

Second WMO RCC-Washington International Training Workshop

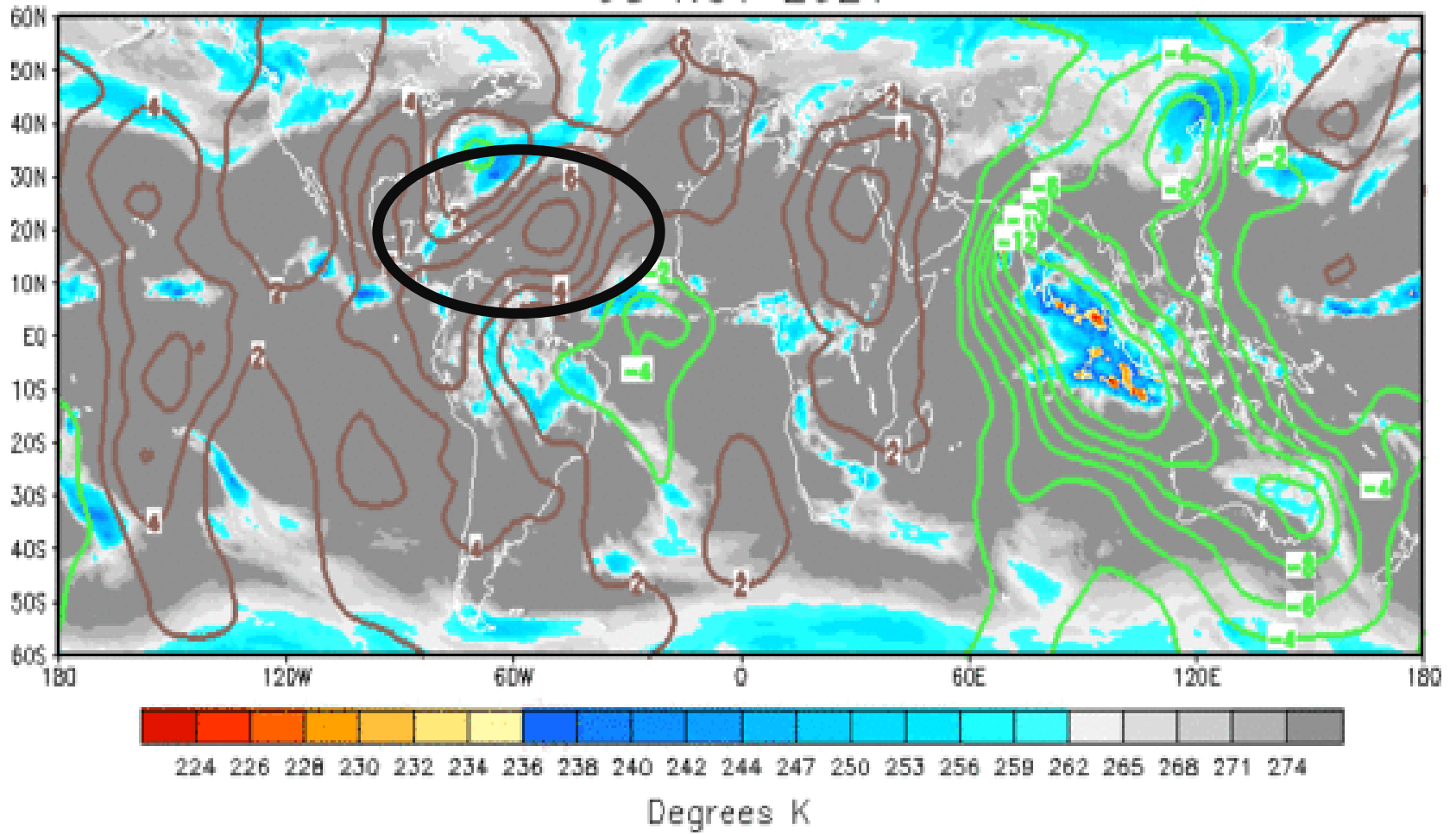
**Real-time week-2 extreme
precipitation outlook**

Lesser Antilles

8 – 10 November 2021

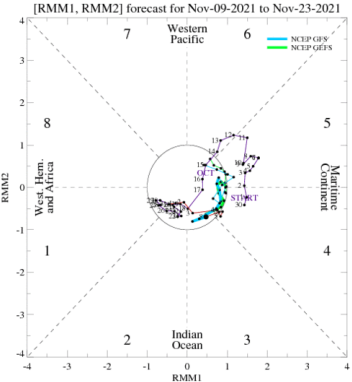
200-hPa Velocity Potential Anomaly

08 NOV 2021

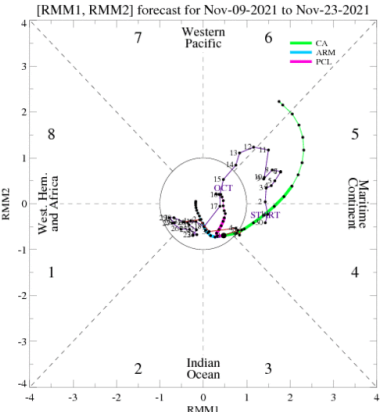


Wheeler-Hendon Index – Forecasts

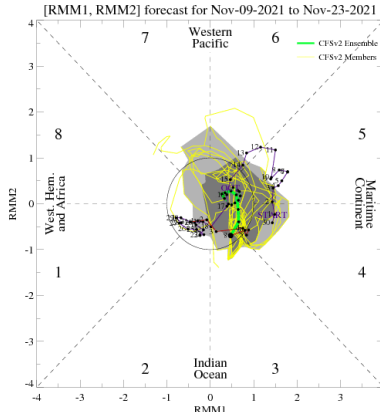
GEFS



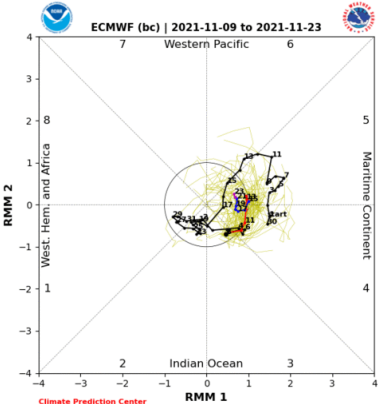
Statistical



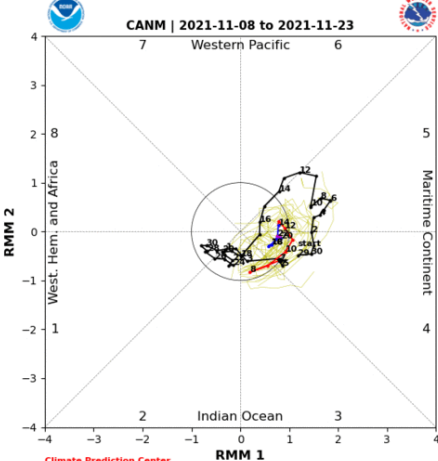
CFSv2



ECMWF

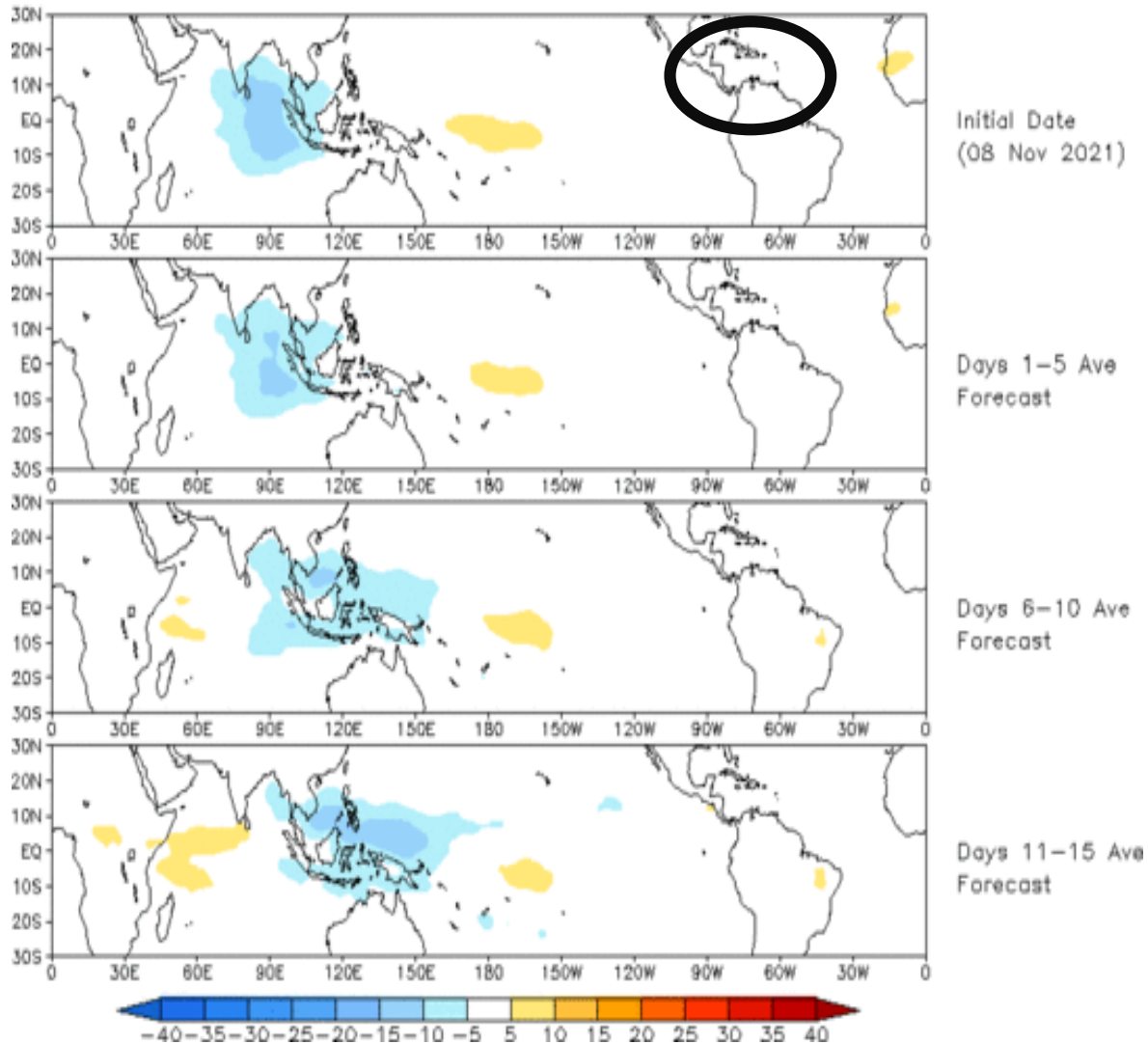


CMET



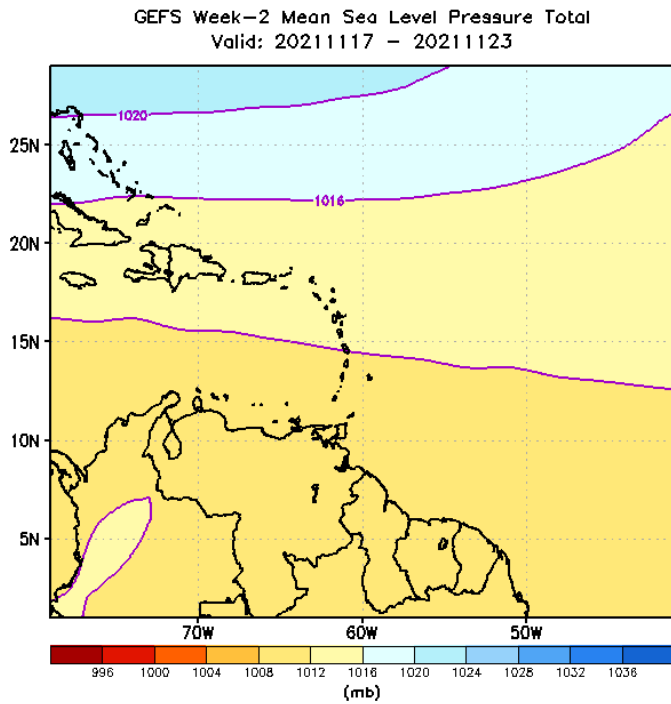
Evolution of MJO-related Anomalies

Prediction of MJO-related anomalies using GEFS operational forecast
Initial date: 08 Nov 2021
OLR

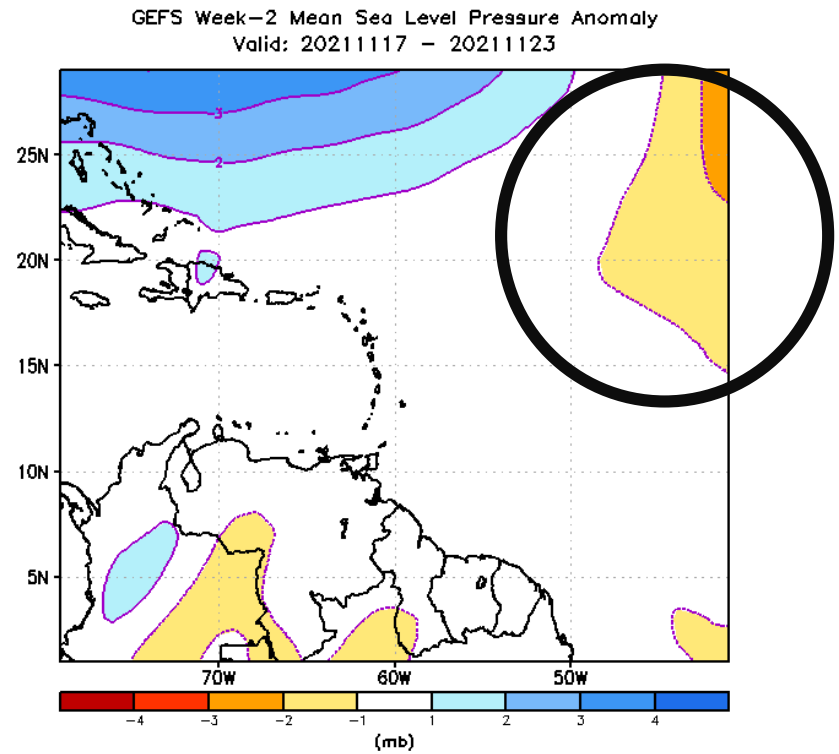


Mean Sea Level Pressure

Total



Anomaly



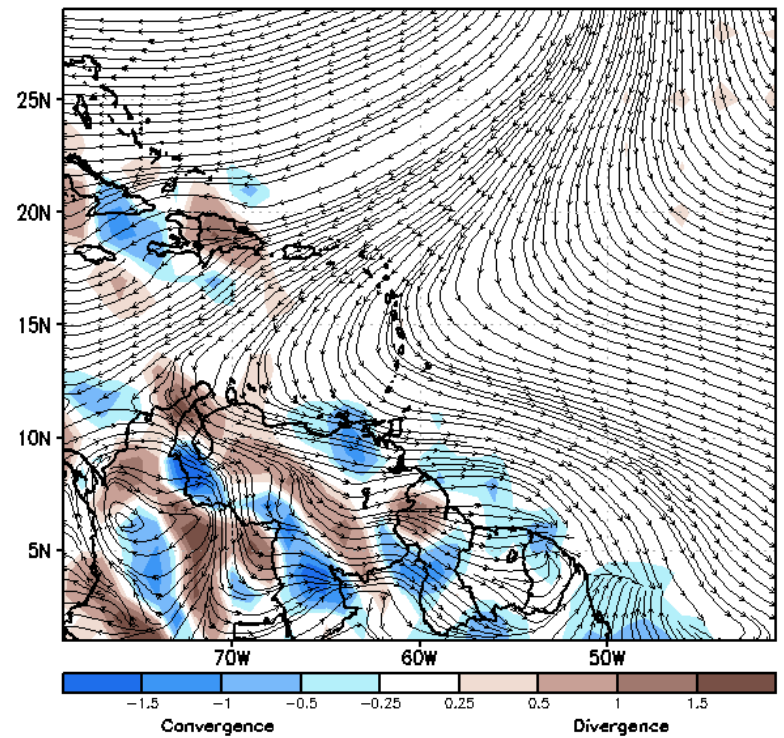
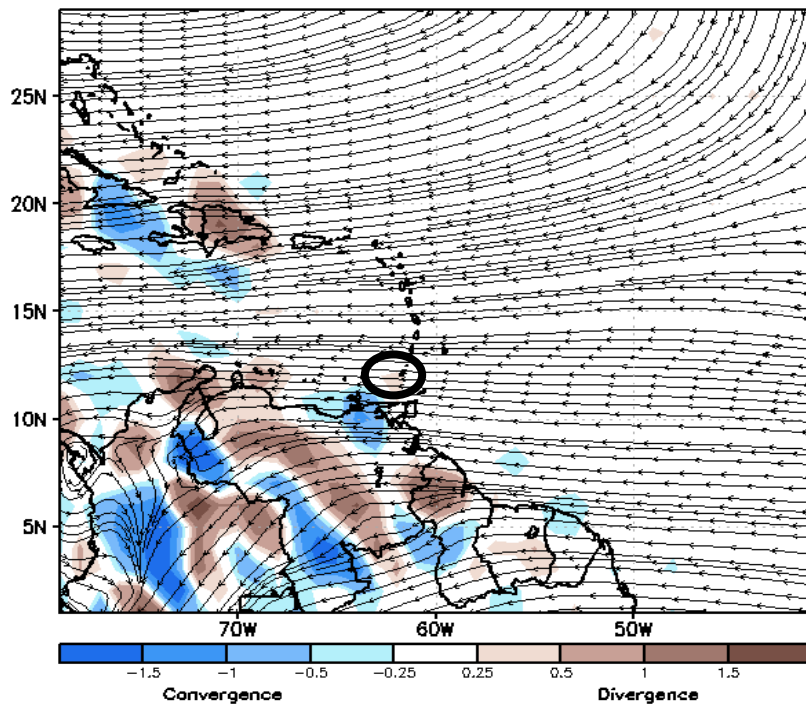
850-hPa Wind

Total

Anomaly

GEFS Week-2 850-hPa Divergence and Wind Total
Valid: 20211117 - 20211123

GEFS Week-2 850-hPa Divergence and Wind Anomaly
Valid: 20211117 - 20211123

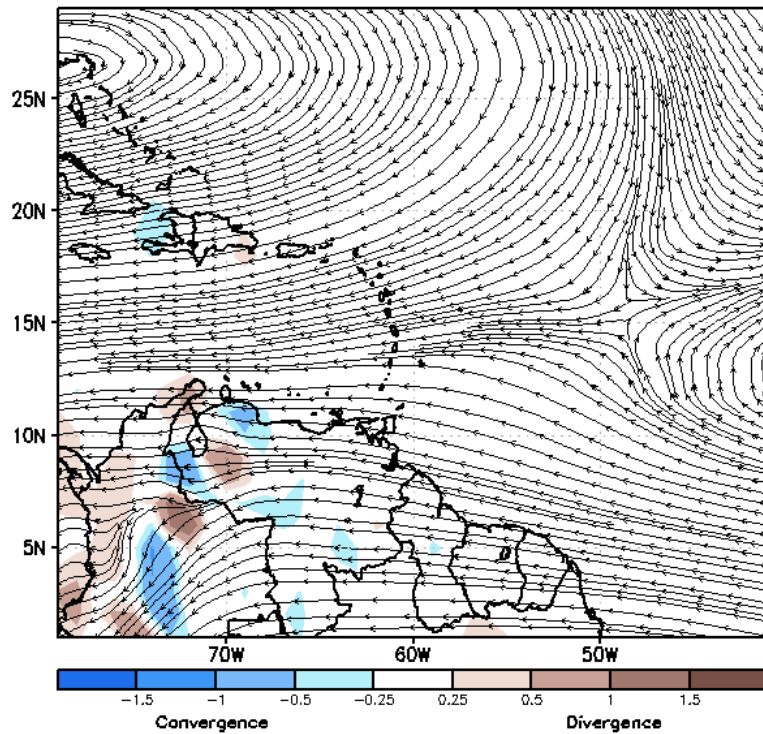


700-hPa Wind

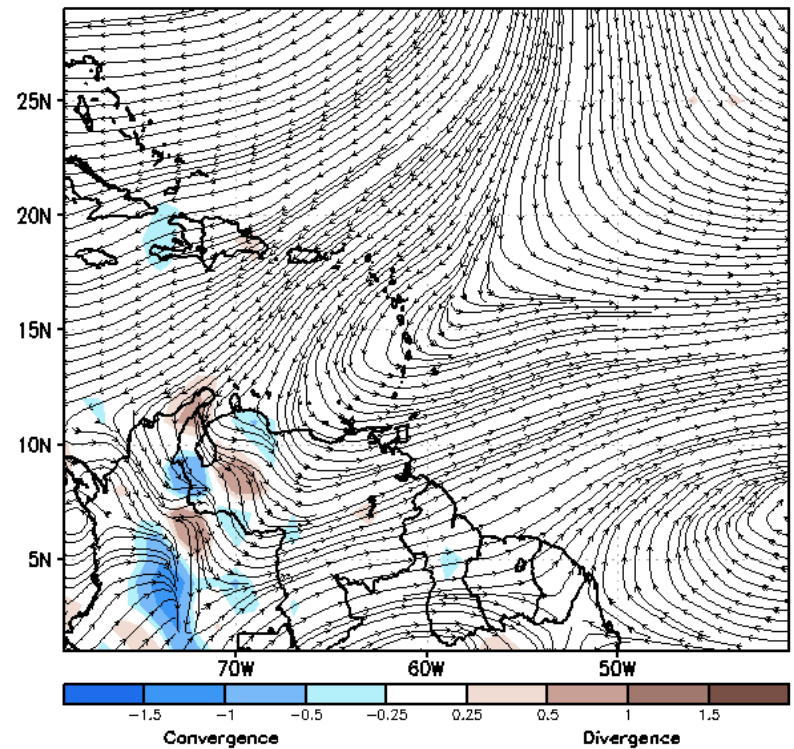
Total

Anomaly

GEFS Week-2 700-hPa Divergence and Wind Total
Valid: 20211117 - 20211123



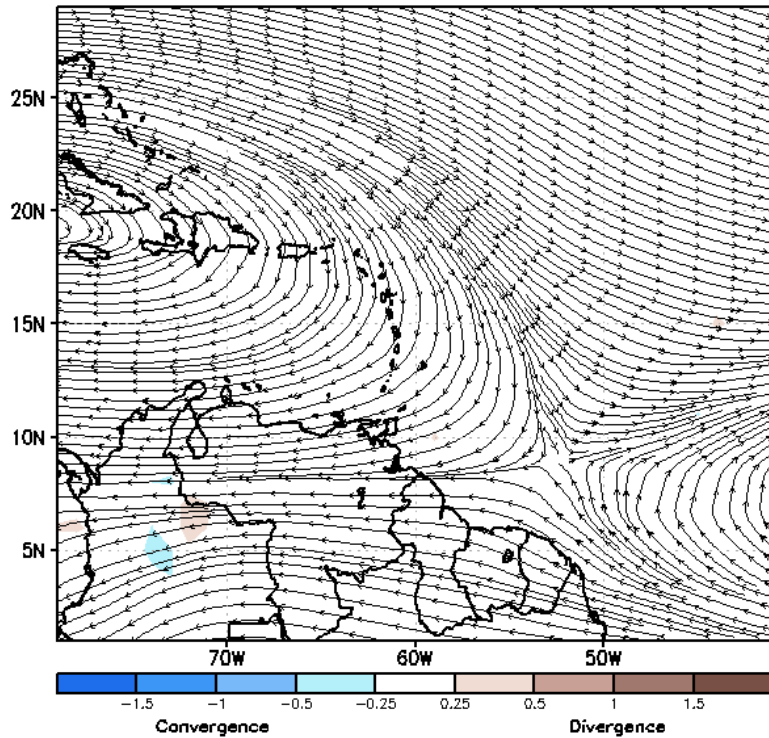
GEFS Week-2 700-hPa Divergence and Wind Anomaly
Valid: 20211117 - 20211123



500-hPa Wind

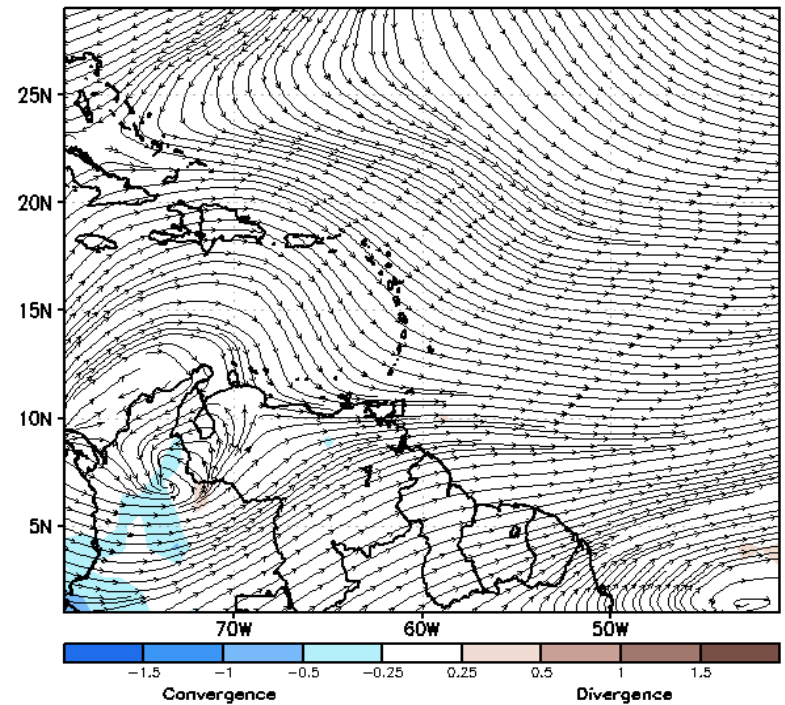
Total

GEFS Week-2 500-hPa Divergence and Wind Total
Valid: 20211117 - 20211123



Anomaly

GEFS Week-2 500-hPa Divergence and Wind Anomaly
Valid: 20211117 - 20211123

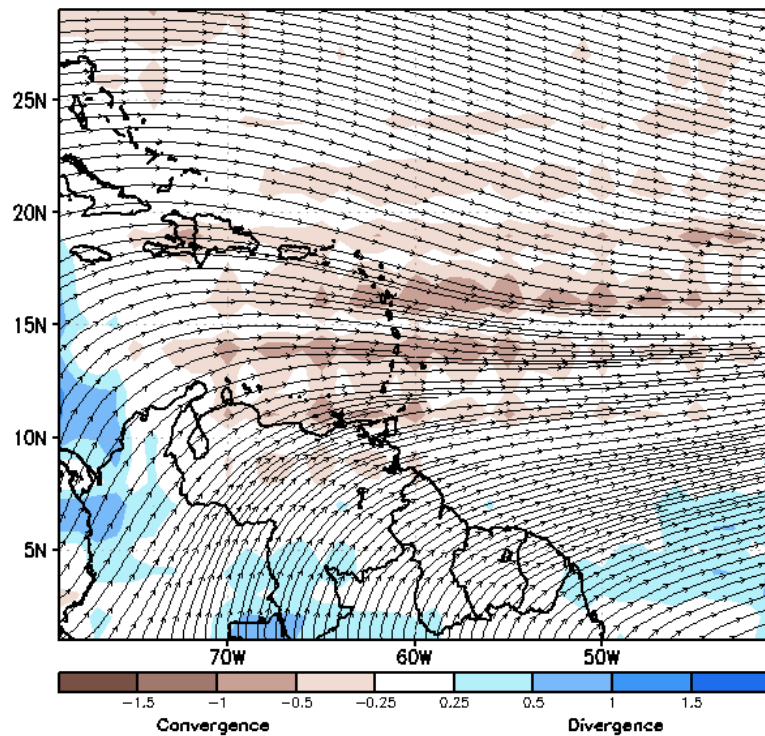


200-hPa Wind

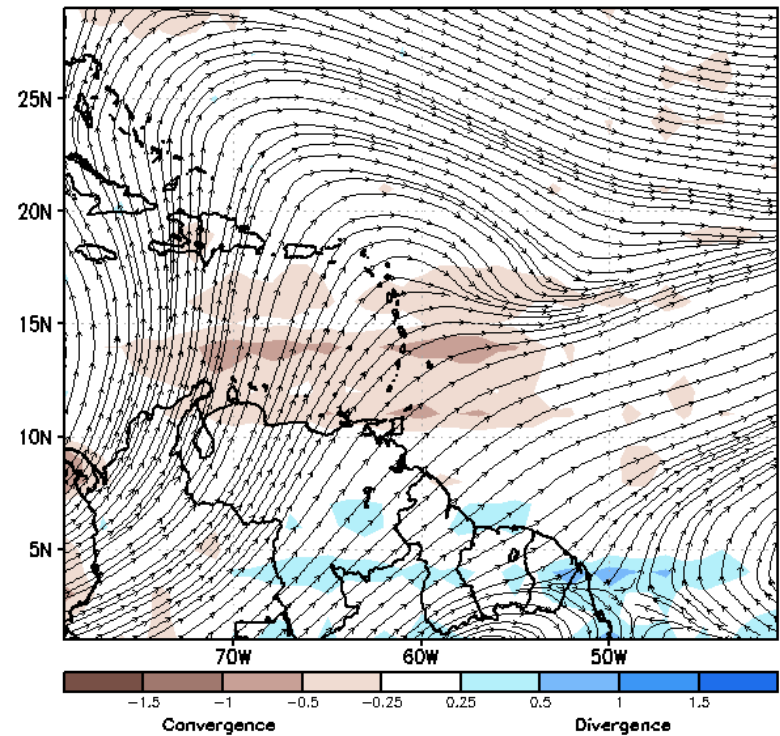
Total

Anomaly

GEFS Week-2 200-hPa Divergence and Wind Total
Valid: 20211117 - 20211123

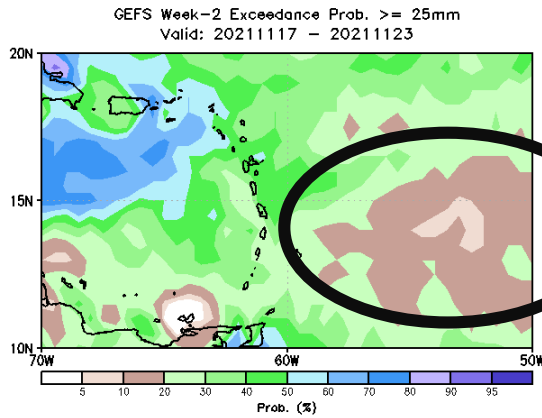


GEFS Week-2 200-hPa Divergence and Wind Anomaly
Valid: 20211117 - 20211123

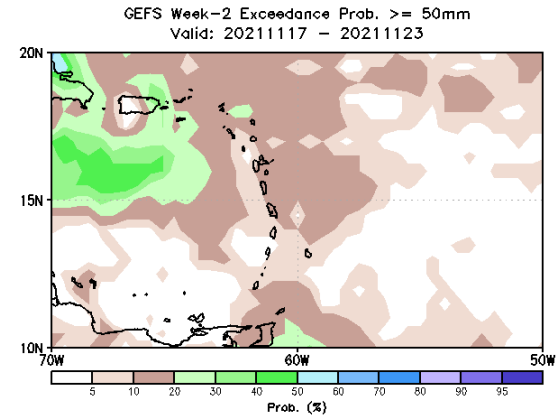


Precipitation Exceedance Probability

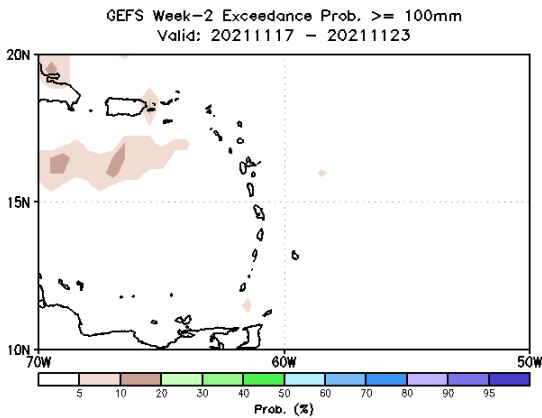
$\geq 25\text{mm}$



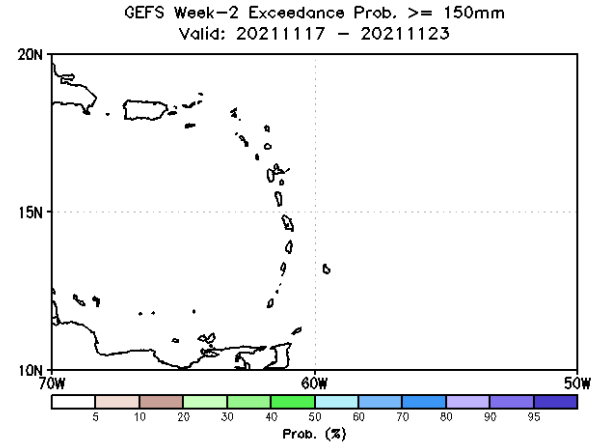
$\geq 50\text{mm}$



$\geq 100\text{mm}$

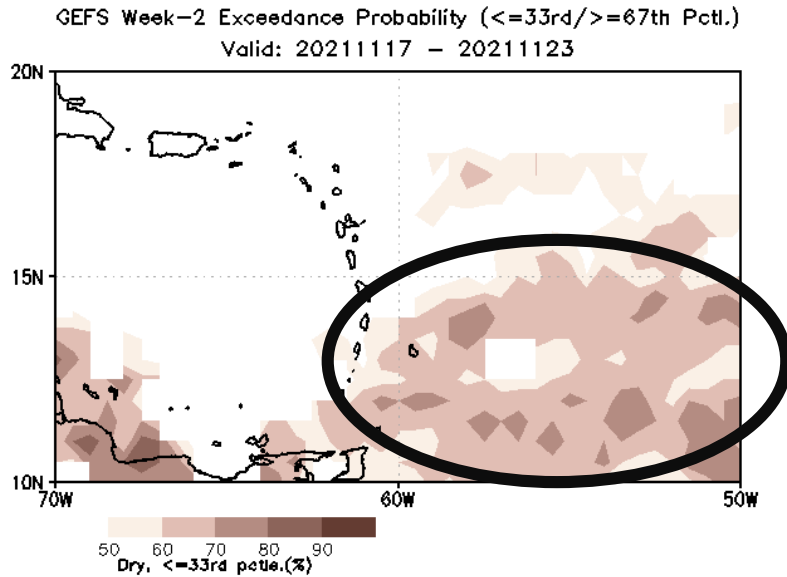


$\geq 150\text{mm}$

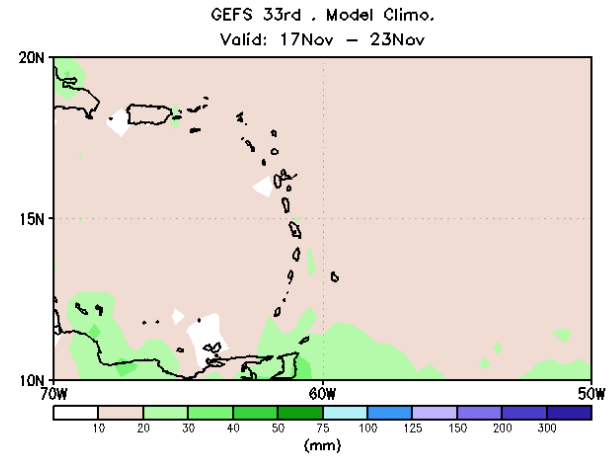


Precipitation Exceedance Probability ($\leq 33^{\text{rd}}$ & $\geq 67^{\text{th}}$ percentiles)

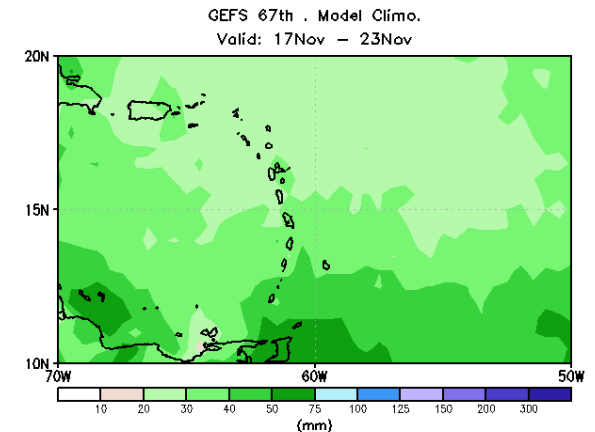
$\leq 33^{\text{rd}}$ & $\geq 67^{\text{th}}$ percentiles



33^{rd} percentile climo



67^{th} percentile climo

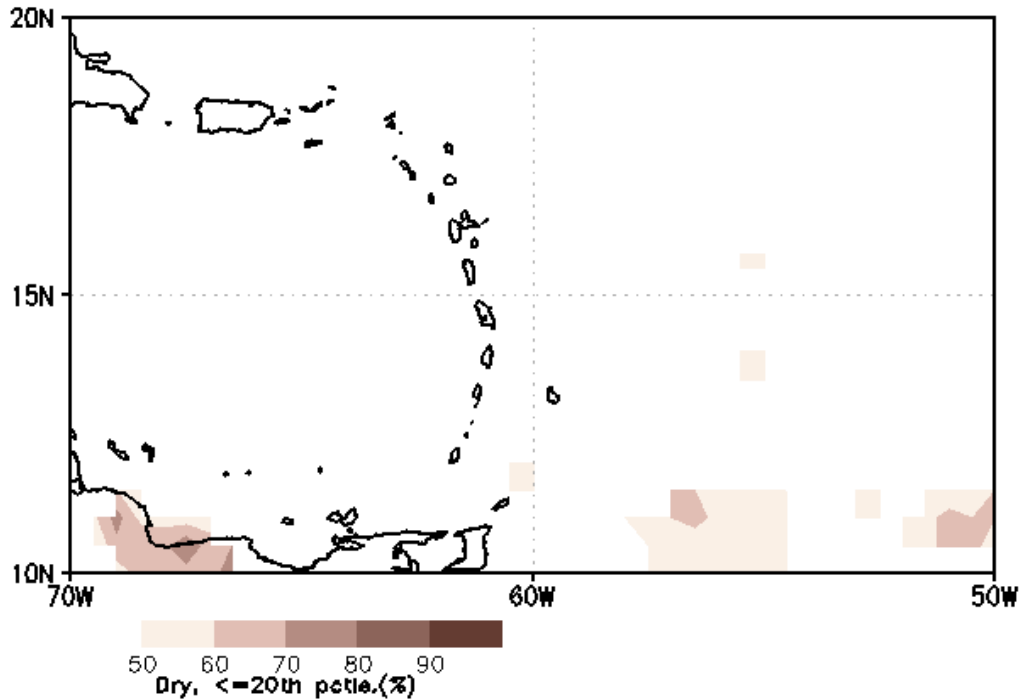


Precipitation Exceedance Probability ($\leq 20^{\text{th}}$ & $\geq 80^{\text{th}}$ percentiles)

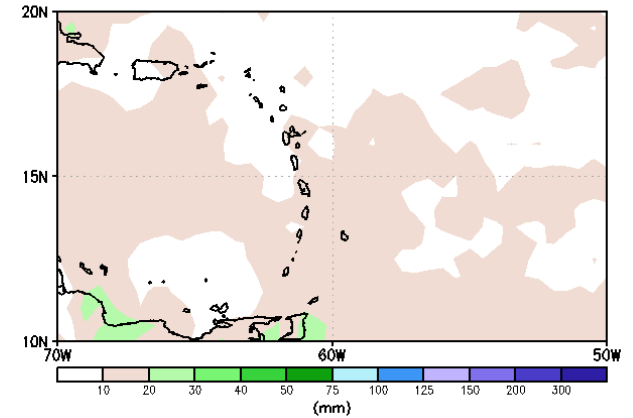
$\leq 20^{\text{th}}$ & $\geq 80^{\text{th}}$ percentiles

20th percentile climo

GEFS Week-2 Exceedance Probability ($\leq 20^{\text{th}} / \geq 80^{\text{th}}$ Pctl.)
Valid: 20211117 - 20211123

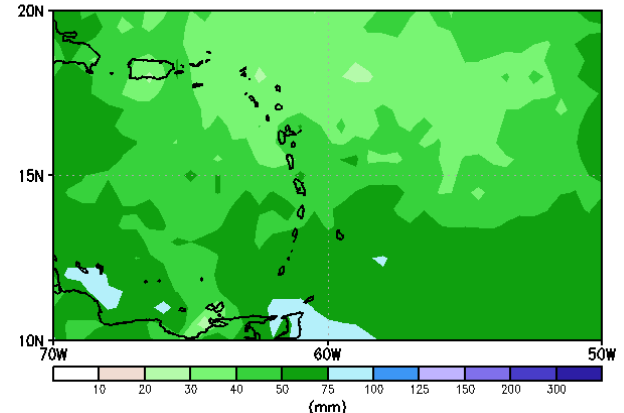


GEFS 20th . Model Climo.
Valid: 17Nov - 23Nov



80th percentile climo

GEFS 80th . Model Climo.
Valid: 17Nov - 23Nov

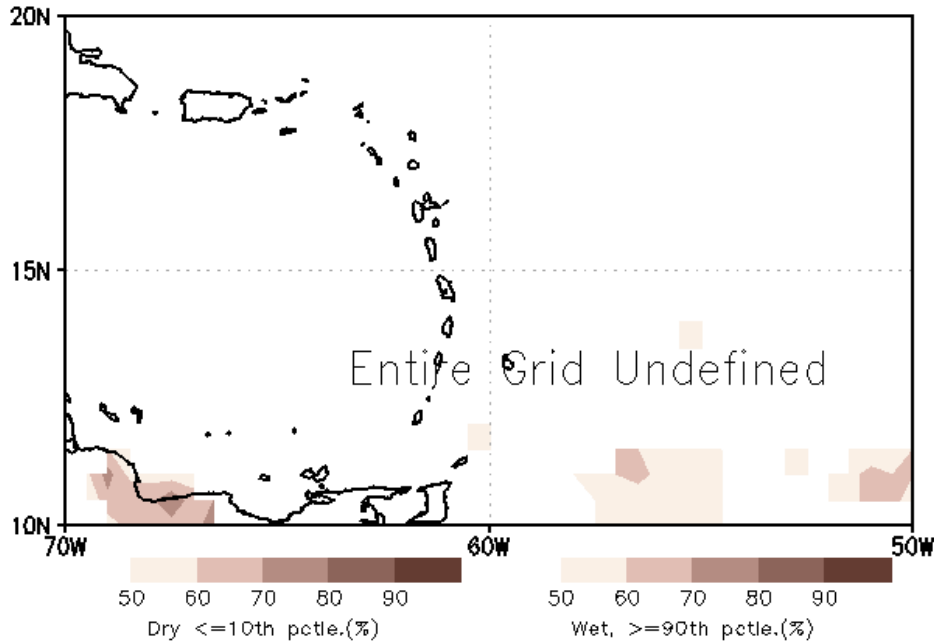


Precipitation Exceedance Probability ($\leq 10^{\text{th}}$ & $\geq 90^{\text{th}}$ percentiles)

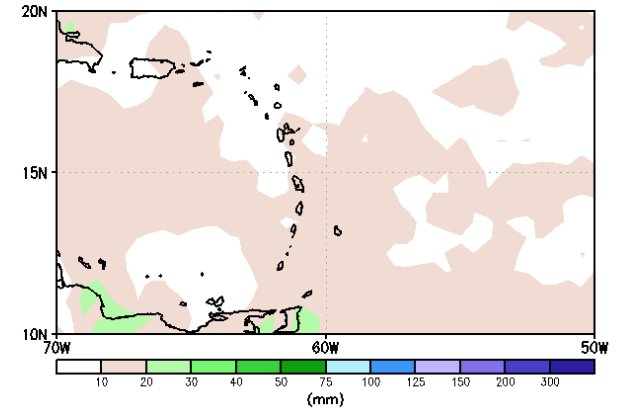
$\leq 10^{\text{th}}$ & $\geq 90^{\text{th}}$ percentiles

10th percentile clima

GEFS Week-2 Exceedance Probability ($\leq 10^{\text{th}}/\geq 90^{\text{th}}$ Pctl.)
Valid: 20211117 - 20211123

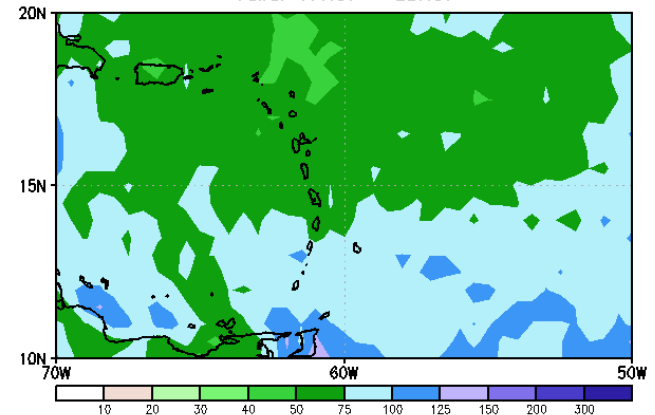


GEFS 10th . Model Clímo.
Valid: 17Nov - 23Nov



90th percentile clima

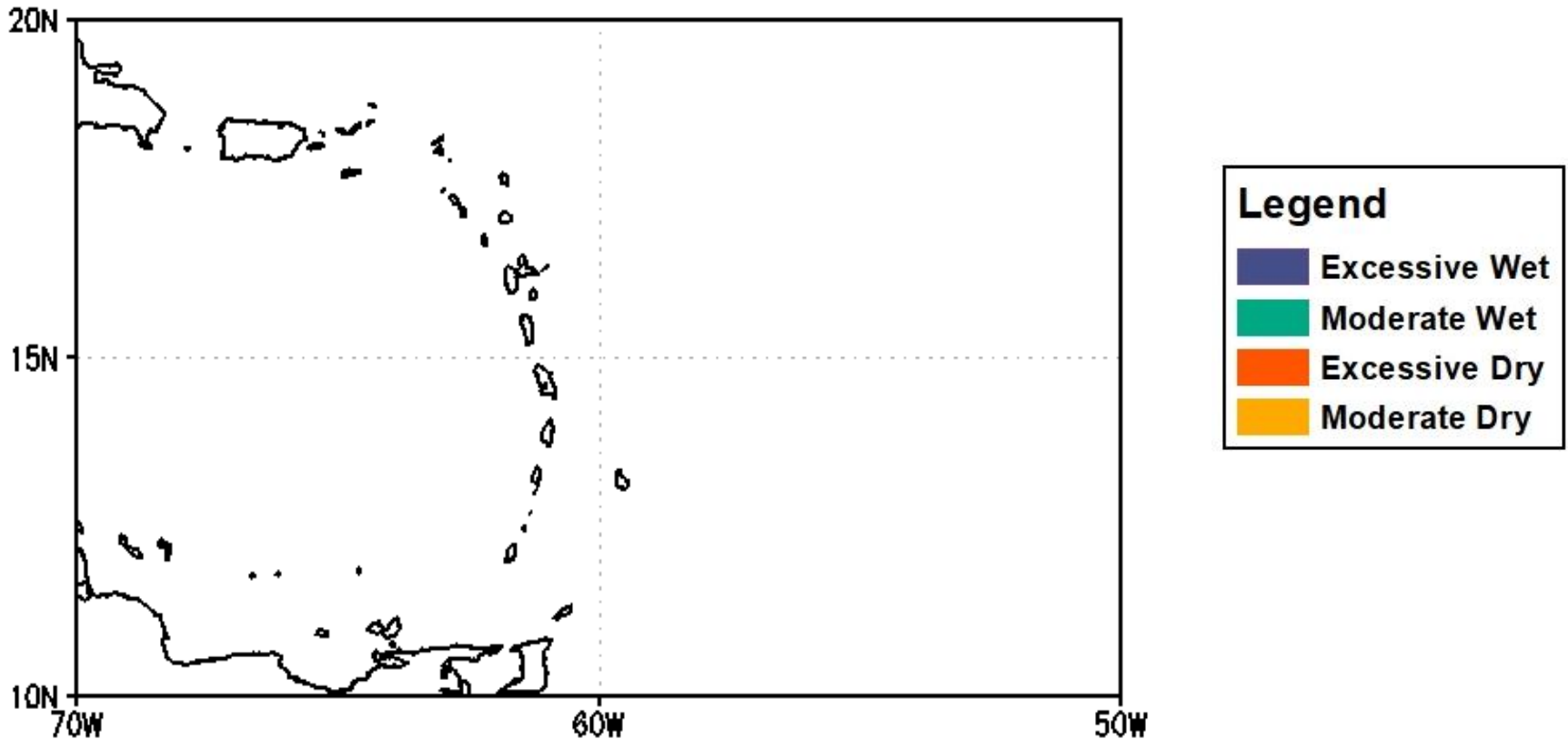
GEFS 90th . Model Clímo.
Valid: 17Nov - 23Nov



Summary

- MJO Not active
- **Large Scale Circulation Pattern:** Anticyclonic flow across the Lesser Antilles at 500hpa, drier mid level conditions/subsidence
- Subsidence at 200 hpa.
- **Exceedence Probability forecast:** higher probability of precip to be below the 33rd, 67th percentile

Extreme Precipitation Outlooks



- Drier conditions across the Lesser Antilles generally. Subsidence at mid to upper levels. Low probability of exceeding 25mm and even lower probability at 50mm. Percentile exceedance suggest drier conditions across the Lesser Antilles
- Similar pattern across Puerto Rico and the virgin islands, but there are higher probabilities of exceeding 50 mm as compared to the Lesser Antilles.