

Monthly Regional Focus Group Session

Wednesday 07 December 2022 at 17:30 UTC

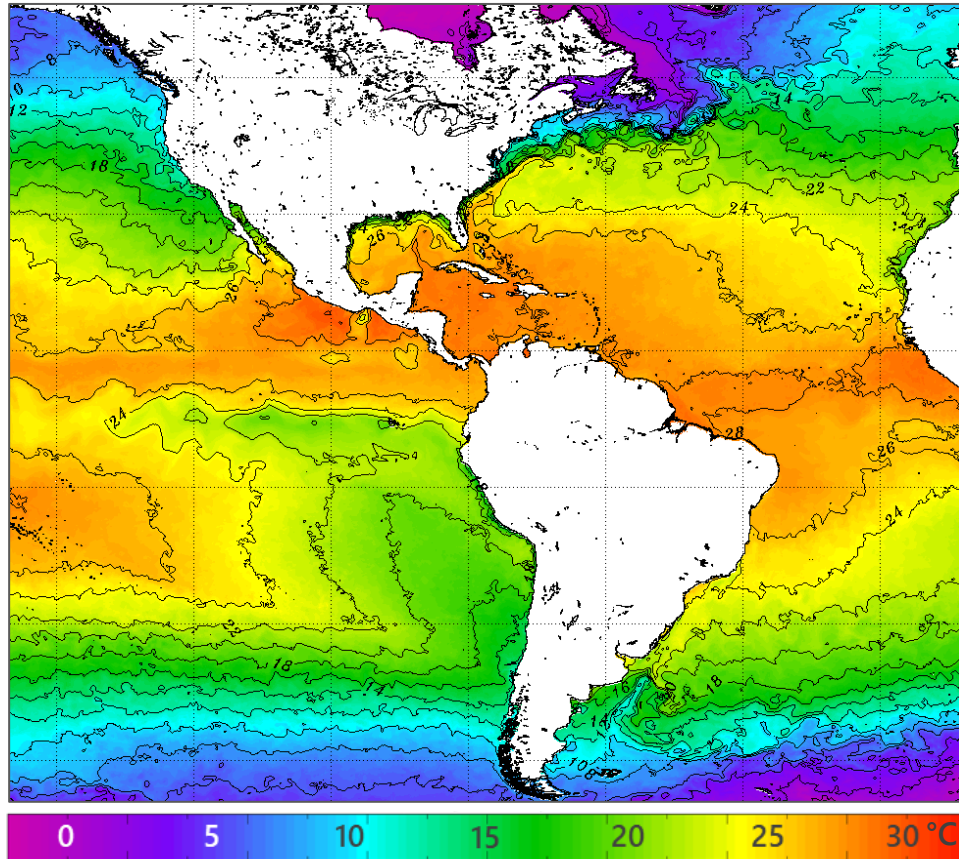
Special welcome to our Barbados NOAA/WMO Workshop Participants

RFG Website: <https://rammb2.cira.colostate.edu/training/rmtc/focusgroup/>

Sea Surface Temperatures (SST)

December 4th

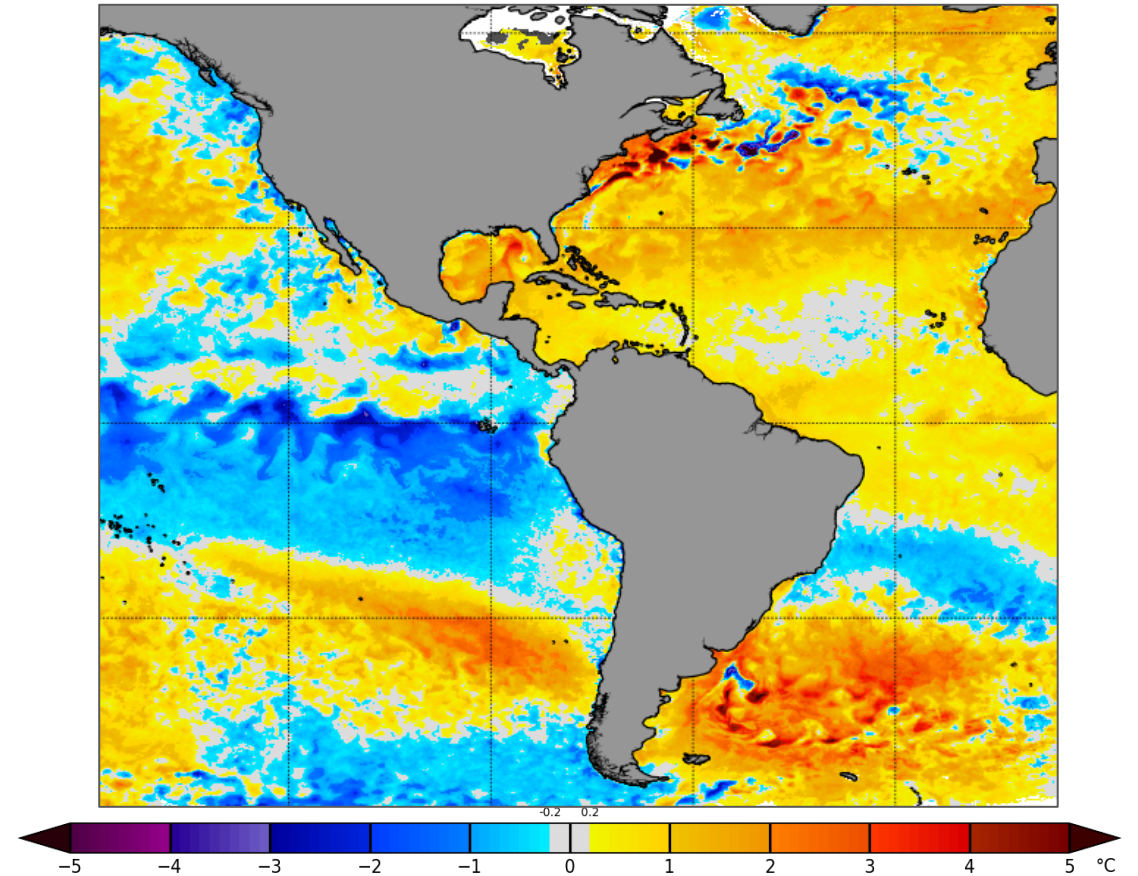
SST



NOAA OSPO

https://www.ospo.noaa.gov/data/sst/contour/global_small.c.gif

Anomaly



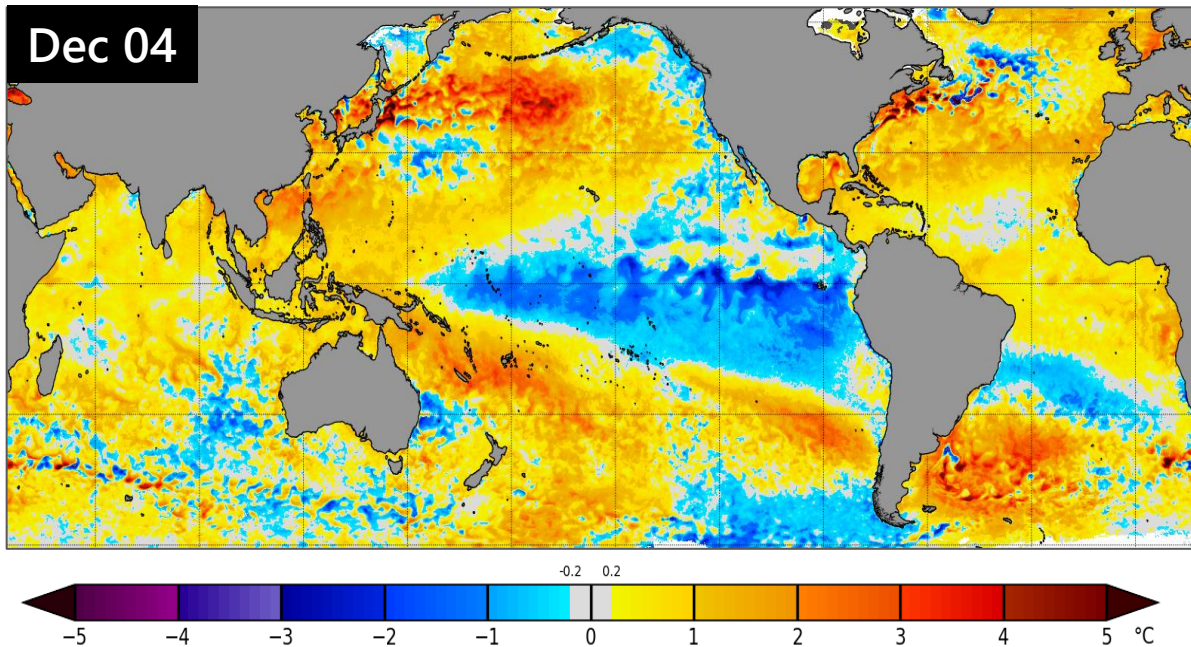
NOAA Coral Reef Watch

https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

Sea Temperature Anomalies in top layer

DEEP ANOMALIES LAST LONGER, THUS USEFUL FOR SUBSEASONAL FORECASTING

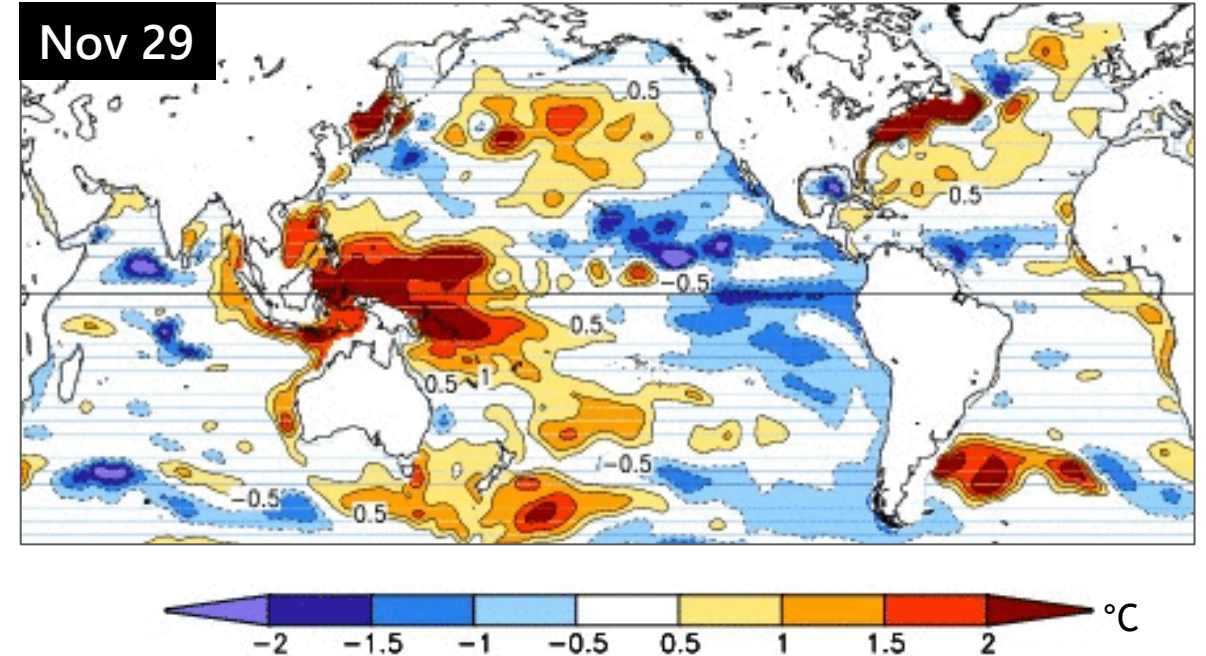
Surface Anomaly



NOAA Coral Reef Watch

https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

Top 300m-Layer Anomaly (GODAS)



NOAA CPC

Source: CPC GODAS, <https://www.cpc.ncep.noaa.gov/products/GODAS/>

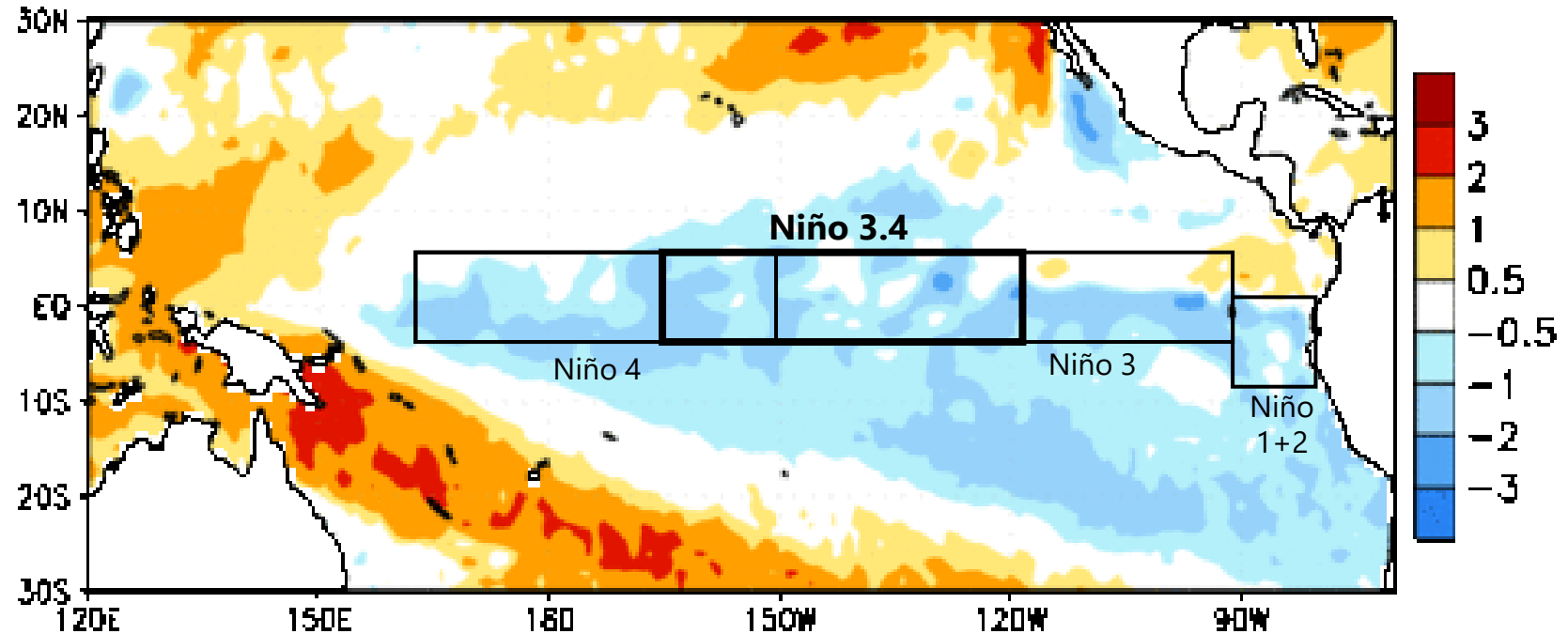
ENSO:

La Niña

(no changes since April)

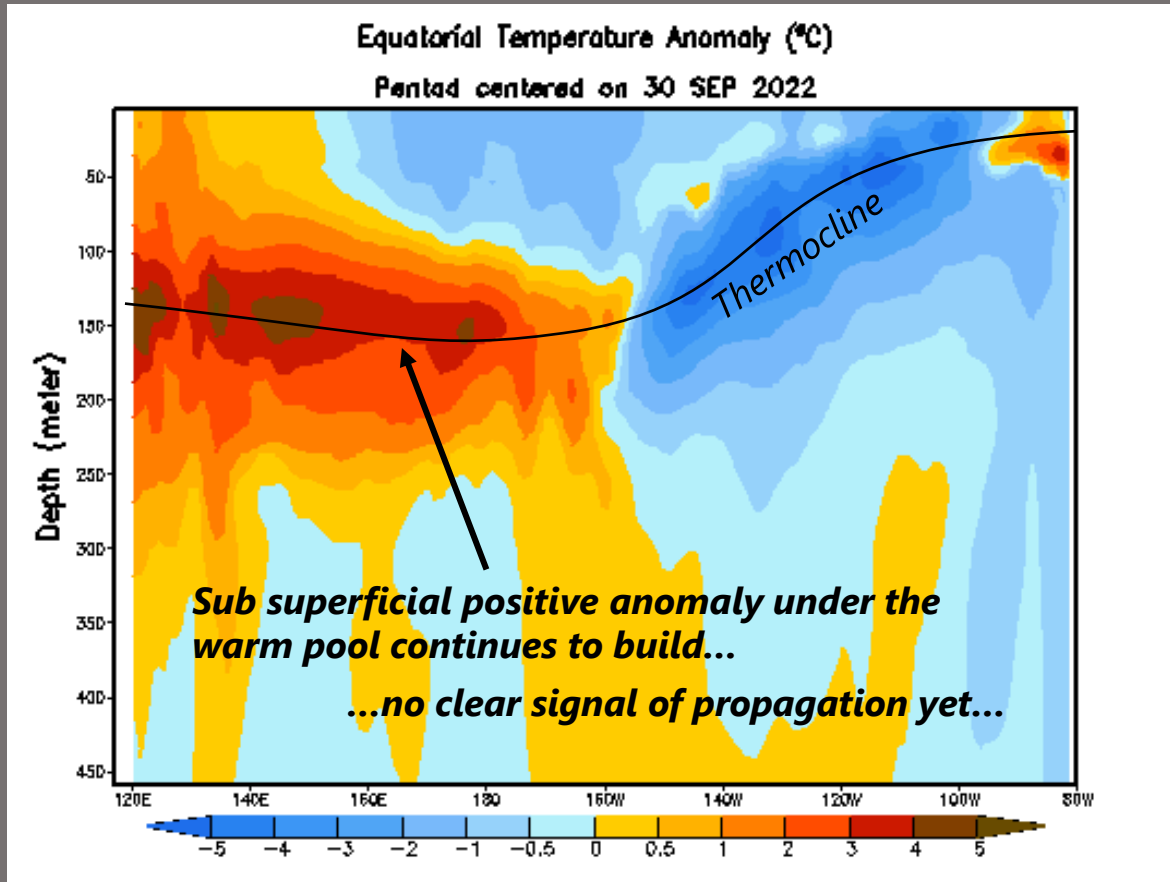
- ☯ La Niña is present.*
- ☯ Equatorial SSTs are below average across most of the Pacific Ocean.
- ☯ The tropical Pacific atmosphere is consistent with La Niña.

Week centered on 14 SEP 2022
SST Anomalies (°C)



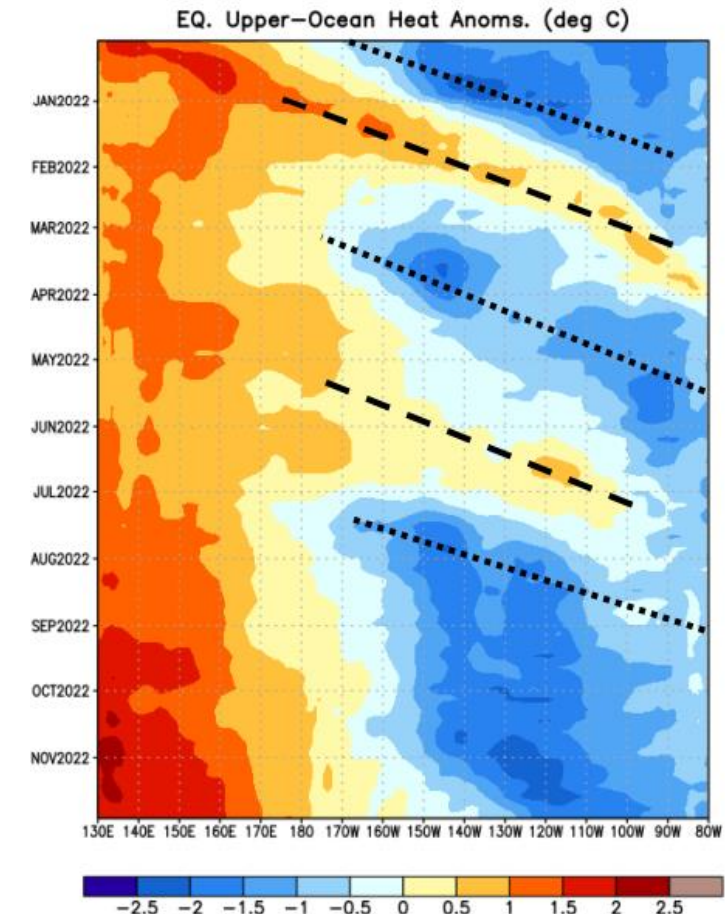
ENSO: Oceanic Kelvin Waves

Equatorial Pacific Temperature Anomaly Cross Section



Source: CPC

Heat Content Anomaly Hovmöller

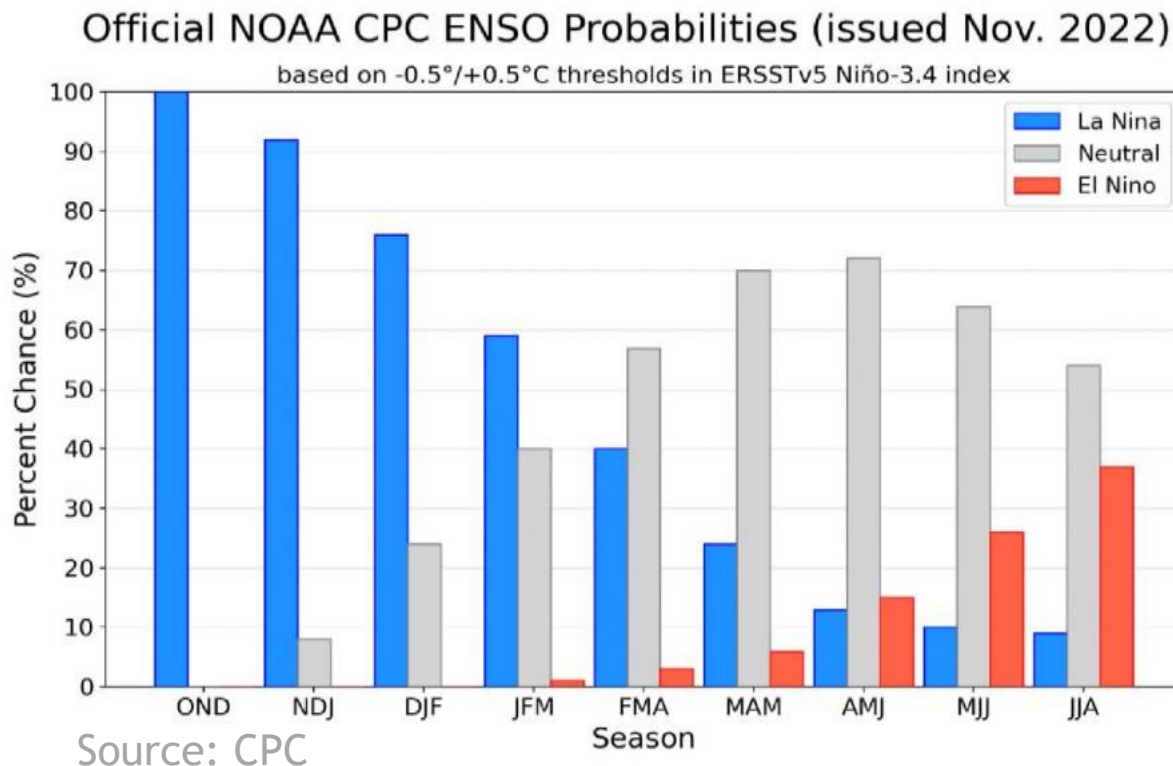


Monthly Regional Focus Session

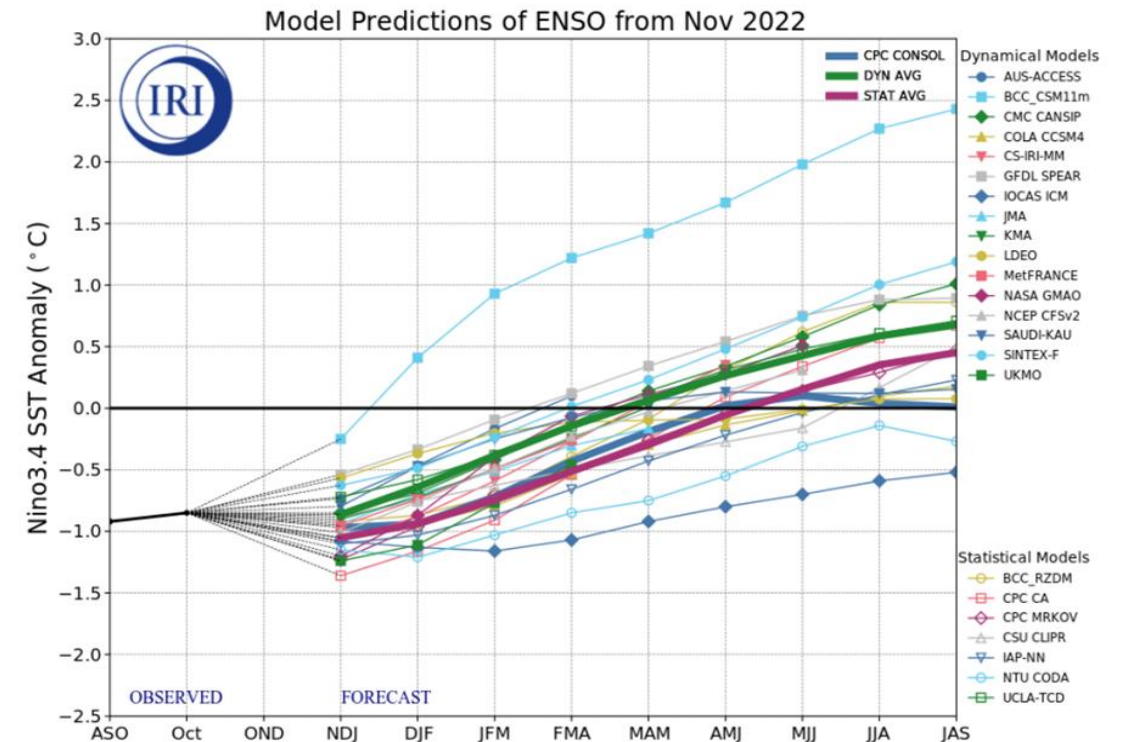
ENSO Outlook

There is a 76% chance of La Niña during the Northern Hemisphere winter (December-February) 2022-23, with a transition to ENSO-neutral favored in February-April 2023 (57% chance).*

CPC Probabilistic Forecast



IRI/CPC Dynamic Models

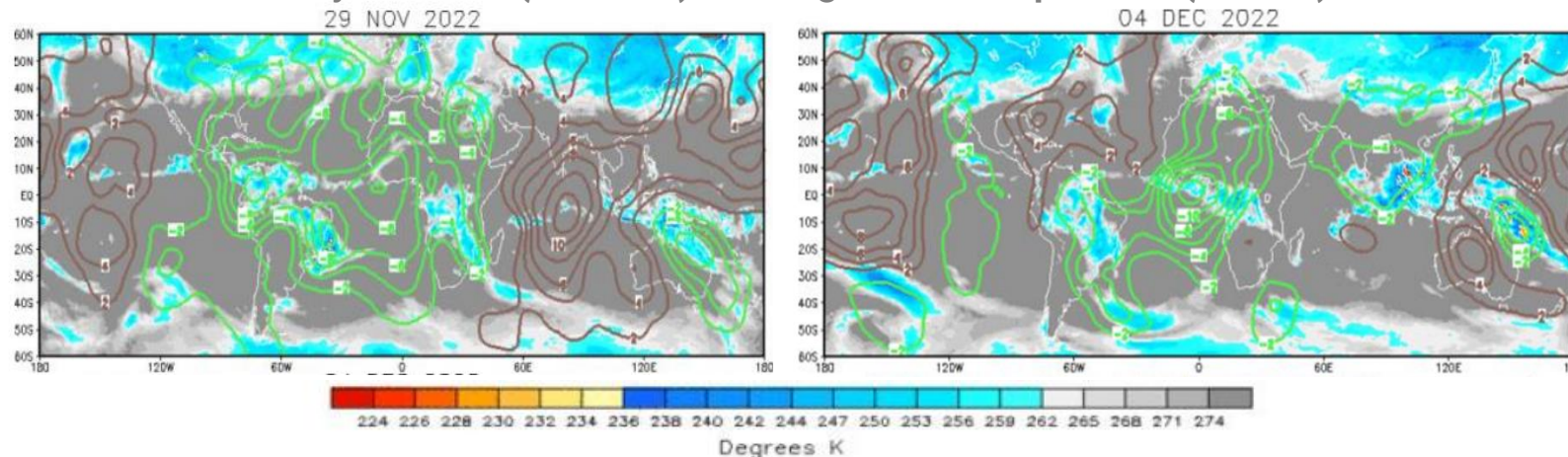


Madden-Julian Oscillation (MJO)

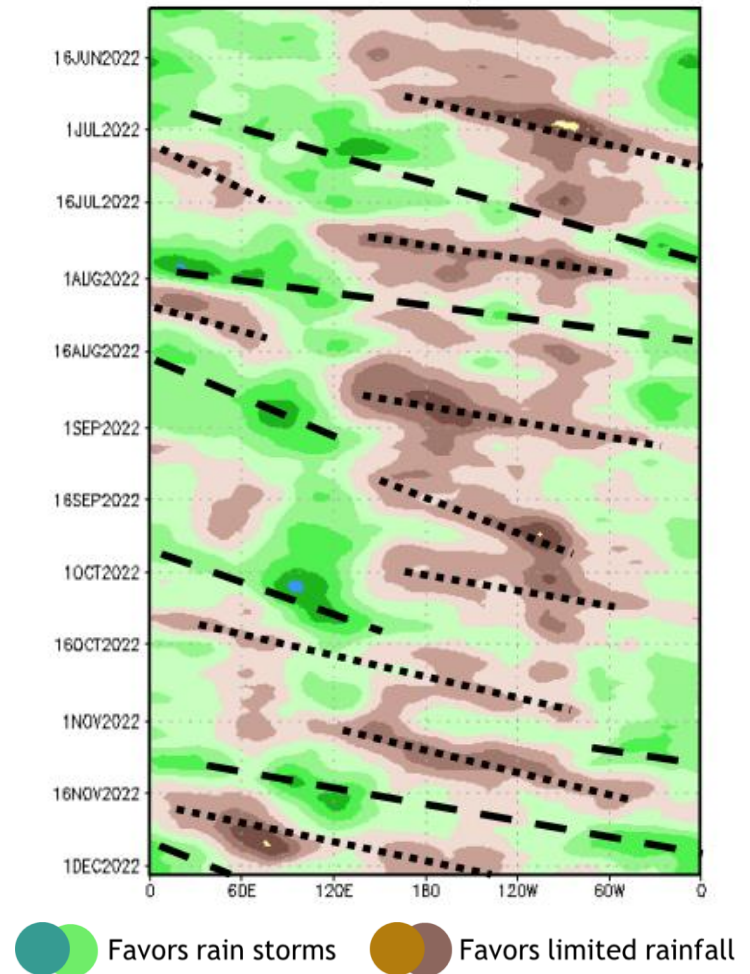
Current Observations:

- Wave-1 Pattern continues. Upper divergent phase (green) was moving across Africa into the Indian Ocean, and Upper Convergent across the Pacific/Date Line.
- Propagation seems to be slowing down.
- Extrapolating propagation, large scale upper convergence should gradually increase over the Americas into mid December.

Velocity Potential (contours) and Brightness Temperature (shaded)



200-hPa Velocity Potential Anomaly: 5N-5S
5-day Running Mean



MJO and Upper Tropospheric Waves

Outlook for the next week:

- Increasing large scale upper convergence (positive velocity potential CHI200).
- This means generally drier.
- No divergent Kelvin until Dec 14-16 (local enhancement in equatorial areas where synoptic systems are favoring rainfall at that time).



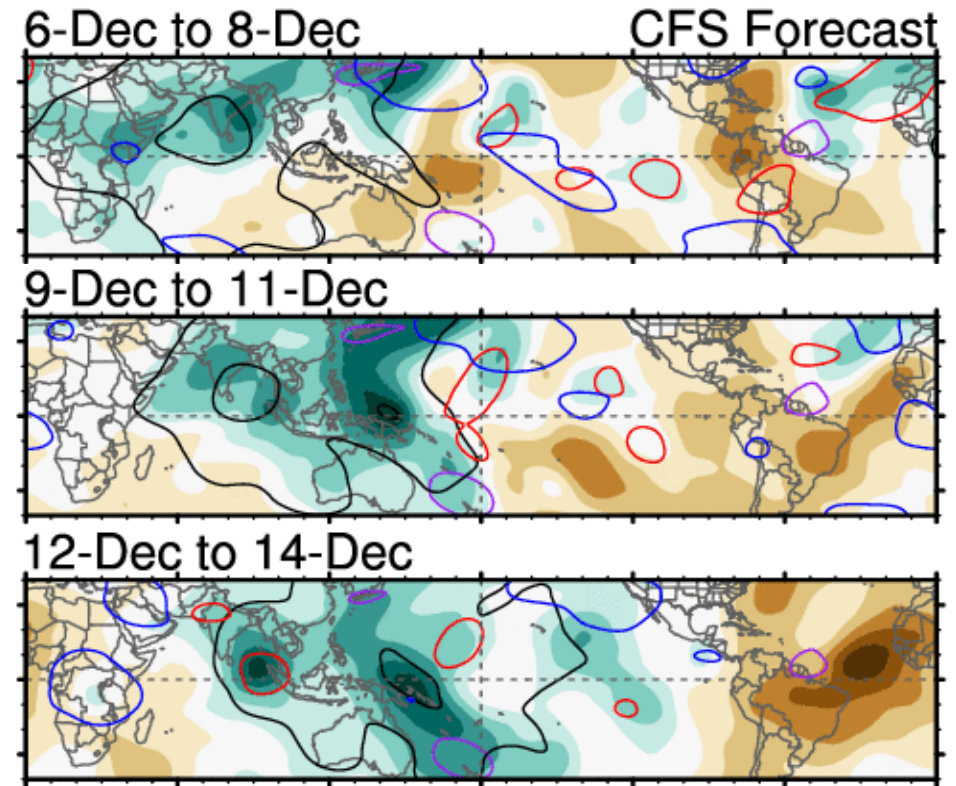
5-day CHI200 with CFS forecasts

Tue 2022-11-15 11:17 UTC

— MJO — Kelvin x2
— Low — ER

Contours at -2, -6 $\times 10^6 \text{ m}^2 \text{ s}^{-1}$

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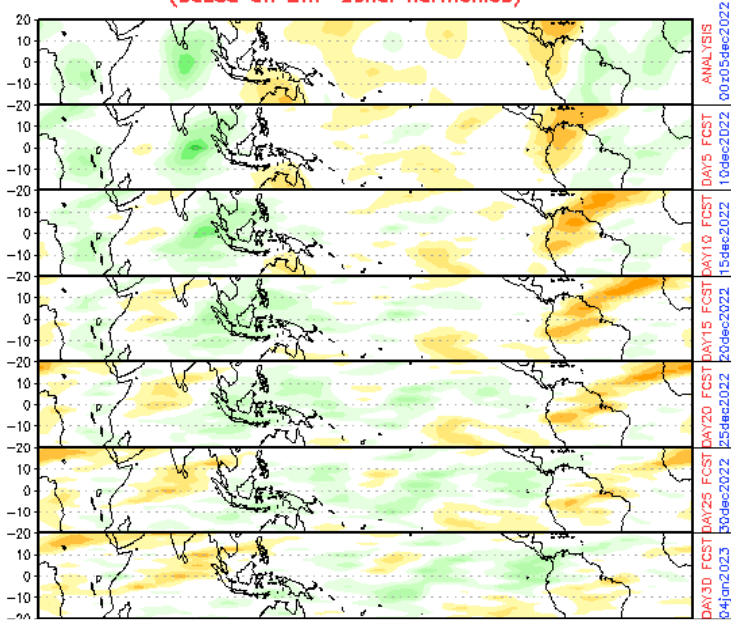


 Favors rain storms  Favors limited rainfall

MJO Forecasts for the Americas

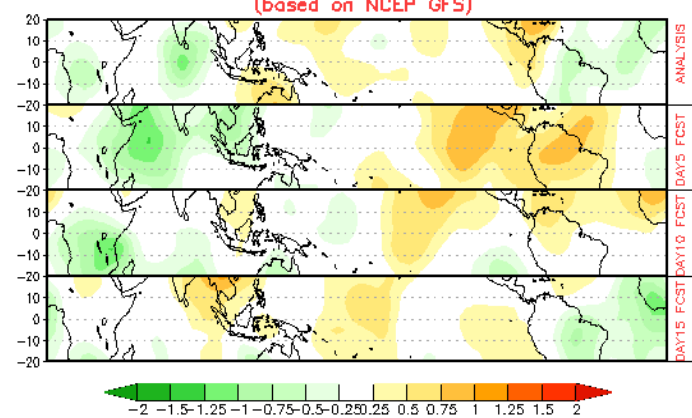
Empirical Wave Propagation (EWP)

CHI 200 hPa 40-DAY forecast (00z05dec2022–14jan2023)
(based on EWP zonal harmonics)



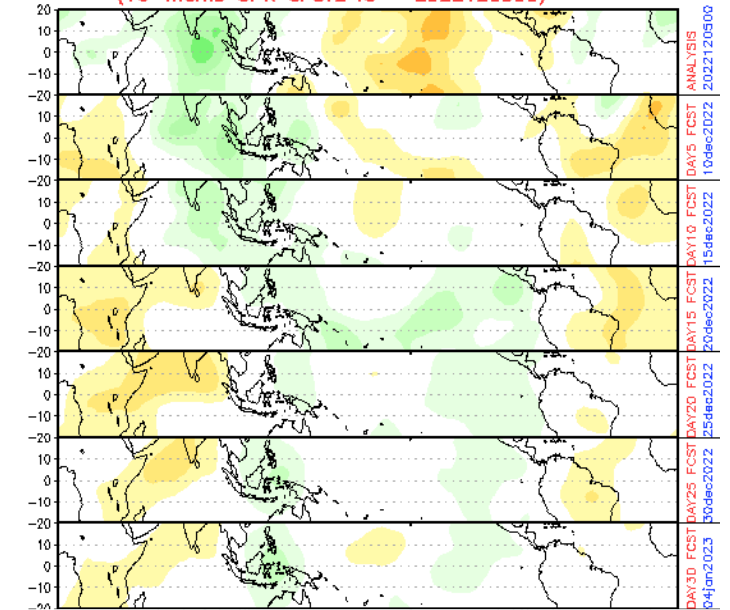
Global Forecast System (GFS)

CHI 200 hPa 15-DAY forecast (00z05dec2022–20dec2022)
(based on NCEP GFS)



Climate forecast System (CFS)

CHI 200 hPa 40-DAY forecast (00z05dec2022–14jan2023)
(16-memb QPR CFSv2 IC = 2022120500)



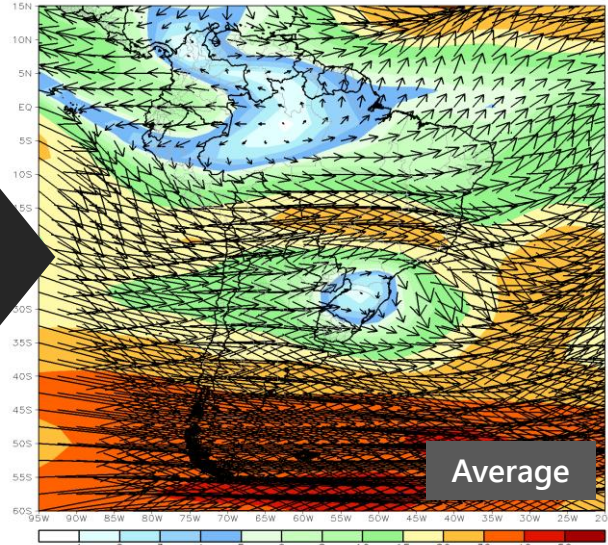
- General agreement on that the pattern is becoming increasingly upper convergent (dry), through Dec 20.
- Potential shift towards wetter conditions past Dec 15, but current model signals are mixed.

 Favors rain storms  Favors limited rainfall

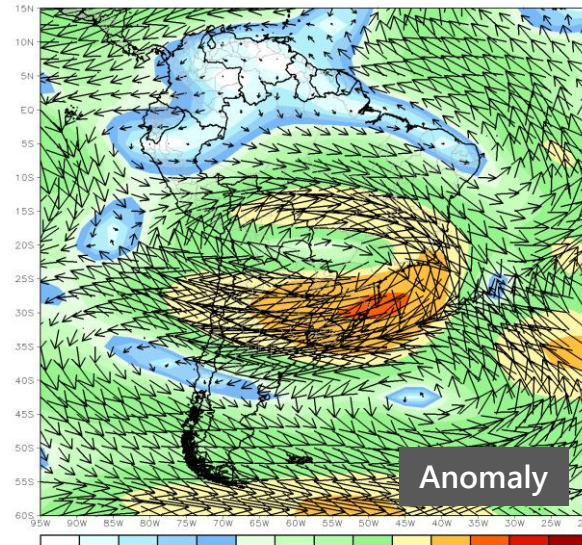
South America, Last 7 Days

200 hPa
Flow

CDAS 200mb 7-Day Mean Vector Wind Total (m/s)
Period: 26Nov2022 - 02Dec2022

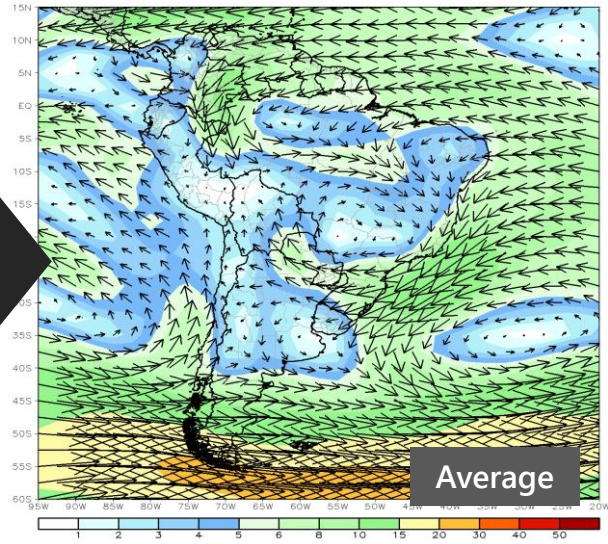


CDAS 200mb 7-Day Mean Vector Wind Anomaly (m/s)
Period: 26Nov2022 - 02Dec2022

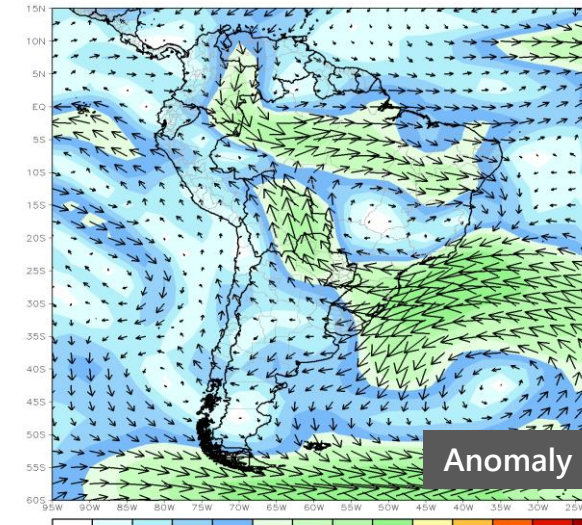


850 hPa
Flow

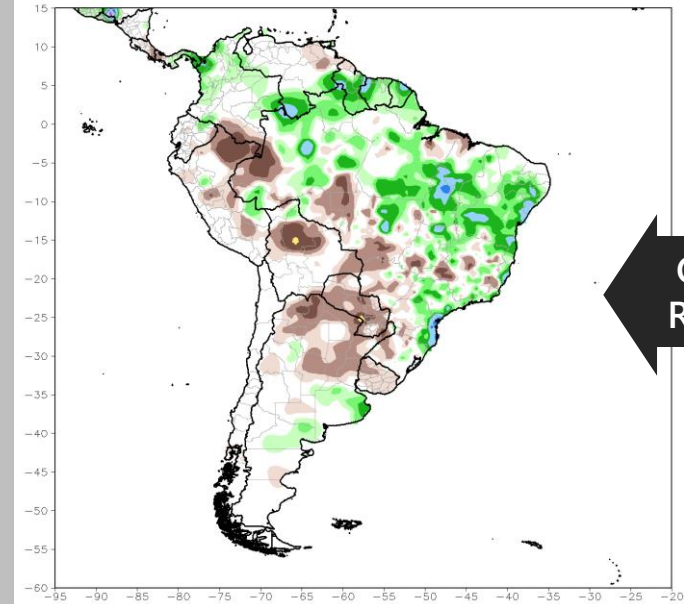
CDAS 850mb 7-Day Mean Vector Wind Total (m/s)
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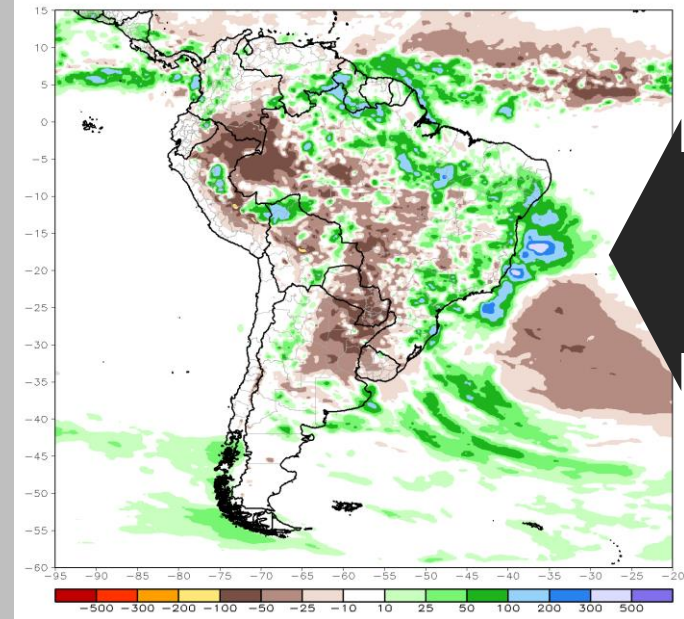
CDAS 850mb 7-Day Mean Vector Wind Anomaly (m/s)
Period: 26Nov2022 - 02Dec2022



CPC Unified Gauge 7-Day Total Rainfall Anomaly (mm)
Period: 28Nov2022 - 04Dec2022

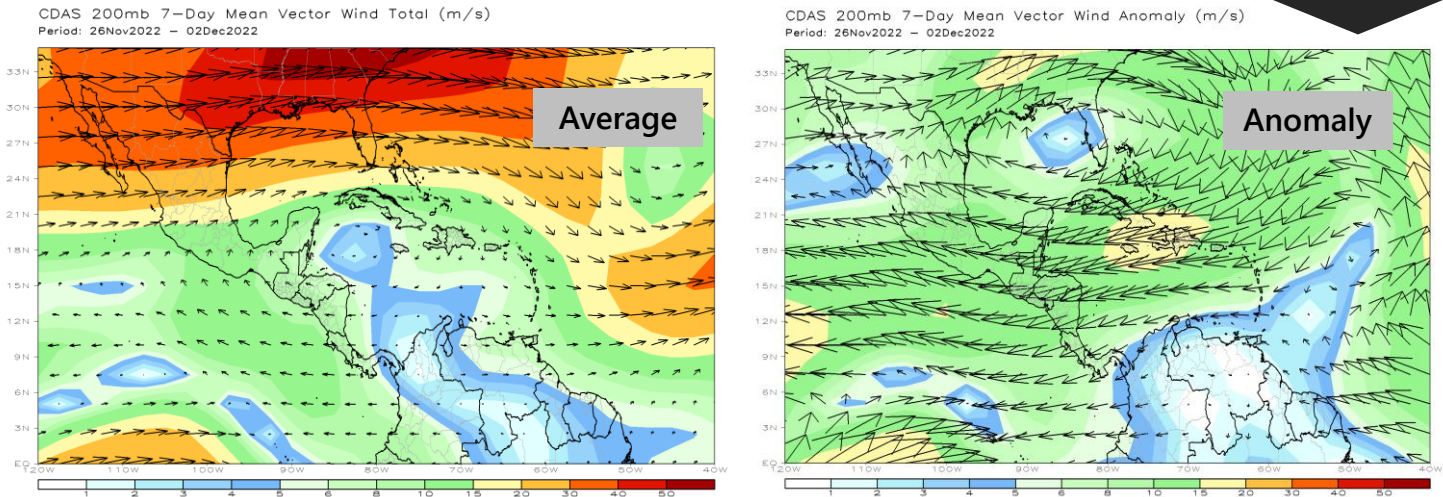


CMORPH 7-Day Total Rainfall Anomaly (mm)
Period: 28Nov2022 - 04Dec2022

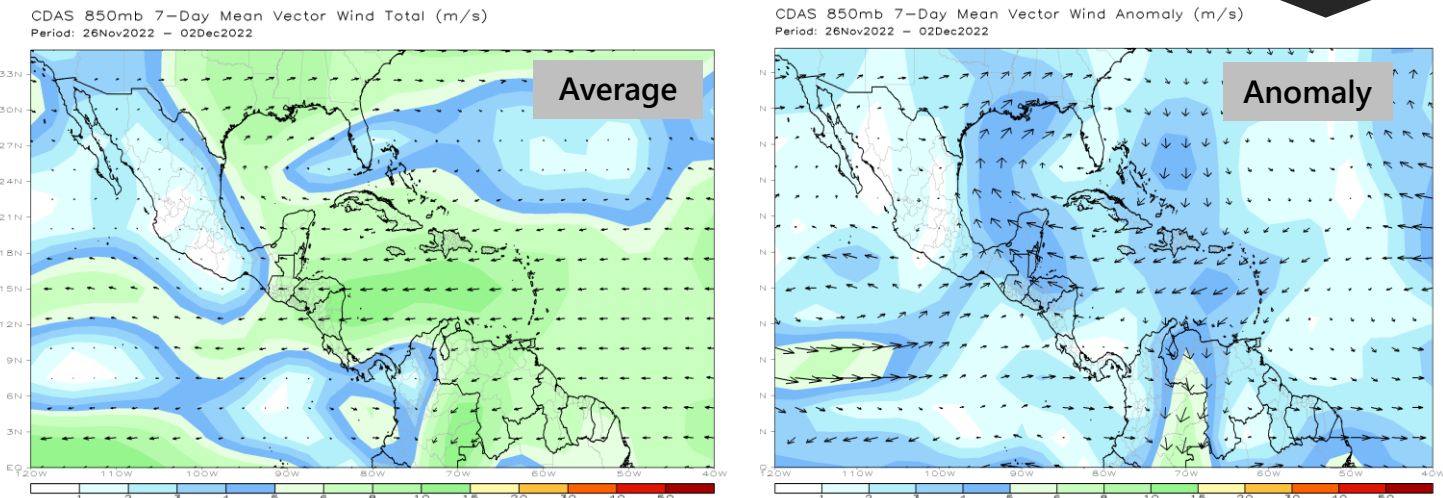


Caribbean/Central America, Last 7 Days

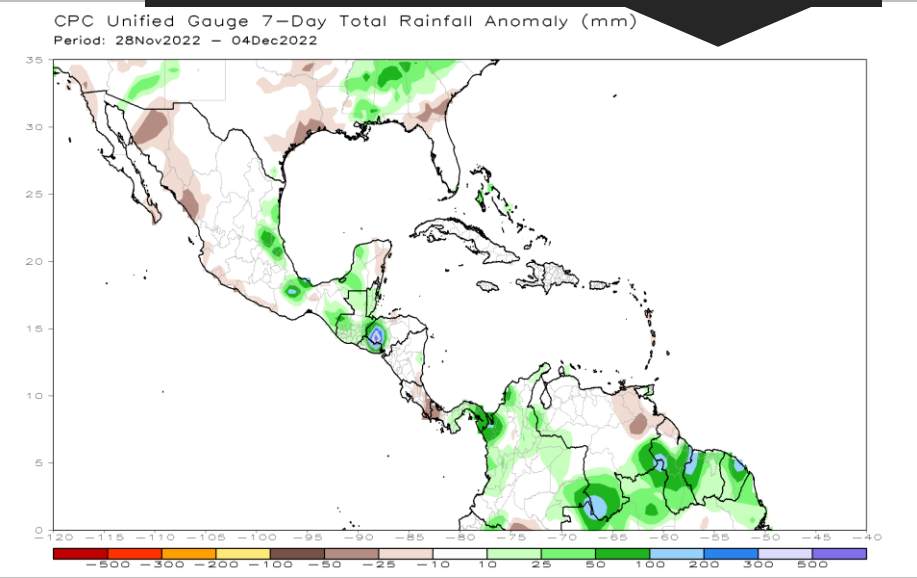
200 hPa Flow



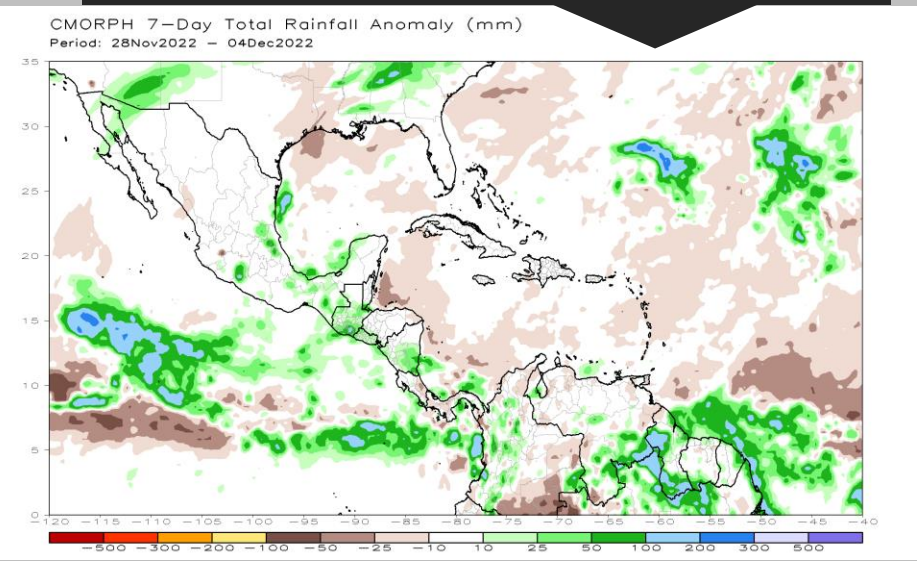
850 hPa Flow



Rainfall from Gauges (CPC)



Satellite – Estimated Rainfall (CMORPH)



¡Gracias! Thank you! ¡Obrigado!

Next RFG Session (January): Date to be discussed

Recorded sessions and more information available at:
<https://rammb2.cira.colostate.edu/training/rmtc/focusgroup/>

For enrolling in the distribution list for RFG announcements, please send an email to jose.galvez@noaa.gov or bernie.connell@colostate.edu