

ENSO Comparisons

CORE WG

Analysis by Michelle L'Heureux

Examining 5N-5S average across the tropical Pacific.

Examining 1980-2020 (monthly means)

1991-2020 Climatology.

13 El Niño events. 14 La Niña events.

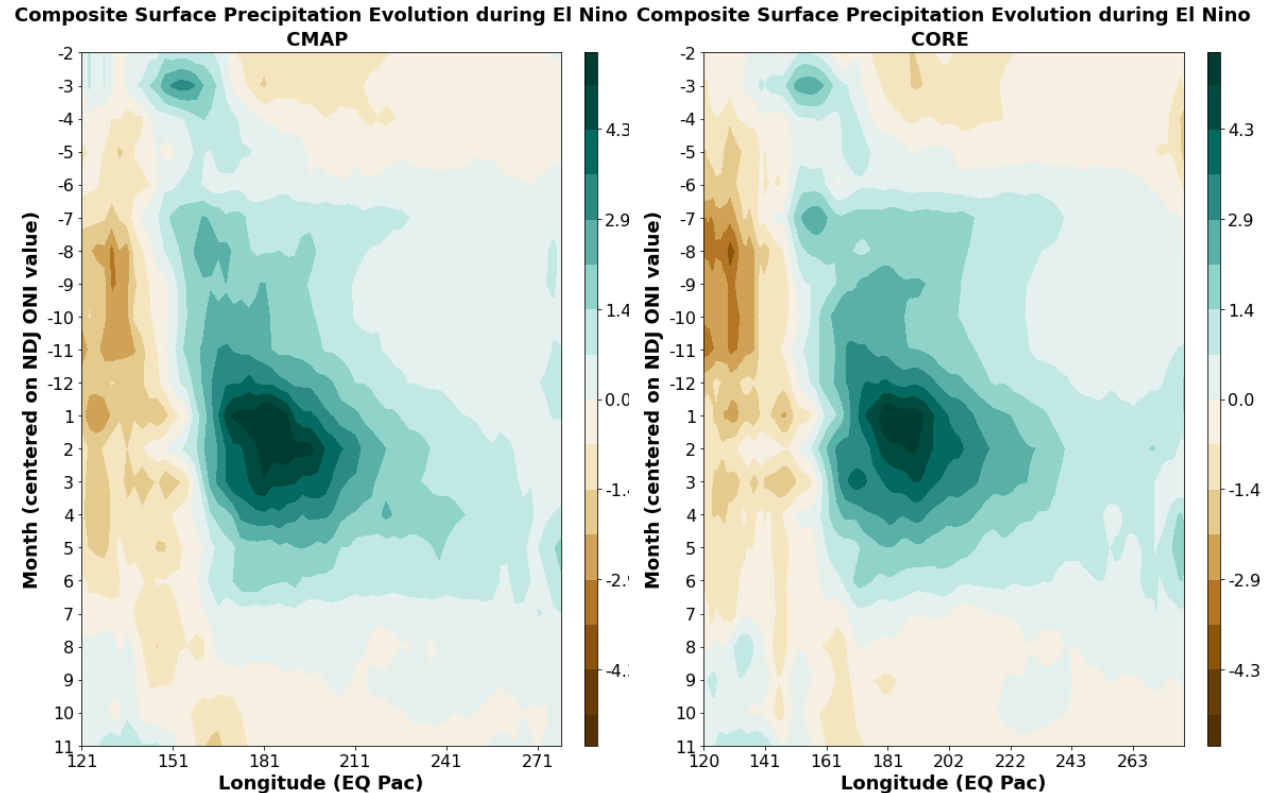
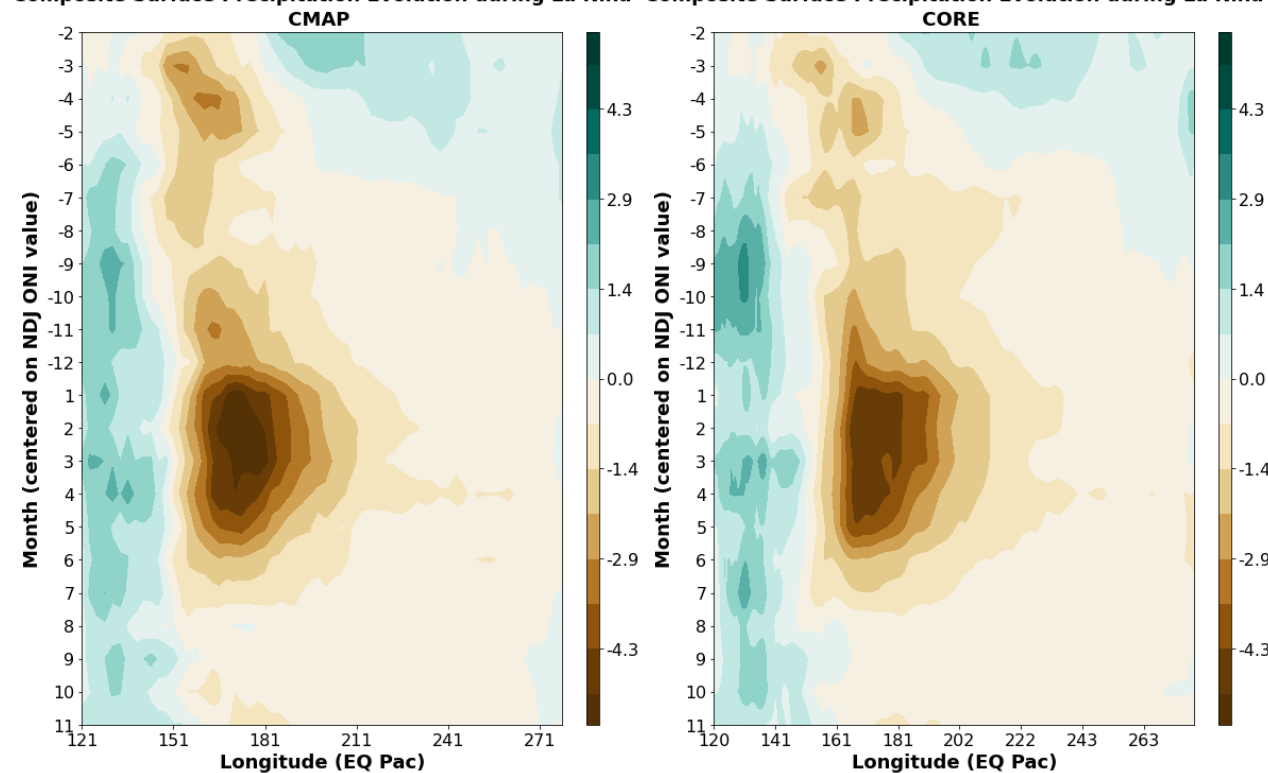
Centered on NDJ peak and looking at lag/lead evolution.

“All Reanalysis Average” is based on CFSR, R1, MERRA2, JRA55, and ERA5

Precipitation Anomalies CMAP vs. CORE

During peak of La Niña, CORE precip slightly more positive (less negative) than CMAP near Date Line

Composite Surface Precipitation Evolution during La Niña



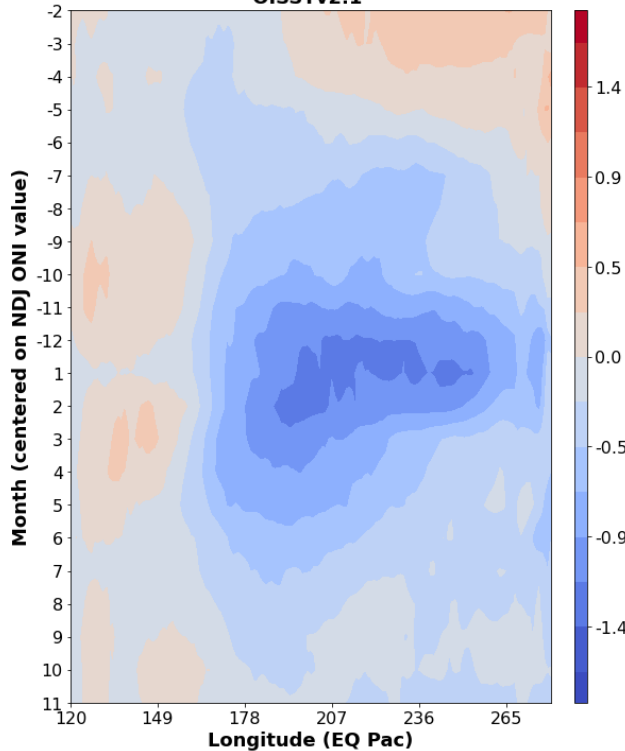
During peak of El Niño, above-average CORE precip extended slightly farther to the east than CMAP

Sea Surface Temperature Anomalies

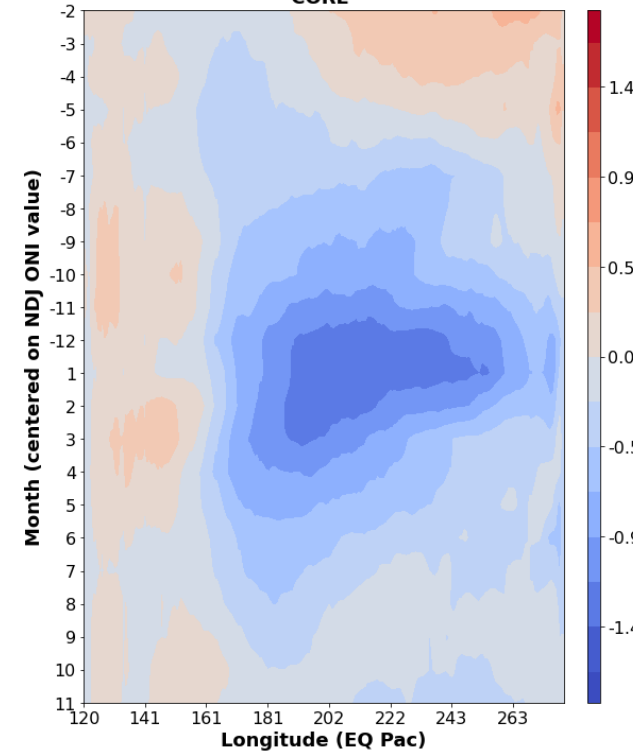
OISSTv2.1 vs. CORE

During peak of La Niña, CORE SSTs are negative over a broader region than OISSTv2.1

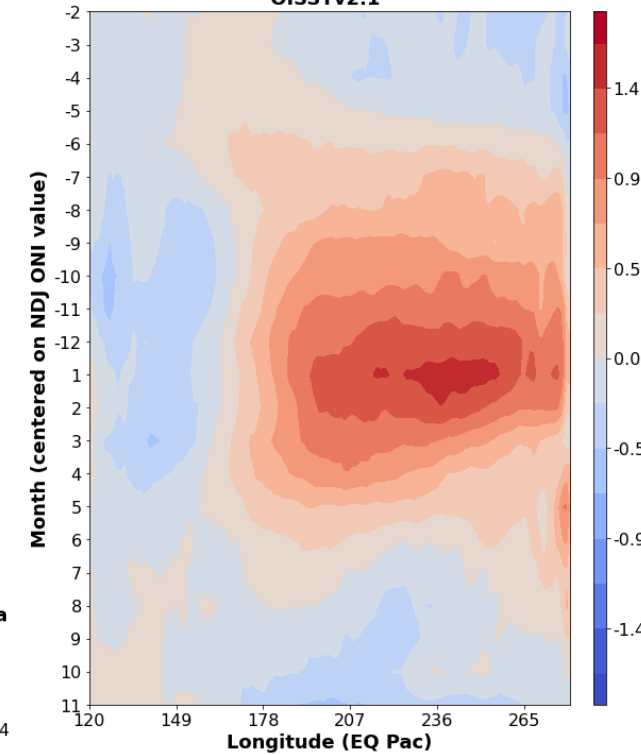
Composite Surface Temperature Evolution during La Nina
OISSTv2.1



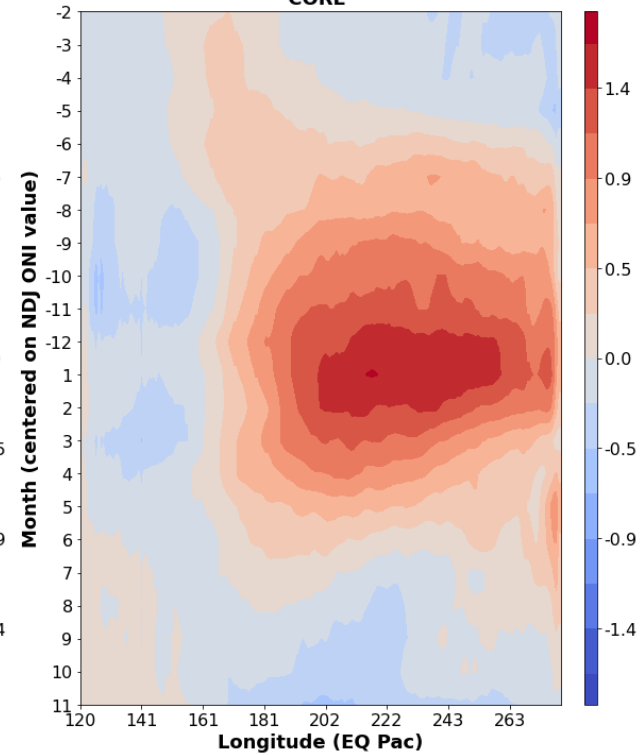
Composite Surface Temperature Evolution during La Nina
CORE



Composite Surface Temperature Evolution during El Nino
OISSTv2.1



Composite Surface Temperature Evolution during El Nino
CORE



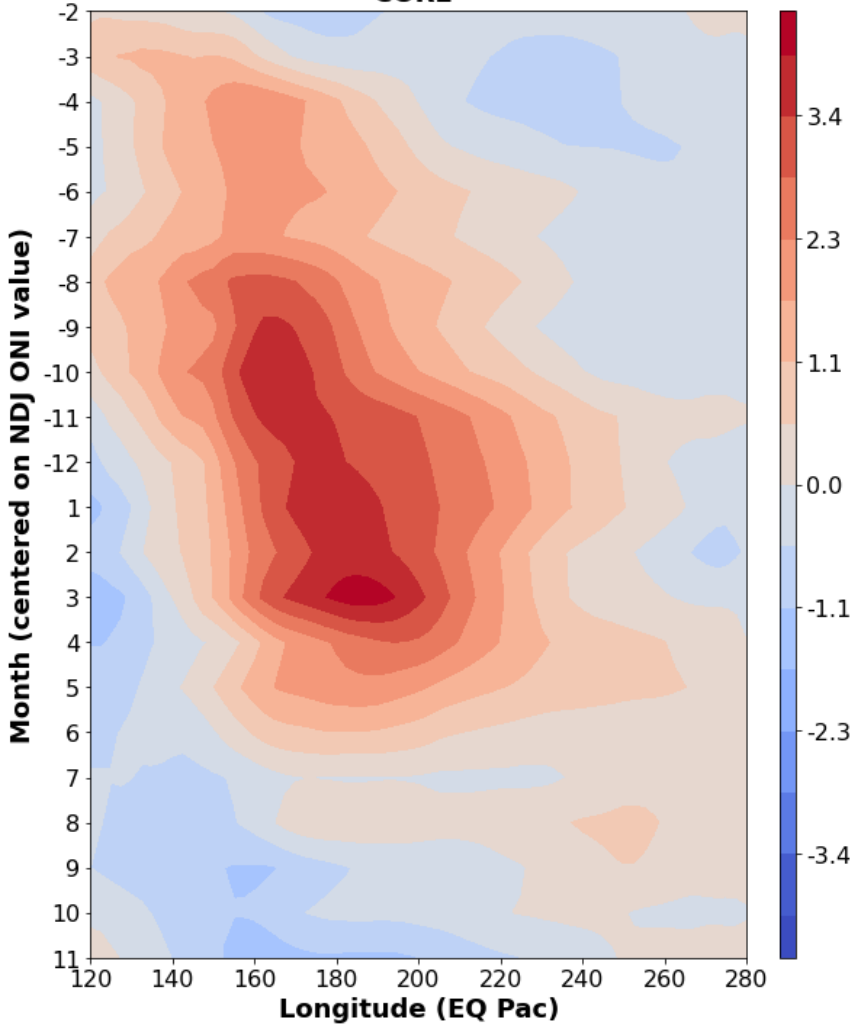
During peak of El Niño, CORE SSTs are more positive over a broader region than OISSTv2.1

850mb Zonal Wind Anomalies during El Niño

All Reanalysis Avg (5 averaged) vs. CORE

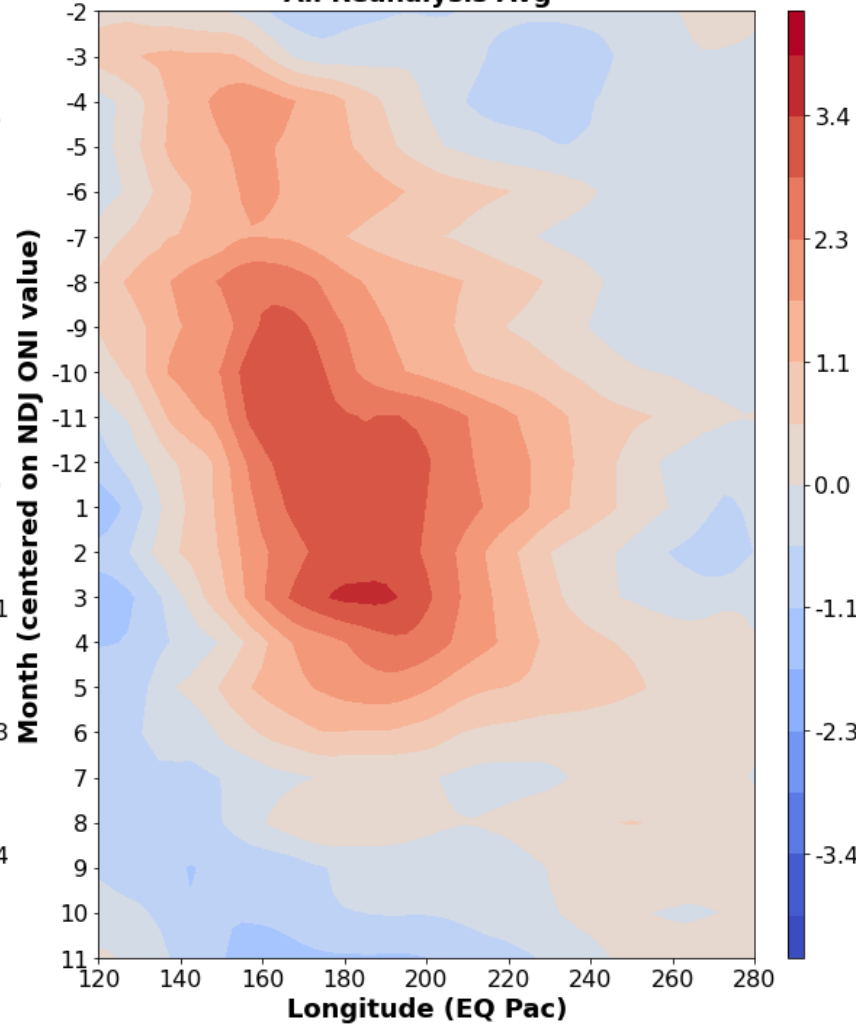
Composite 850hPa Zonal Wind Evolution during El Niño

CORE



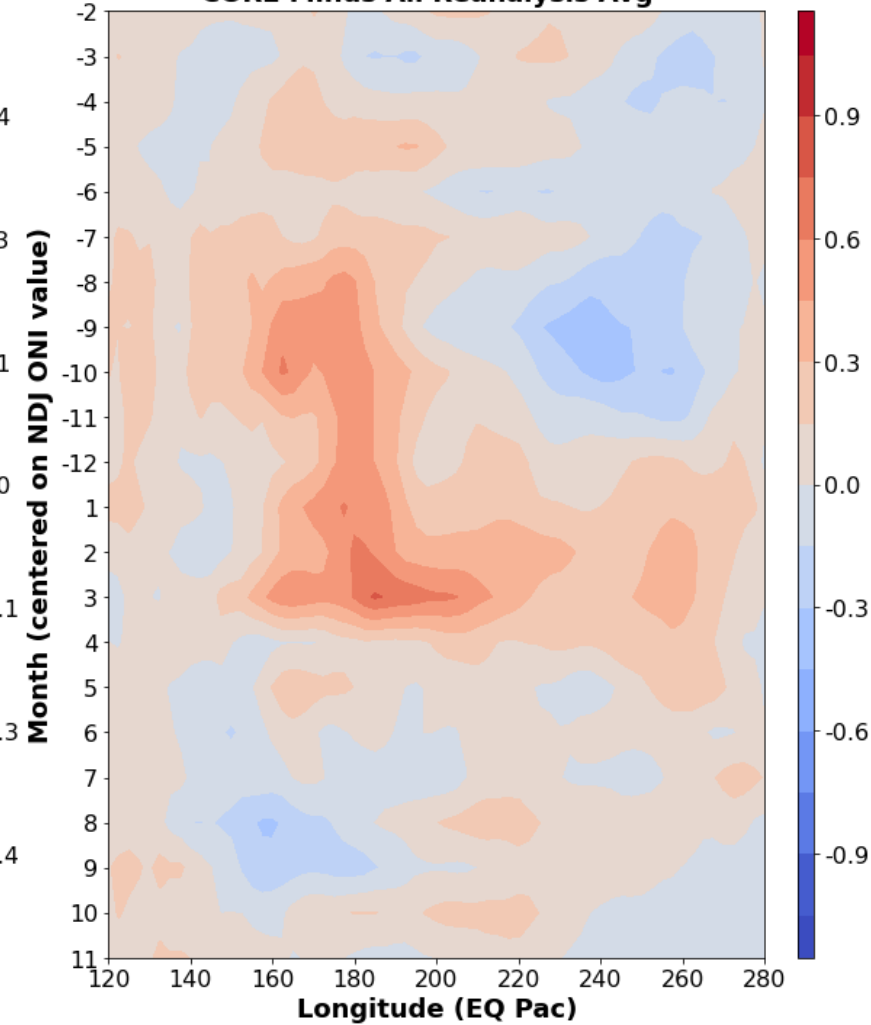
Composite 850hPa Zonal Wind Evolution during El Niño

All Reanalysis Avg



Composite 850hPa Zonal Wind Evolution during El Niño

CORE Minus All Reanalysis Avg



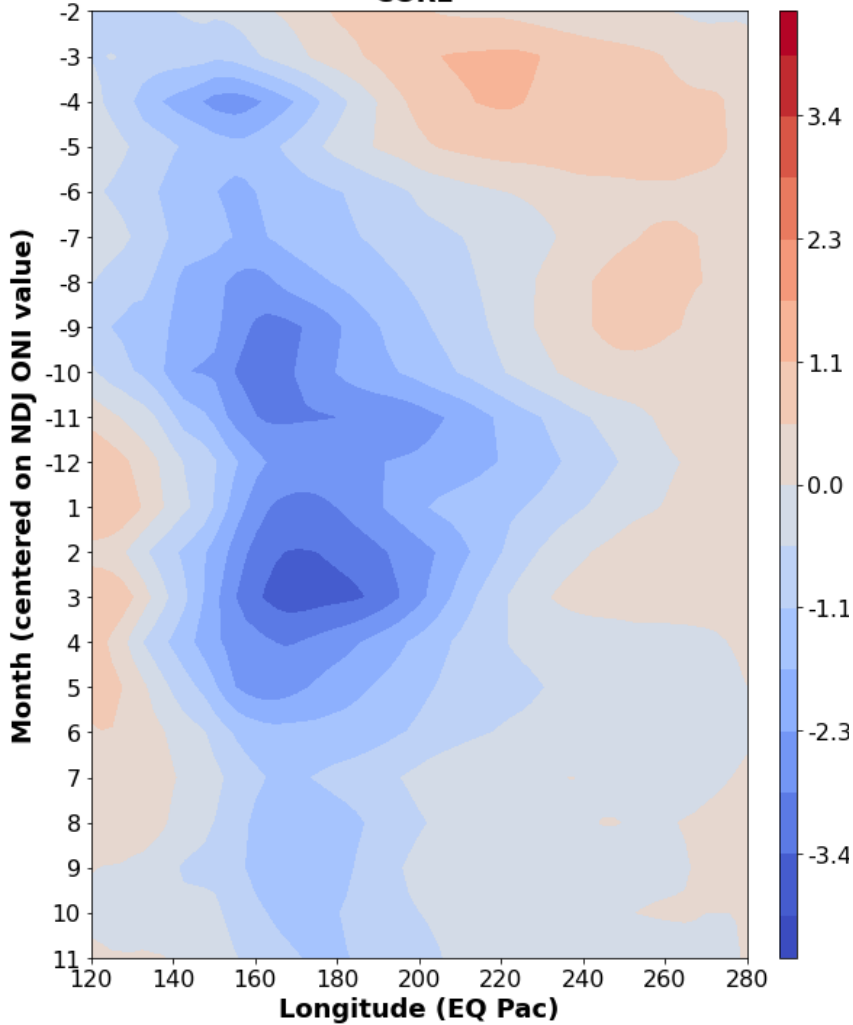
During El Niño, CORE 850hPa zonal wind anomalies are more positive (westerly) than the AVG in the western and central Pacific Ocean.

850mb Zonal Wind Anomalies during La Niña

All Reanalysis Avg (5 averaged) vs. CORE

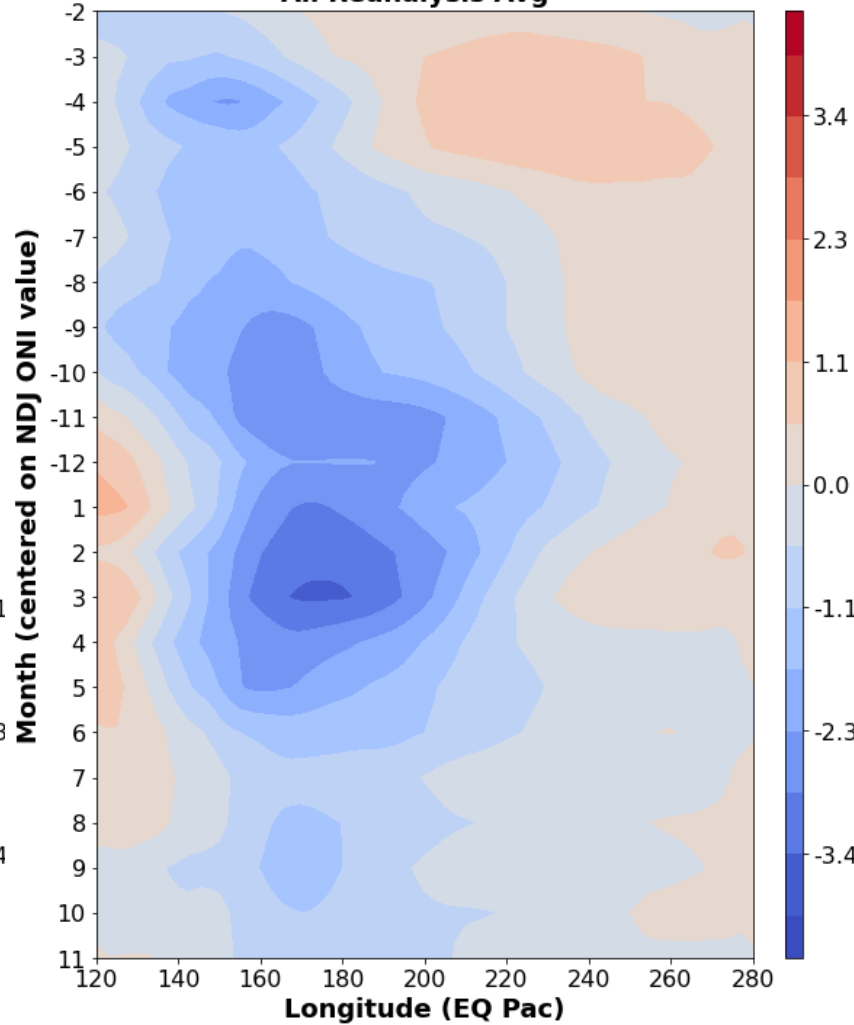
Composite 850hPa Zonal Wind Evolution during La Nina

CORE



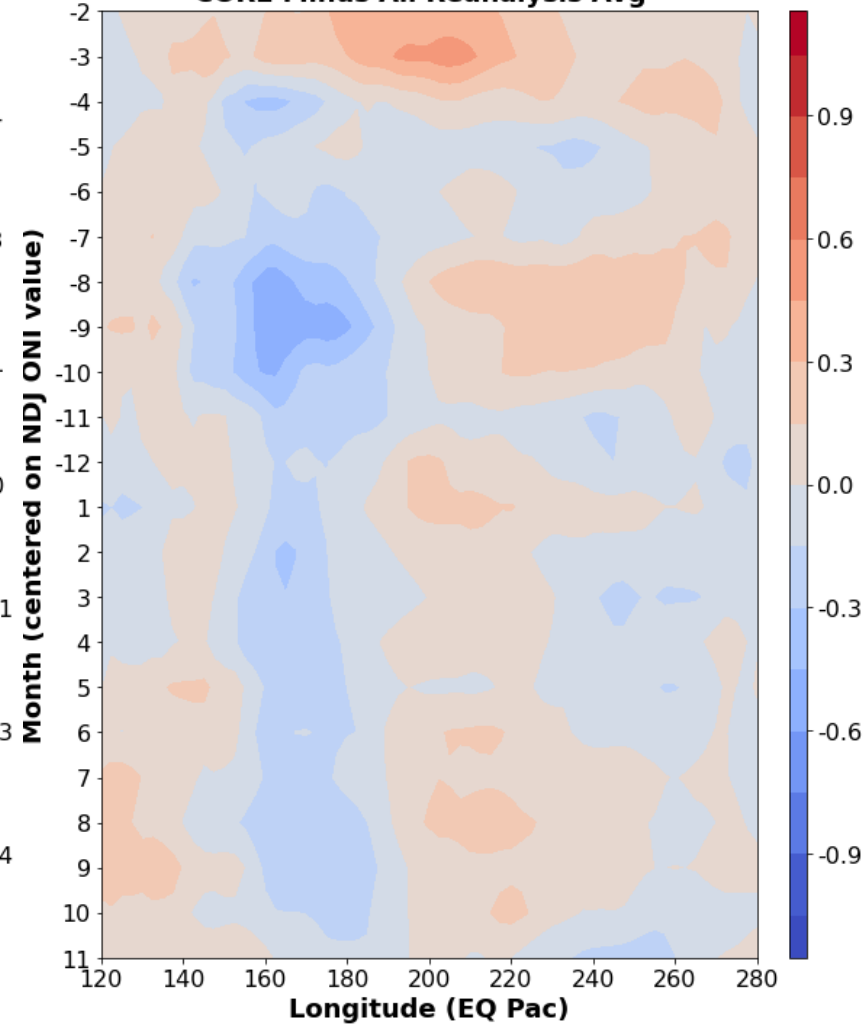
Composite 850hPa Zonal Wind Evolution during La Nina

All Reanalysis Avg



Composite 850hPa Zonal Wind Evolution during La Nina

CORE Minus All Reanalysis Avg

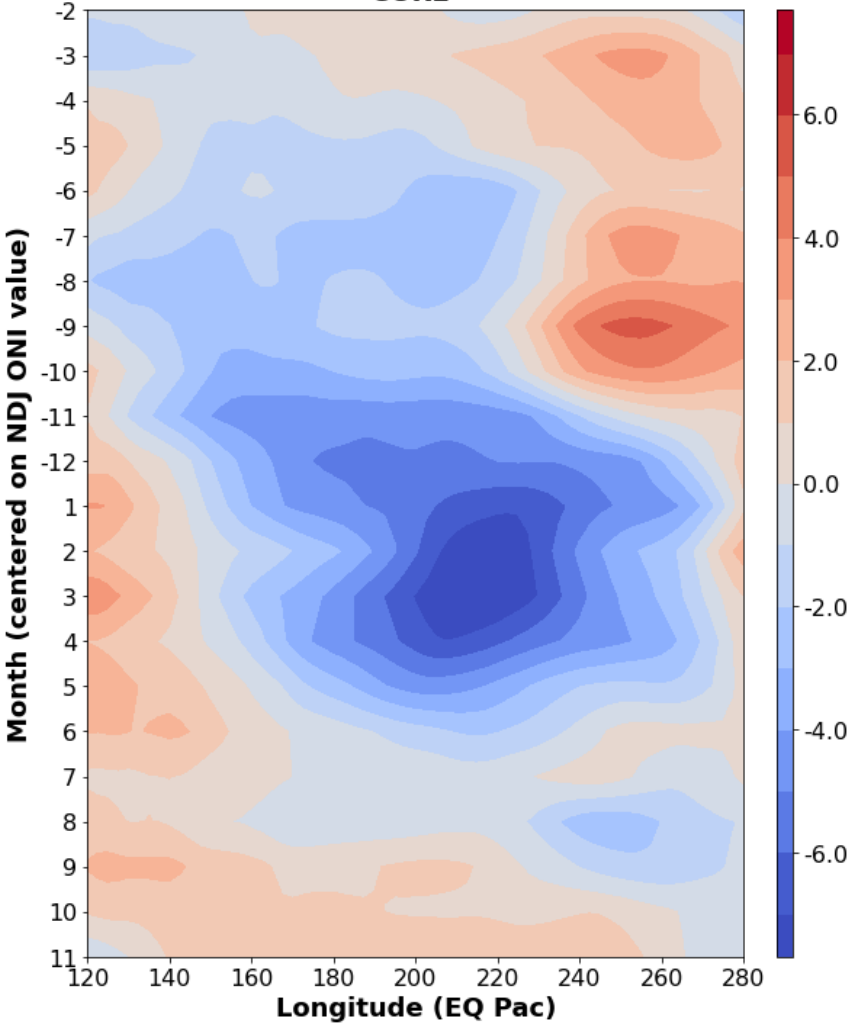


During La Niña, CORE 850hPa zonal wind anomalies are more negative (easterly) than the AVG in the west-central Pacific Ocean.

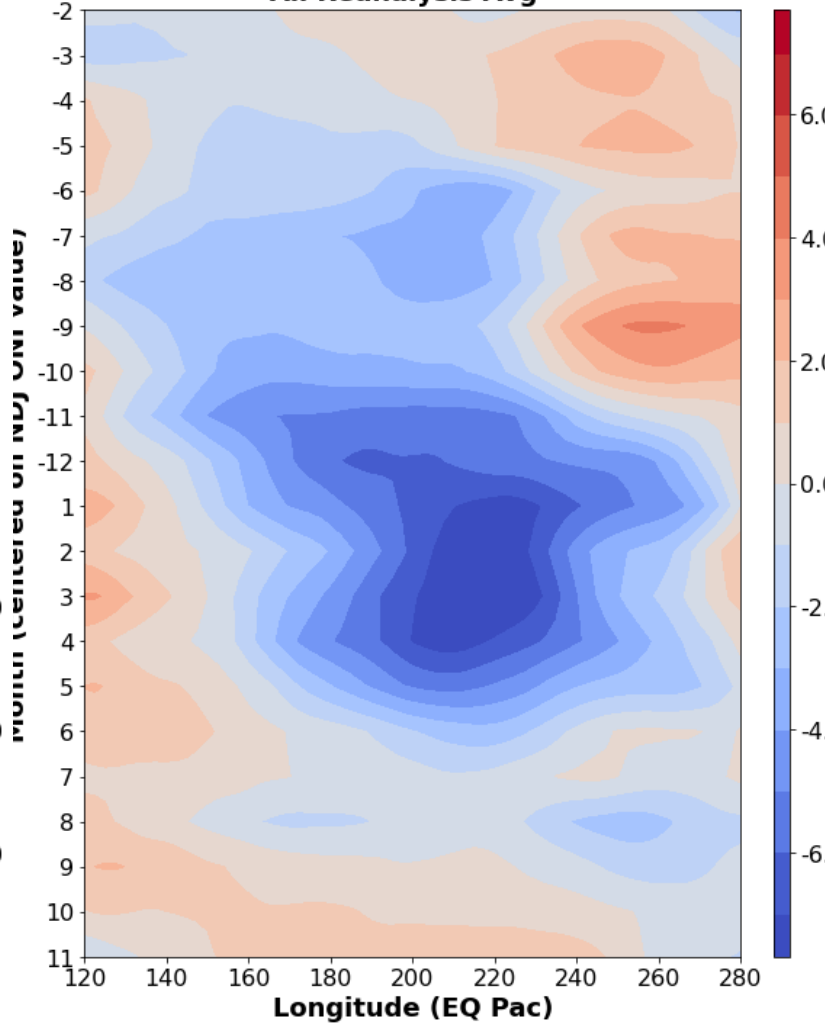
200mb Zonal Wind Anomalies during El Niño

All Reanalysis Avg (5 averaged) vs. CORE

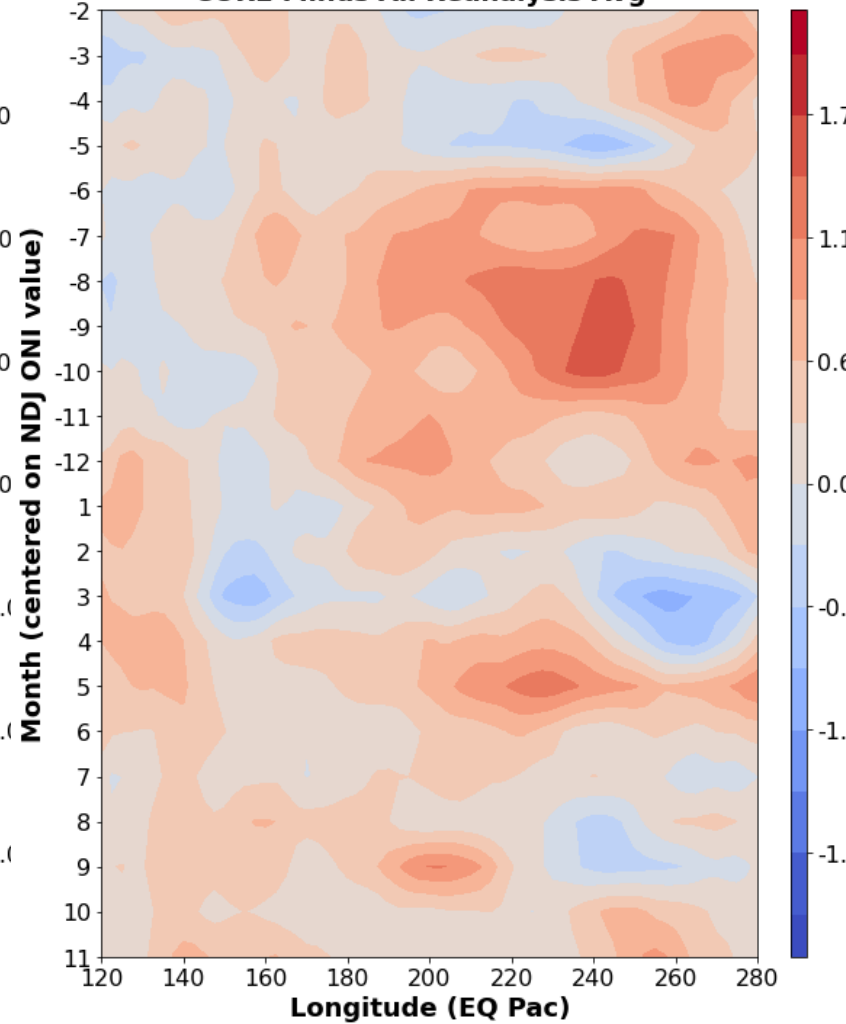
Composite 200hPa Zonal Wind Evolution during El Niño
CORE



Composite 200hPa Zonal Wind Evolution during El Niño
All Reanalysis Avg



Composite 200hPa Zonal Wind Evolution during El Niño
CORE Minus All Reanalysis Avg



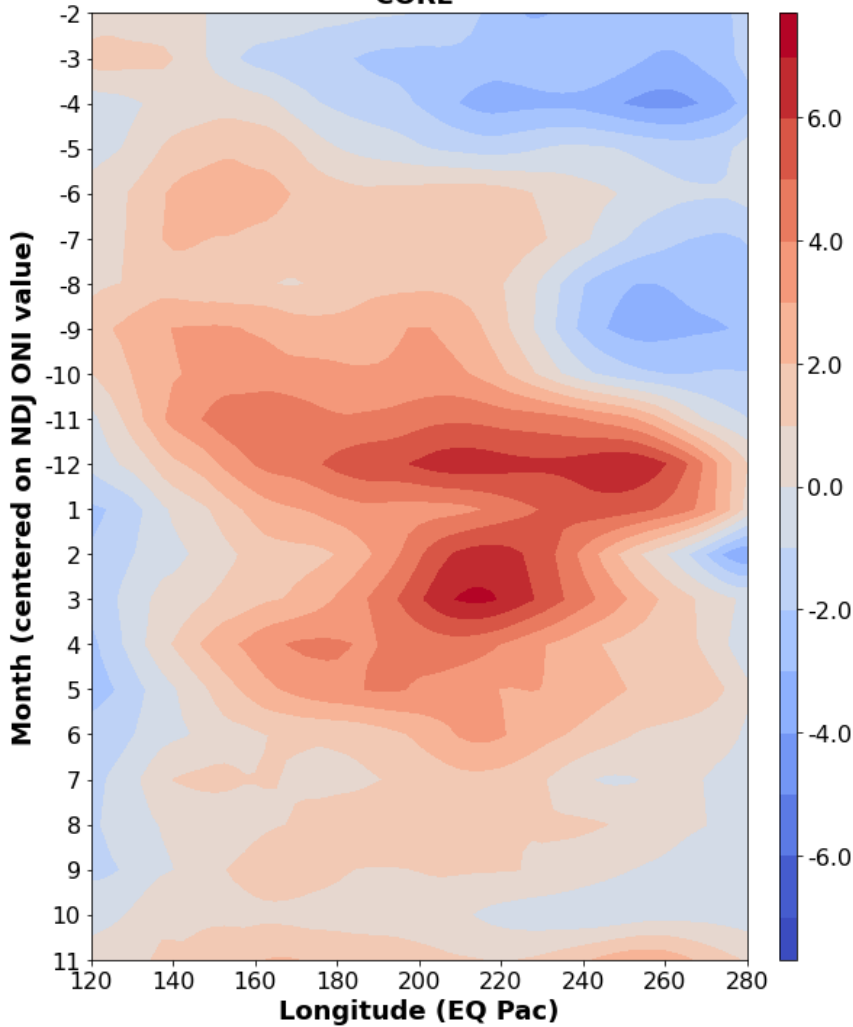
During El Niño, CORE 200hPa zonal wind anomalies are less negative (westerly) than the AVG in the east-central Pacific Ocean.

200mb Zonal Wind Anomalies during La Niña

All Reanalysis Avg (5 averaged) vs. CORE

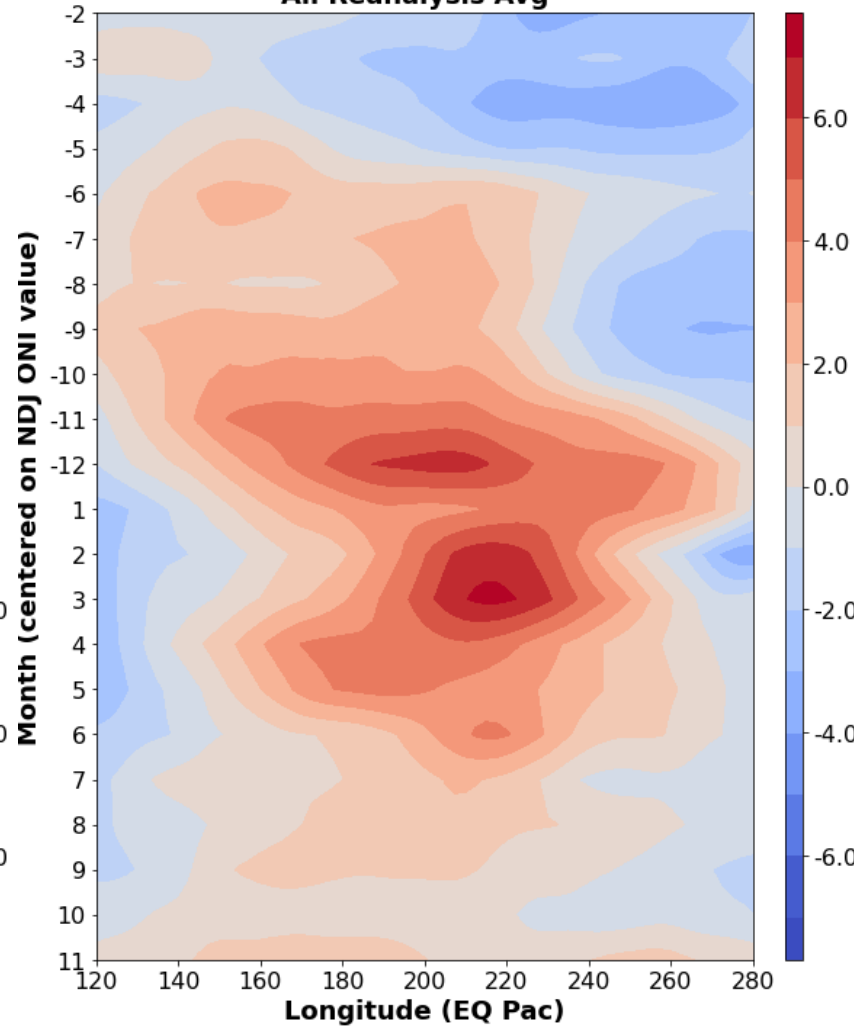
Composite 200hPa Zonal Wind Evolution during La Nina

CORE



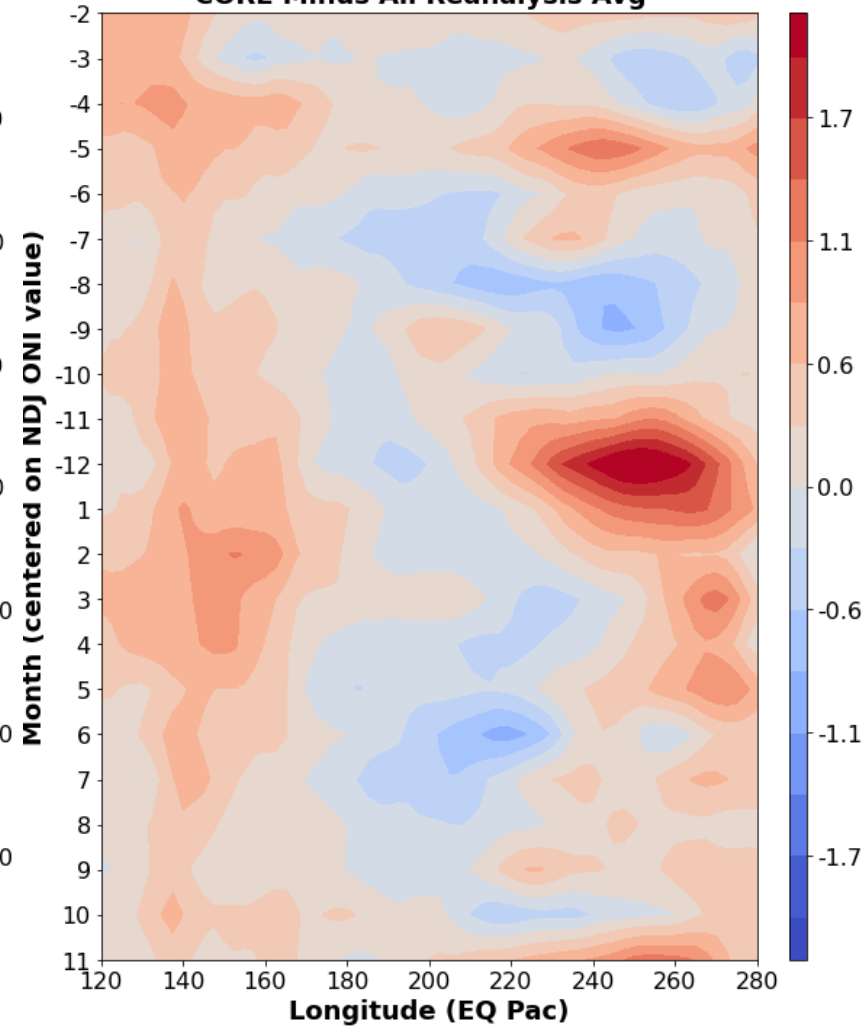
Composite 200hPa Zonal Wind Evolution during La Nina

All Reanalysis Avg



Composite 200hPa Zonal Wind Evolution during La Nina

CORE Minus All Reanalysis Avg



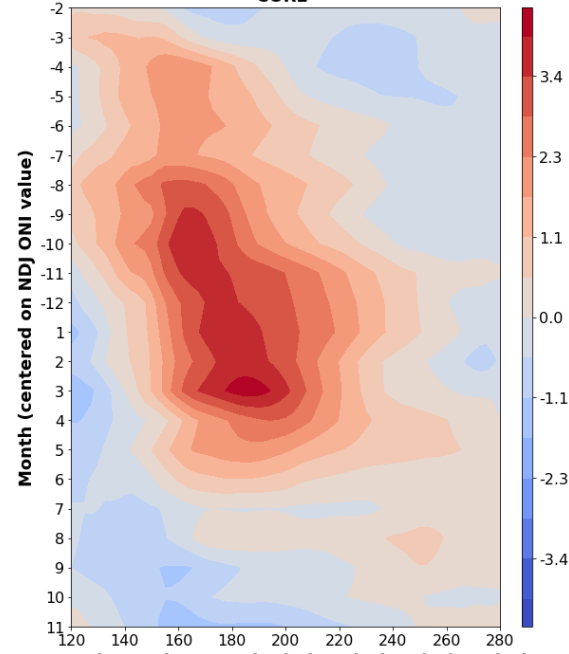
During La Niña, CORE 200hPa zonal wind anomalies are more positive (westerly) than the AVG over the western/eastern Pacific Ocean and less positive (easterly) than AVG over the east-central Pacific Ocean.

Extra Slides

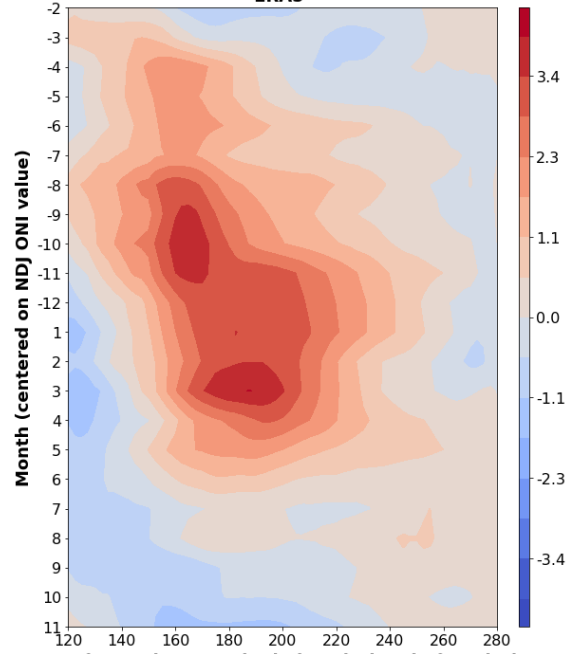
Individual reanalysis for 850 and 200 hPa zonal wind anomalies
(which are summarized previously using the “All reanalysis AVG”)

850mb Zonal Wind Anomalies during El Niño

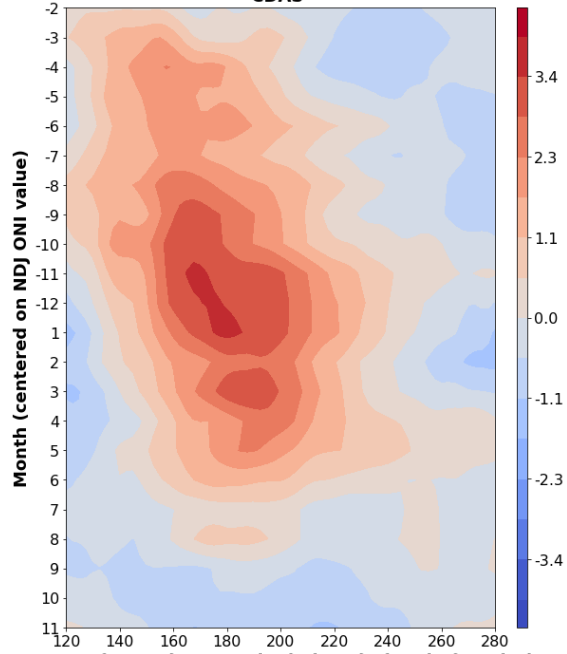
Composite 850hPa Zonal Wind Evolution during El Niño
CORE



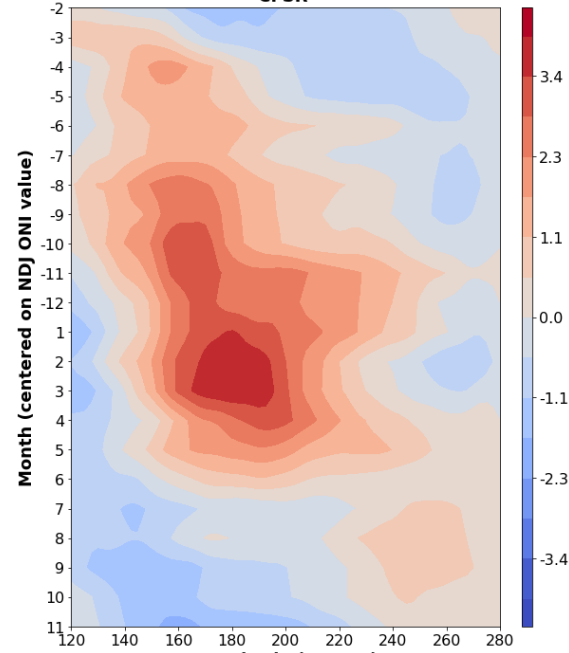
Composite 850hPa Zonal Wind Evolution during El Niño
ERA5



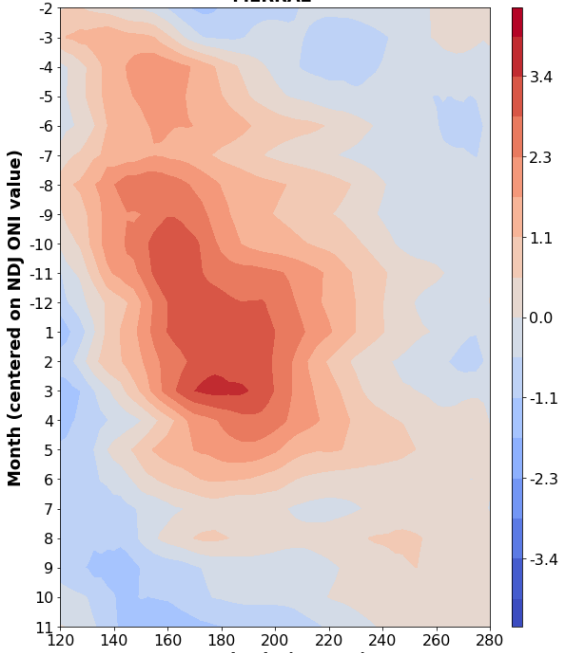
Composite 850hPa Zonal Wind Evolution during El Niño
CDAS



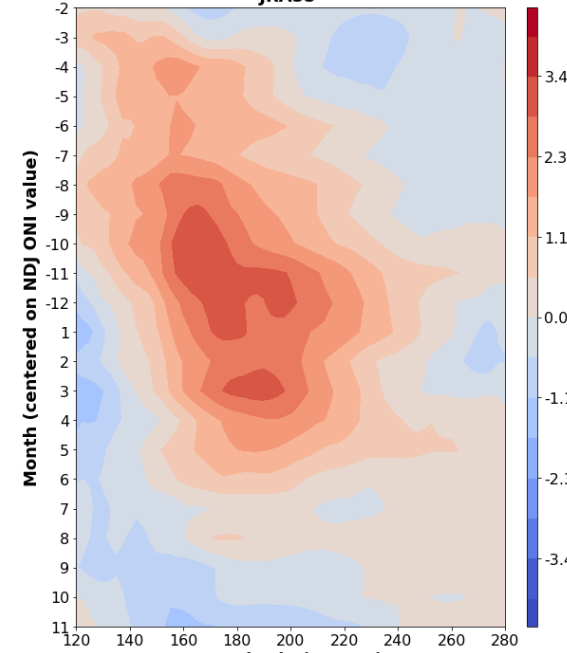
Composite 850hPa Zonal Wind Evolution during El Niño
CFSR



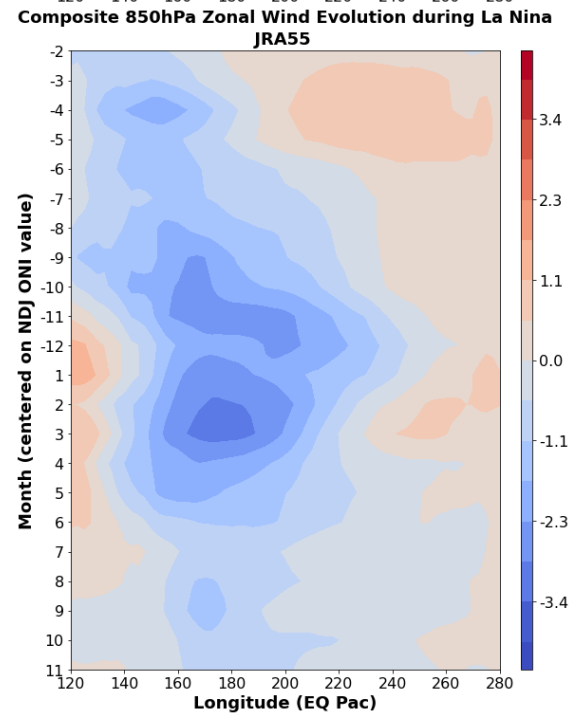
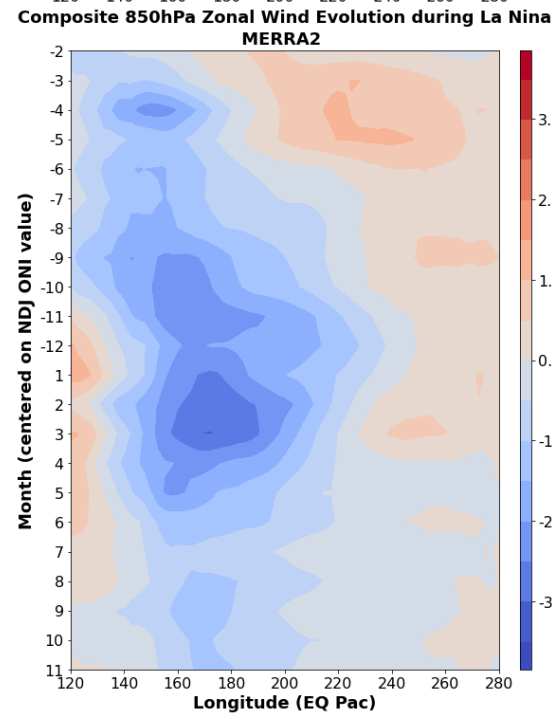
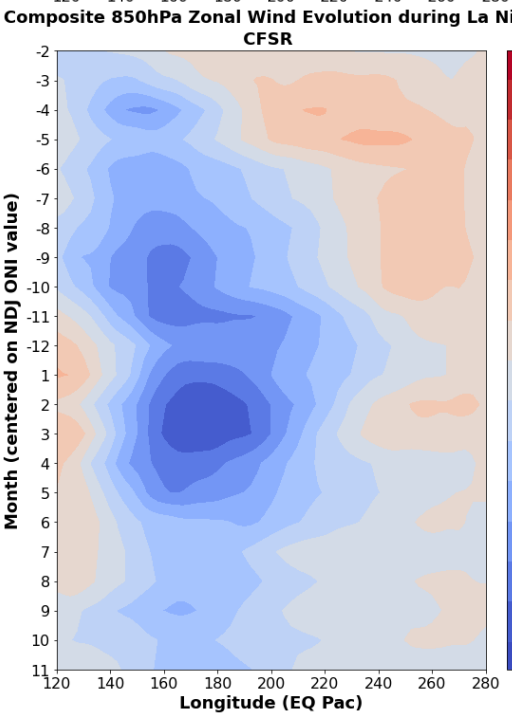
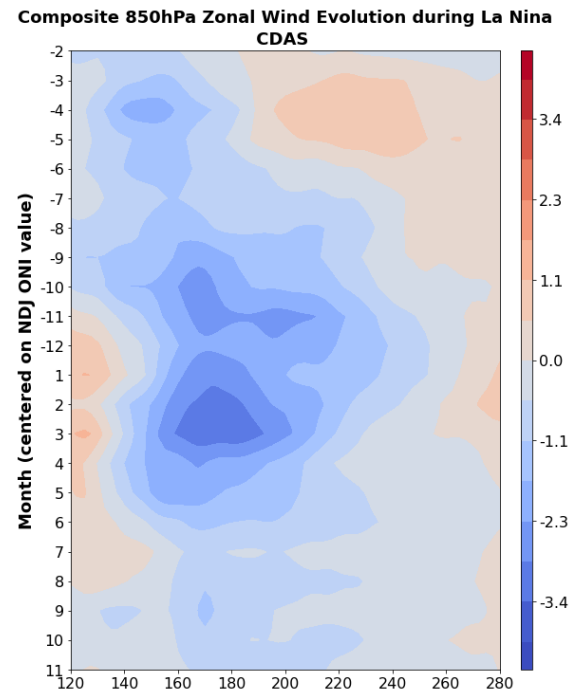
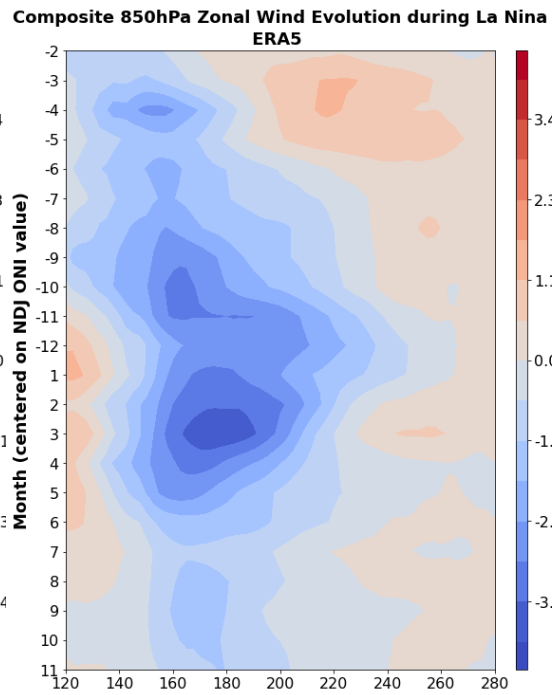
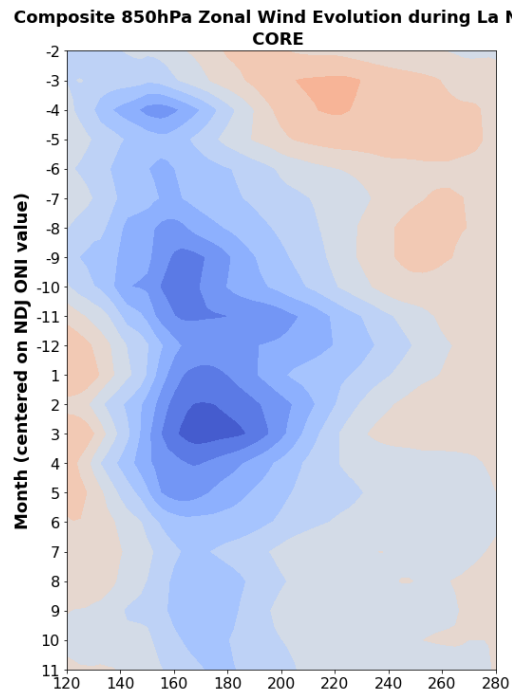
Composite 850hPa Zonal Wind Evolution during El Niño
MERRA2



Composite 850hPa Zonal Wind Evolution during El Niño
JRA55

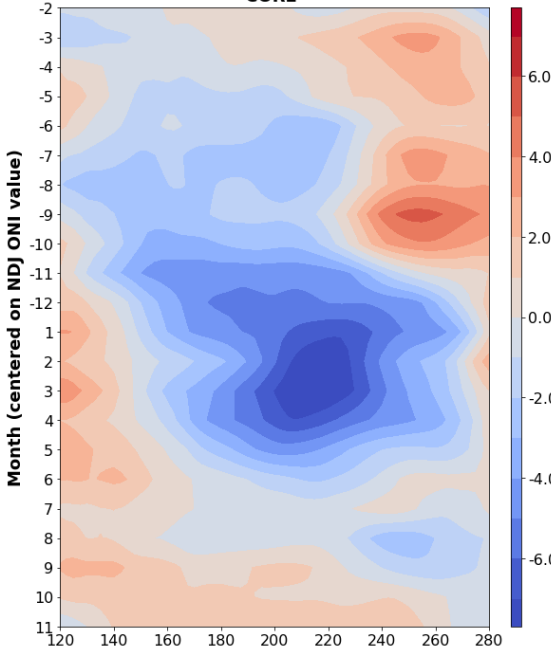


850mb Zonal Wind Anomalies during La Niña

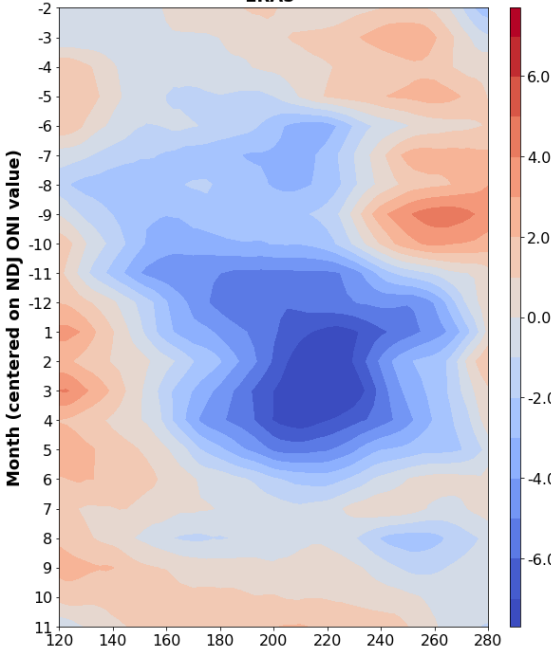


200mb Zonal Wind Anomalies during El Niño

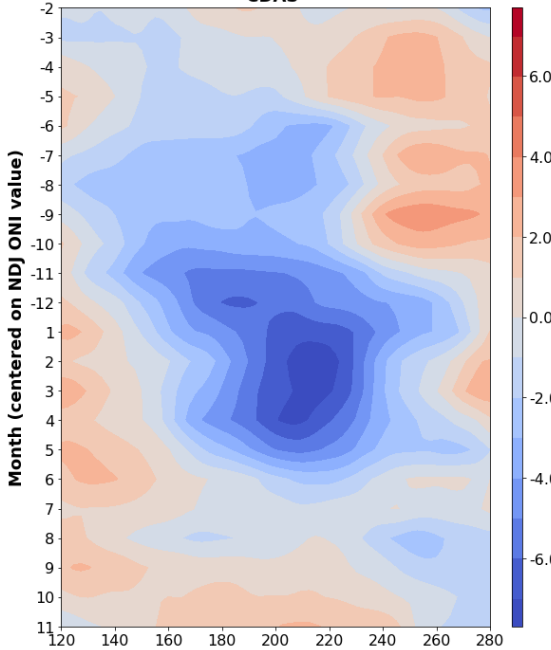
Composite 200hPa Zonal Wind Evolution during El Niño
CORE



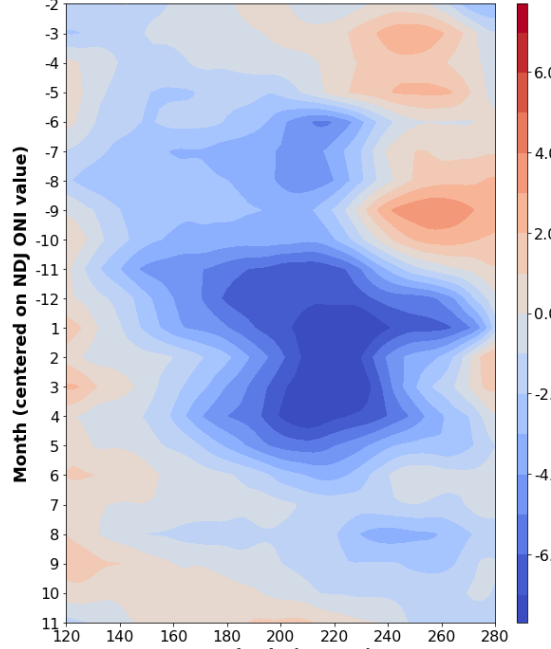
Composite 200hPa Zonal Wind Evolution during El Niño
ERA5



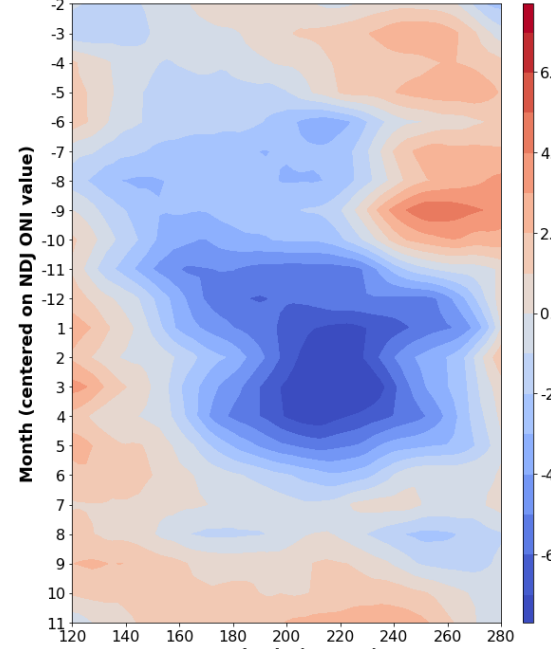
Composite 200hPa Zonal Wind Evolution during El Niño
CDAS



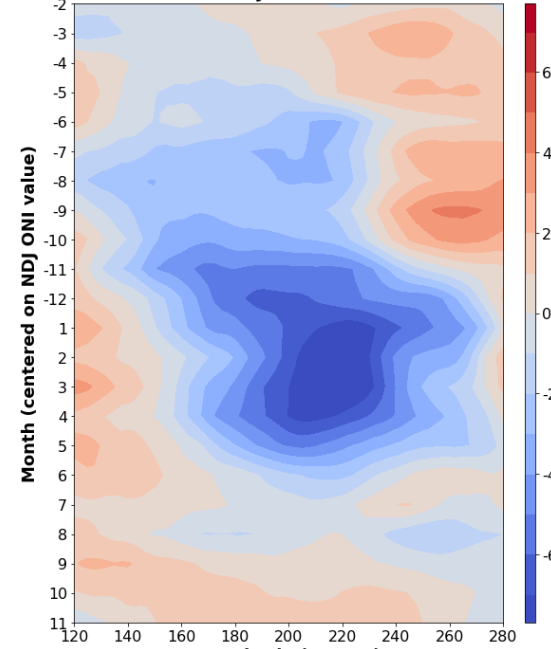
Composite 200hPa Zonal Wind Evolution during El Niño
CFSR



Composite 200hPa Zonal Wind Evolution during El Niño
MERRA2

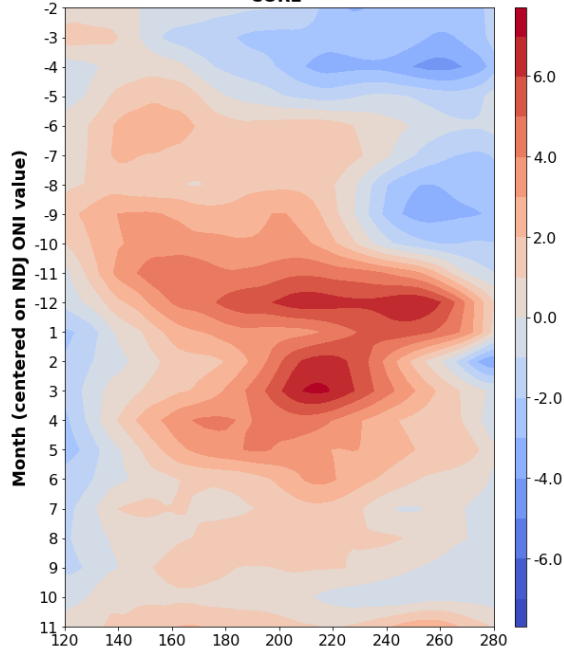


Composite 200hPa Zonal Wind Evolution during El Niño
JRA55

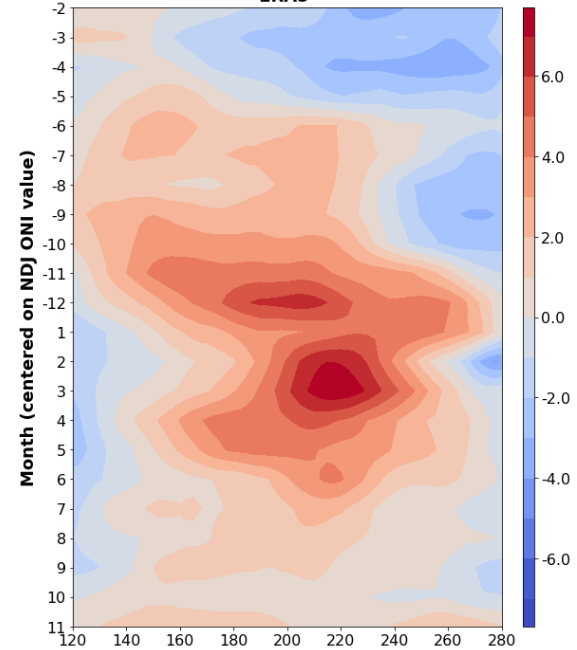


200mb Zonal Wind Anomalies during La Niña

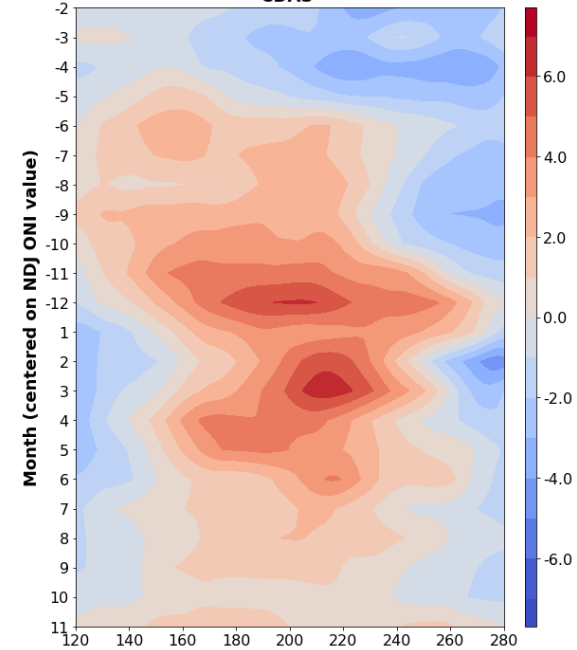
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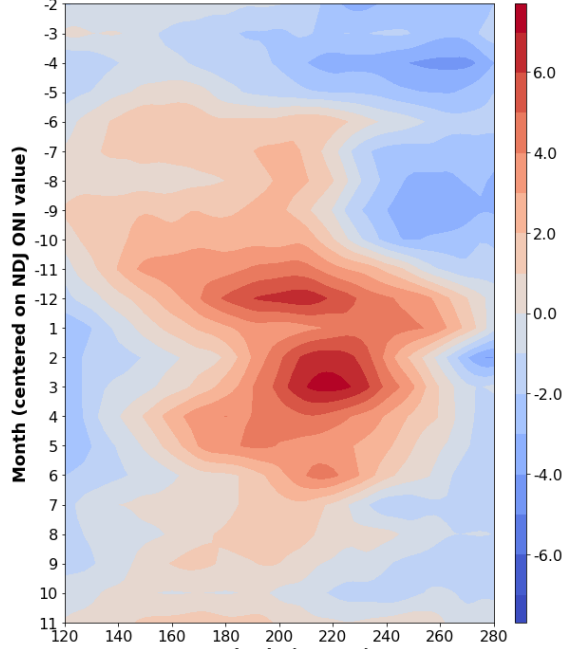
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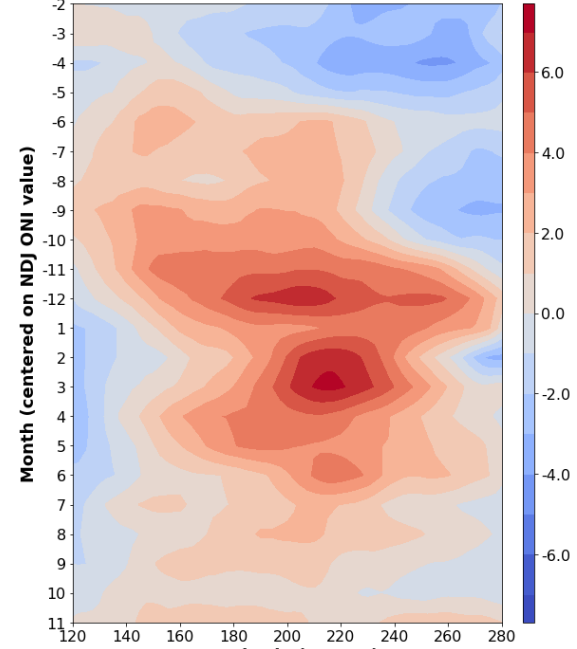
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