

Second WMO RCC-Washington International Training Workshop

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

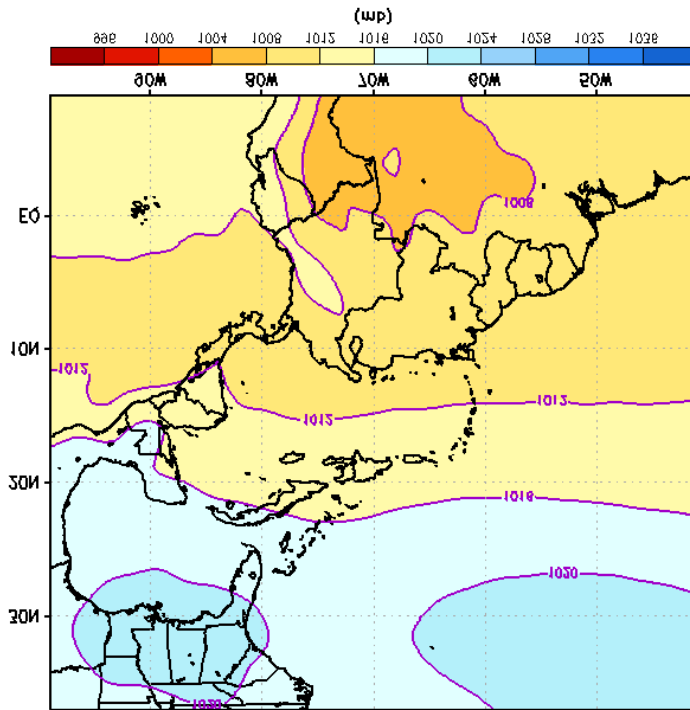
Marie Carmelle V CHERY

Haiti

8 – 10 November 2021

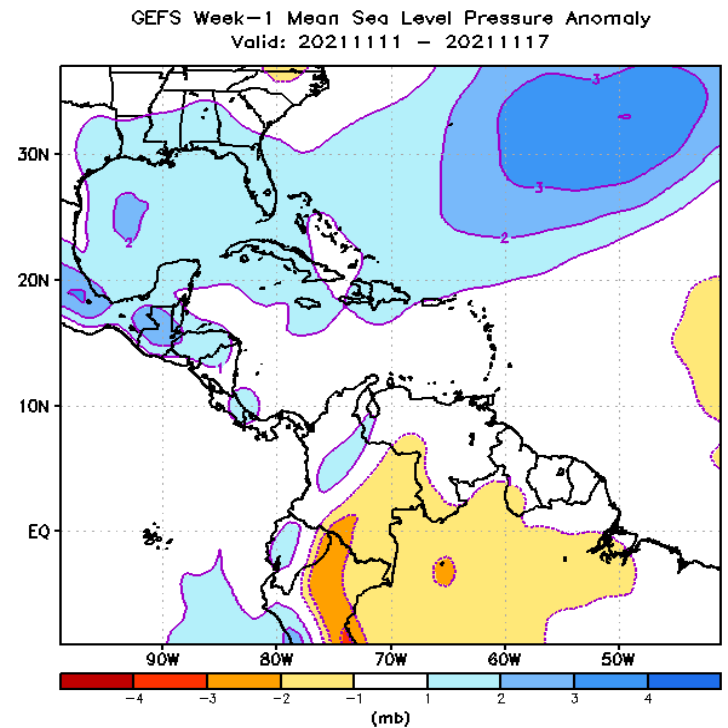
Mean Sea Level Pressure

Total



GEFS Week-1 Mean Sea Level Pressure Total

Anomaly



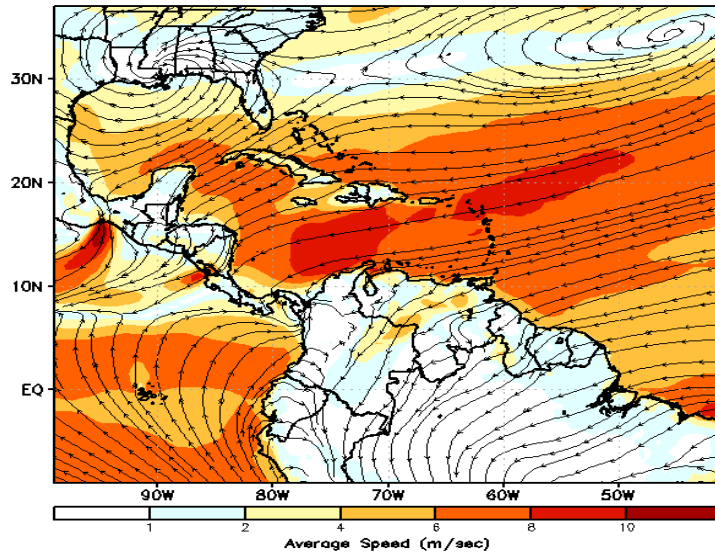
An area of positive mean sea level pressure anomaly is located over western Atlantic, extending into the Caribbean and northern South America

10m Wind

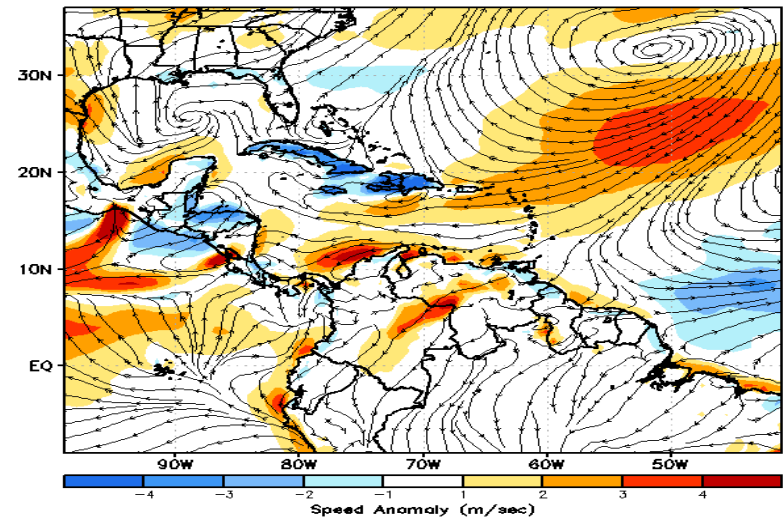
Total

Anomaly

GEFS Week-2 10m Wind Speed Total
Valid: 20210821 - 20211124



GEFS Week-2 10m Wind Speed Anomaly
Valid: 20210821 - 20211124

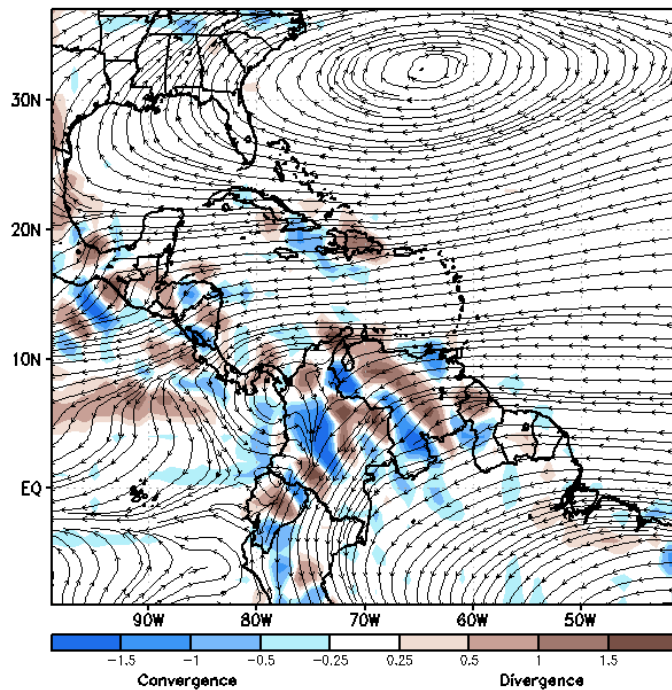


An area of weaker than normal wind speed anomaly across much of the Caribbean Islands : Cuba, Haiti, Dominican Republic and Jamaica.

850-hPa Wind

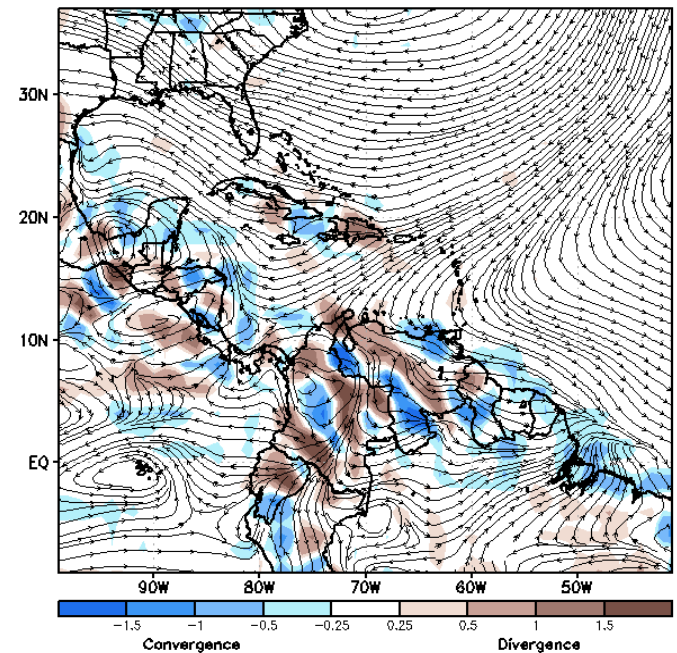
Total

GEFS Week-2 850-hPa Divergence and Wind Total
Valid: 20210821 - 20211124



Anomaly

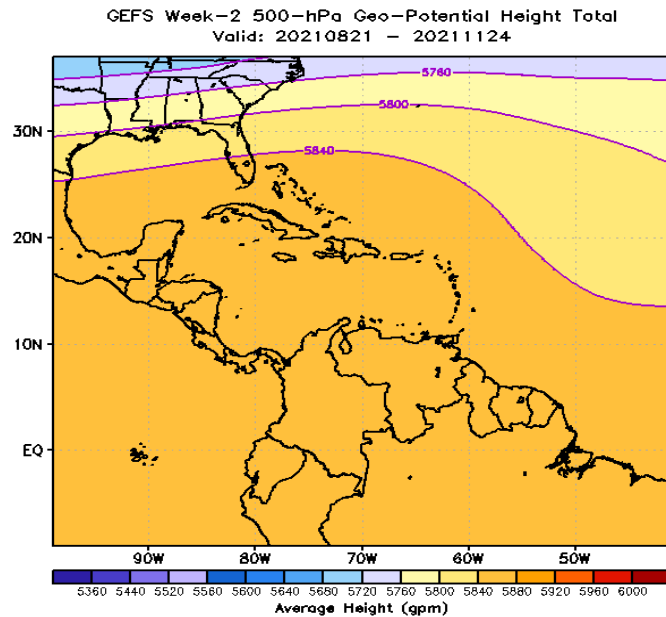
GEFS Week-2 850-hPa Divergence and Wind Anomaly
Valid: 20210821 - 20211124



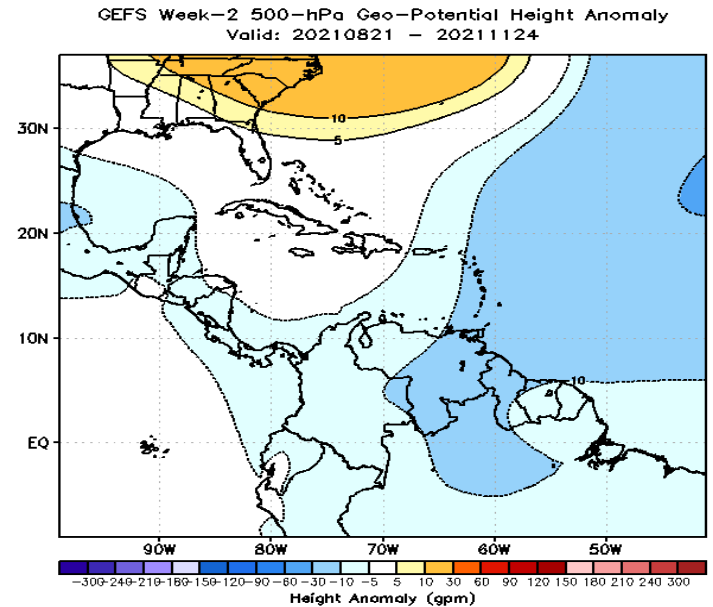
A broad area of cyclonic circulation across western Atlantic, with localized areas of divergence and convergence anomaly at 850-hPa in the Caribbean Islands : Cuba, Haiti, Dominican Republic, Jamaica.. and Southern part of America.

500-hPa Height

Total



Anomaly

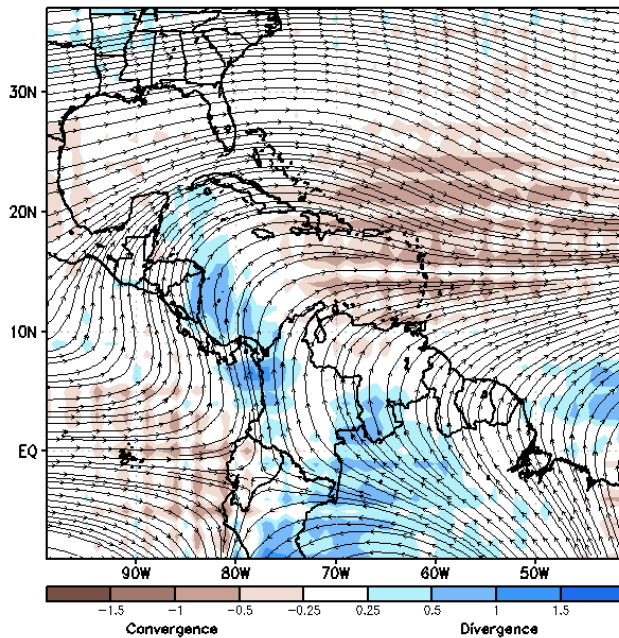


A broad area of potential height anomaly at 500-hPa is expected to prevail across many places in the Caribbean.

200-hPa Wind

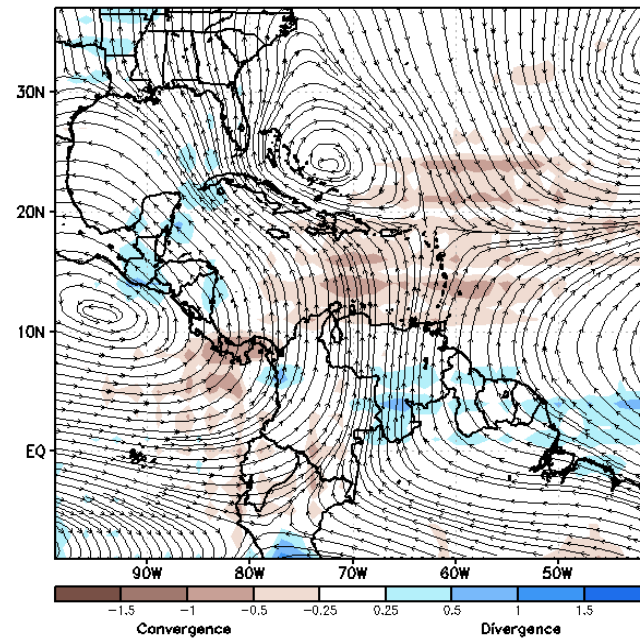
Total

GEFS Week-2 200-hPa Divergence and Wind Total
Valid: 20210821 - 20211124



Anomaly

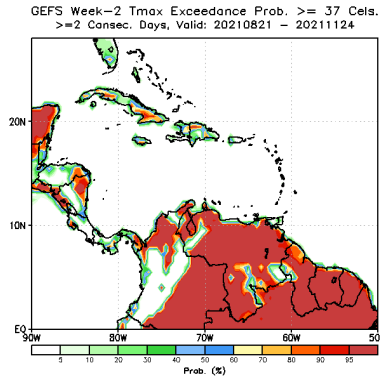
GEFS Week-2 200-hPa Divergence and Wind Anomaly
Valid: 20210821 - 20211124



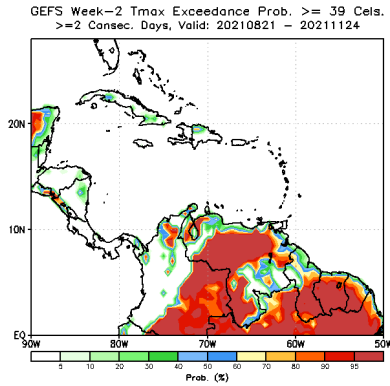
An area of upper-level divergence (blue shaded) over the northern west of Cuba and brown shaded over Haiti.

Tmax Exceedance Probability for at least 2 Consecutive Days

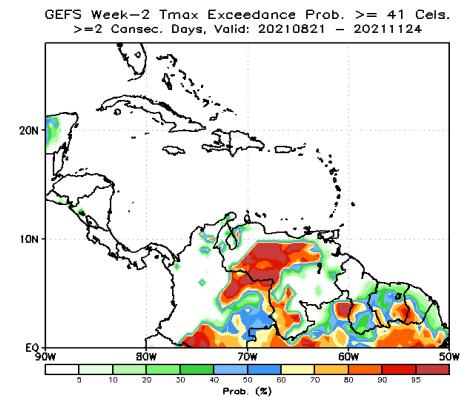
$\geq 37^{\circ}\text{C}$



$\geq 39^{\circ}\text{C}$



$\geq 41^{\circ}\text{C}$

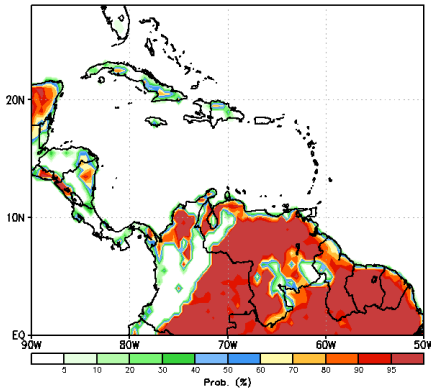


High exceedance probability ($\geq 37^{\circ}\text{C}$ for at least 2 consecutive days) over many places in the Caribbean like Cuba, Haiti, Dominican Republic, and in the neighbors

Tmax Exceedance Probability for at least 3 Consecutive Days

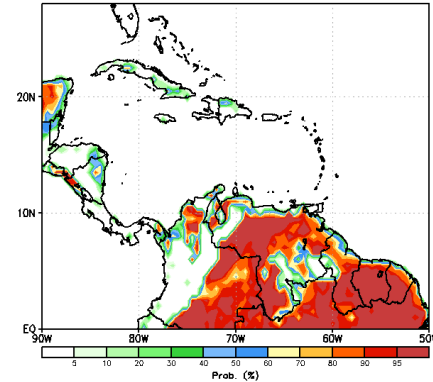
$\geq 37\text{ }^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 37 Deg. Cels.
>=3 Consec. Days, Valid: 20210821 - 20211124



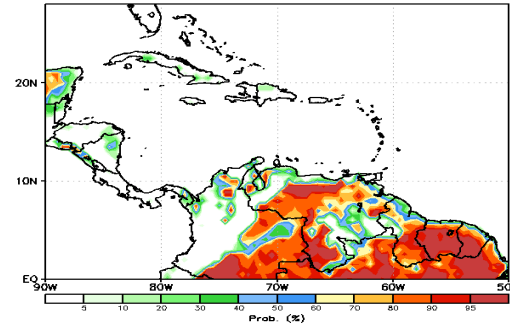
$\geq 39\text{ }^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 39 Deg. Cels.
>=3 Consec. Days, Valid: 20210821 - 20211124



$\geq 41\text{ }^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 41 Deg. Cels.
>=3 Consec. Days, Valid: 20210821 - 20211124

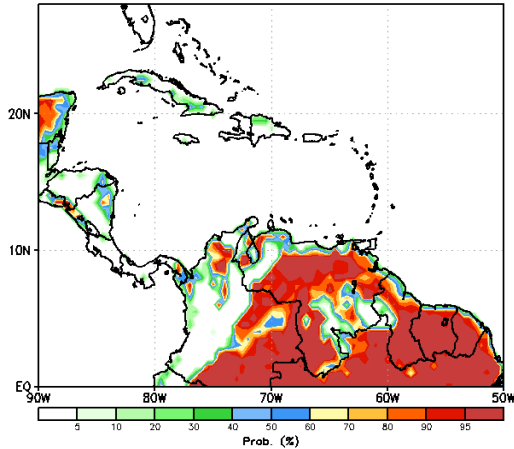


High exceedance probability ($\geq 37^{\circ}\text{C}$ for at least 3 consecutive days) over many places in the Caribbean like Cuba, Dominican Republic, Haiti and the far northern South America.

HI Exceedance Probability for at least 2 Consecutive Days

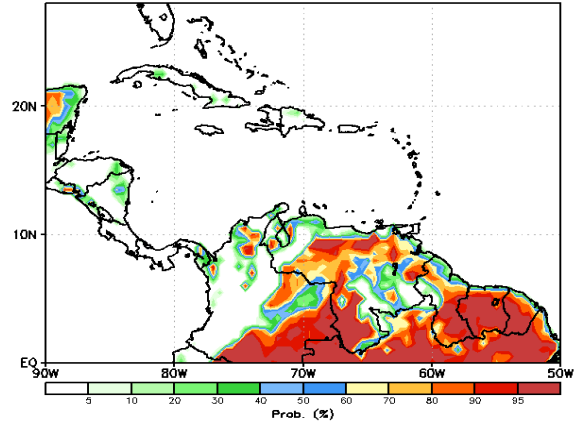
$\geq 41^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 41 Deg. Cels.
>=2 Consec. Days, Valid: 20210821 - 20211124



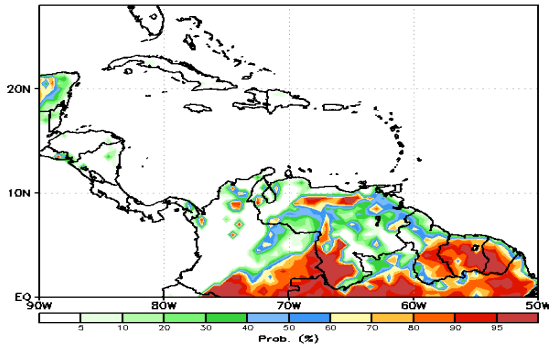
$\geq 43^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 43 Deg. Cels.
>=2 Consec. Days, Valid: 20210821 - 20211124



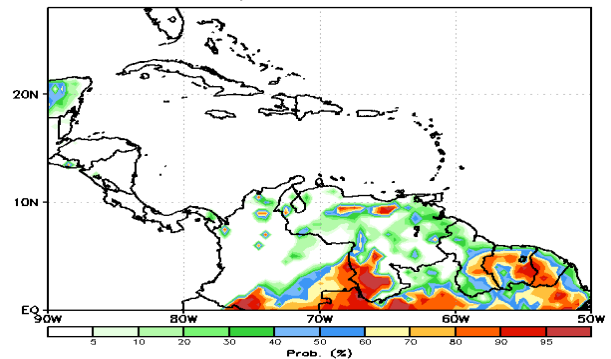
$\geq 45^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 45 Deg. Cels.
>=2 Consec. Days, Valid: 20210821 - 20211124



$\geq 47^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 47 Deg. Cels.
>=2 Consec. Days, Valid: 20210821 - 20211124

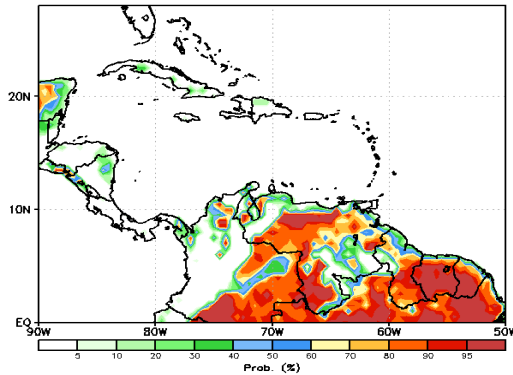


High exceedance probability ($\geq 41^{\circ}\text{C}$ for at least 2 consecutive days) over many places in the Caribbean particularly in Cuba, Haiti, Dominican Republic and in the neighbors areas.

HI Exceedance Probability for at least 3 Consecutive Days

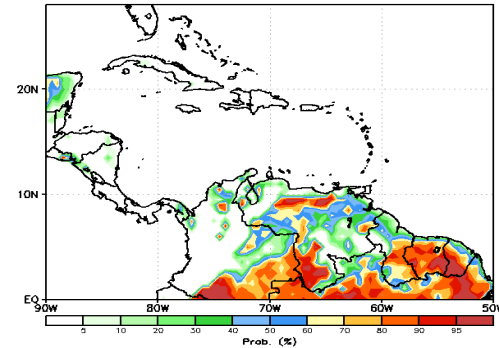
$\geq 41^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 41 Deg. Cels.
>=3 Consec. Days, Valid: 20210821 - 20211124



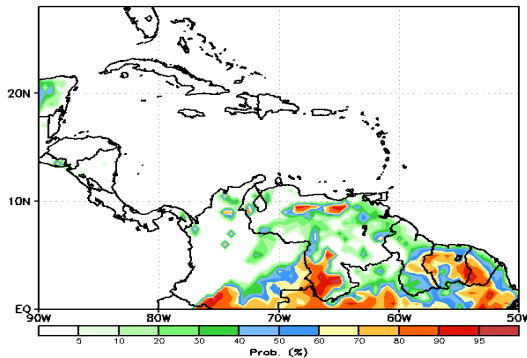
$\geq 43^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 43 Deg. Cels.
>=3 Consec. Days, Valid: 20210821 - 20211124



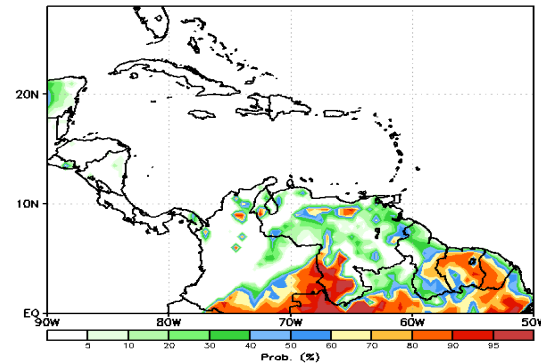
$\geq 45^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 45 Deg. Cels.
>=3 Consec. Days, Valid: 20210821 - 20211124



$\geq 47^{\circ}\text{C}$

GEFS Week-2 HI Exceedance Prob. ≥ 47 Deg. Cels.
>=2 Consec. Days, Valid: 20210820 - 20211123

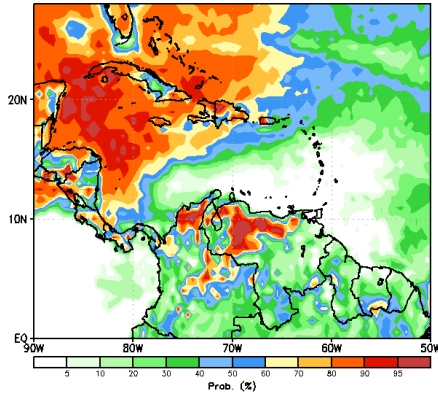


High exceedance probability ($\geq 41^{\circ}\text{C}$ for at least 3 consecutive days) over many places in the Caribbean, and the neighbors areas.

Tmax Exceedance Probability with respect to Percentiles for at least 2 Consecutive Days

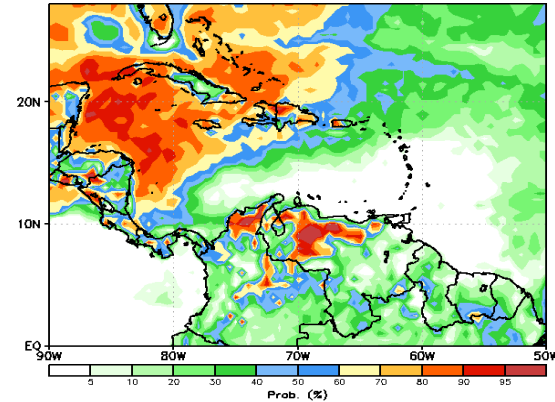
$\geq 80^{\text{th}}$ percentile

GEFS Week-2 HI Exceedance Prob. $\geq 80^{\text{th}}$ Pctl.
>=2 Consec. Days, Valid: 20210821 - 20211124



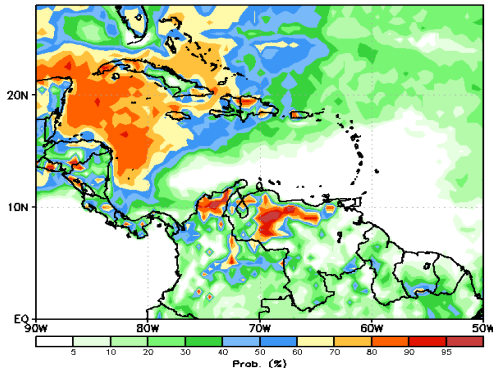
$\geq 85^{\text{th}}$ percentile

GEFS Week-2 HI Exceedance Prob. $\geq 85^{\text{th}}$ Pctl.
>=2 Consec. Days, Valid: 20210821 - 20211124



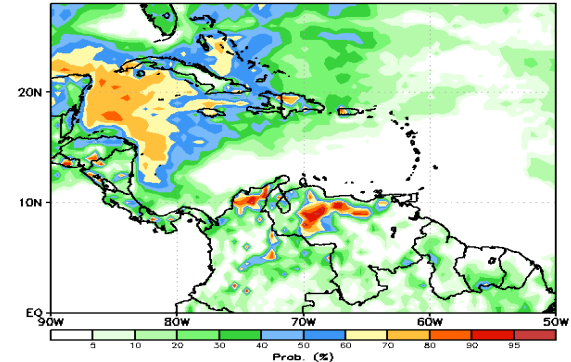
$\geq 90^{\text{th}}$ percentile

GEFS Week-2 HI Exceedance Prob. $\geq 90^{\text{th}}$ Pctl.
>=2 Consec. Days, Valid: 20210821 - 20211124



$\geq 95^{\text{th}}$ percentile

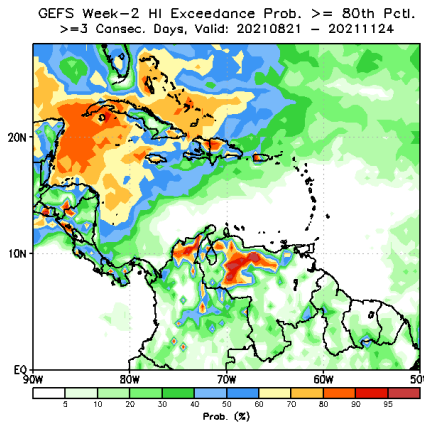
GEFS Week-2 HI Exceedance Prob. $\geq 95^{\text{th}}$ Pctl.
>=2 Consec. Days, Valid: 20210821 - 20211124



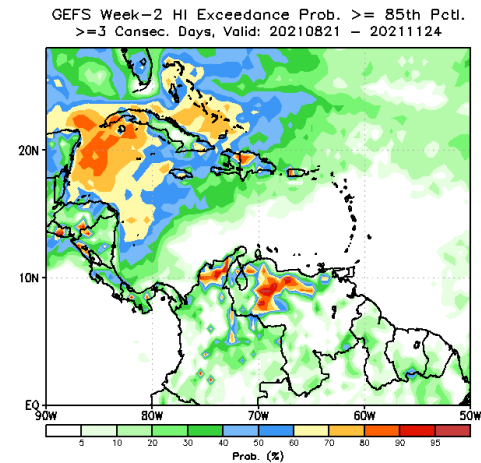
High exceedance probability ($\geq 85^{\text{th}}$ percentile for at least 2 consecutive days) over many places in the Caribbean :Cuba, Jamaica, Bahamas, Haiti, Dominican Republic and the far northern South America.

Tmax Exceedance Probability with respect to Percentiles for at least 3 Consecutive Days

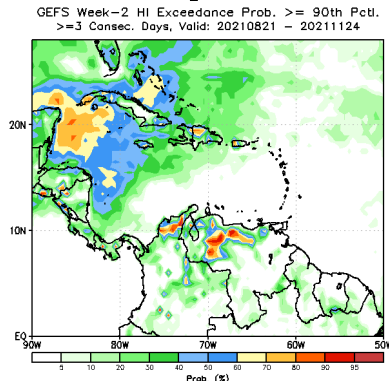
$\geq 80^{\text{th}}$ percentile



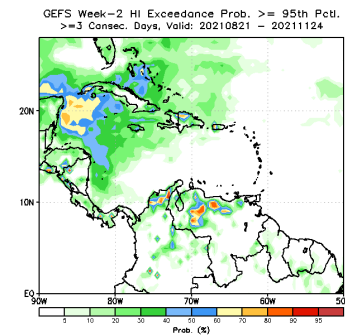
$\geq 85^{\text{th}}$ percentile



$\geq 90^{\text{th}}$ percentile



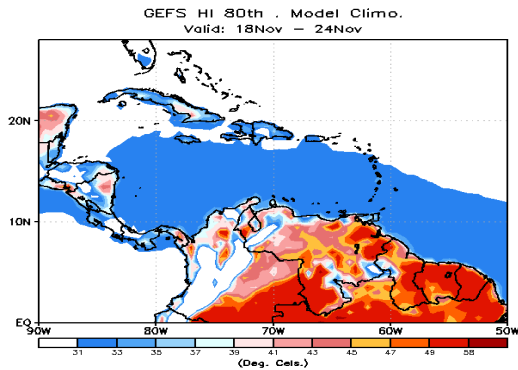
$\geq 95^{\text{th}}$ percentile



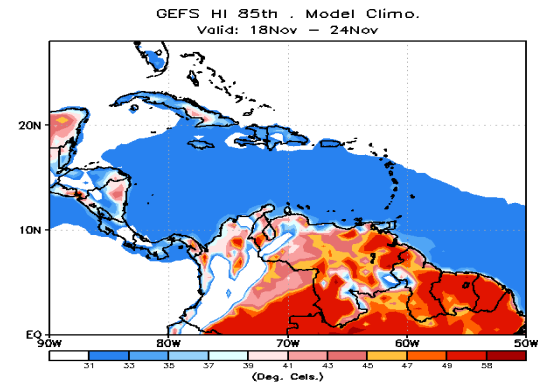
High exceedance probability ($\geq 85^{\text{th}}$ percentile for at least 3 consecutive days) over many places in the Caribbean :Cuba, Jamaica, Bahamas, Haiti, Dominican Republic and the far northern South America

Tmax Percentile Climatology

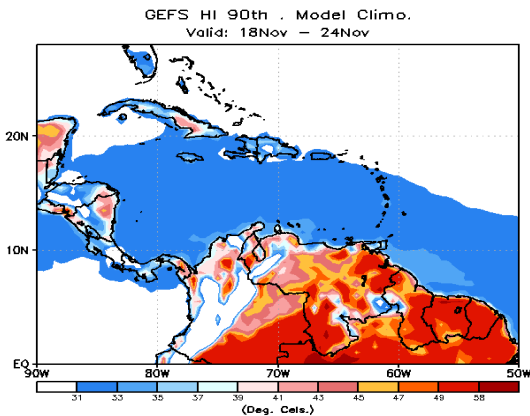
80th percentile



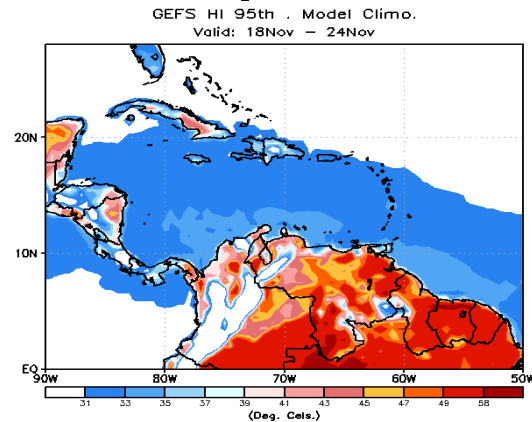
85th percentile



90th percentile



95th percentile

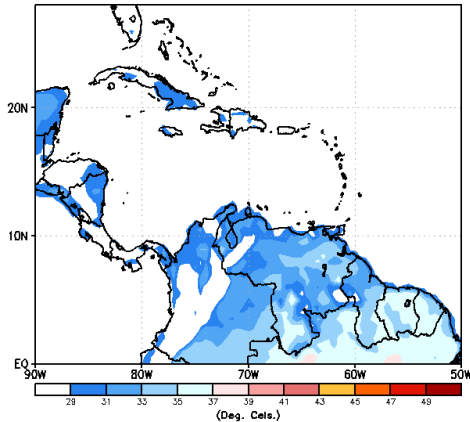


The percentile climatological Values for the forecast period are mostly below 37oC, while the predicted Tmax is likely to exceed the percentile climos

HI Exceedance Probability with respect to Percentiles for at least 2 Consecutive Days

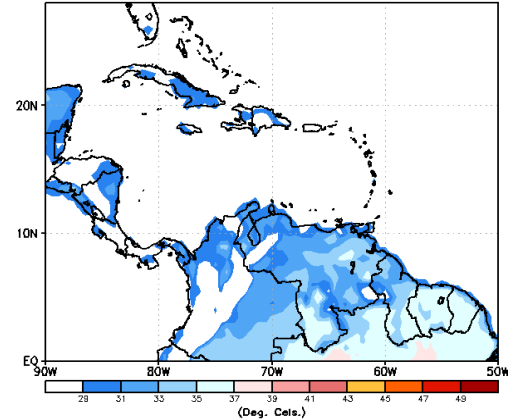
$\geq 80^{\text{th}}$ percentile

GEFS Tmax 80th . Model Climo.
Valid: 18Nov - 24Nov



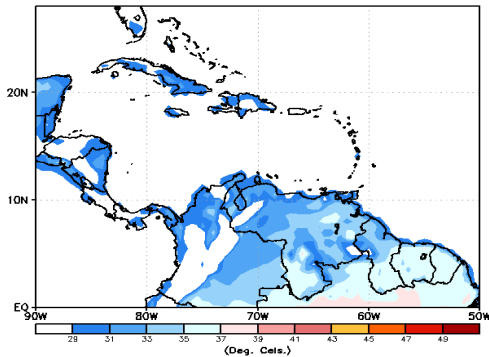
$\geq 85^{\text{th}}$ percentile

GEFS Tmax 85th . Model Climo.
Valid: 18Nov - 24Nov



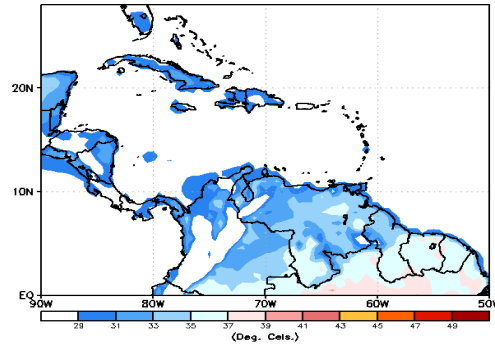
$\geq 90^{\text{th}}$ percentile

GEFS Tmax 90th . Model Climo.
Valid: 18Nov - 24Nov



$\geq 95^{\text{th}}$ percentile

GEFS Tmax 95th . Model Climo.
Valid: 18Nov - 24Nov

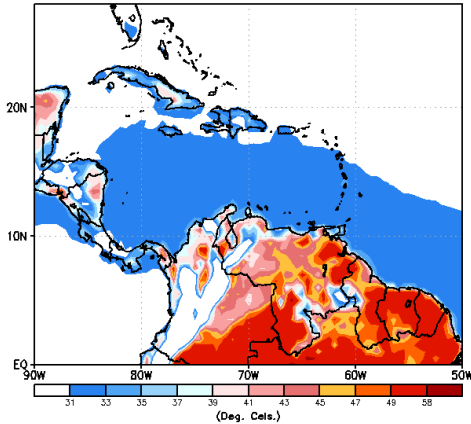


High exceedance probability ($\geq 95^{\text{th}}$ percentile for at least 2 consecutive days) over many places in the Caribbean, and the far northern South America

HI Exceedance Probability with respect to Percentiles for at least 3 Consecutive Days

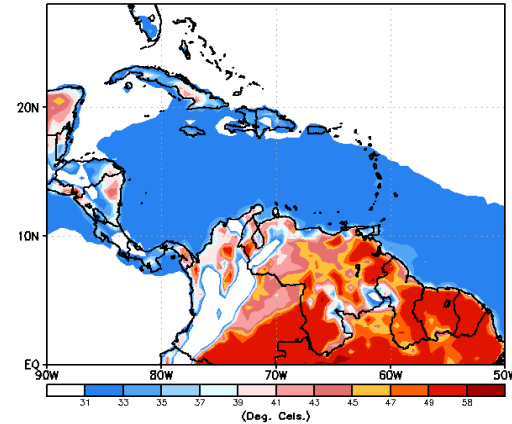
$\geq 80^{\text{th}}$ percentile

GEFS HI 80th . Model Climo.
Valid: 18Nov - 24Nov



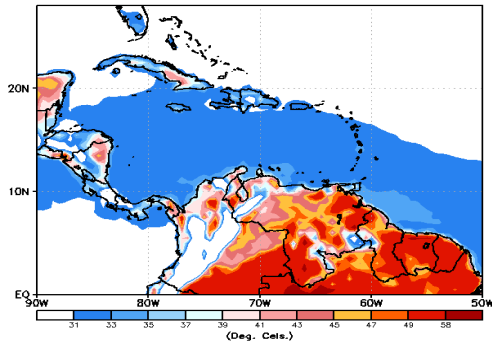
$\geq 85^{\text{th}}$ percentile

GEFS HI 85th . Model Climo.
Valid: 18Nov - 24Nov



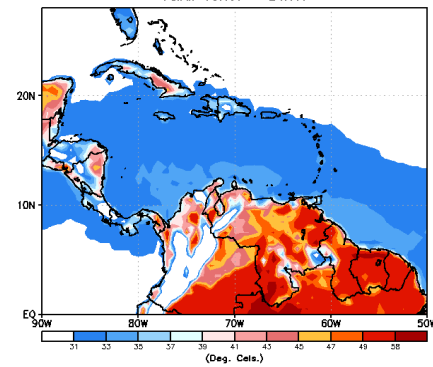
$\geq 90^{\text{th}}$ percentile

GEFS HI 90th . Model Climo.
Valid: 18Nov - 24Nov



$\geq 95^{\text{th}}$ percentile

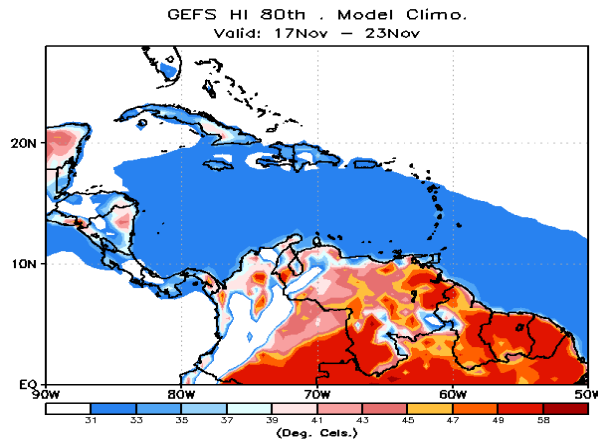
GEFS HI 95th . Model Climo.
Valid: 18Nov - 24Nov



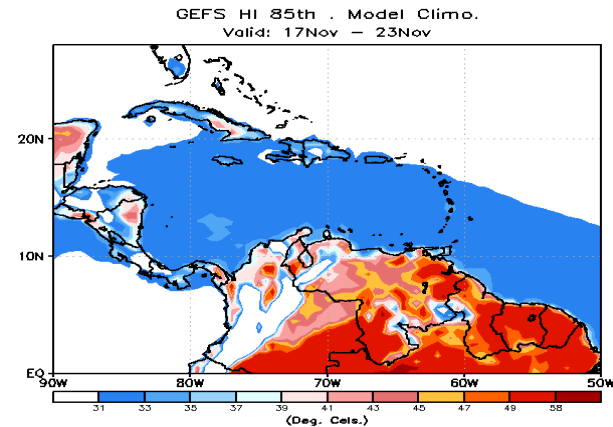
High exceedance probability ($\geq 85^{\text{th}}$ percentile for at least 3 consecutive days) over many places in Central America, the Caribbean, and the far northern South America

HI Percentile Climatology

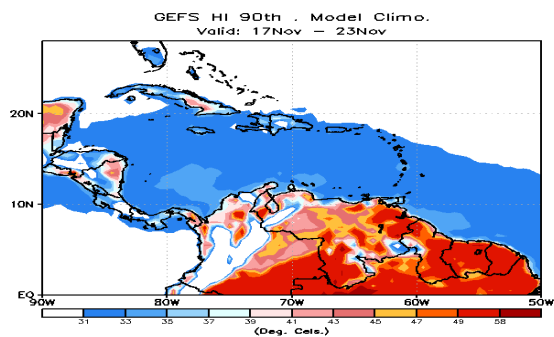
80th percentile



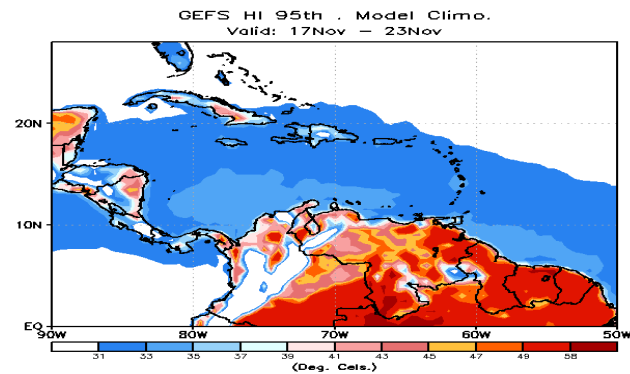
85th percentile



90th percentile



95th percentile



The percentile climatological values for the forecast period are below 41°C over the Caribbean, while the predicted HI is likely to exceed these percentile climos. Summary

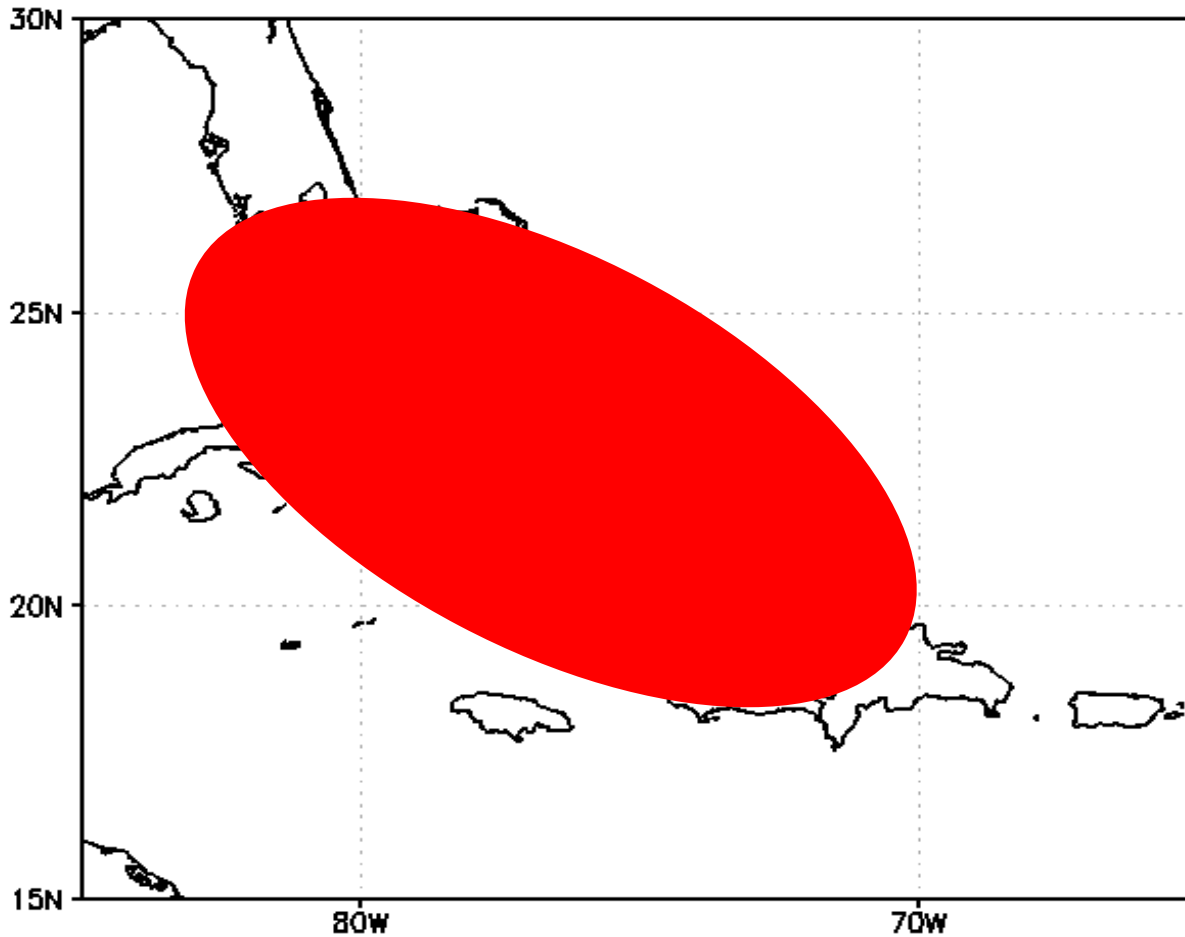
- Convergence of evidences
- Large Scale Circulation patterns => A stationary

Summary

Large scale atmospheric patterns • Mean Sea Level Pressure anomalies • 10m wind speed, 500-hPa height, 850-hPa and 200h-hPa wind and divergence anomalies.

- Below-average surface wind => calmer wind => less ventilation
- Positive height anomaly at 500-hPa => leading to subsidence in the region
- Exceedance probability forecasts = > higher probability of exceedance for Tmax & HI >=80th, 85th , 90th and 95th percentiles.
- Higher probability of exceedance for Tmax >= 35oC. • Higher probability of exceedance for HI >= 37oC.

Excessive Heat Outlook



Legend

- High risk
- Moderate risk

Model forecast suggest an increased chance for moderate to high heat hazards risk over portions of the Caribbean (Tmax/HI \geq 80 percentile, and Tmax/HI \geq 85th percentiles for at least 3 consecutive days ... in some areas).