

# Brainstorming activity

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# Research Focus

- Tropical Cyclones Activity in Atlantic and East-Pacific Basins

# Objective

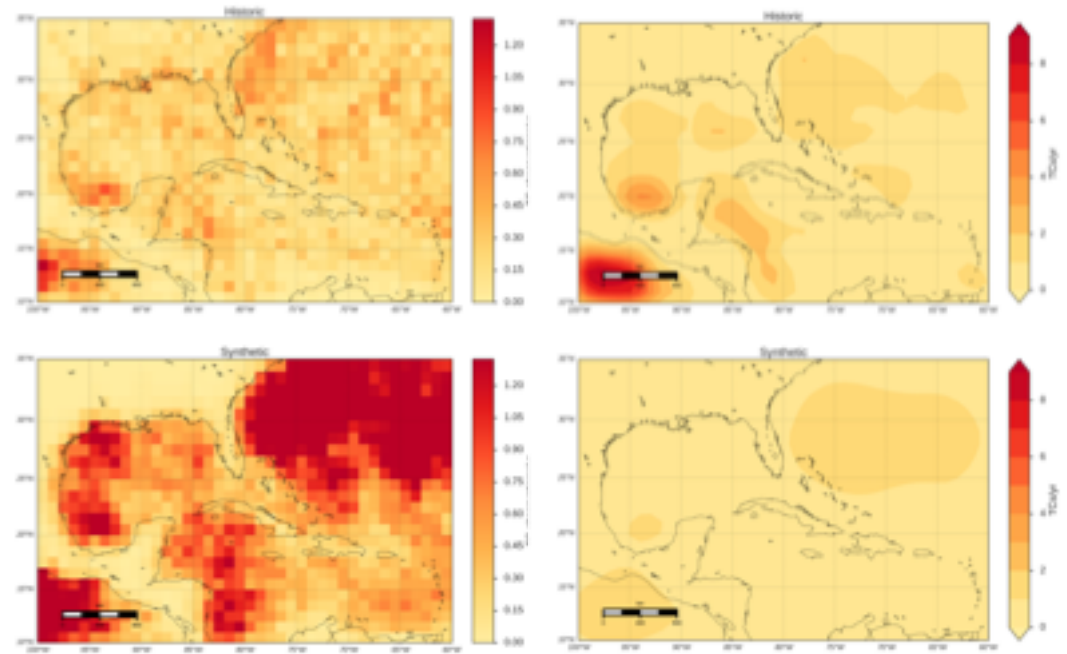
- Application of statistical downscaling to RCM-simulated variables
- Tropical cyclone research with special emphasis on risk assessment
- There are some unique variables that are hard to be simulated by climate models (GCMs and RCMs)
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- Regions of interest: Central and North America (both Pacific and Caribbean cyclones)

# Methods and Data

- Use the Tropical Cyclone Risk Model (TCRM) statistical model to estimate the changes in cyclonic activity in the Atlantic and Pacific-East Basins, based on the trajectories of historical tropical cyclones and predicted in global or regional climate models
- Input for TCRM:
  - hurricane tracks and sea level pressure simulated by coupled CORDEX RCMs (e.g. those from Ramon and Bezanilla)
  - Bias-corrected hurricane tracks and sea level pressure from the RCMs

# Expected results

- To calibrate the TCRM model results from the input data.
- Improve the spatial resolution by applying ESD techniques.
- Risk assessment for the hurricanes under a changing climate (RCP scenarios and new CMIP6 emission scenarios).



# Time Line

- Other than the future projections under CMIP6 scenarios, the risk assessment using TCRM and CORDEX RCM output can be completed within a year.