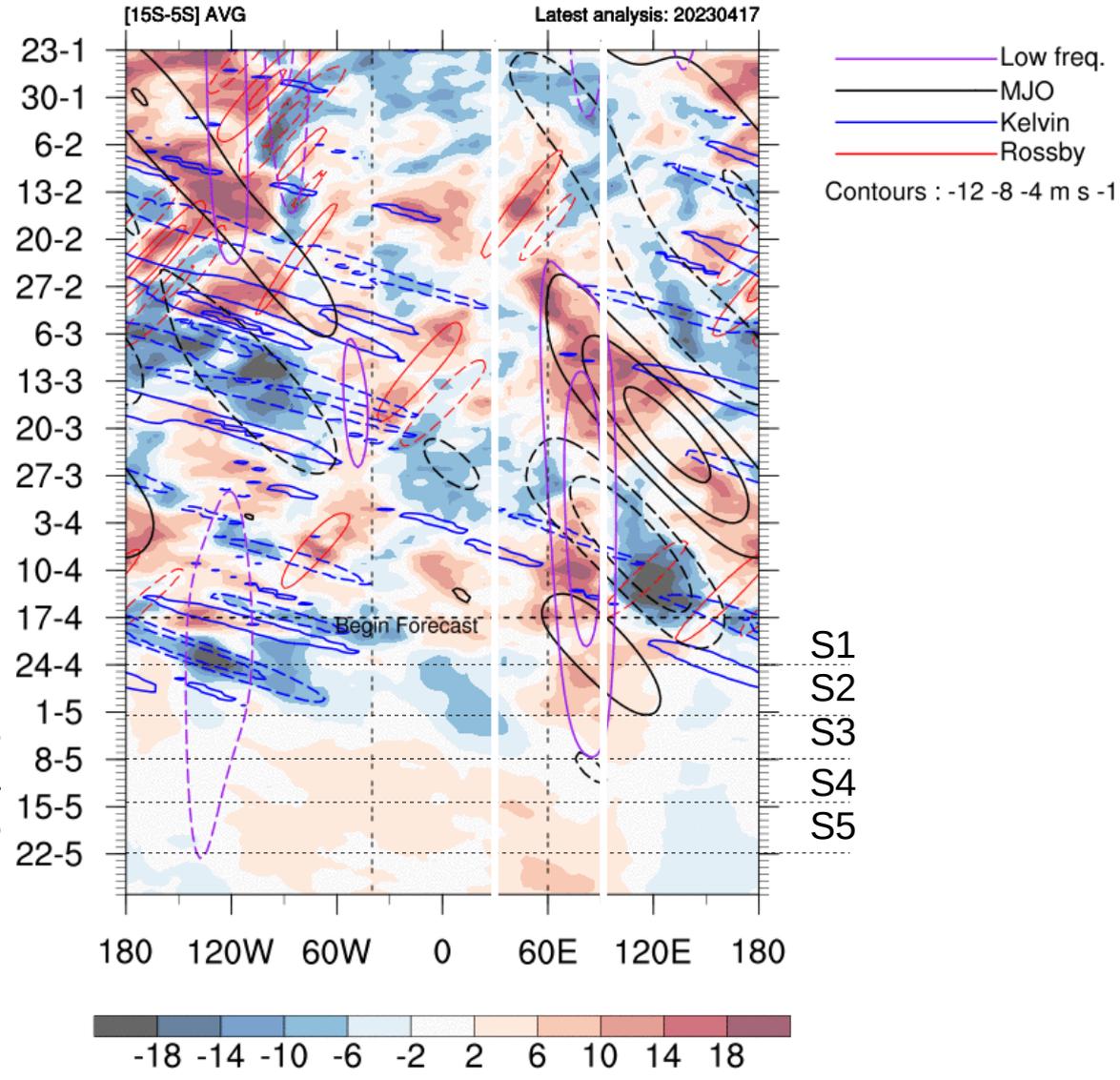
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ushear200-850 anomaly + Eq. Waves filtering



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ushear200-850 anomaly + Eq. Waves filtering



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