WMO VLab Regional Focus Group
of the Americas and Caribbean

Since 2004

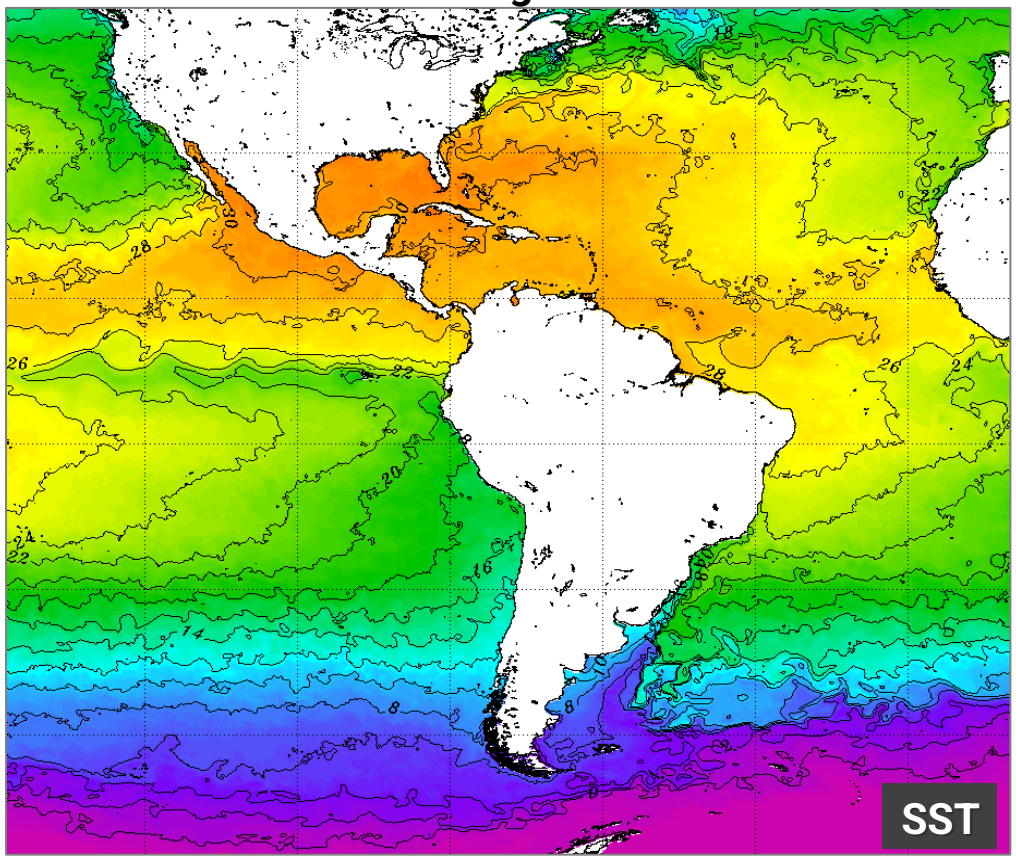
Climate Indices

Current Status and Projections

Wednesday 20 August, 2025

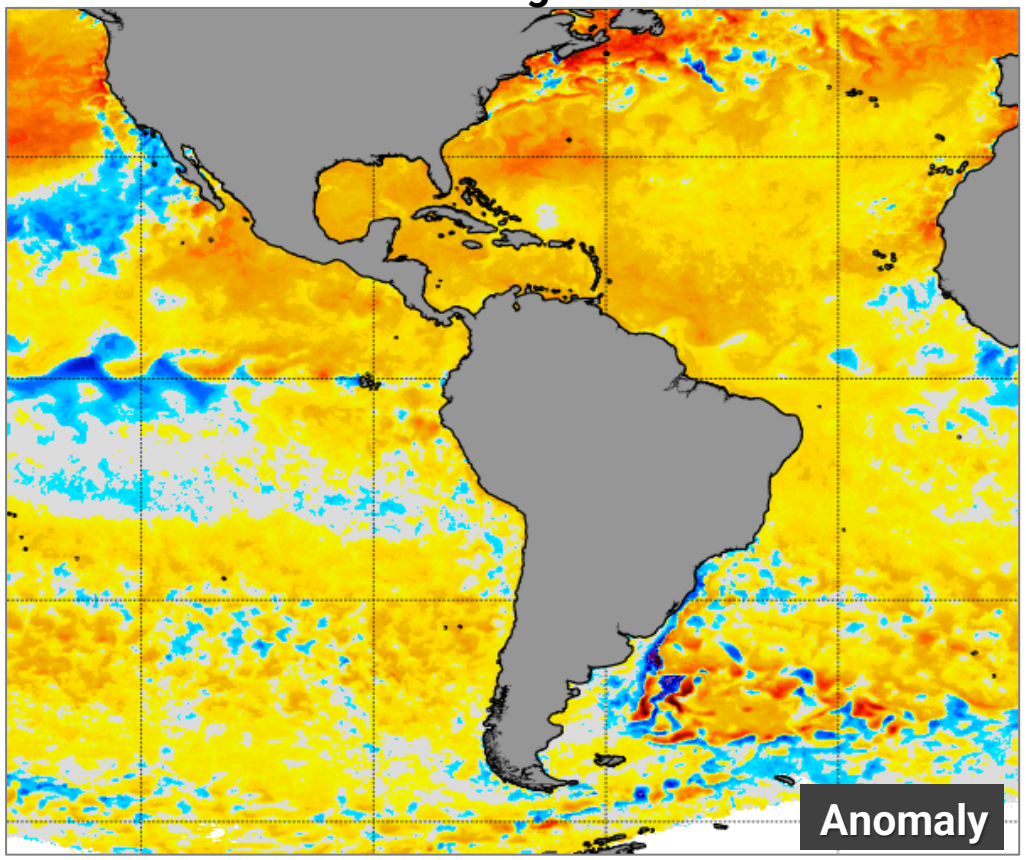
Sea Surface Temperature (SST)

18 August



Source: OSPO

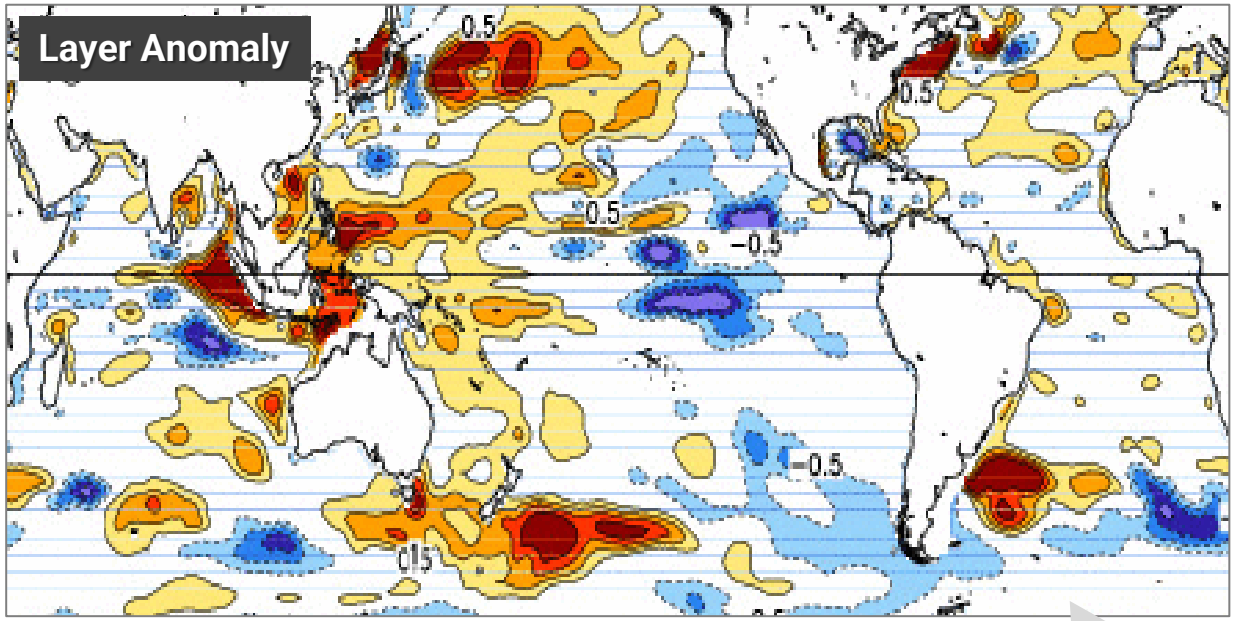
18 August



Source: NOAA Coral Reef Watch

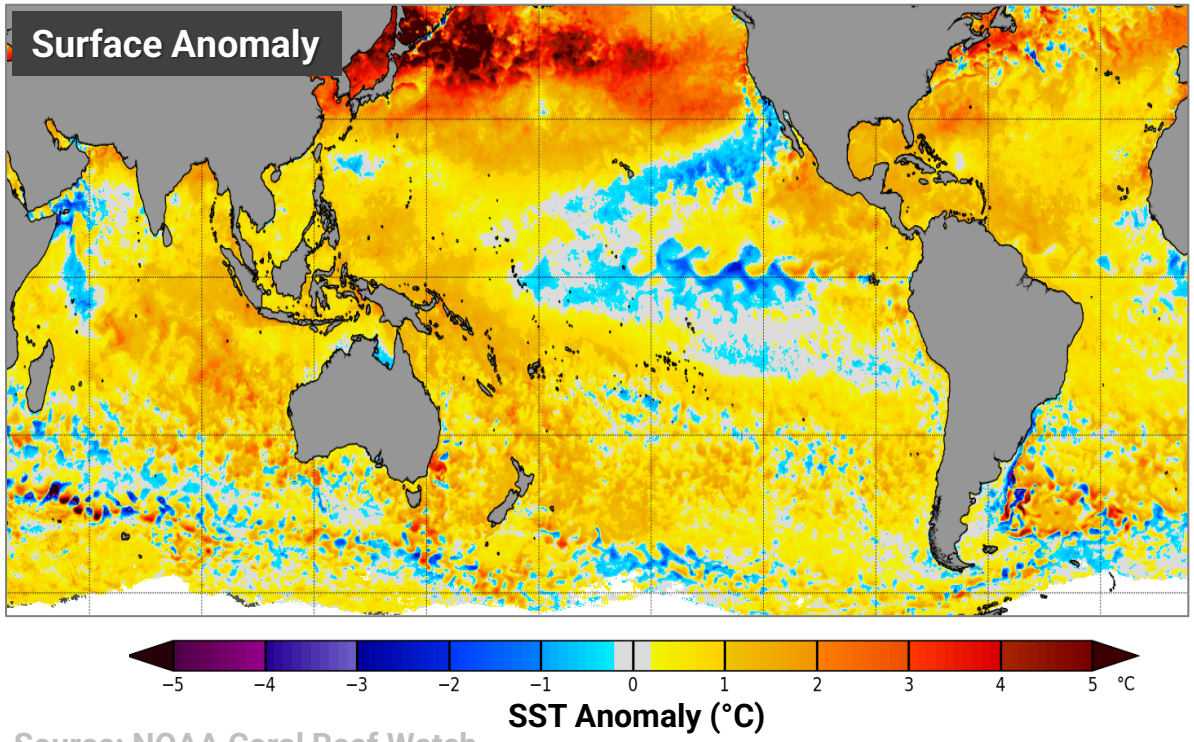
Top 300m Layer Temperature Anomaly

11 August



Source: GODAS, CPC

18 August



Source: NOAA Coral Reef Watch

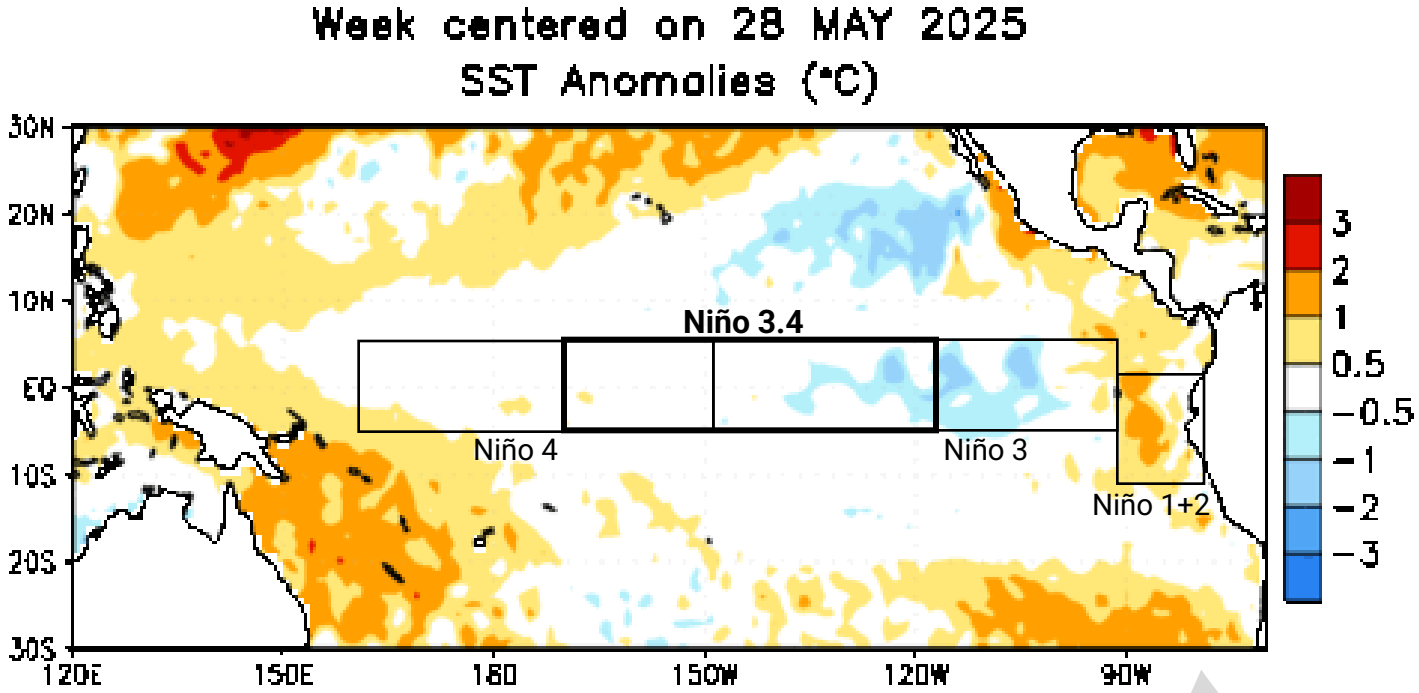
Layer anomalies take longer to dissipate than superficial ones, which makes them a great subseasonal forecasting tool!

El Niño-Southern Oscillation (ENSO)

CPC Official Statement

La Niña Watch

- ENSO-neutral is present.*
- Equatorial sea surface temperatures (SSTs) are near average across most of the Pacific Ocean.

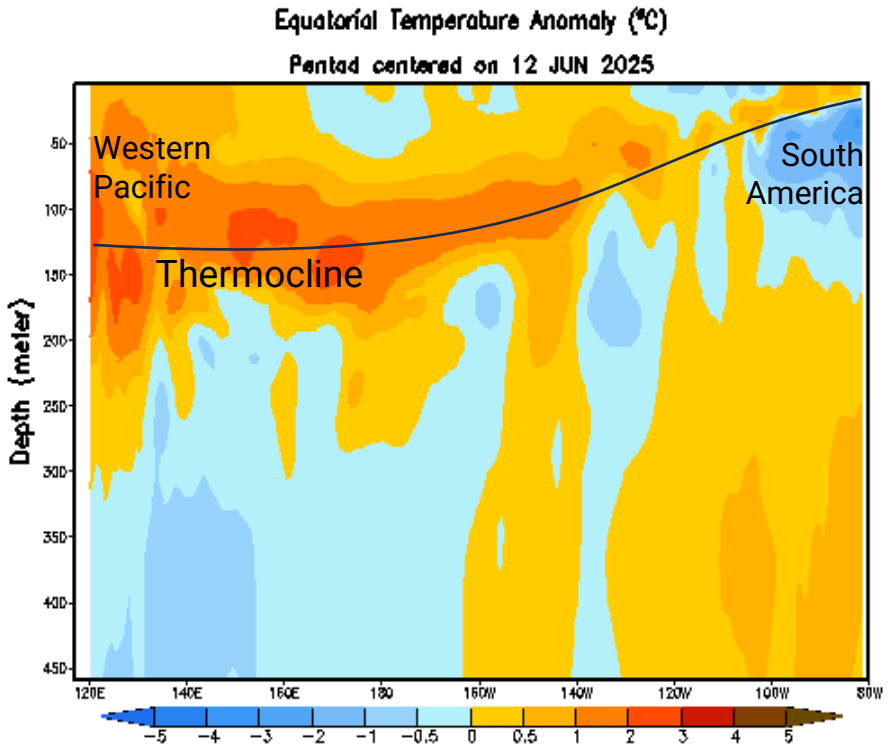


Takeaways

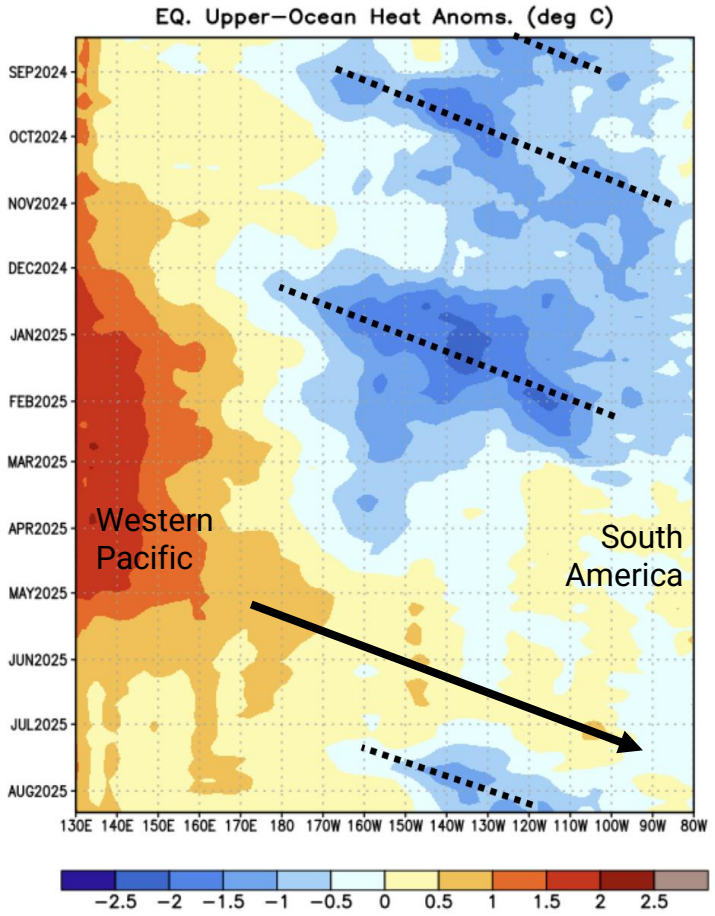
- Neutral conditions are established.
- The South American coast continues warming up.
- There is a La Niña watch, meaning that La Niña conditions could develop in the coming months.

Oceanic Kelvin Wave Activity (ENSO)

Temperature Anomaly Cross Section



Heat Content Hovmöller



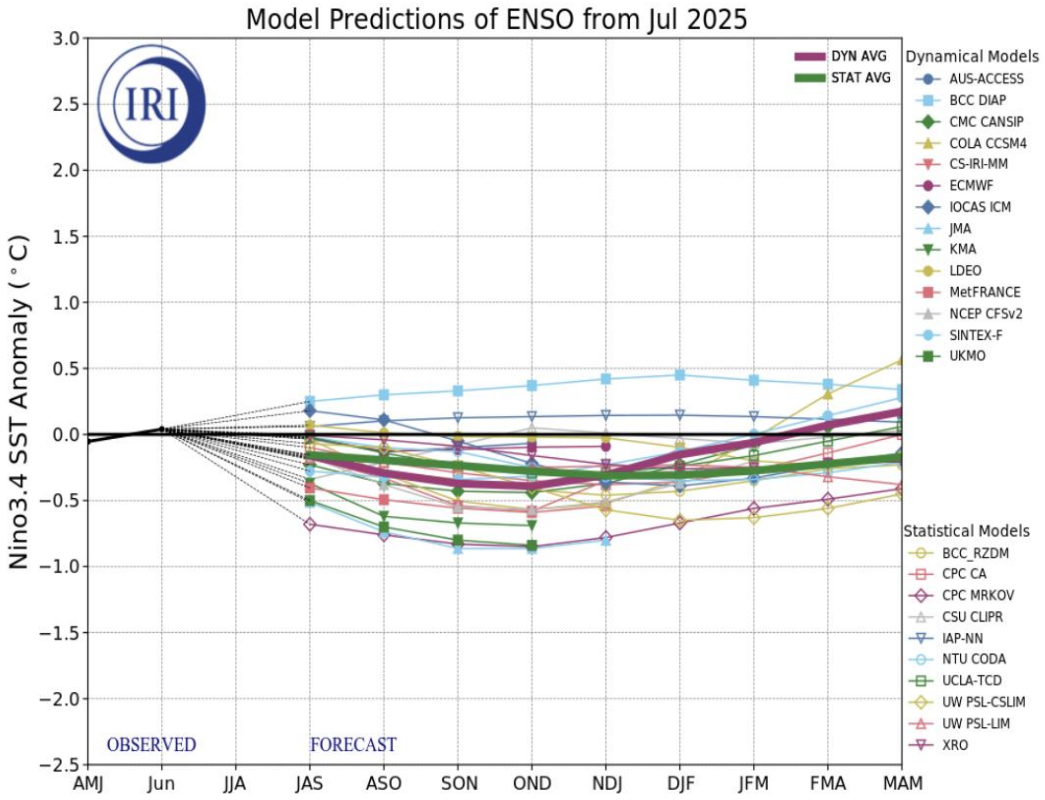
Takeaways

- The South American coast warming might be partly due to a weak warm (downwelling) Kelvin Wave.
- A cool (upwelling) Kelvin is propagating near 100°W, which could favor a coastal cooling late in mid-September.

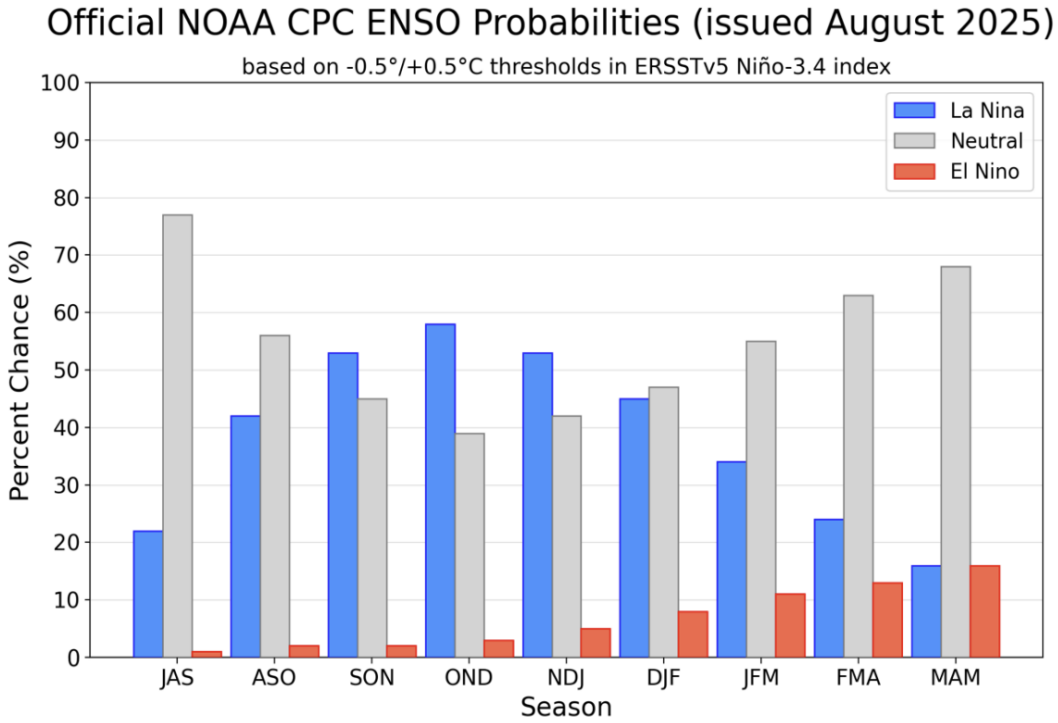
ENSO Outlook:

ENSO-neutral is most likely through the late Northern Hemisphere summer 2025 (56% chance in August-October). Thereafter, a brief period of La Niña conditions is favored in the fall and early winter 2025-26 before reverting to ENSO-neutral.

Dynamical Models

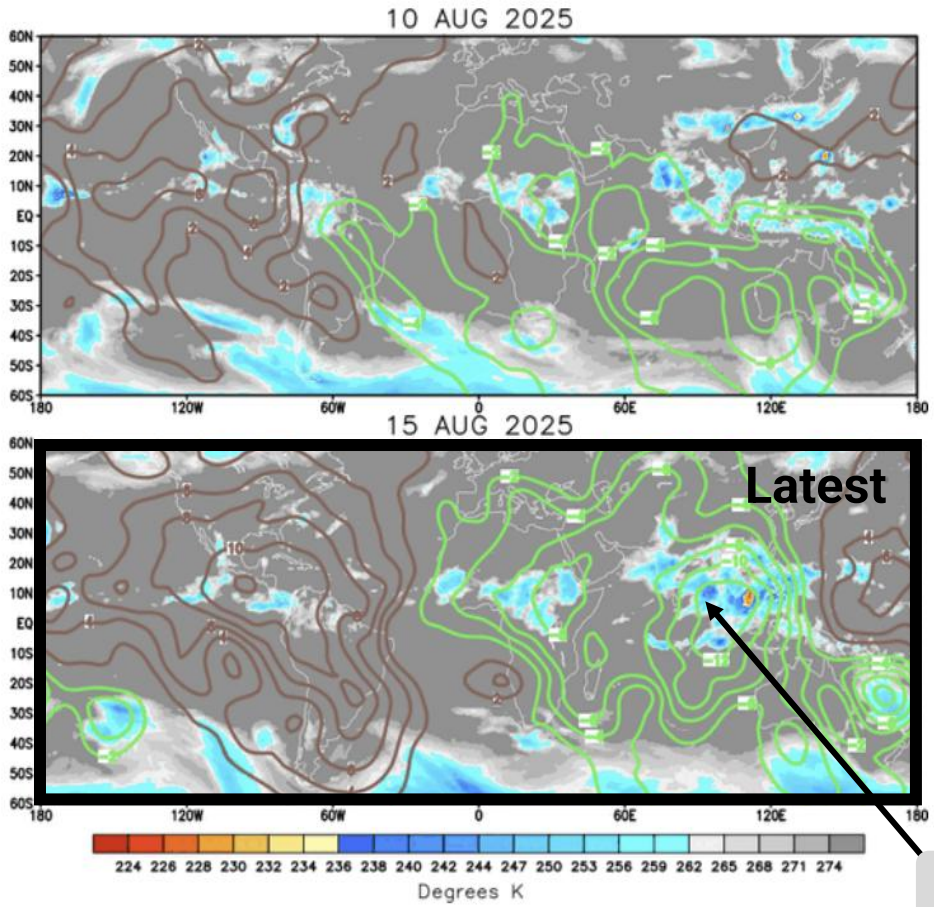


Probabilistic Forecast

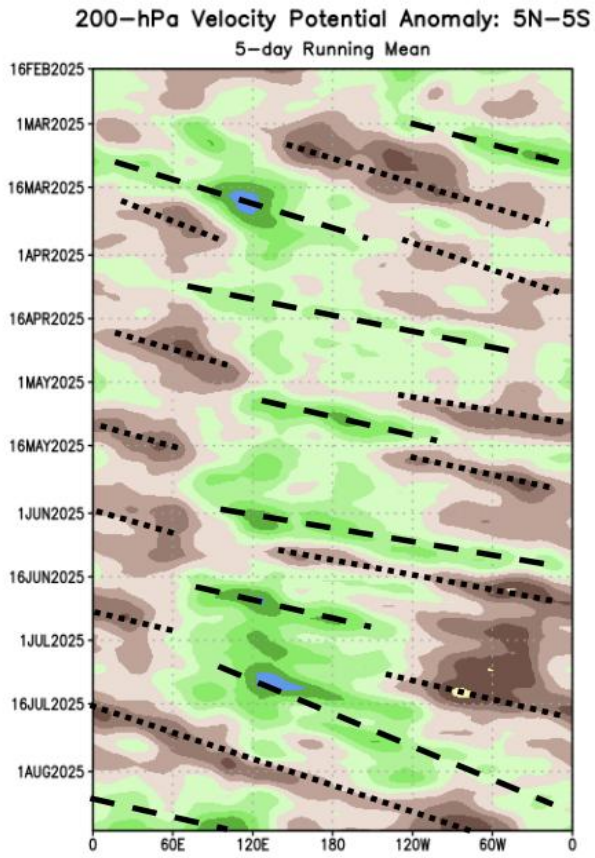


Madden-Julian Oscillation (MJO)

Velocity Potential and Outgoing Long Wave Radiation



CHI Hovmöller

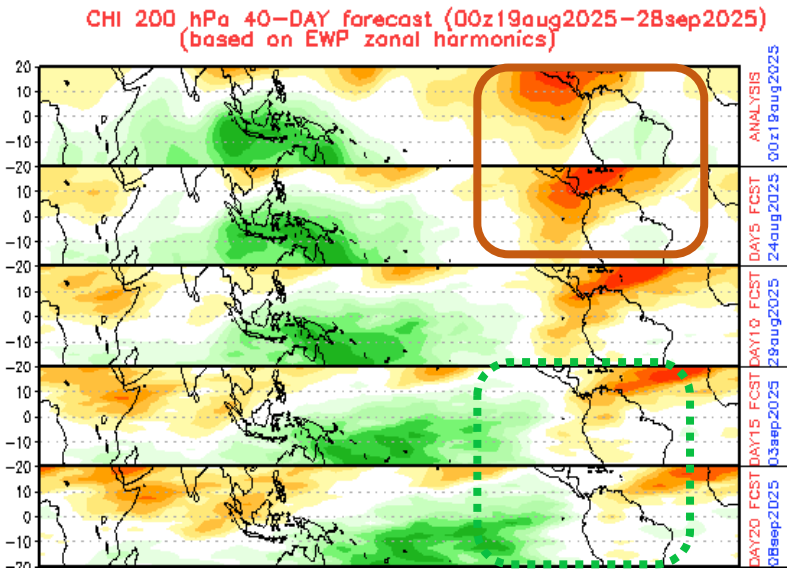


Takeaways

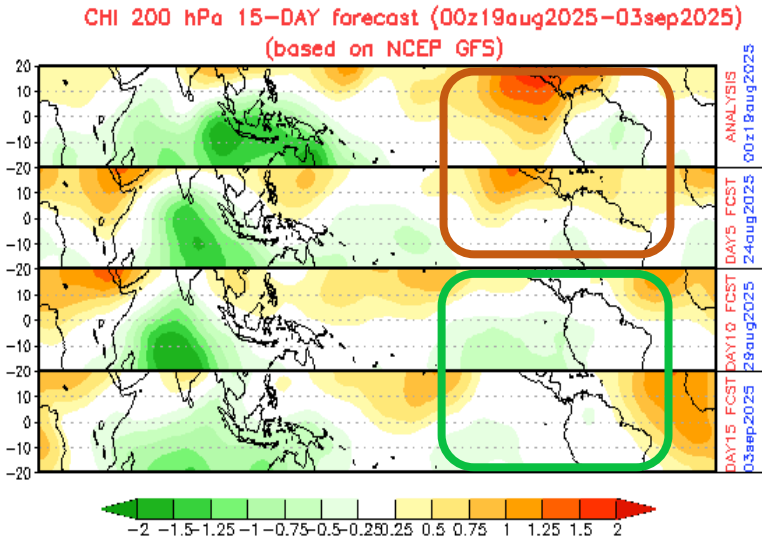
- The MJO is currently organized in a Wave-1 mode.
- Upper convergent is present over the Americas.
- The Upper Divergent (wet) phase should be arriving in mid-September. Yet, models are showing a decrease in strength once it arrives (next slides).

MJO Forecasts

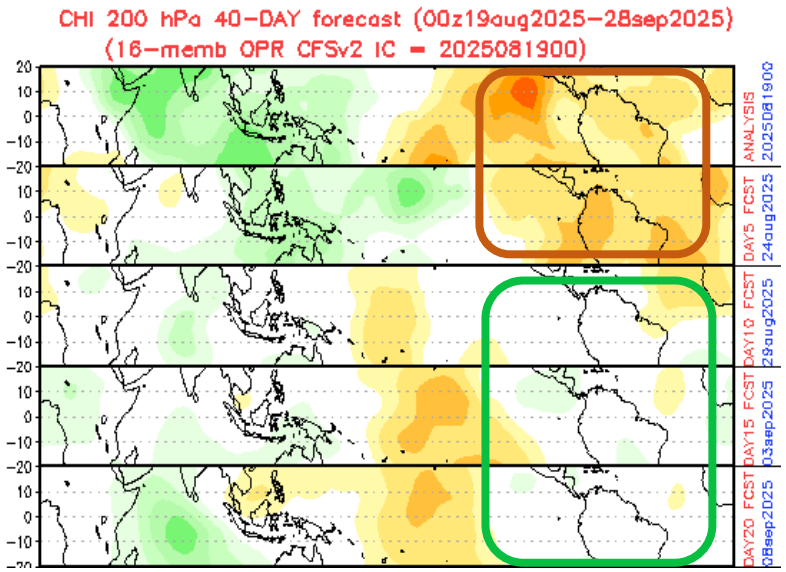
Empirical Wave Propagation



Global Forecast System (GFS)



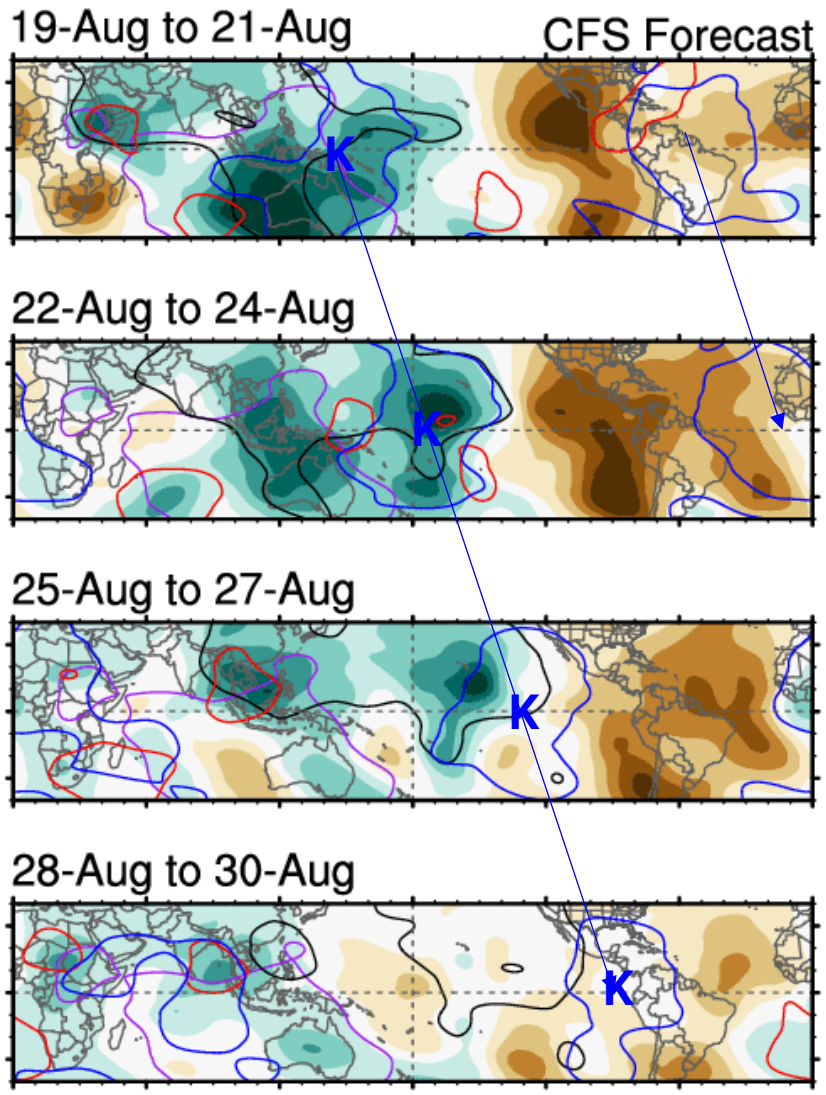
Climate Forecast System (CFS)



Takeaways

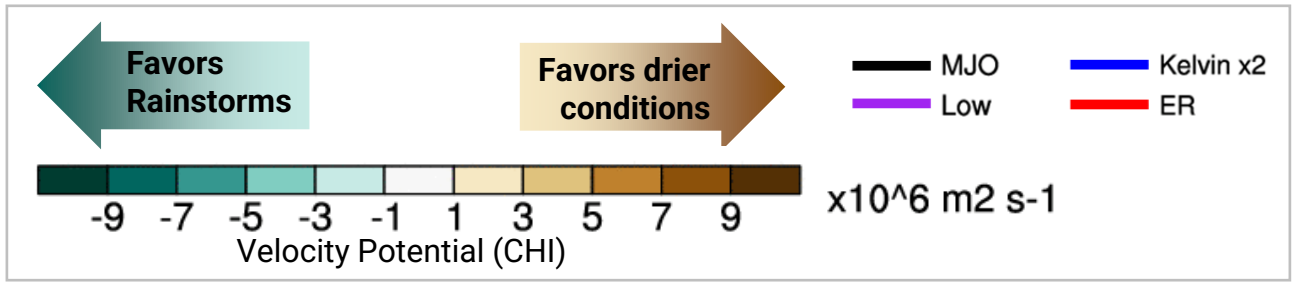
- The upper convergent (dry) phase should continue through August 24th.
- A gradual change to wetter conditions should start at the end of the month.
- The first 2 weeks of September could be wetter, although models are damping the strength of the upper divergent (wet) phase once it arrives.

MJO and Upper Tropospheric Waves

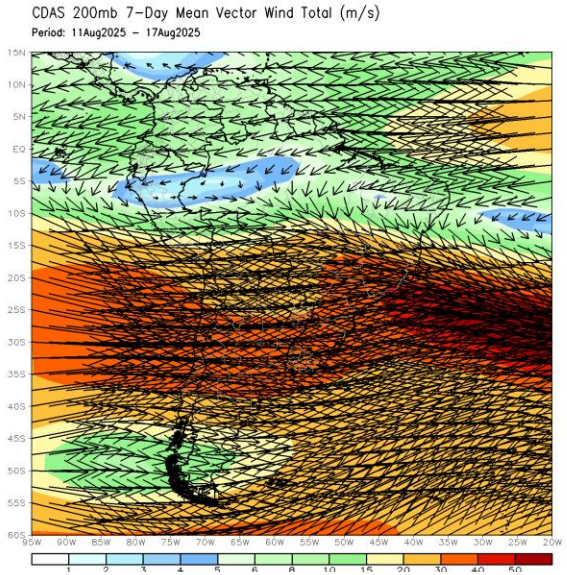


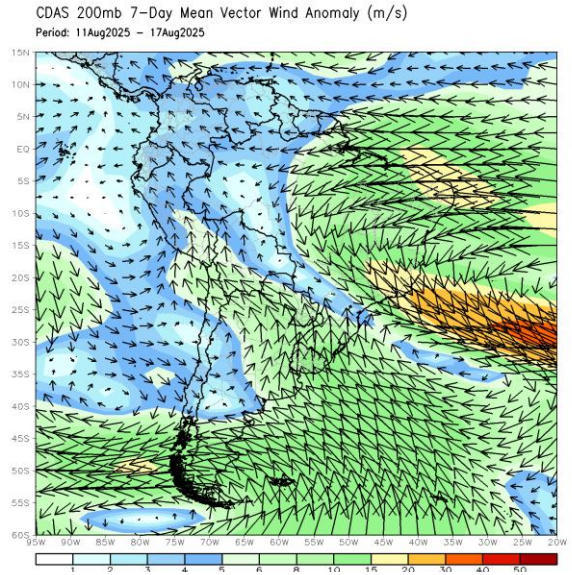
Takeaways

- Large scale upper convergent conditions are present.
- Active Indian Ocean-Maritime Continent convection is triggering Kelvin Waves.
- A Kelvin Wave will likely arrive to the Americas between August 28-30, to enhance deep convection and favor heavier precipitation where weather systems are present at that time.

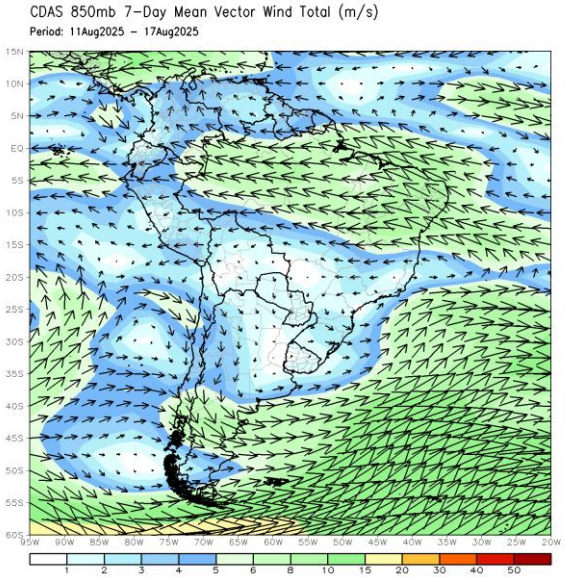


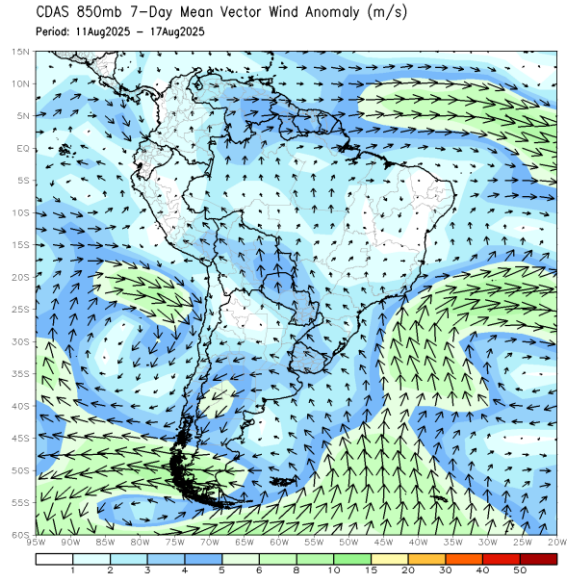
South America, last 7 days





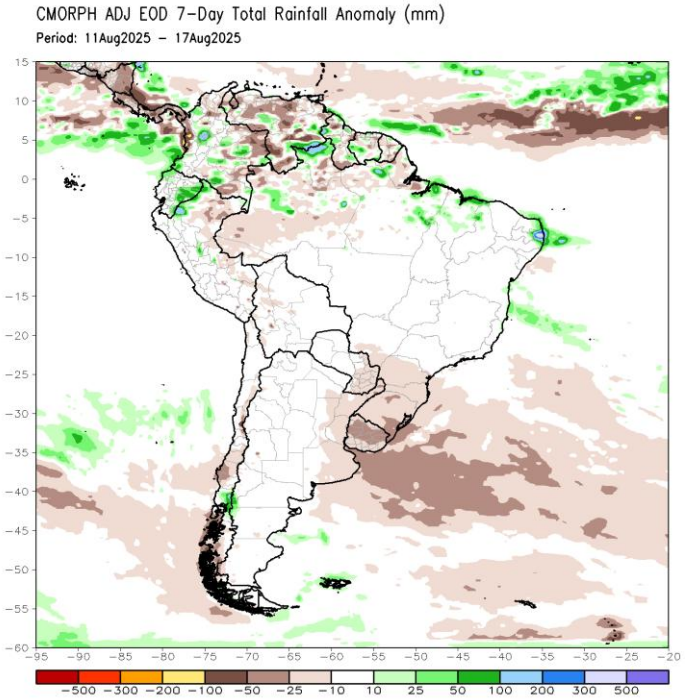
200 hPa Flow

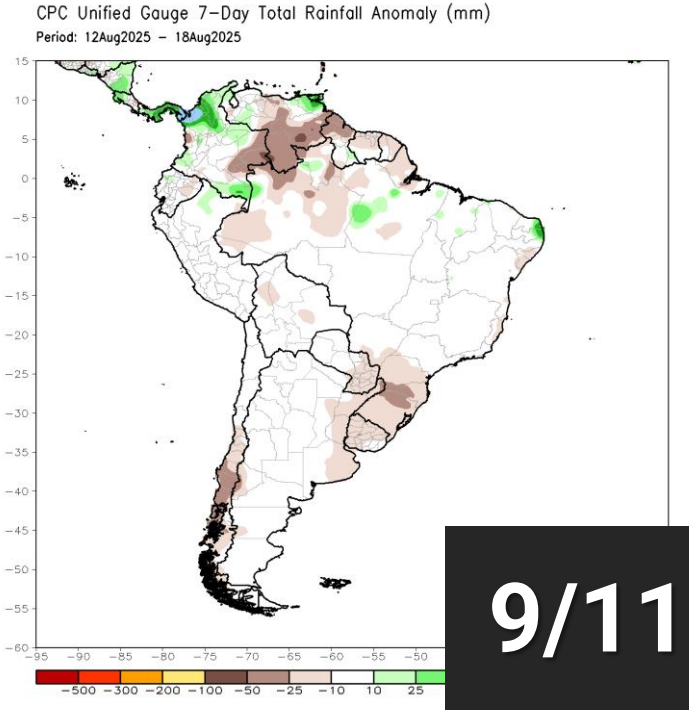




850 hPa Flow

Rainfall Anomalies





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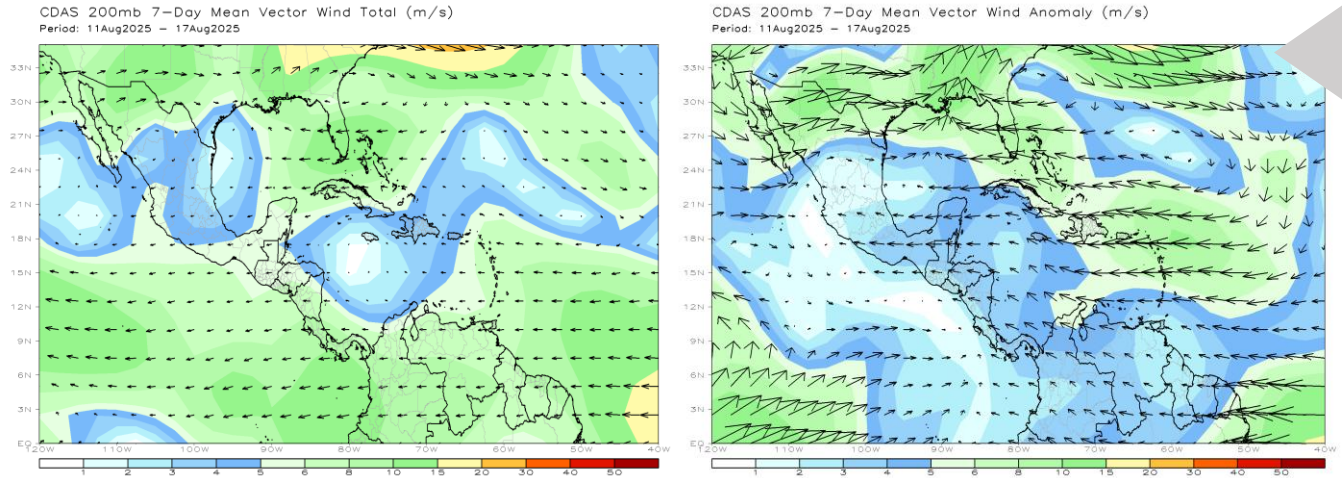
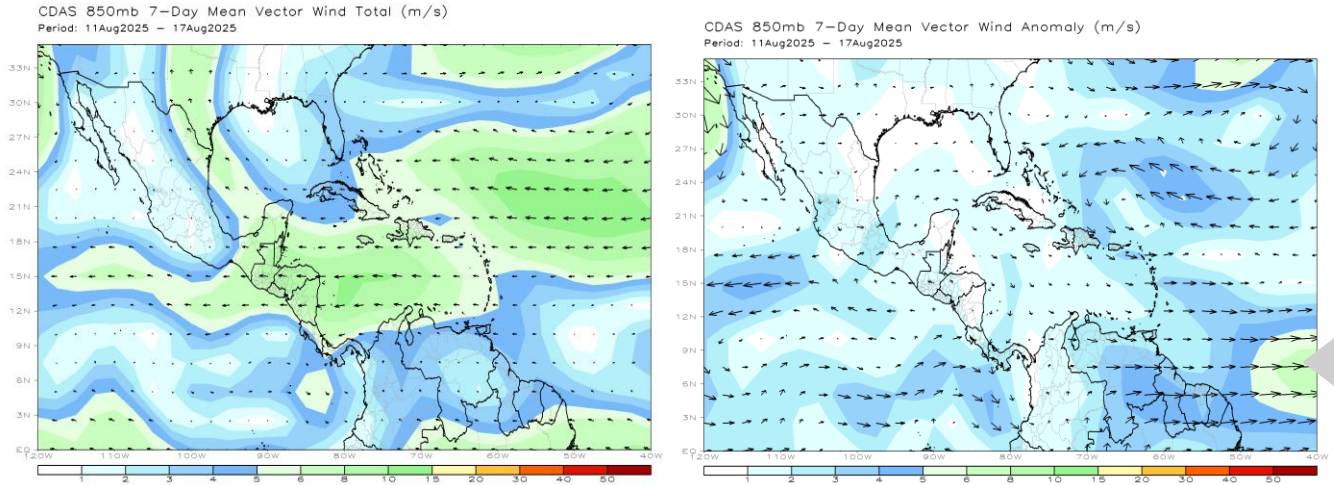
Caribbean, Central America and Mexico, last 7 days



200 hPa Flow



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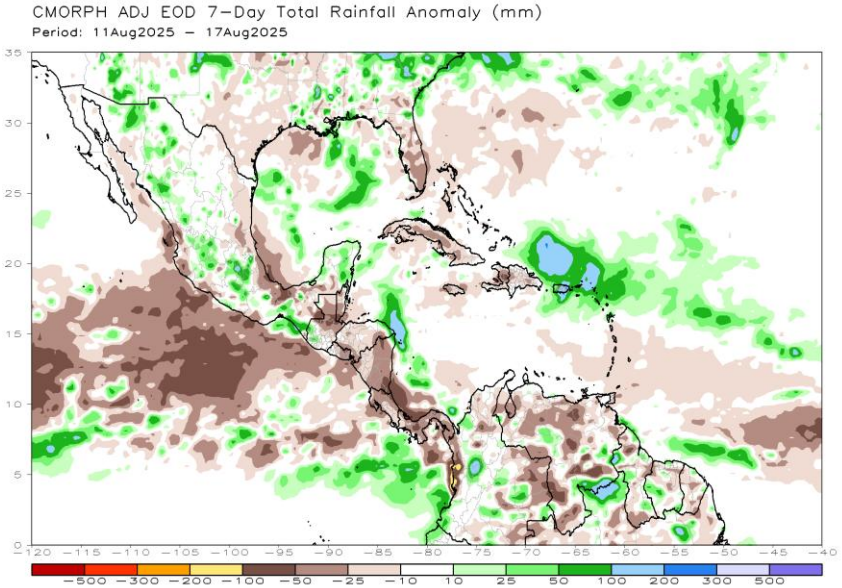
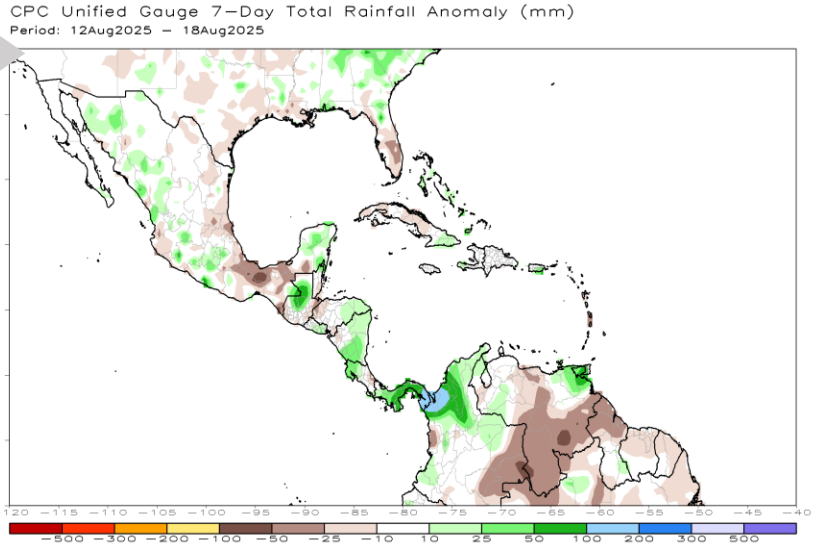




Upcoming Severe Weather and Heavy Rainfall Event

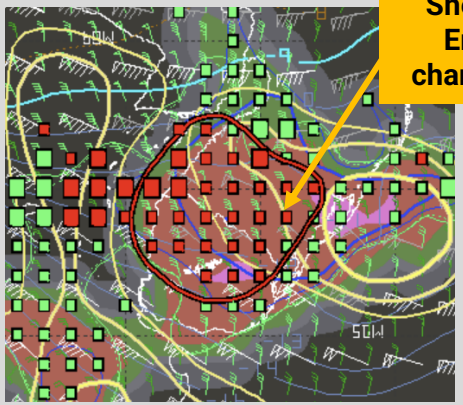
Where? When?
Southern Brazil, Thursday night through Sunday night. Worst on Friday through Saturday morning.

What? 3-day rainfall totals: 100-150mm, isolated close to 200mm in RGS. Severe Wx including hail.

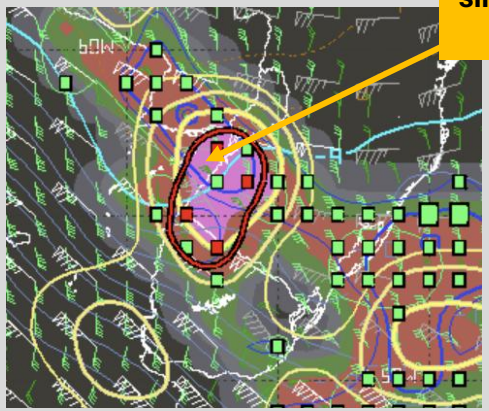
GR02T Algorithm

- Enhanced risk for hail late on Thursday night into Friday morning, including directional shear (rotation).
- A second round late on Friday into Saturday ahead of a potent front. Heavier precipitation but lesser chance for hail and rotation.

09 UTC Fri



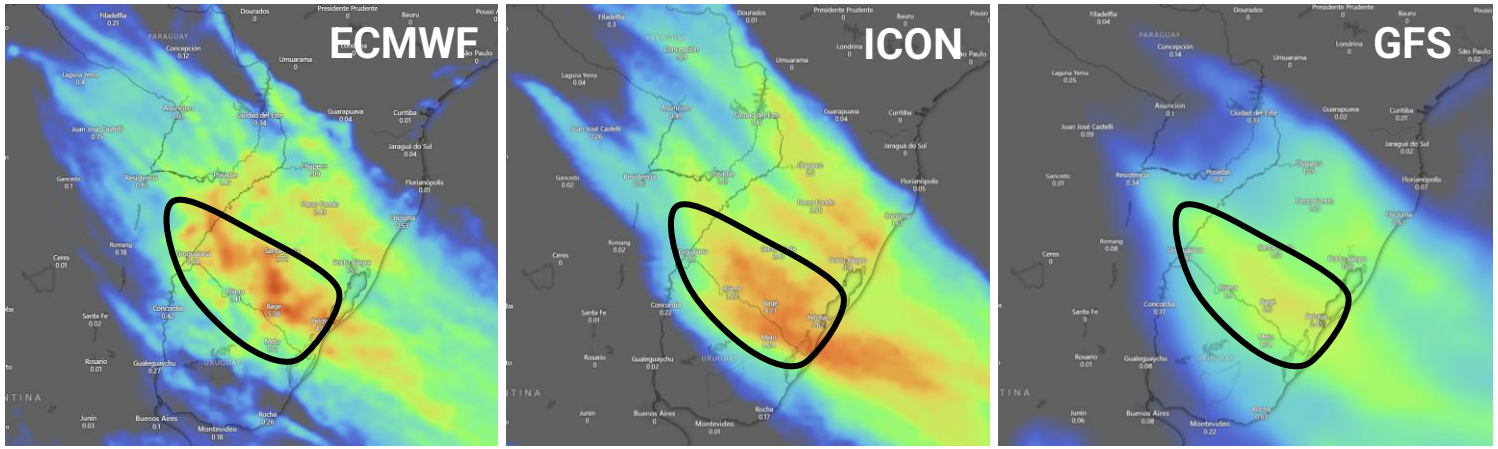
00 UTC Sat



Model Rainfall

- 100-150mm in southern RGSul and northeast Uruguay, mostly late Thursday through Saturday morning. Isolated maxima near 200mm.

Model Rainfall: 22-Aug 00 UTC through 15 Aug 00 UTC



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Since 2004

Next Session: Tuesday 16 September at 15 UTC

★ Our website: https://rammb2.cira.colostate.edu/training/rmtc/focusgroup/

★ To join our distribution list: email erin.sanders@colostate.edu, jose.galvez@colostate.edu or bernie.connell@colostate.edu

Thank you!

Gracias!

Obrigado!