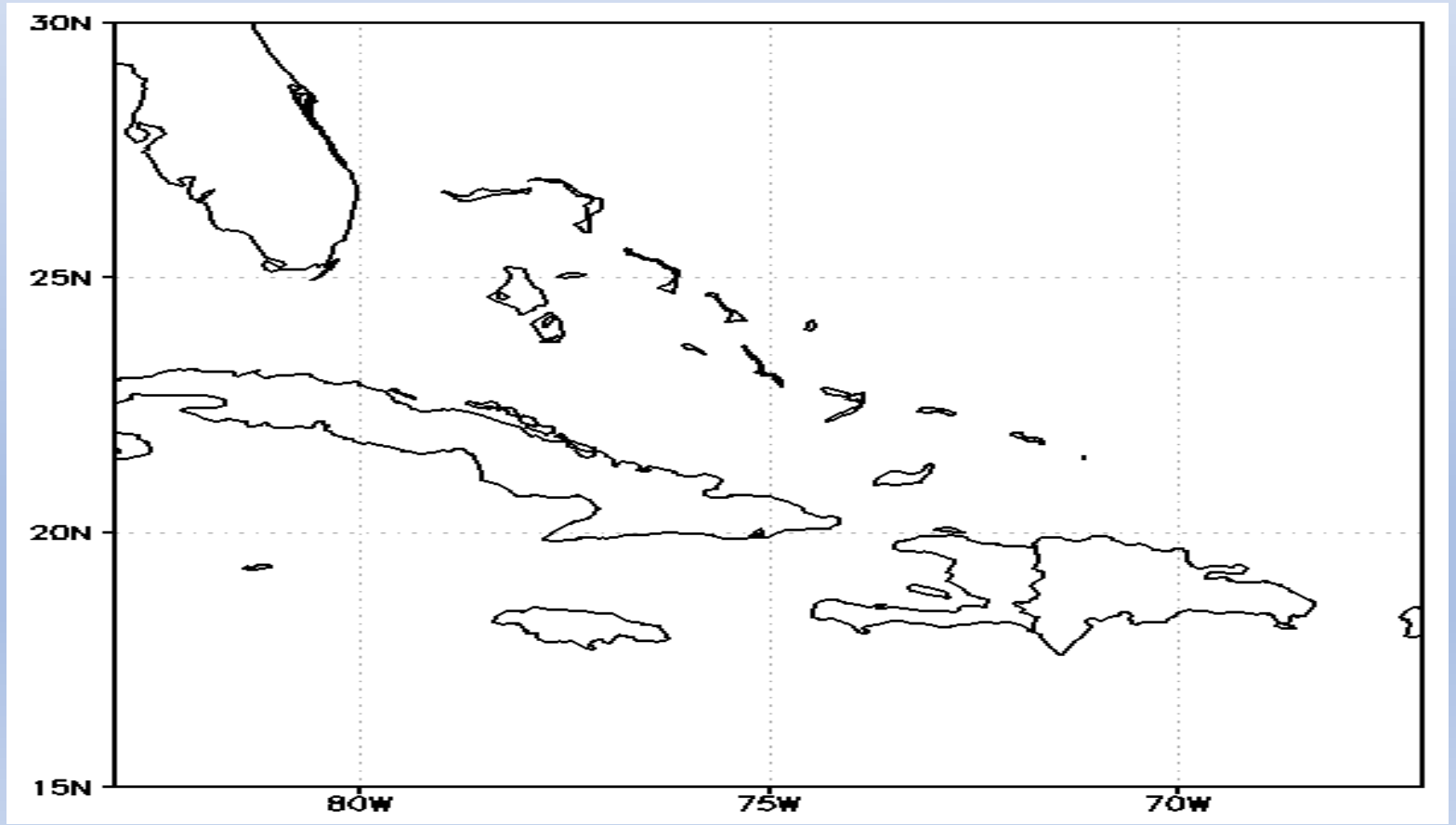
Generating Week-2 Real Time Forecasts 11 – 17 October 2019 Western Caribbean Forecast

Glenroy Brown / Arnold King / Avalon Porter/ Miriam Matos

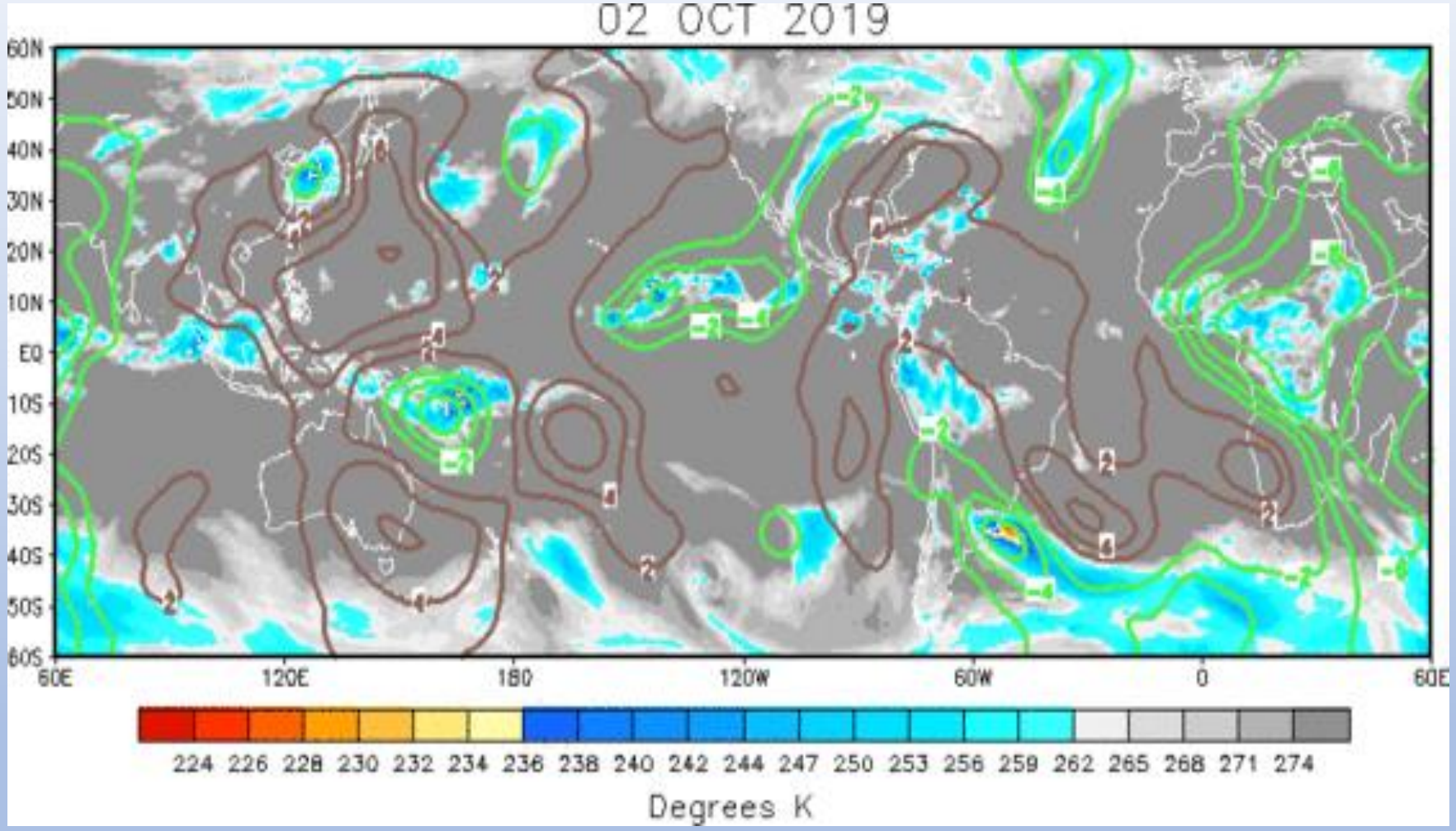


Week-2 Forecast Tools use to arrive at the forecast

- Active MJO?
- Tropical cyclone activity?
- Significant SST and circulation anomaly patterns?
- Surface temperatures
- Global model rainfall forecast

200-hPa Velocity Potential Anomaly

https://www.cpc.ncep.noaa.gov/products/precip/CWlink/ir_anim_monthly.shtml

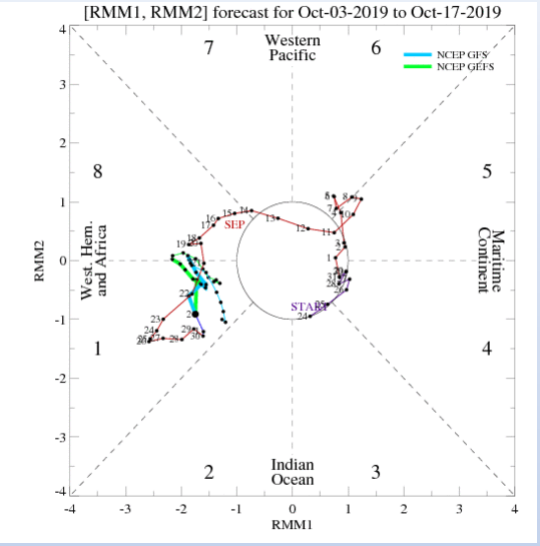


- Green shade indicates areas of upper level divergence and convection or precipitation at surface.
- Brown contours indicate areas of upper level convergence or subsidence and suppressed precipitation at surface.

Wheeler-Hendon Index - Forecasts

GFS/GEFS

https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/combphase_noCFSfull.gif



Statistical

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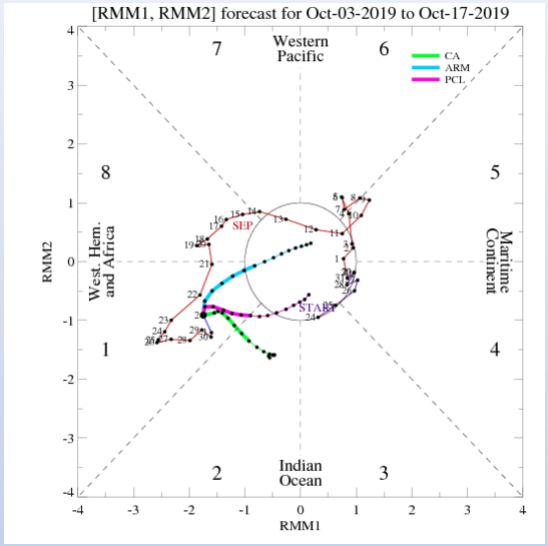
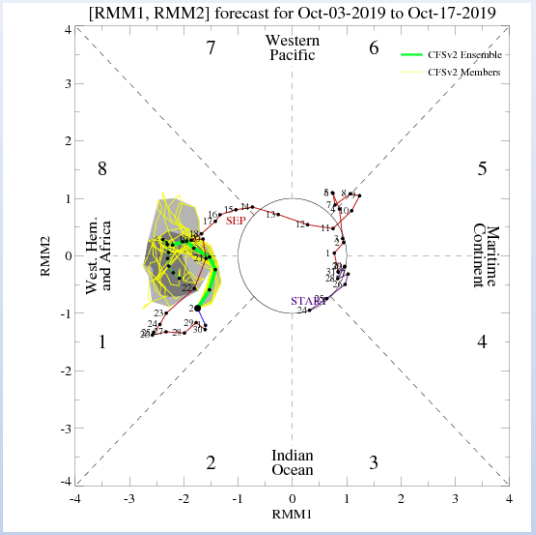


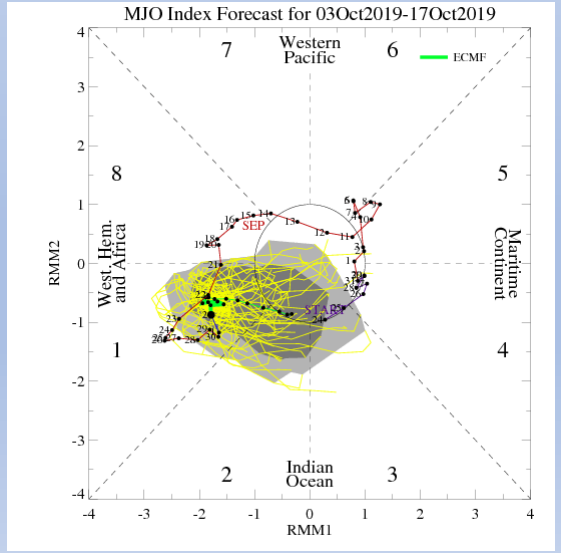
CFSv2

https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/CLIVAR/CFSO_phase_small.gif



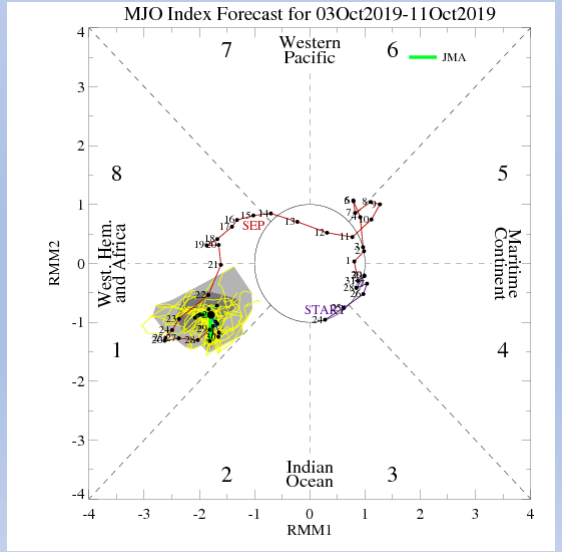
ECMWF

https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/CLIVAR/ECMF_phase_MANOM_51m_small.gif



JMAN

https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/CLIVAR/JMAN_phase_51m_small.gif



CMET

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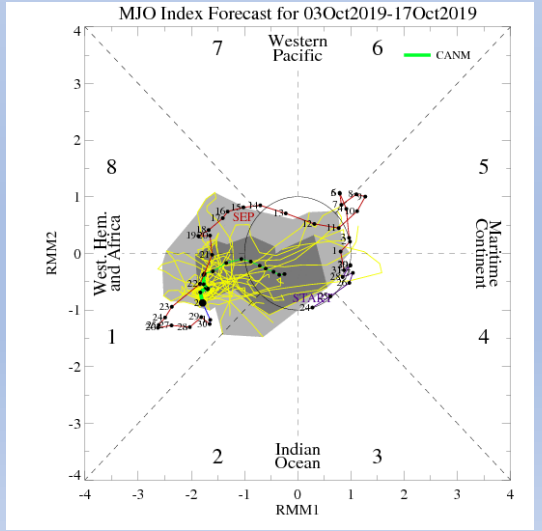
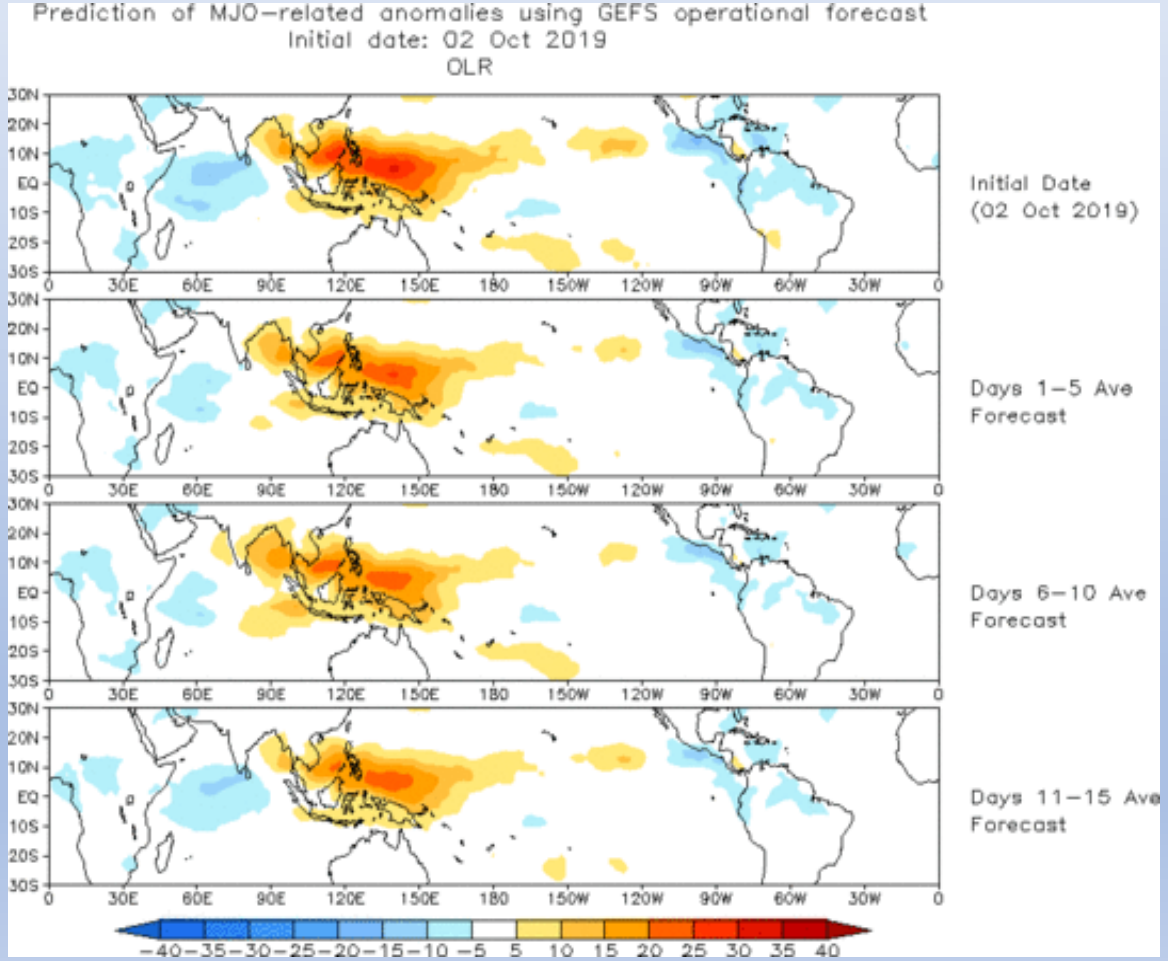


Evolution of MJO-related anomalies

Initial date: 2 October 2019

https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/spatial_olrmap_full.gif



Red shade indicate areas of suppressed convection

Blue shade indicate areas of enhanced convection

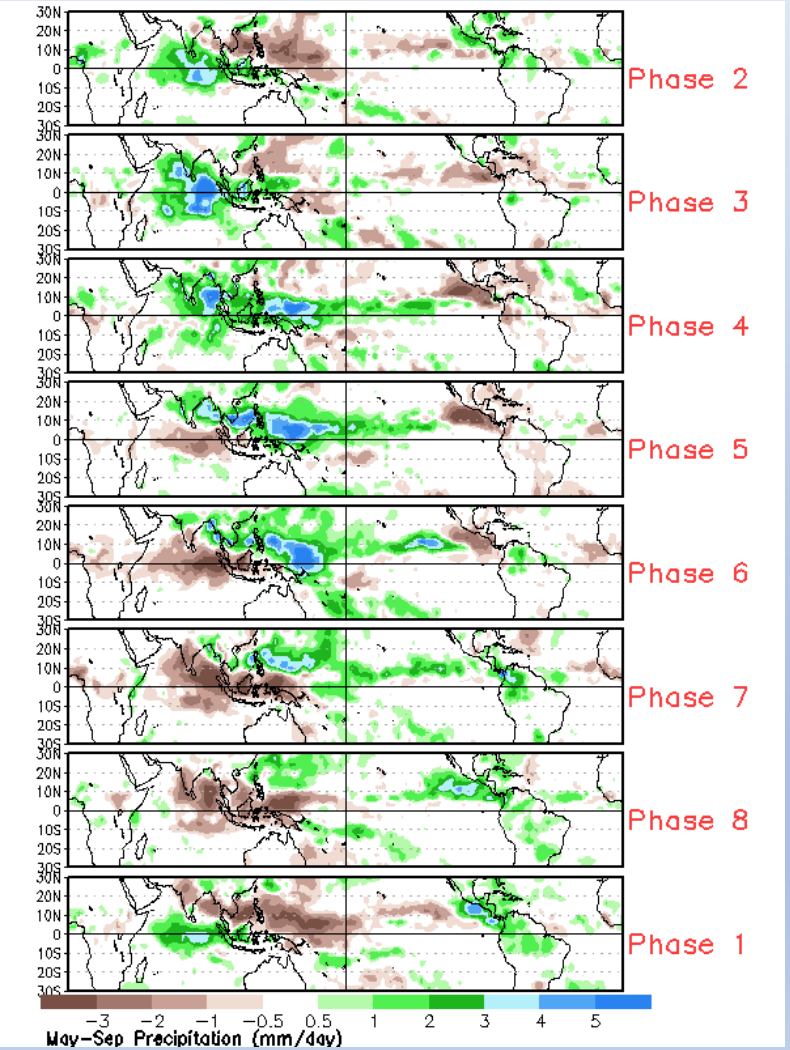
1 - 5 days ave. Forecast

6-10 days ave. Forecast

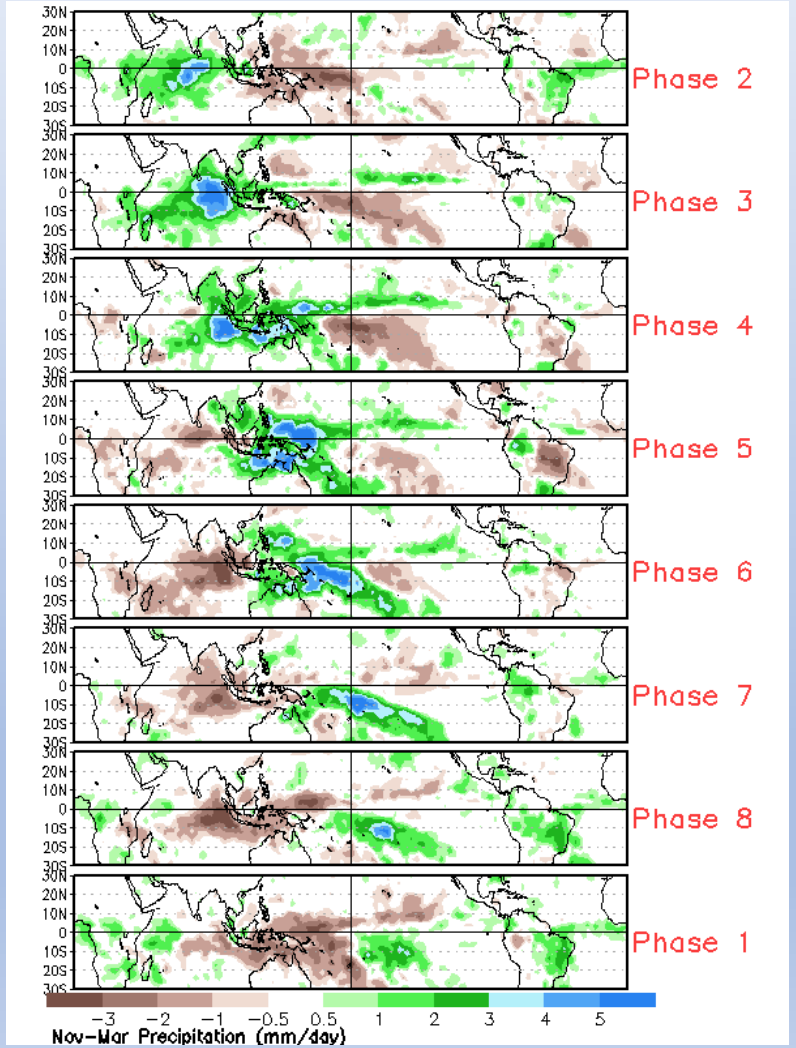
11-15 days ave. Forecast

MJO Rainfall Composites – Global Tropics

Precipitation Anomalies (May - Sep)



Precipitation Anomalies (November - March)

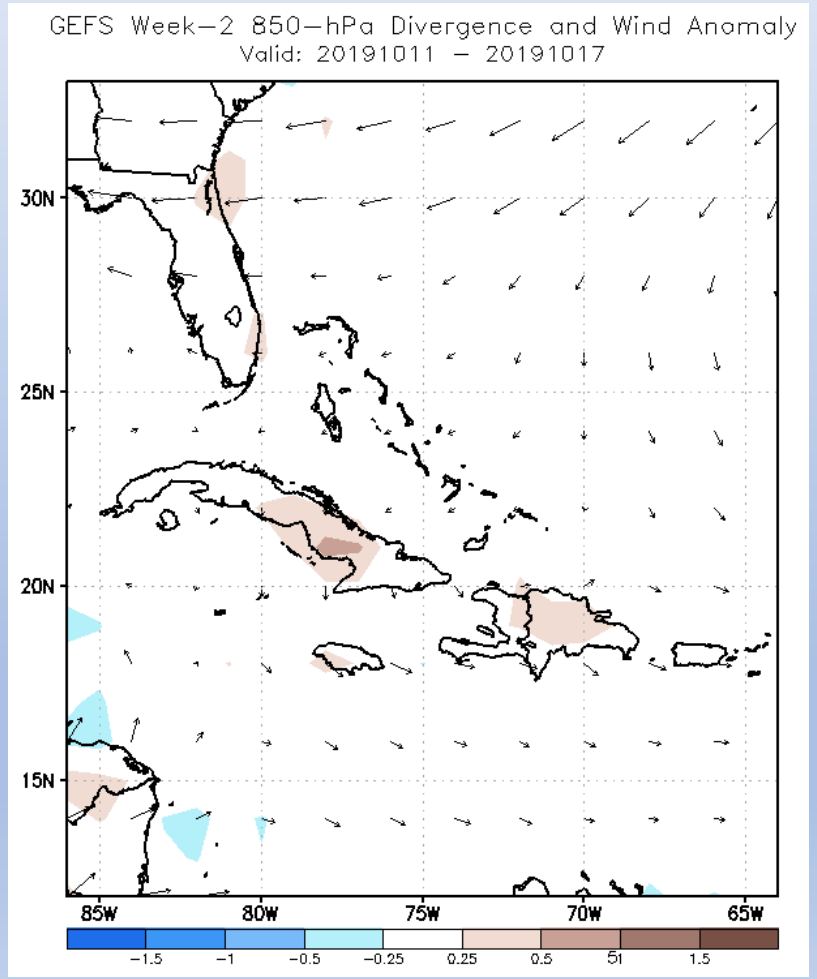


Week2, MJO Contribution?

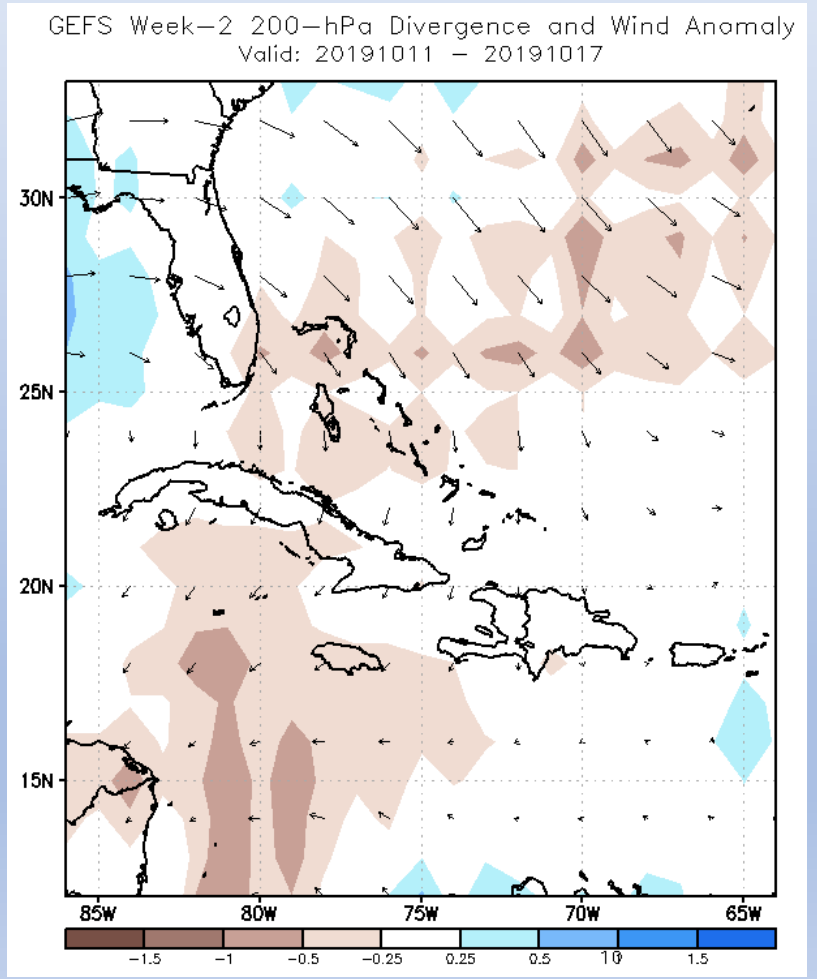
- Base on observation the model indicates that the MJO is in a weak state. Therefore, the MJO predictions suggest suppressed rainfall activities over the countries of interest?

NCEP GEFS Wind and Divergence Anomaly Forecast Week-2, Valid: 11 - 17 October, 2019

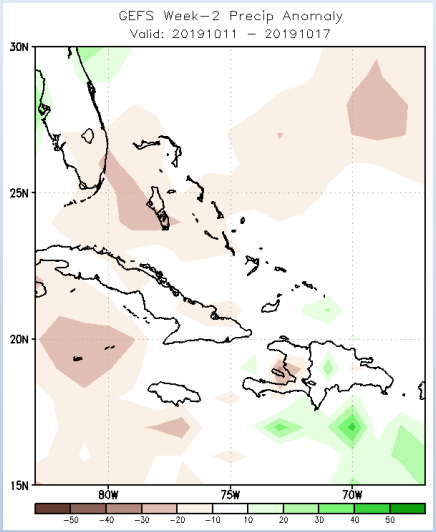
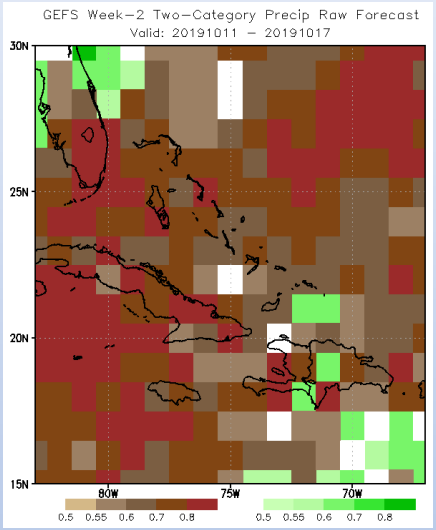
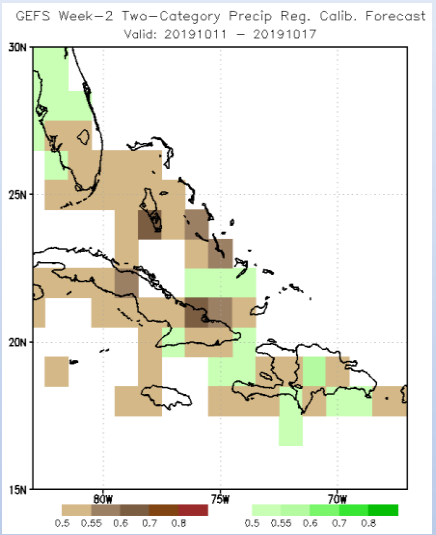
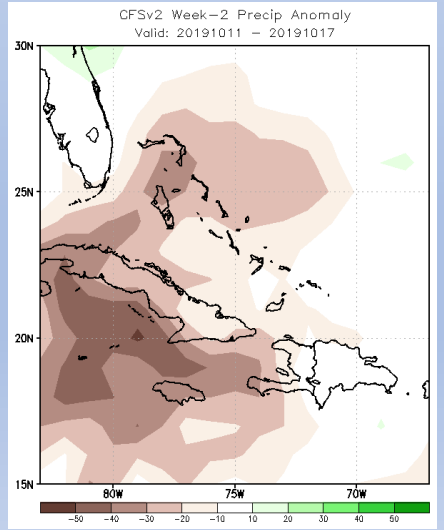
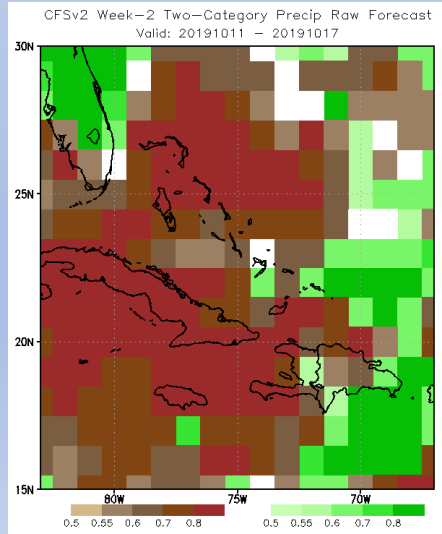
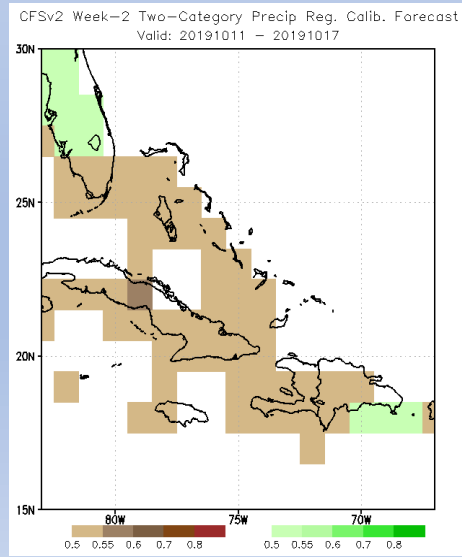
850-hPa or 700-hPa



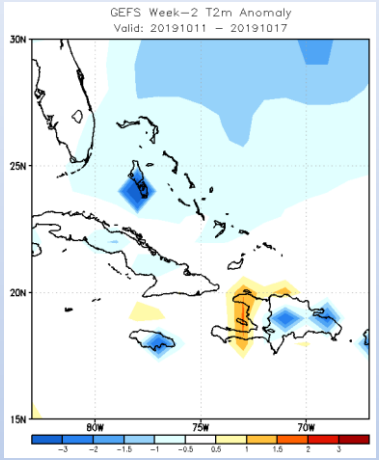
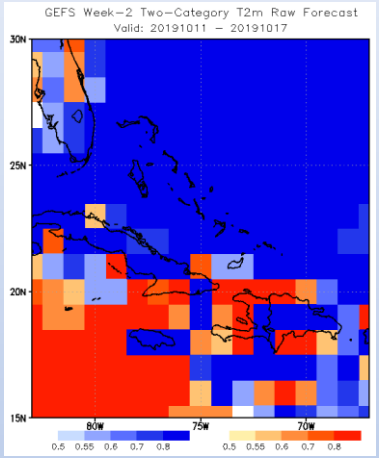
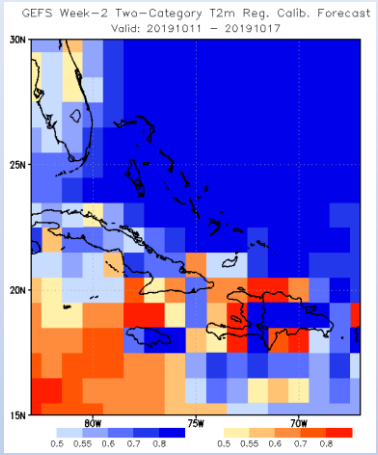
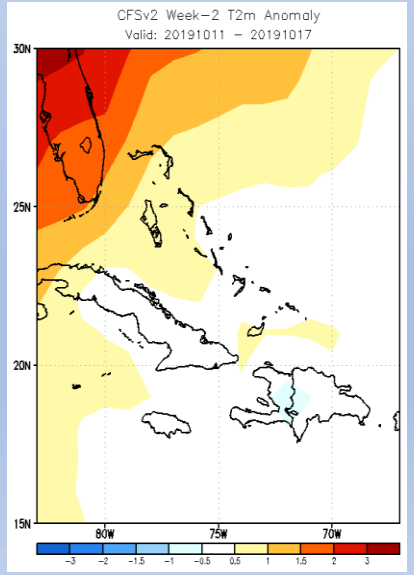
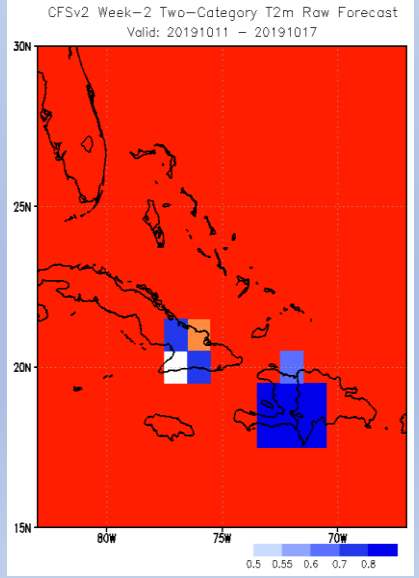
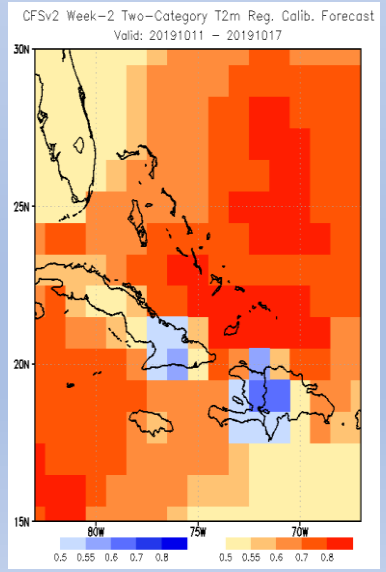
200-hPa



NCEP GEFS/CFSv2, Precip forecasts for Week-2, Valid: 11 - 17 October, 2019

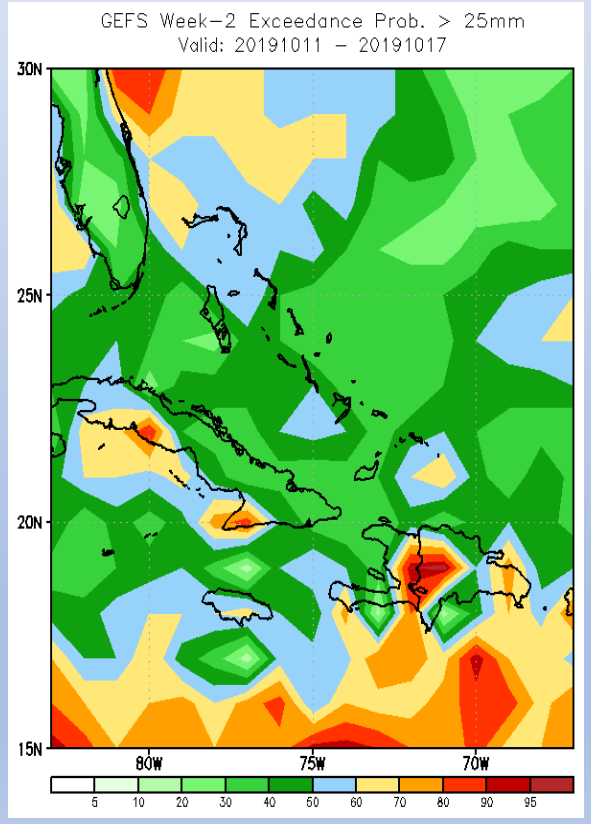
	Ensemble Mean Anomaly	Two-category Probabilistic Forecast - Raw	Two-category Probabilistic Forecast – Reg - Calibrated
GEFS			
CFSv2			

NCEP GEFS/CFSv2, 2m Temp. forecasts for Week-2, Valid: 11 - 17 October, 2019

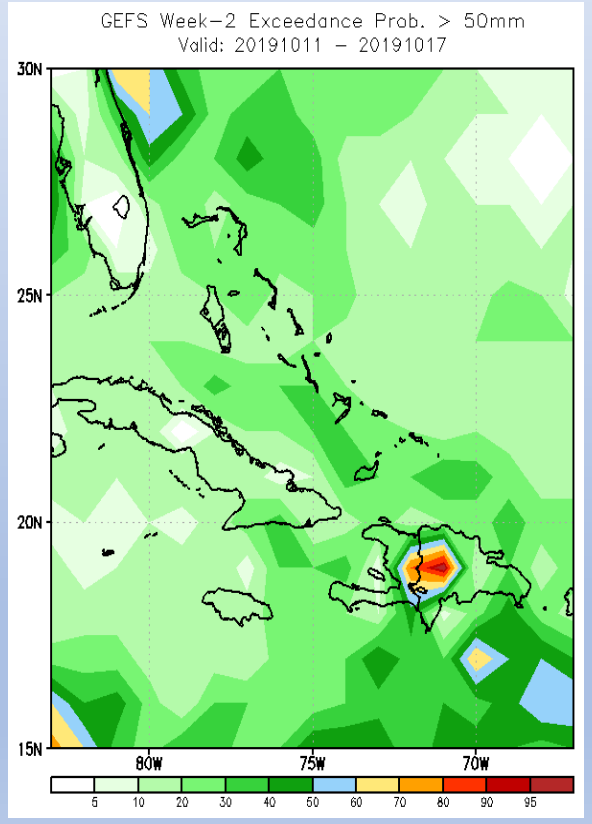
	Ensemble Mean Anomaly	Two-category Probabilistic Forecast - Raw	Two-category Probabilistic Forecast – Reg - Calibrated
GEFS			
CFSv2			

GEFS Week-2 Exceedance Probability, Valid: 11 - 17 October, 2019

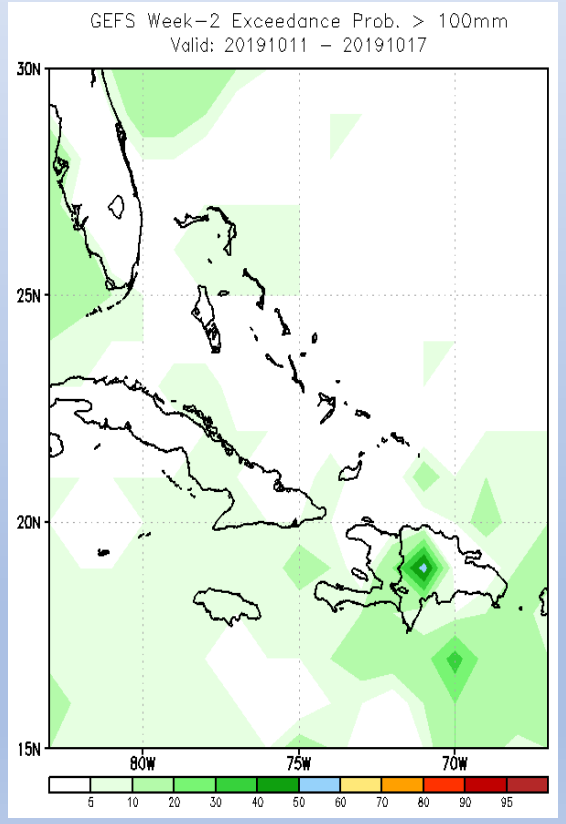
>25mm



>50mm



>100mm



Week-2 Rainfall, Convergence of Evidence?

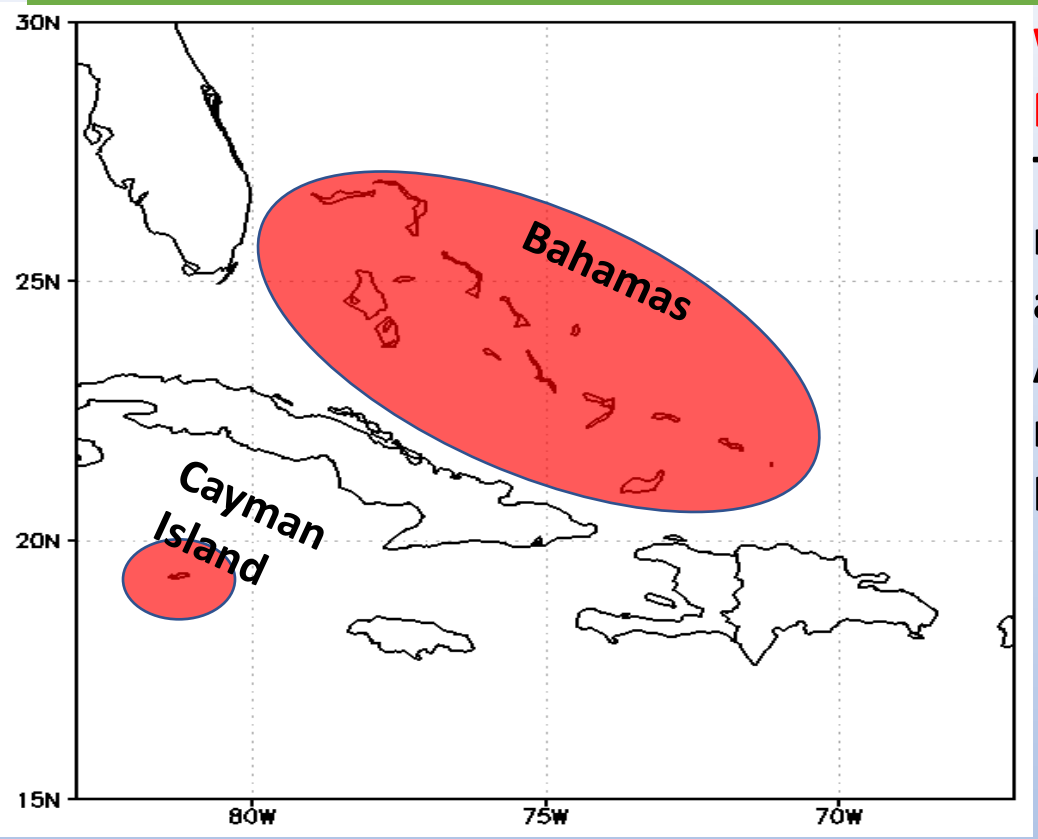
- **Wet**
  - MJO not enhancing rainfall, due to the weak state
  - Upper-level wind convergence anomalies across Jamaica, Cayman and the Bahamas
  - Lower-level wind divergence anomalies across Dominican Republic.
  - Rainfall Model Guidance indicate below normal rainfall over the Cayman Islands and the Bahamas.
  - Exceedance Probability indicate Dominican Republic could exceed 100mm over the period
- **Dry**
  - MJO – Suggest suppress rainfall activates for Jamaica, Cayman, Bahamas and Dominican Republic
  - Rainfall Model Guidance indicated >25 mm rainfall

Week-2 2m Temp., Convergence of Evidence?

- **Cool**
  - Lower-level wind divergence anomalies across Dominican Republic.
  - 2m Temperature Model Guidance -> Cooler temperatures likely over NW Bahamas, Ern Jamaica, Wrn Dominican Republic.

- **Warm**
  - Upper-level wind convergence anomalies across Jamaica, Cayman and the Bahamas
  - 2m Temperature Model Guidance –Lower chance of warmer temperature over NW Bahamas, E Jamaica, W Dominican Republic.

Week-2 Rainfall Outlook, 11 – 17 October 2019



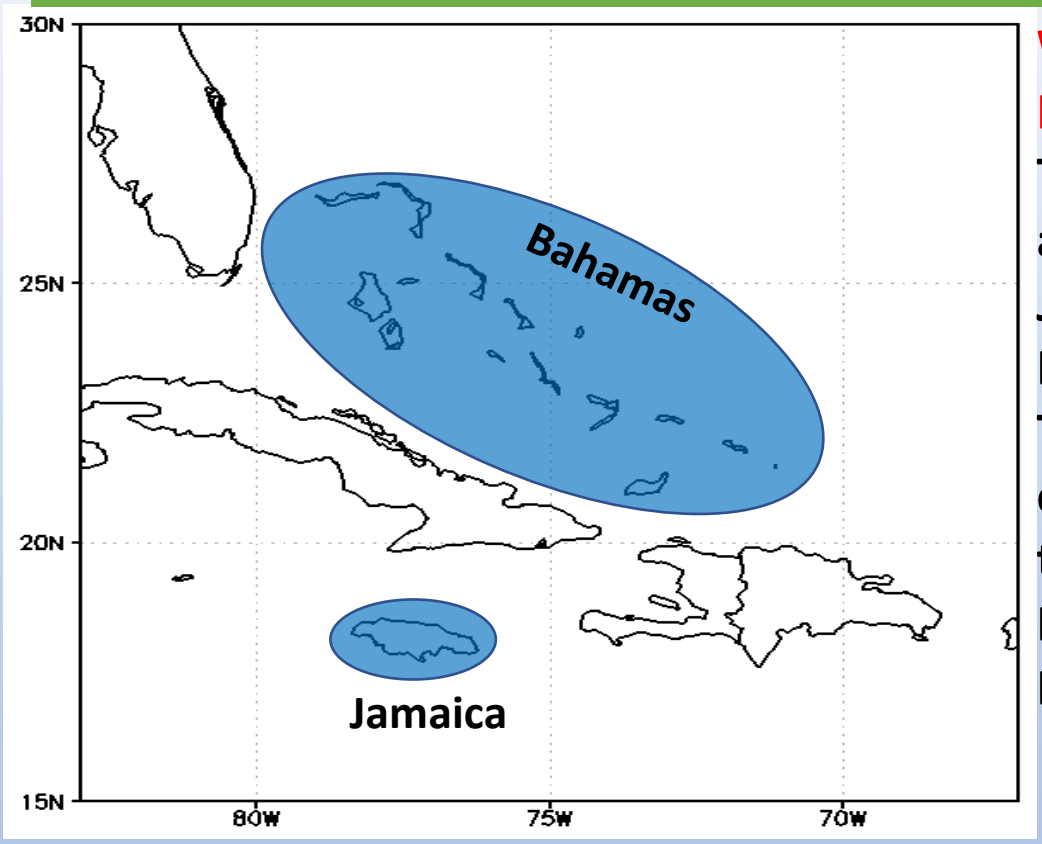
Western Caribbean Forecast:

Reason 1:

There is strong chance of below normal rainfall the Cayman Island and the Bahamas:

Also, both models supporting below normal rainfall for the Cayman Islands and the Bahamas.

Week-2, 2m Temp Outlook, 11 – 17 October 2019



Western Caribbean Forecast:

Reason 1:

There is strong chance of below average temperatures for the Jamaica, Dominican Republic and the Bahamas:

The GEFS model supporting a strong chance of below average temperatures for the Jamaica, Dominican Republic and the Bahamas:


Thank You!