

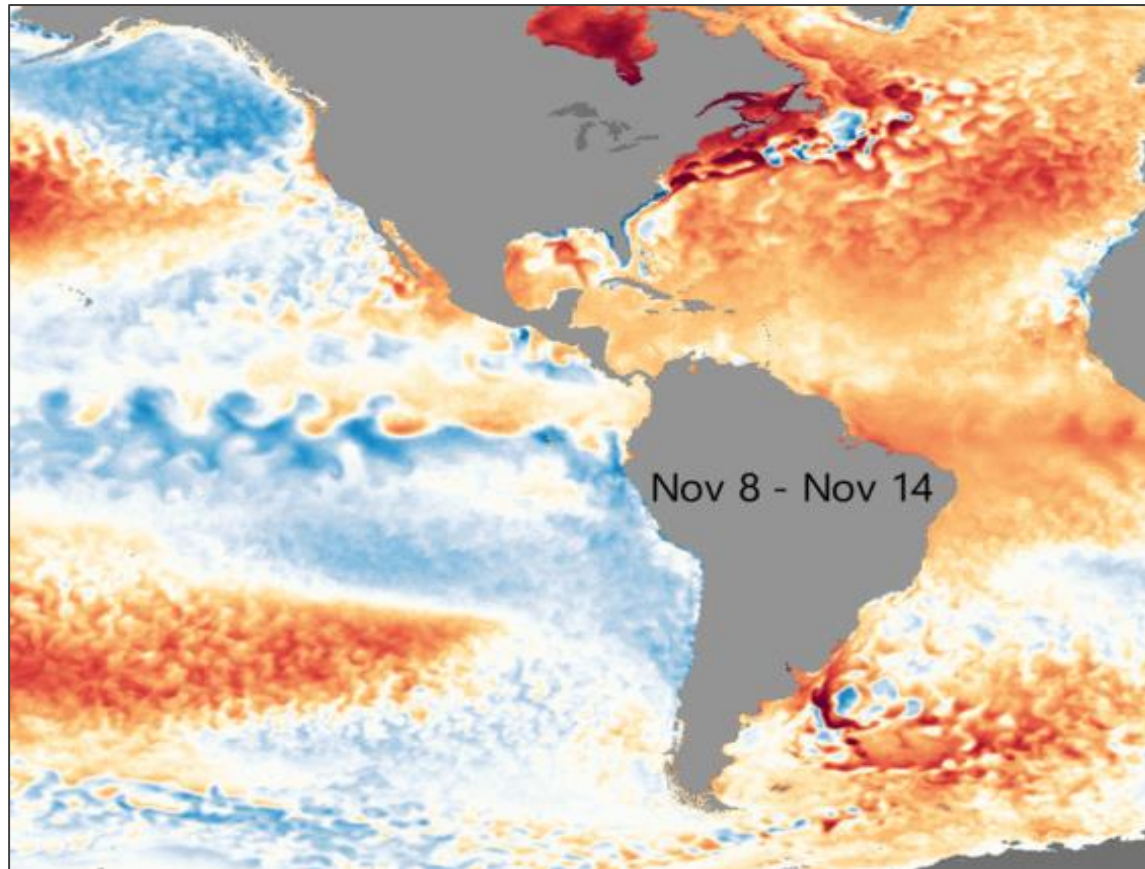


# Monthly Regional Focus Group Session

Wednesday 15 December 2021

# Sea Surface Temperatures

## Anomaly Evolution

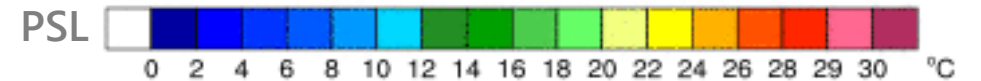
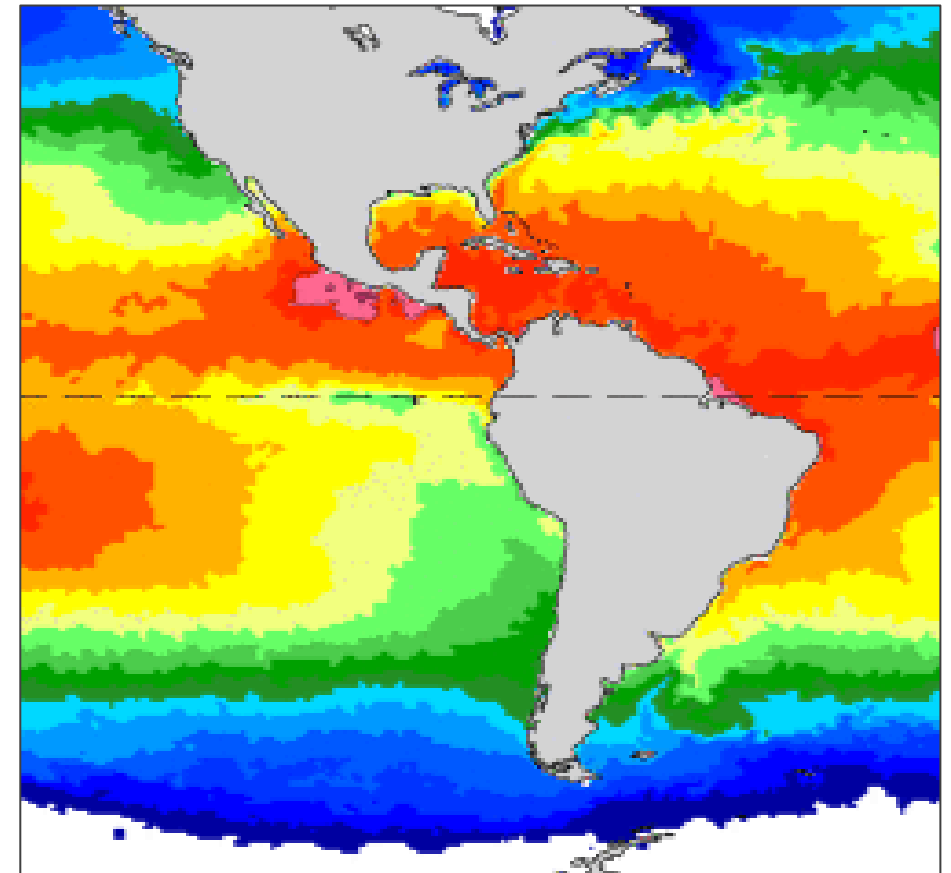


OISST, NOAA NNVL



<https://www.nnvl.noaa.gov/view/globaldata.html#SSTA>

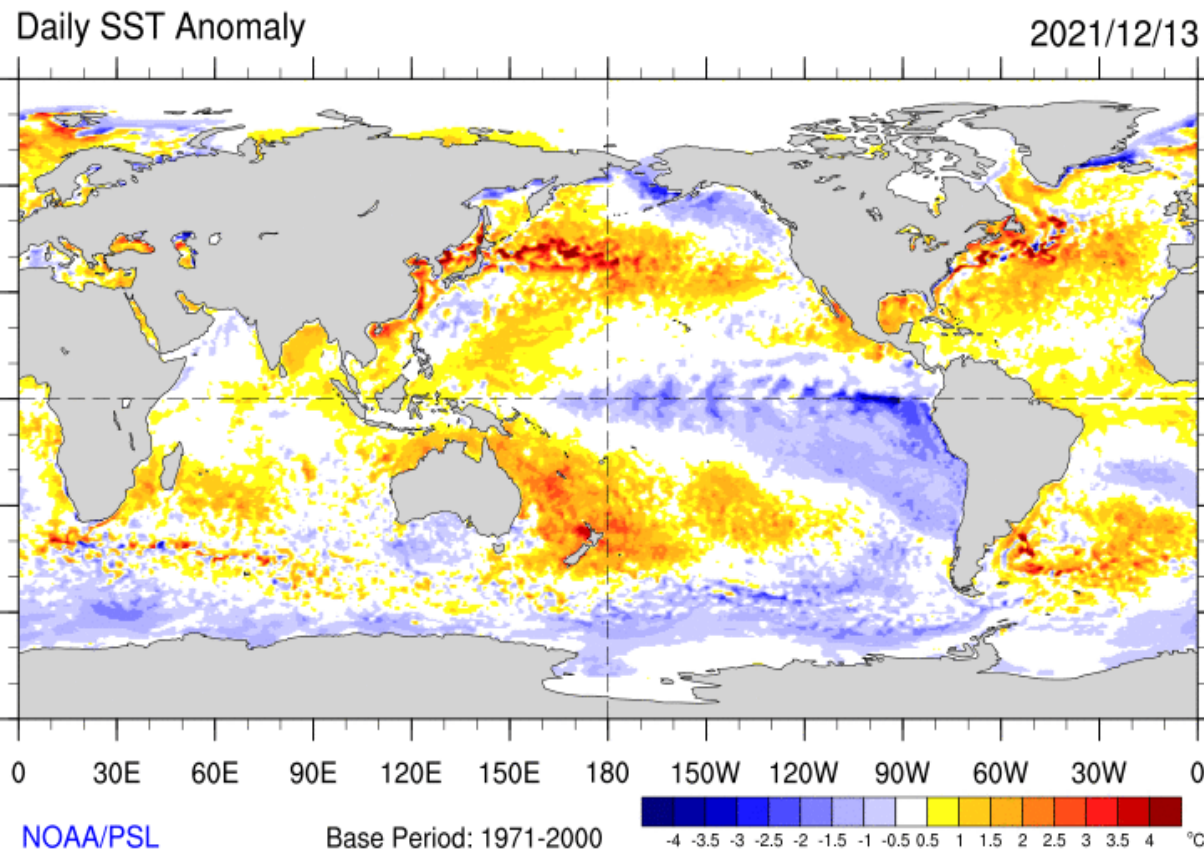
## Daily SST Nov 22



<https://psl.noaa.gov/map/clim/sst.shtml>

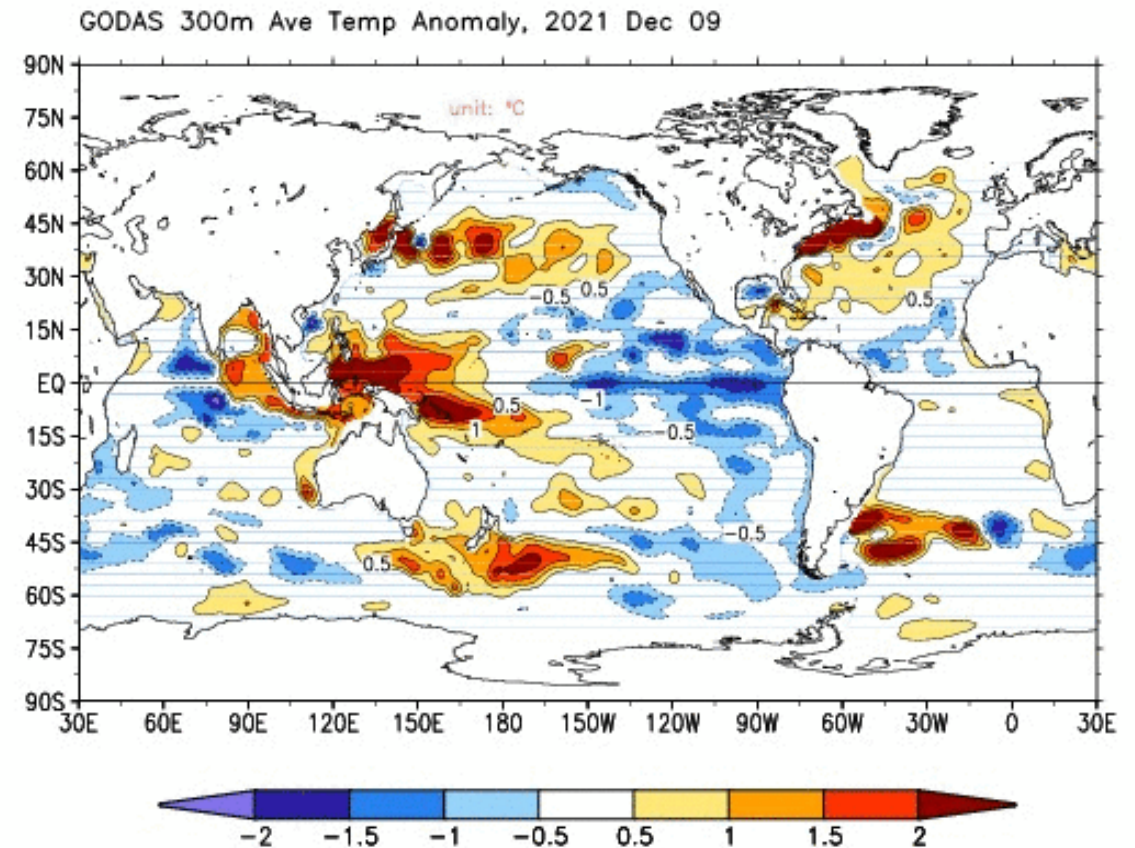
# Are the anomalies deep?

Deep anomalies tend to last longer, becoming useful for subseasonal forecasting.



Source: <https://psl.noaa.gov/map/clim/sst.shtml>

## Top 300m Layer Anomaly

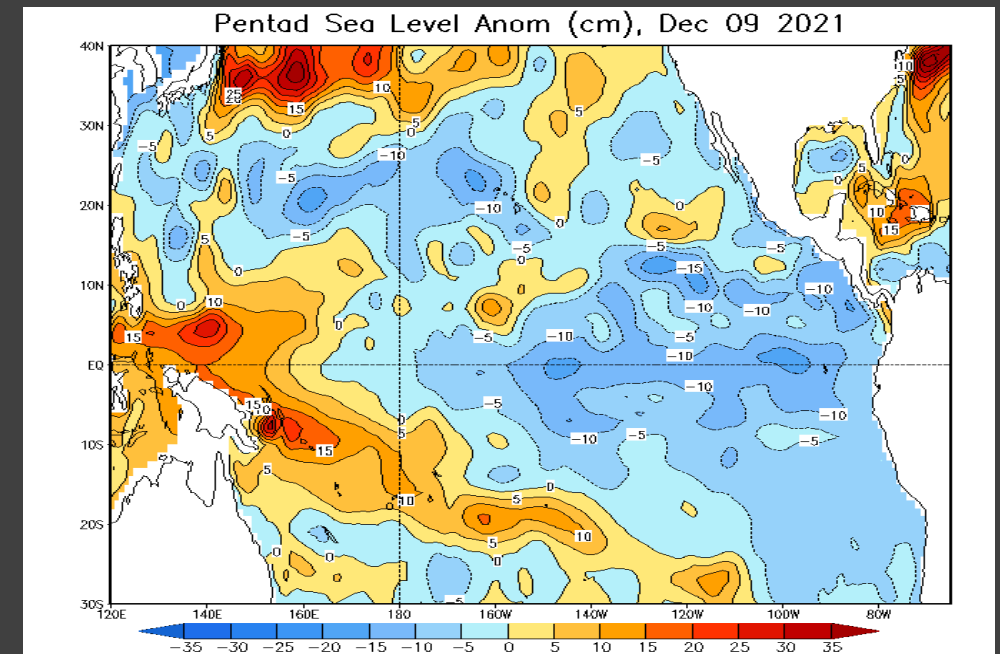
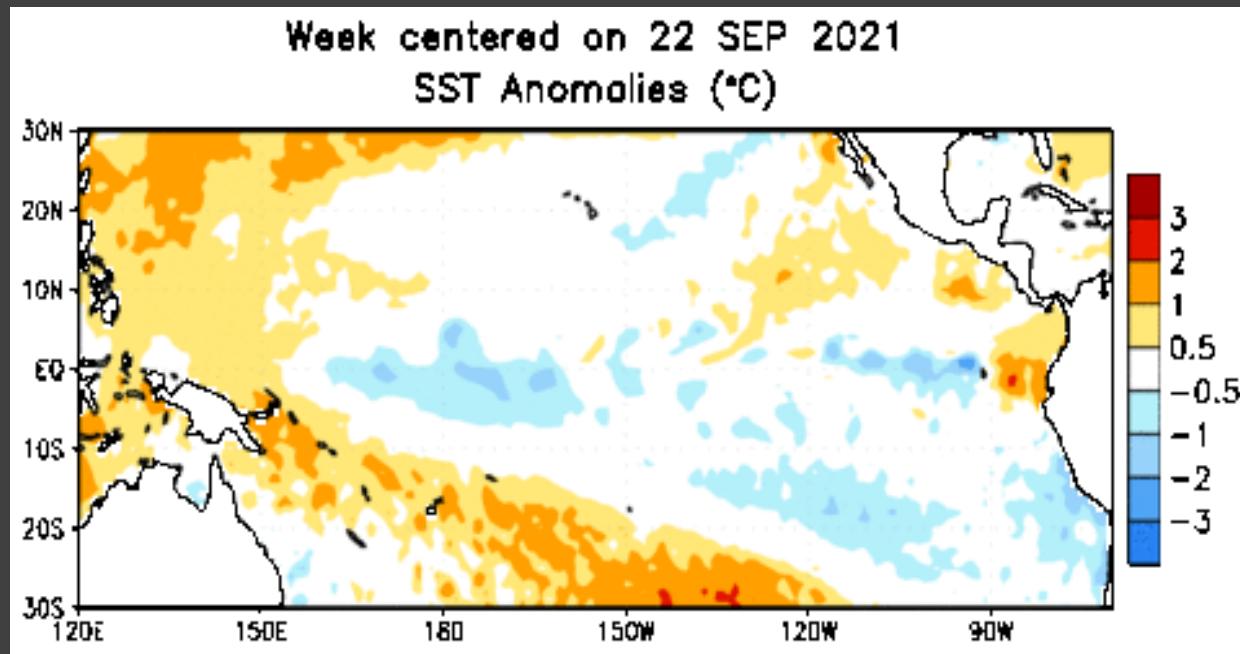


Source: CPC GODAS, <https://www.cpc.ncep.noaa.gov/products/GODAS/>



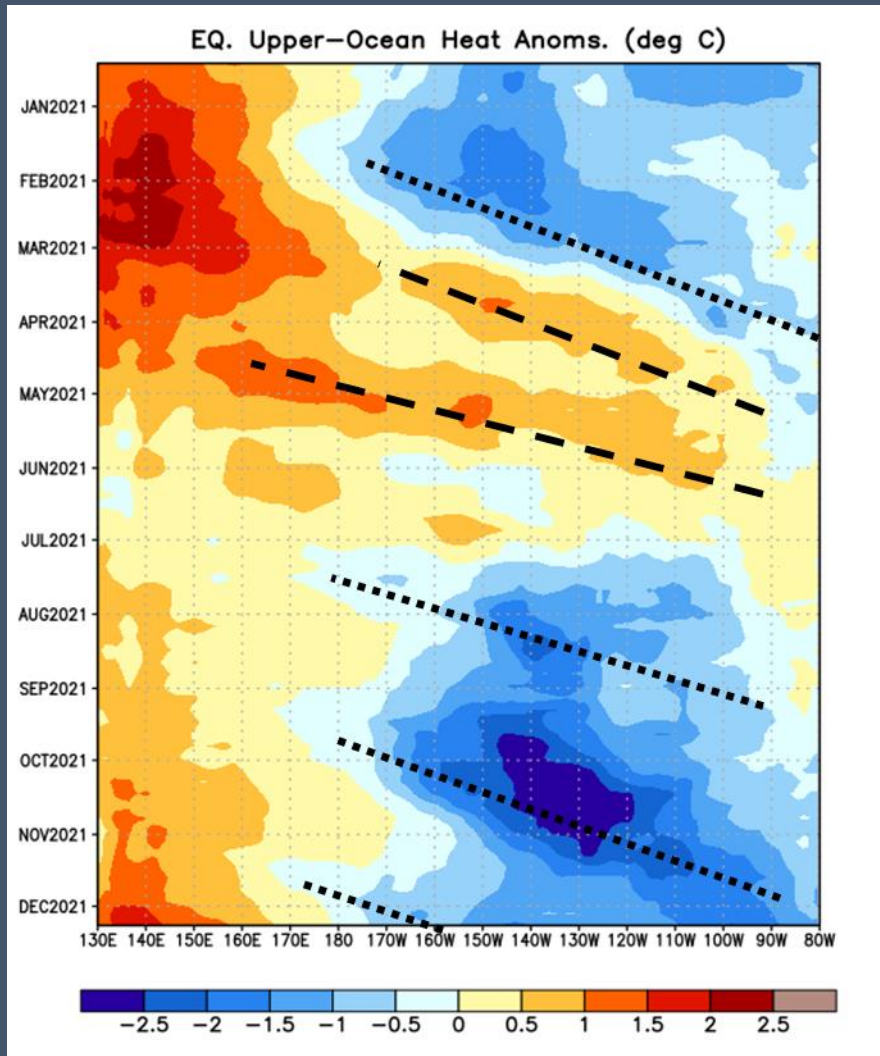
# ENSO: La Niña

- La Niña is present.\*
- Equatorial sea surface temperatures (SSTs) are below average across the central and east-central Pacific Ocean.
- The tropical Pacific atmosphere is consistent with La Niña conditions.



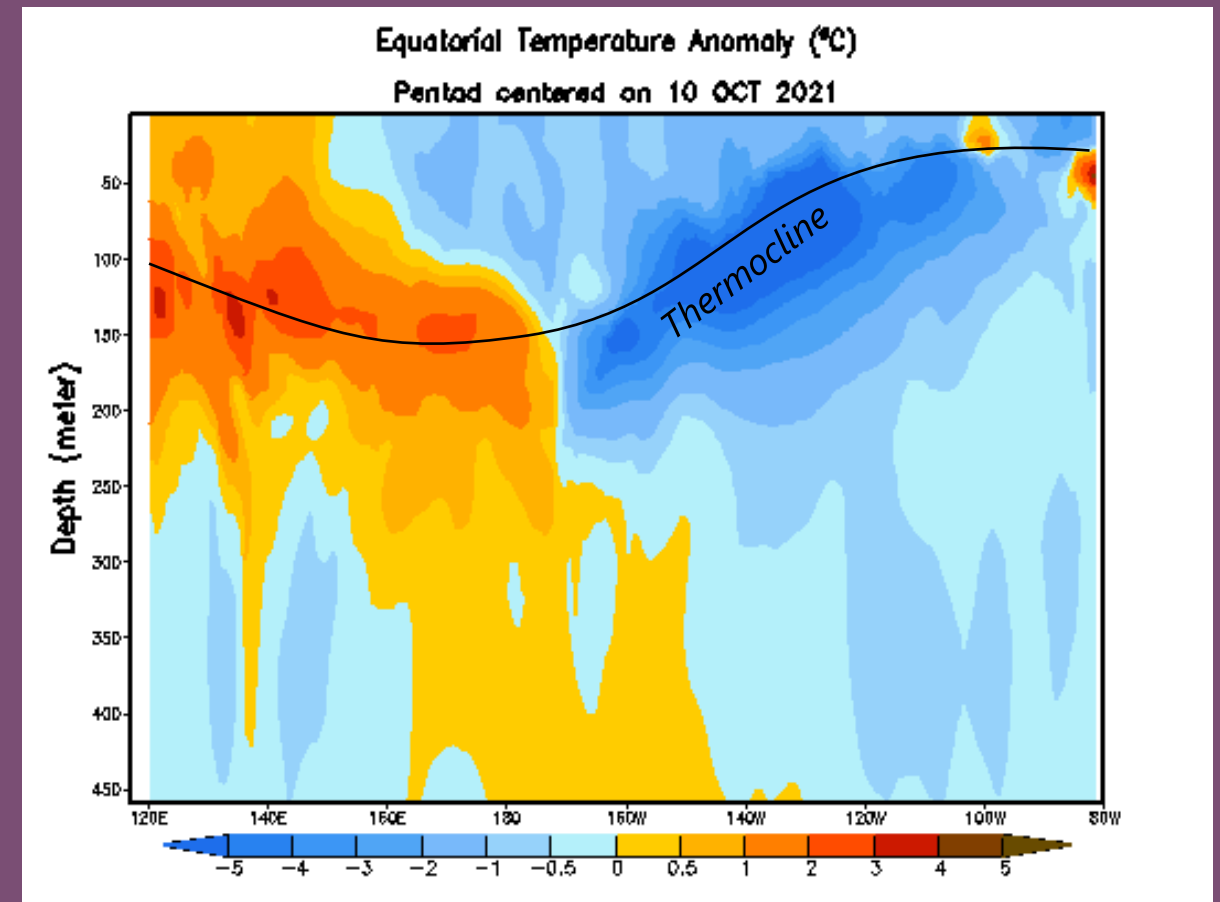
# ENSO: Oceanic Kelvin Waves

## Heat Content Hovmöller



Source:  
CPC

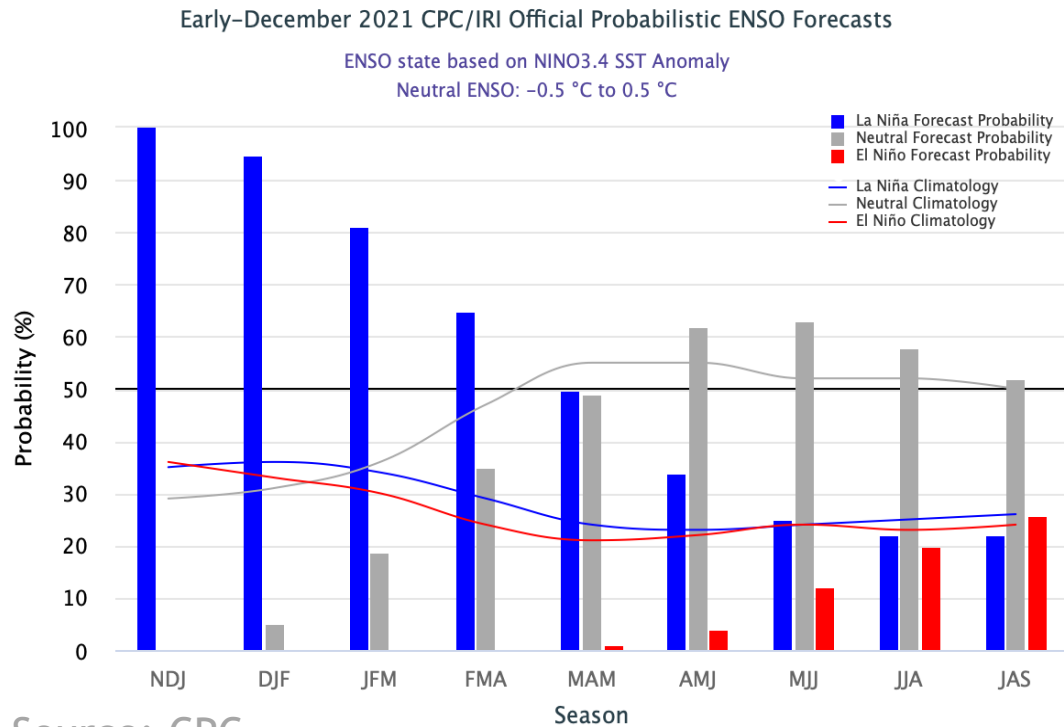
## Equatorial Pacific Temp. Anomaly



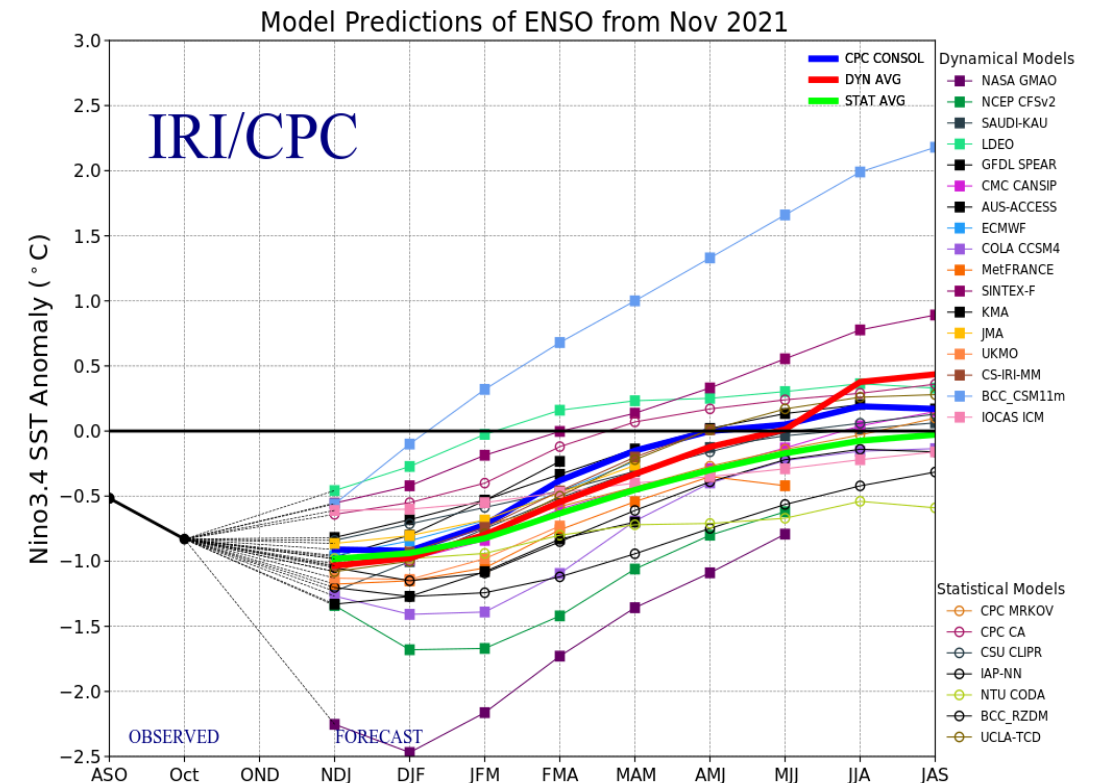
# ENSO Outlook

La Niña is favored to continue through the Northern Hemisphere winter 2021-22 (~95% chance) and transition to ENSO-neutral during the spring 2022 (~60% chance during April-June).\*

## CPC/IRI Probabilistic Forecast



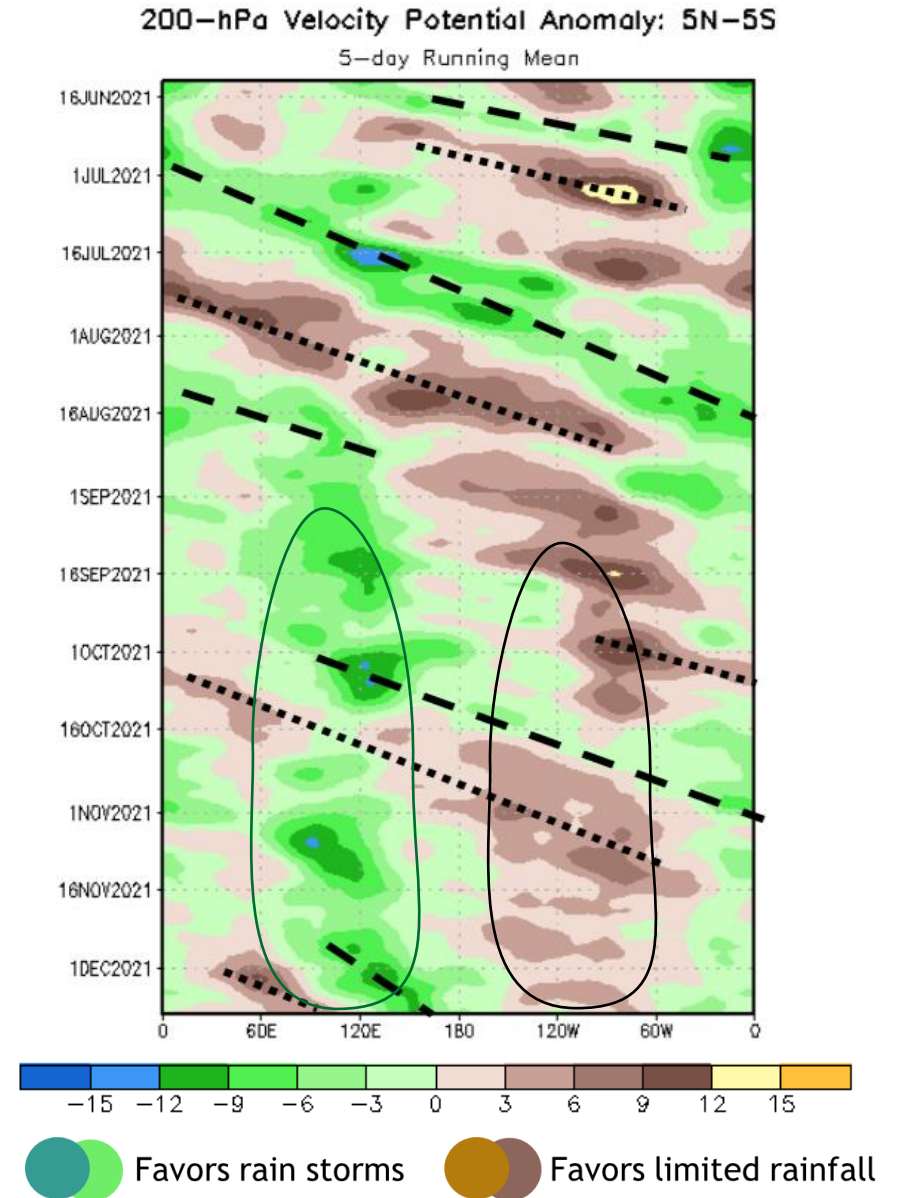
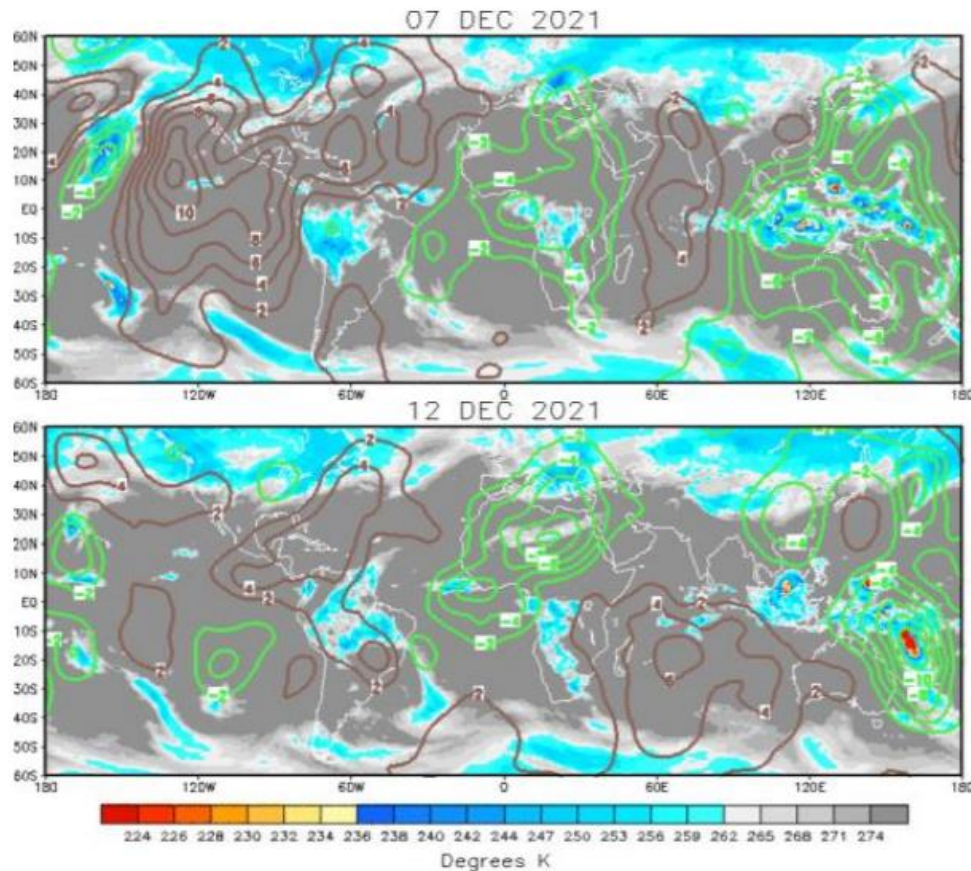
## IRI/CPC Dynamic Models



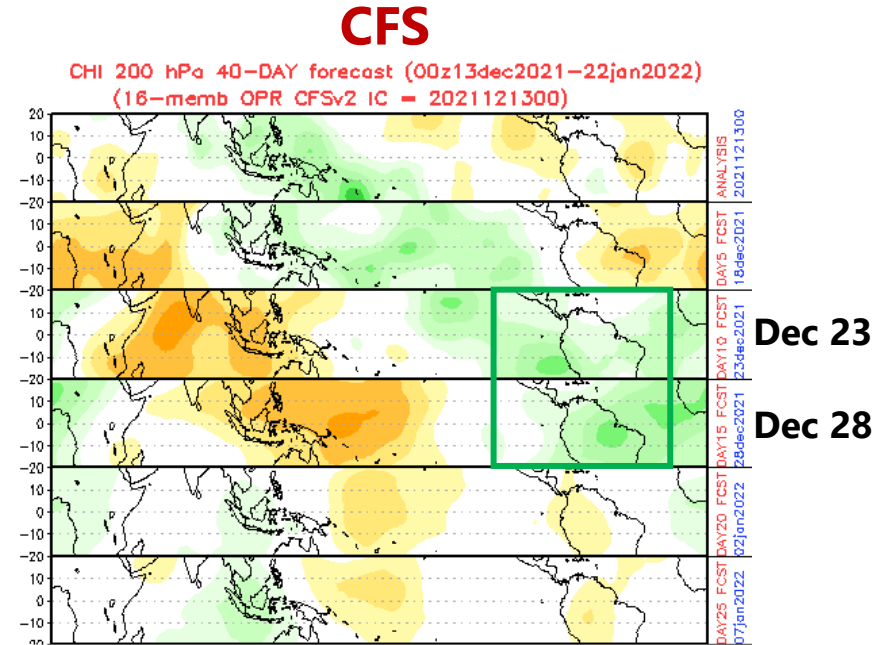
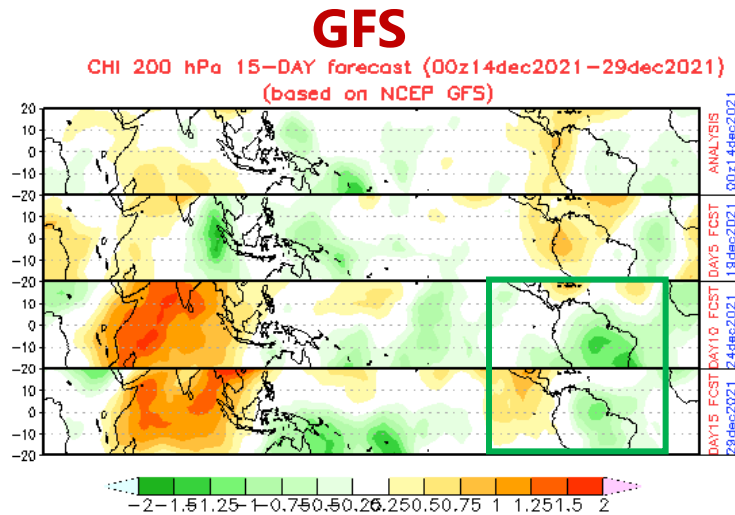
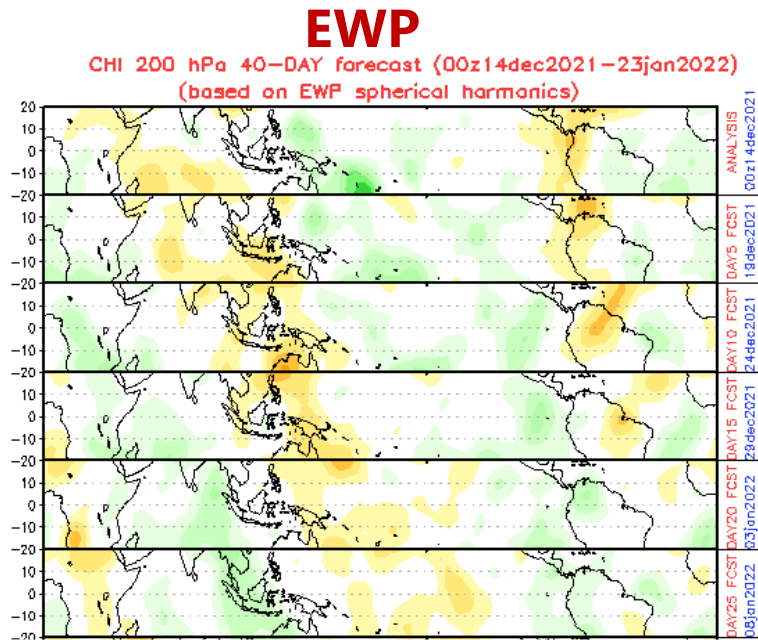


# Madden-Julian Oscillation (MJO)

- Wave 2 velocity pattern is observed
- Suppressed convection over the Americas
- Propagation slightly better organized, but not too much.



# MJO Forecasts

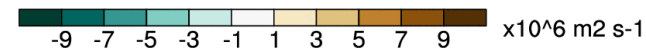
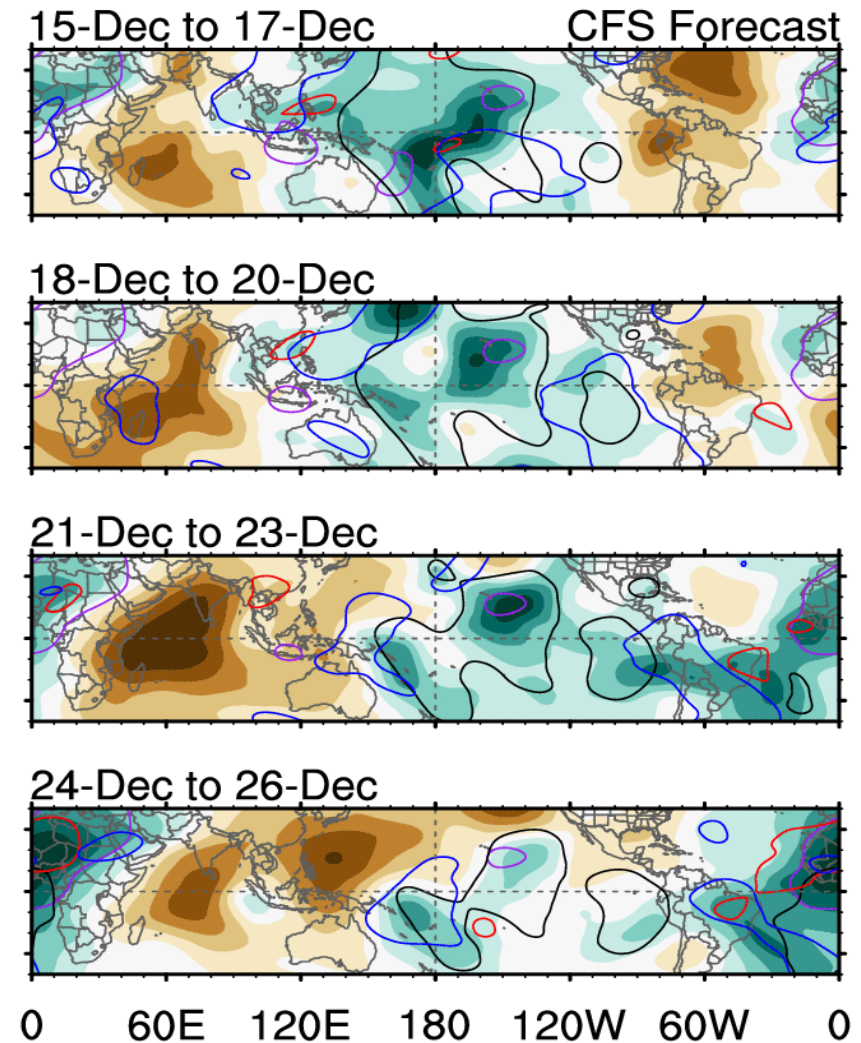


- Weak MJO signature
- Slightly wetter (more upper divergent) on the first week of December
- Dec 1-10 signal might be more pronounced in the Southern Hemisphere



# Tropospheric Equatorial Waves

- Weak convergence through Dec 20
- Kelvin Wave Dec 20-26, South America
  - Monitor for impacts in Eastern and Central Brasil



7-day CHI200 with CFS forecasts

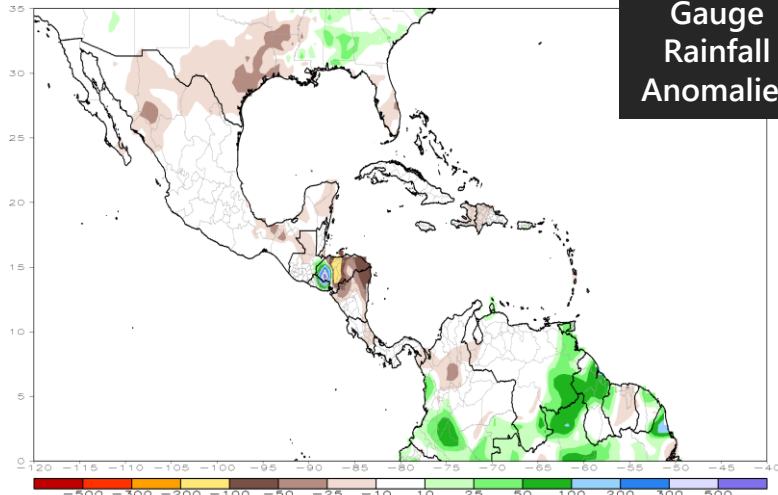
Wed 2020-09-16 1018 UTC

— MJO — Kelvin x2  
— Low — ER

Contours at -2, -6  $\times 10^6$  m2 s-1  
Carl Schreck  
carl\_schreck@ncsu.edu

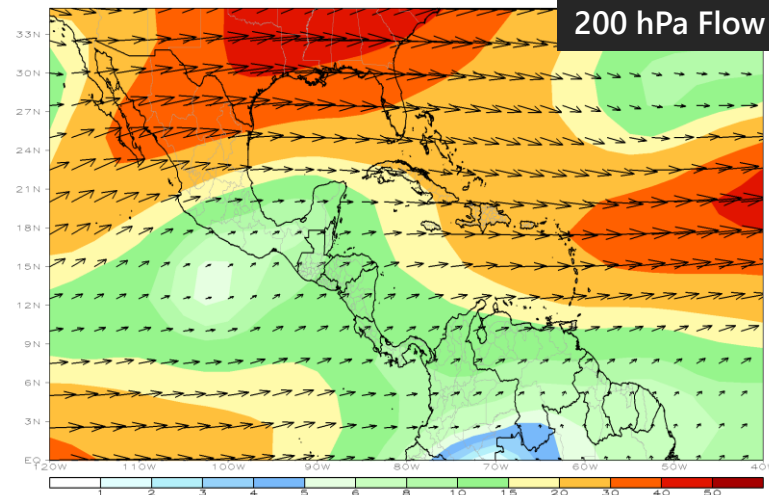
# Tropical Americas: Last 7 Days

CPC Unified Gauge 7-Day Total Rainfall Anomaly (mm)  
Period: 07Dec2021 - 13Dec2021



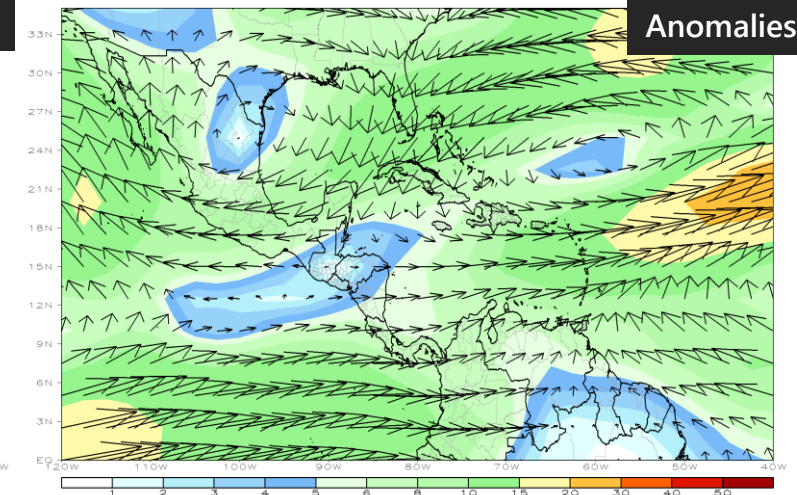
Gauge  
Rainfall  
Anomalies

CDAS 200mb 7-Day Mean Vector Wind Total (m/s)  
Period: 06Dec2021 - 12Dec2021



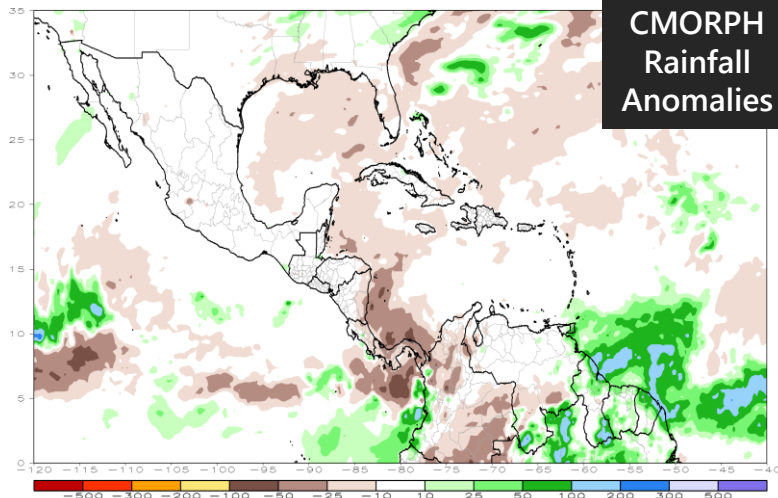
200 hPa Flow

CDAS 200mb 7-Day Mean Vector Wind Anomaly (m/s)  
Period: 06Dec2021 - 12Dec2021



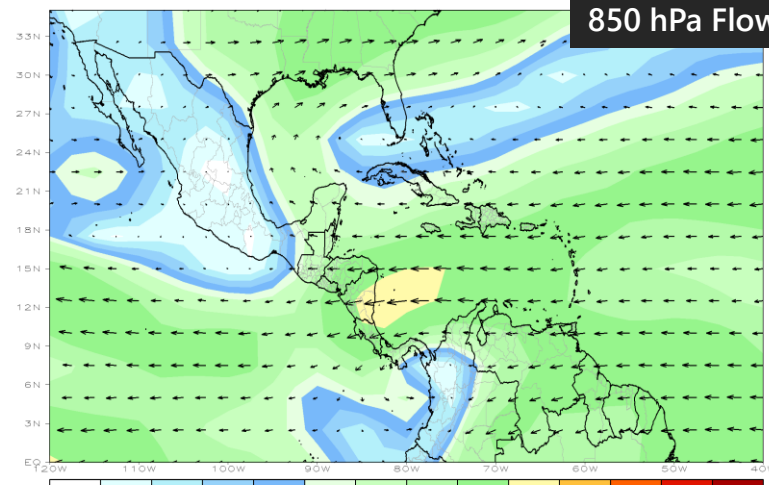
Anomalies

CMORPH 7-Day Total Rainfall Anomaly (mm)  
Period: 07Dec2021 - 13Dec2021



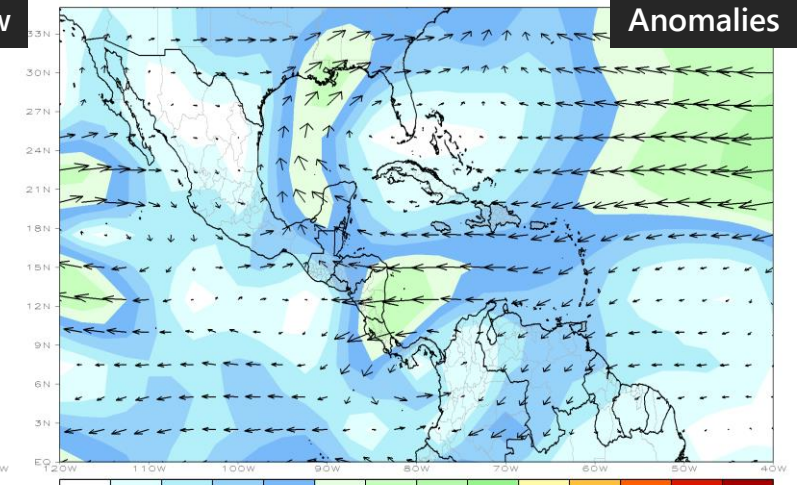
CMORPH  
Rainfall  
Anomalies

CDAS 850mb 7-Day Mean Vector Wind Total (m/s)  
Period: 06Dec2021 - 12Dec2021



850 hPa Flow

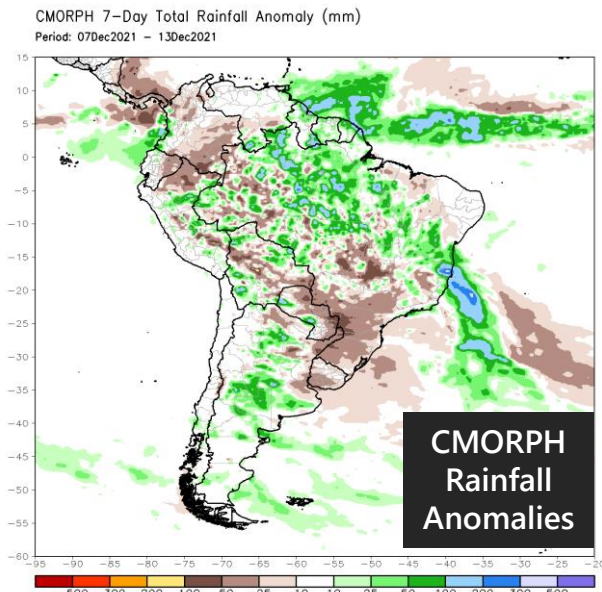
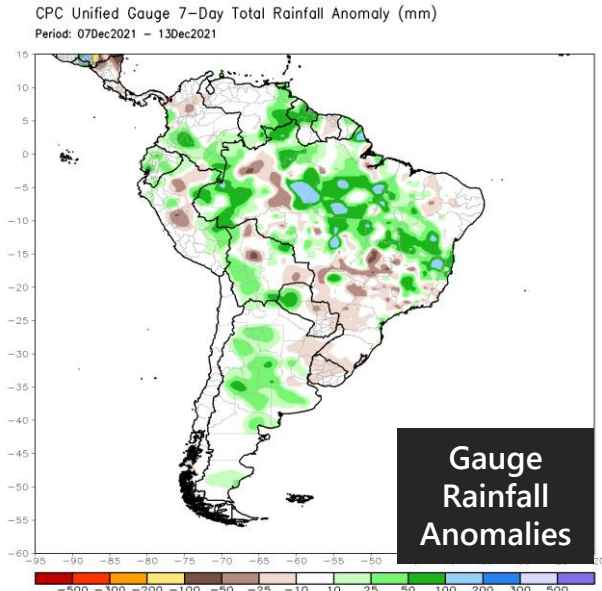
CDAS 850mb 7-Day Mean Vector Wind Anomaly (m/s)  
Period: 06Dec2021 - 12Dec2021



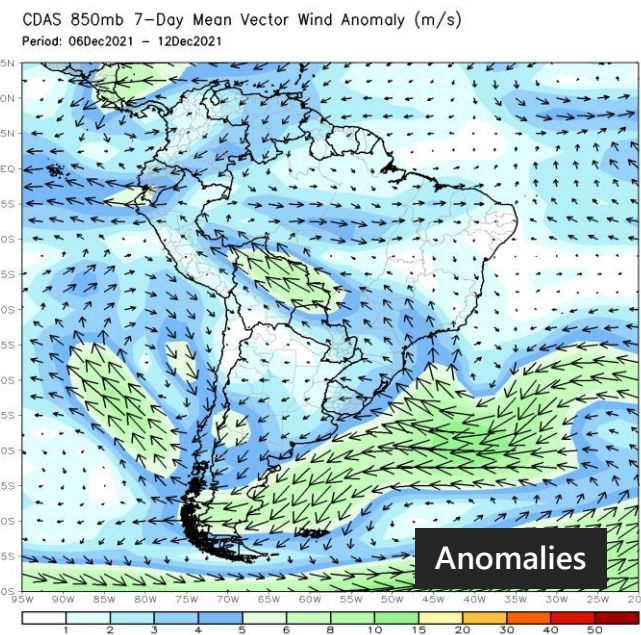
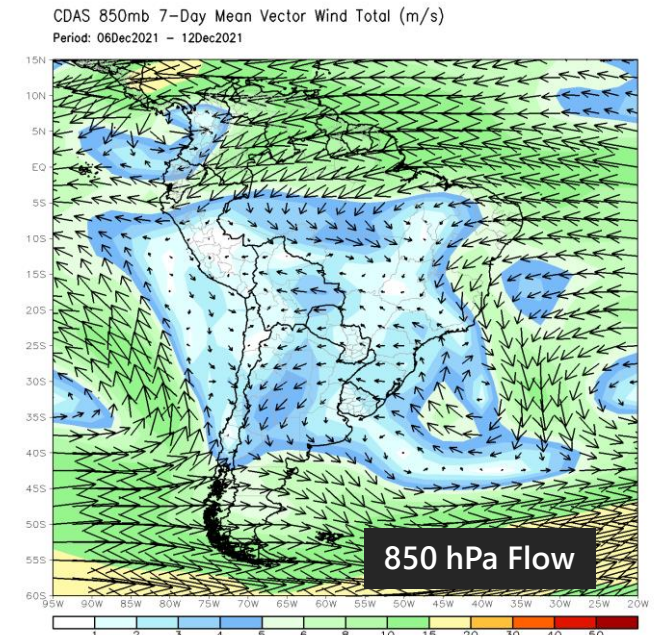
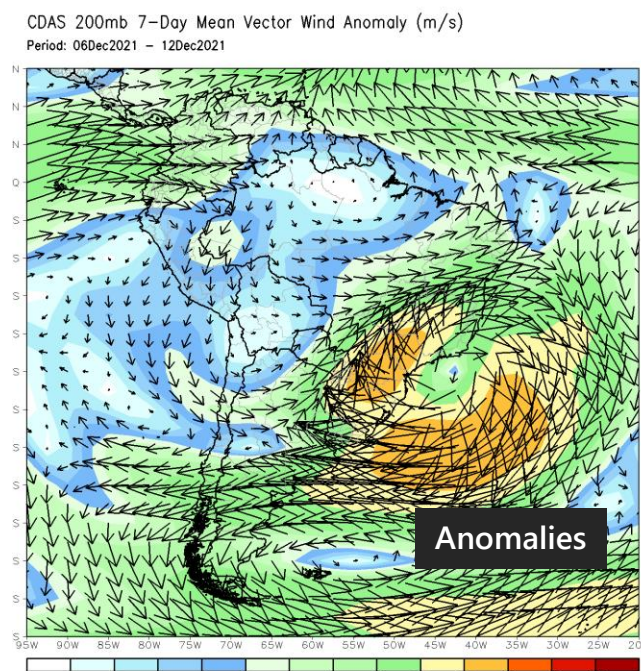
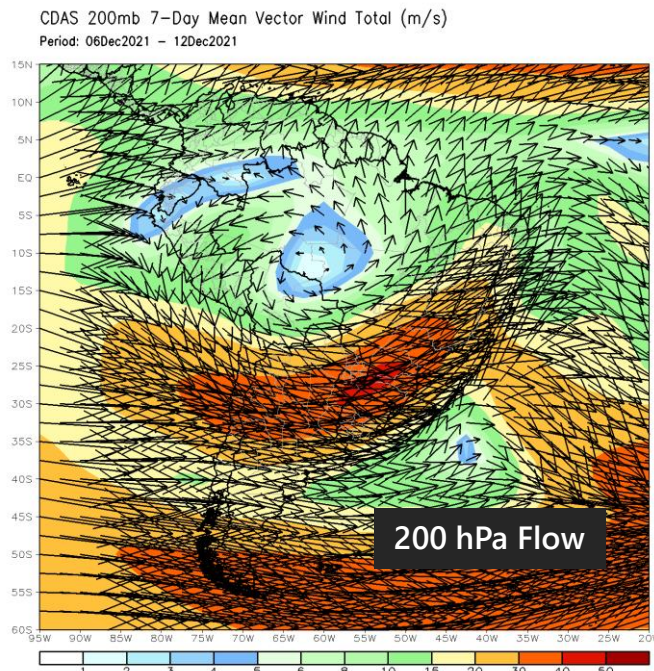
Anomalies



# South America: Last 7 Days



CMORPH: CPC  
Morphing Technique  
[https://www.cpc.ncep.noaa.gov/products/janowiak/cmorph\\_description.html](https://www.cpc.ncep.noaa.gov/products/janowiak/cmorph_description.html)



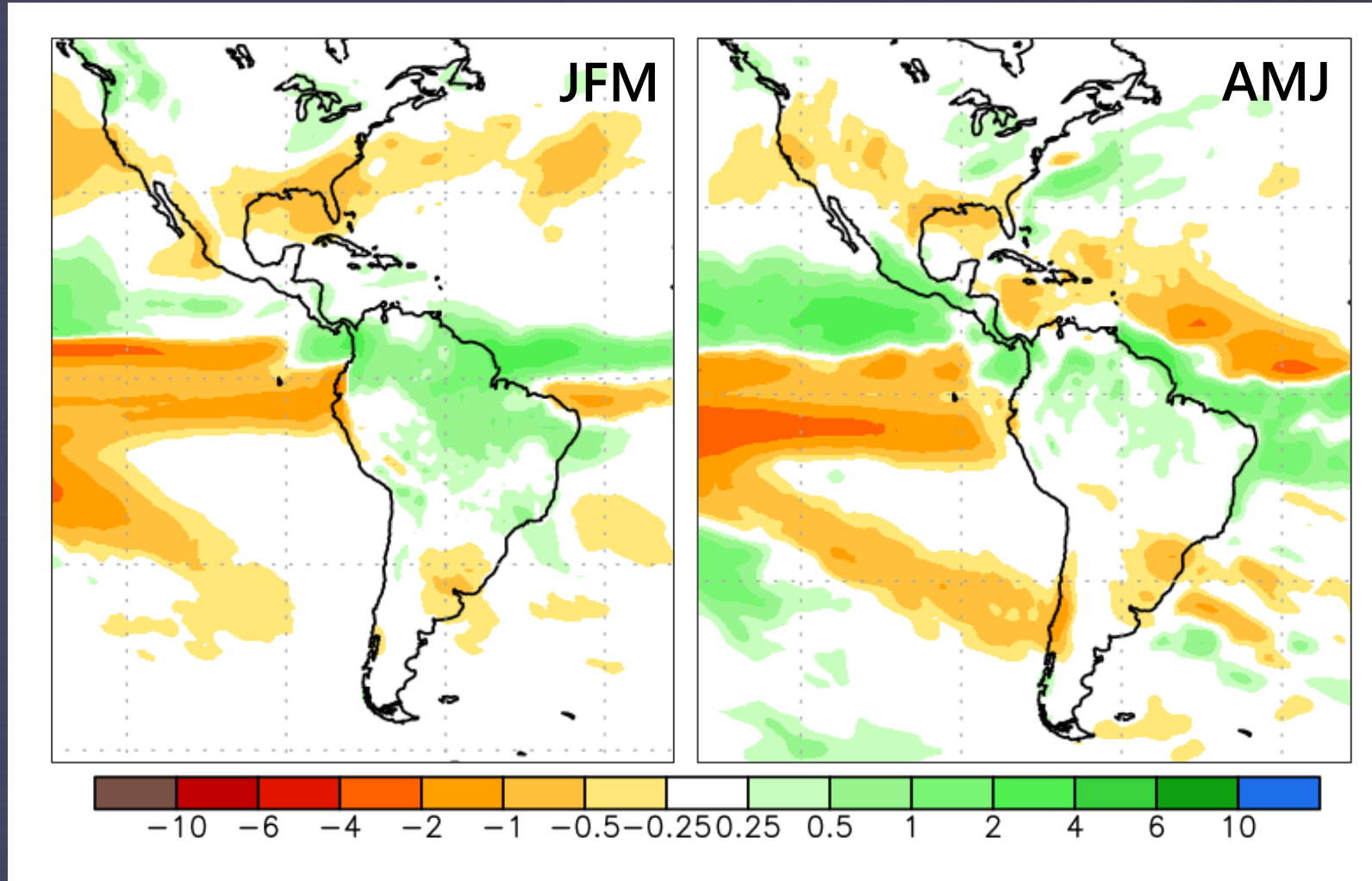


# NMME Precipitation Forecasts

- ☉ NMME = North American Multi-model Ensemble.
- ☉ Output of 7 Global Models, analyzed statistically.
- ☉ Ensemble mean shows generally a La Niña Signal on Rainfall Forecasts.
- ☉ NMME References:

<https://www.ncei.noaa.gov/products/weather-climate-models/north-american-multi-model>

<https://www.cpc.ncep.noaa.gov/products/NMME/seasanom.shtml>



**¡Gracias!**

**Thank you!**