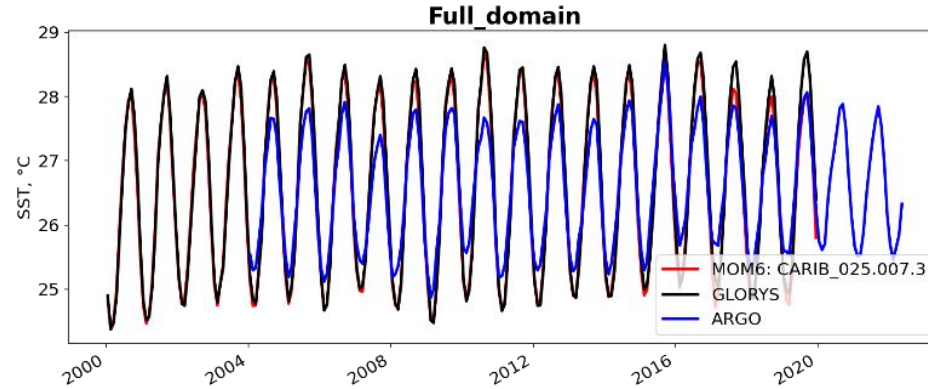


# Regional MOM6/CESM configuration for the Caribbean Sea



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<sup>2</sup>Oceanography Section, Climate & Global Dynamics, NCAR

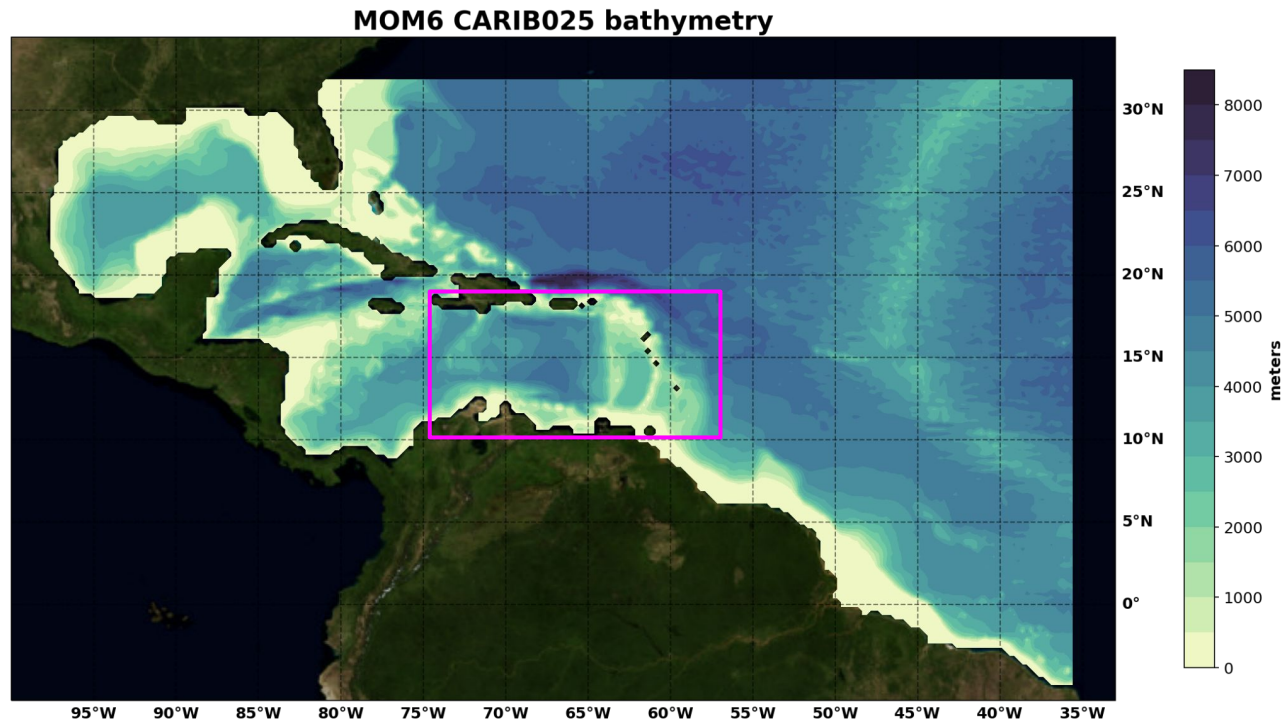


University of Colorado  
Boulder

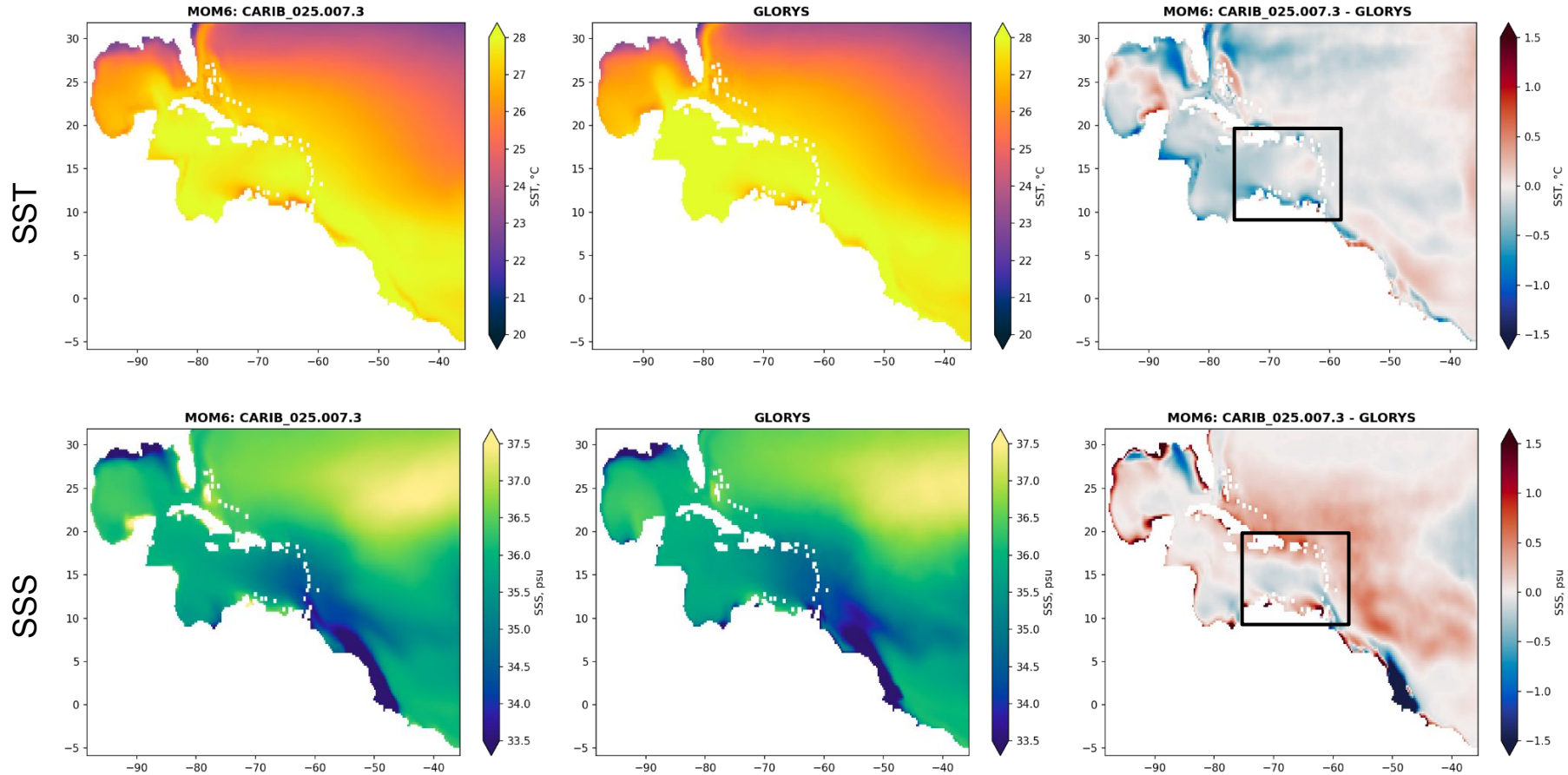


## Configuration at a glance:

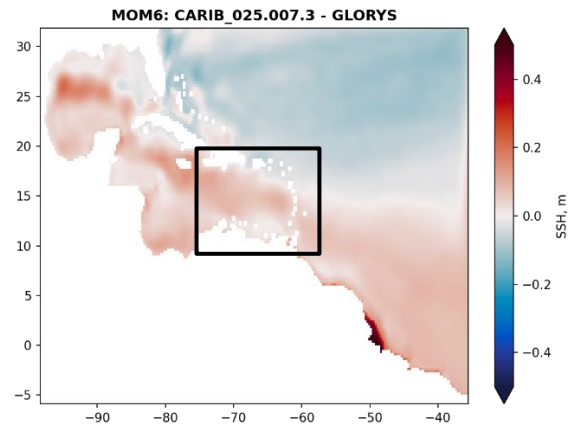
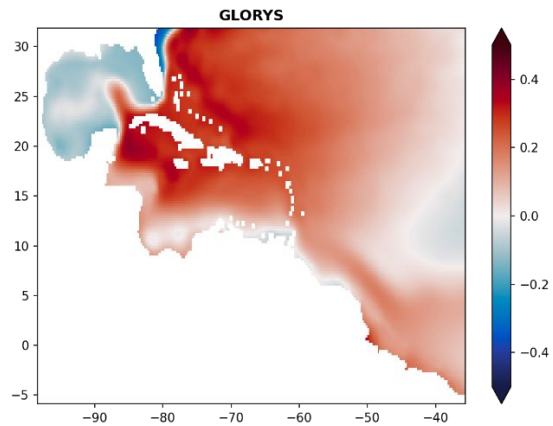
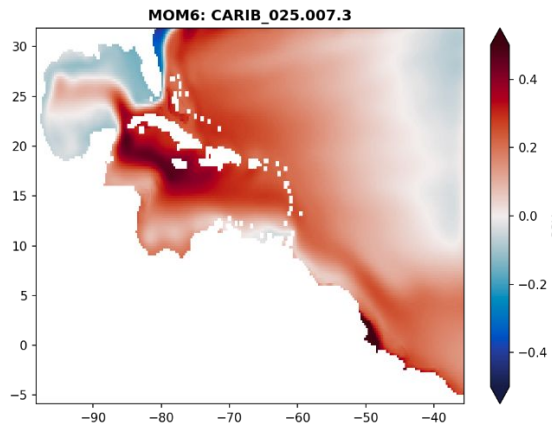
- Resolution:  $\frac{1}{4}$  deg
- 65  $z^*$  vertical levels
- IC/OBC:
  - GLORYS  $\frac{1}{4}$  deg daily
  - Flather + Orlanski (nudged)
- Salinity Restoring + Sponge layers:
  - GLORYS monthly means
- Atm forcing: JRA-55
- Runoff:
  - GloFAS daily
- Tides: TPXO
- Chl-a: SeaWIFS climatology
- Current run: 2000-2020



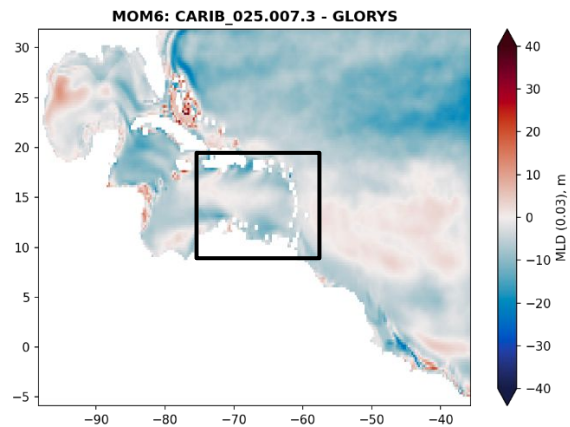
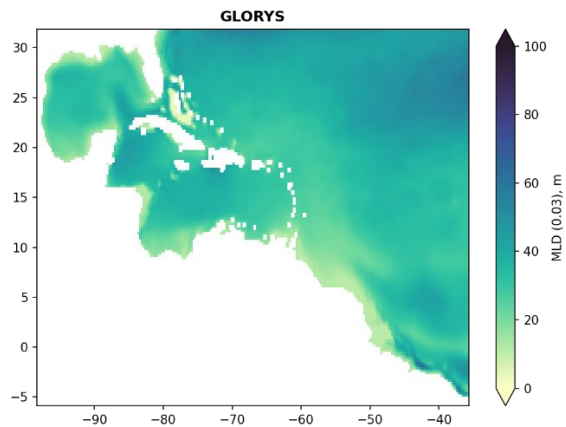
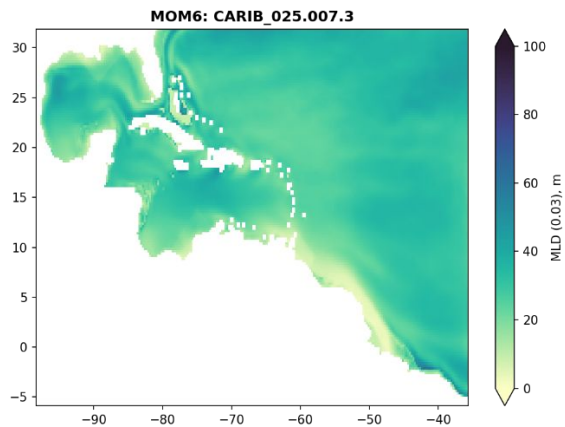
# 20-year means



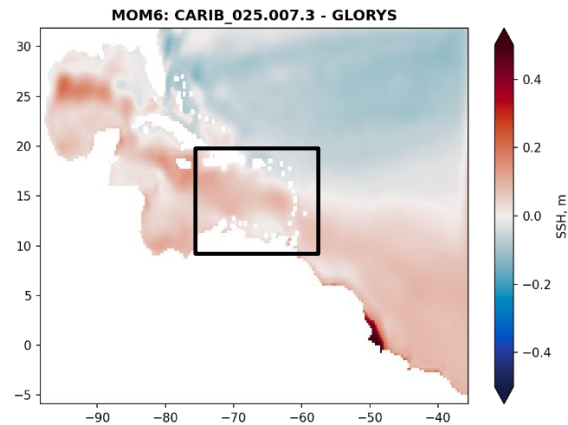
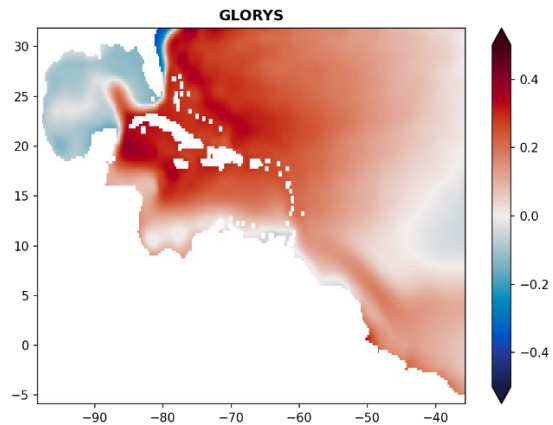
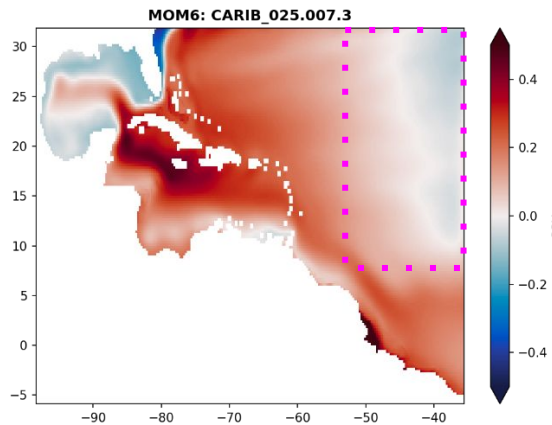
SSH



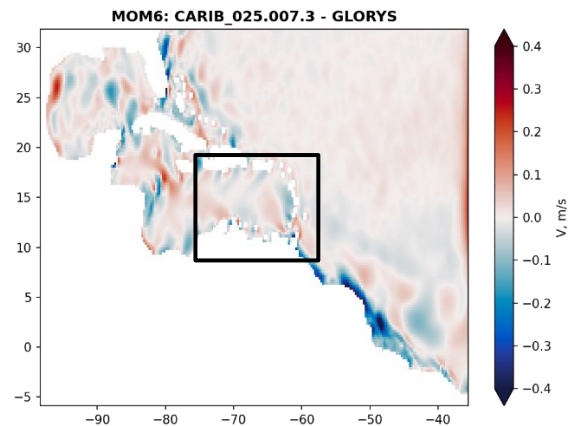
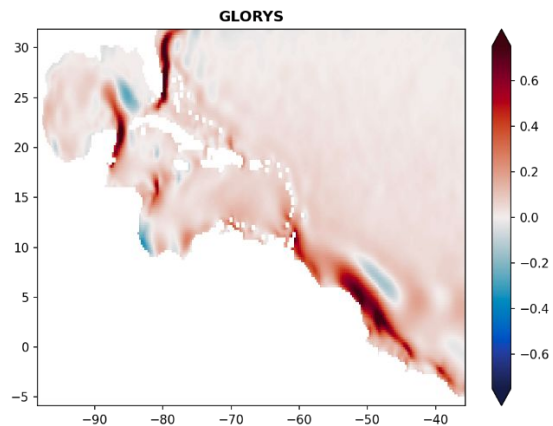
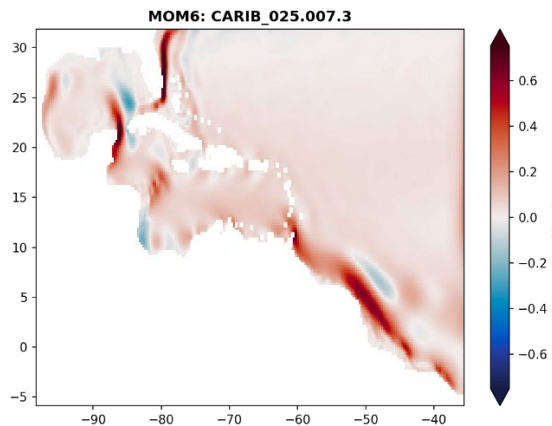
MLD



SSH

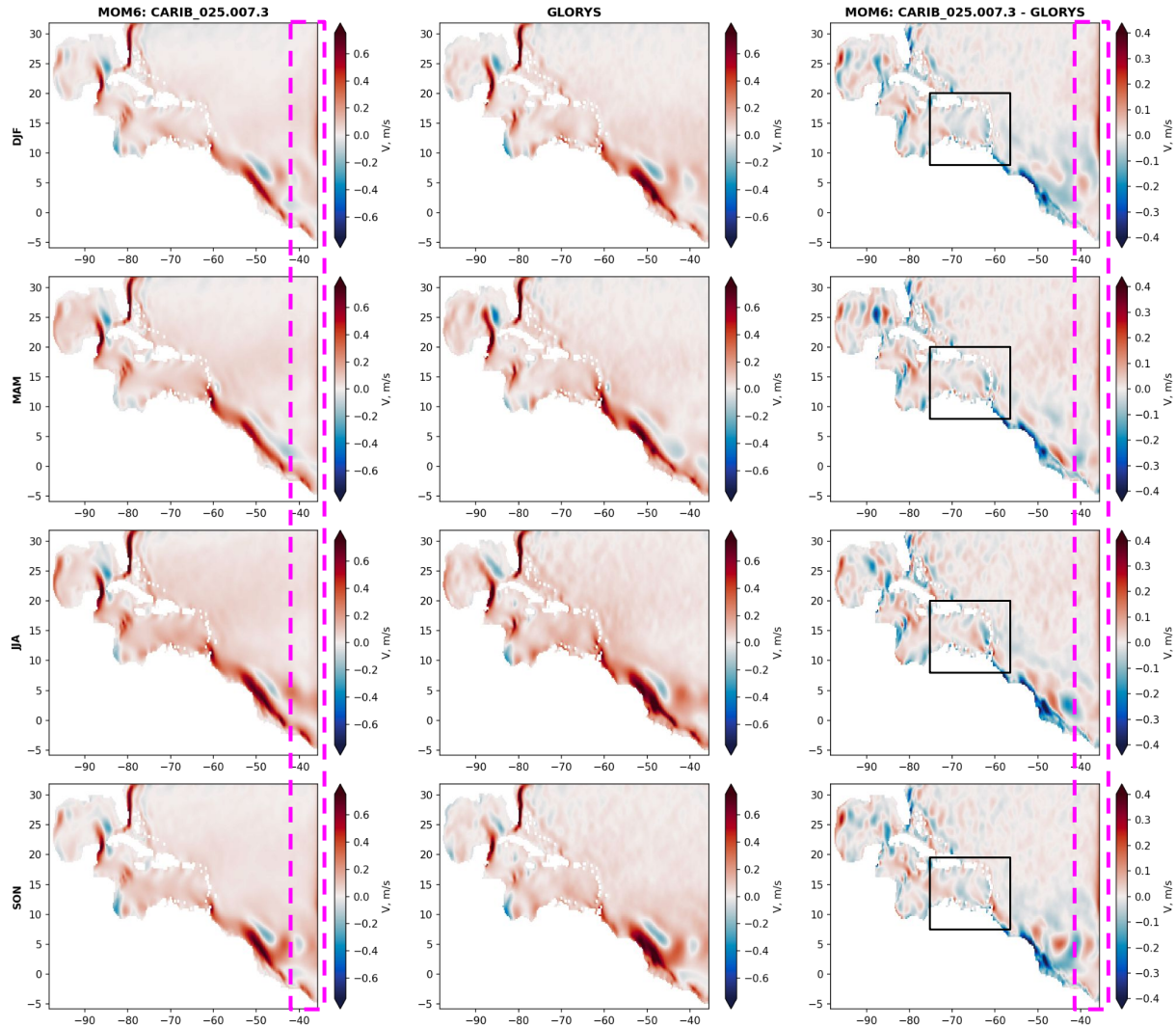


V

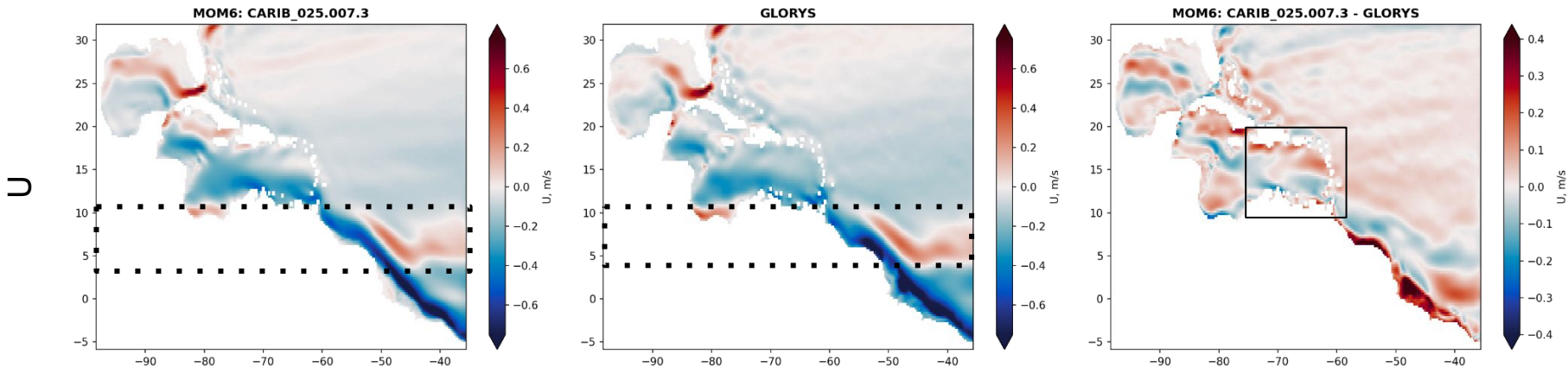


Slower moving waters off the Amazon river

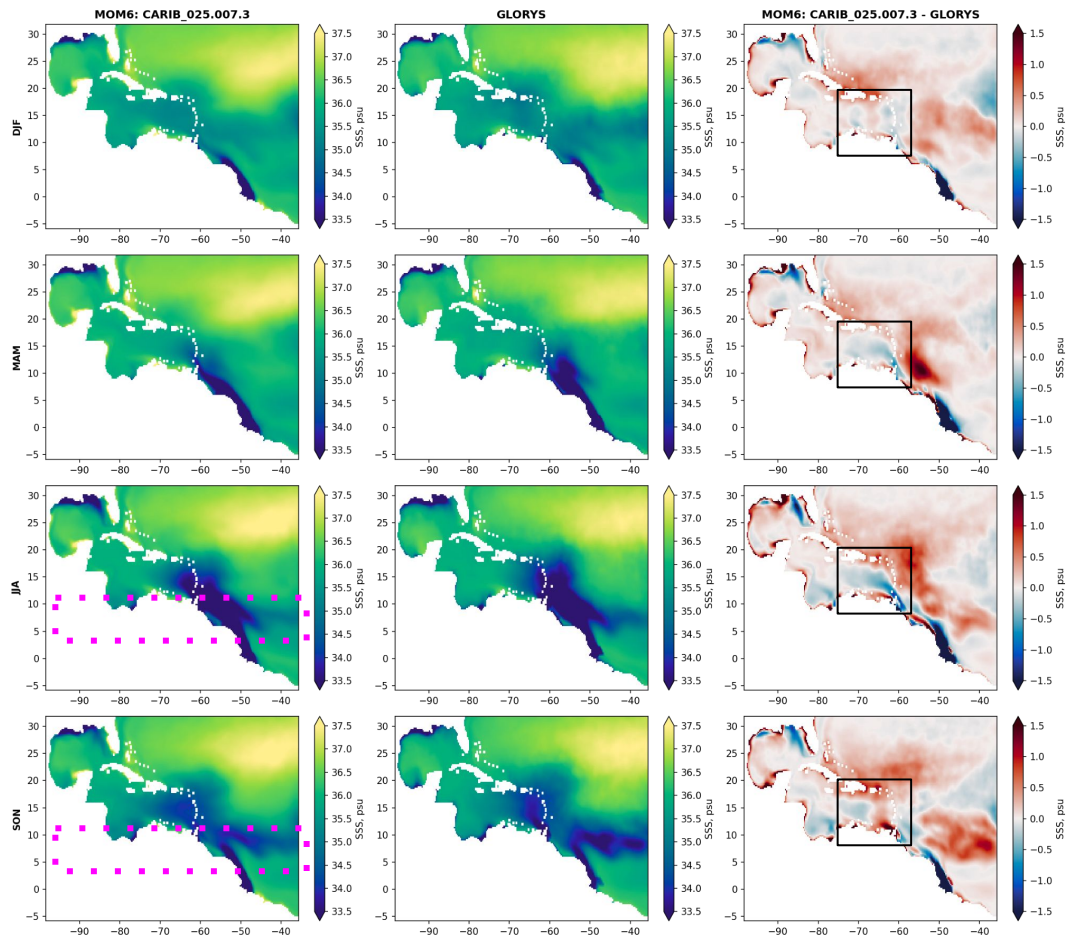
- Improvements still needed along the eastern boundary



- ECC in correct location
- Largest discrepancies along continental shelf of South America and the Amazon river basin.

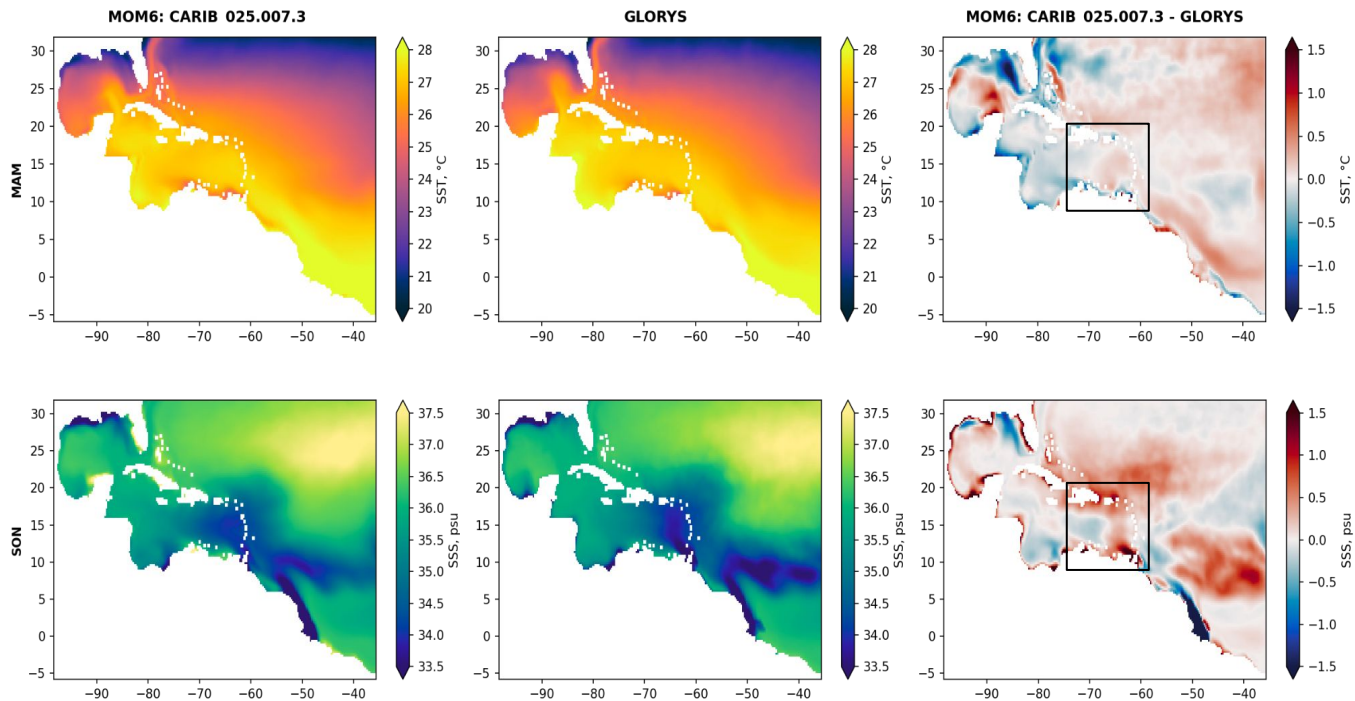


- Seasonal runoff and SSS in right time frame
- ECC in right location and time frame
- Plume waters advect and spread differently



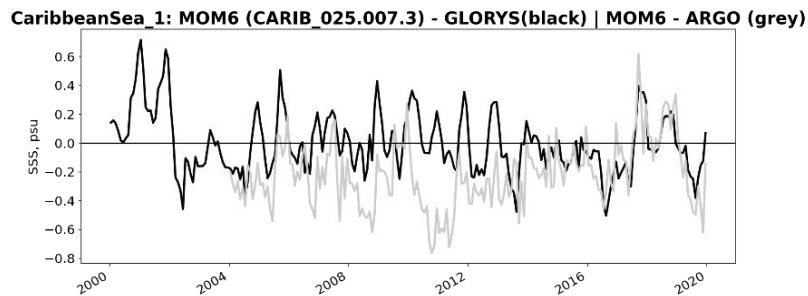
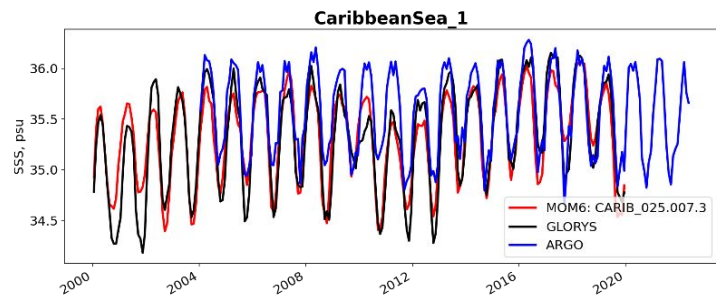
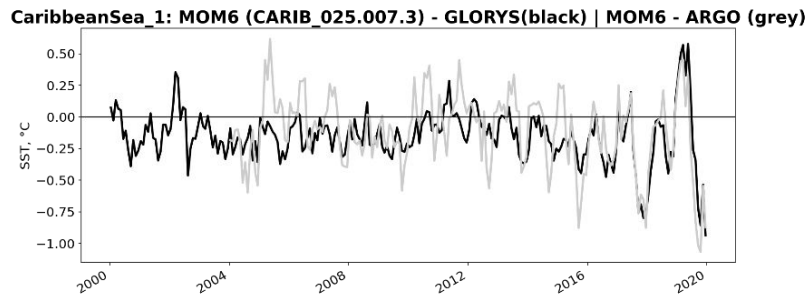
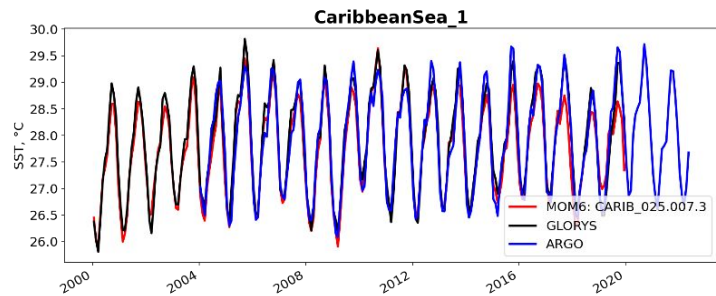
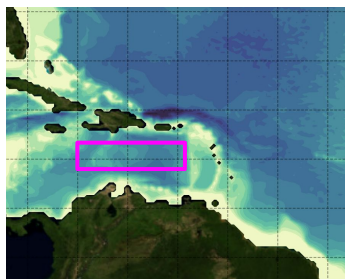


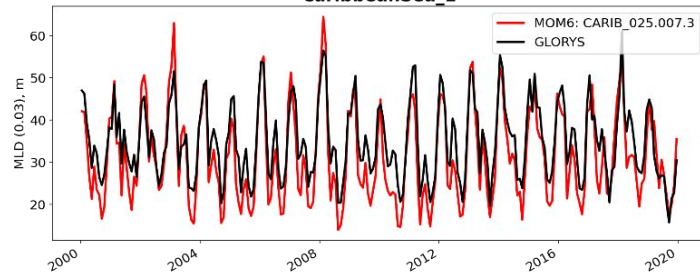
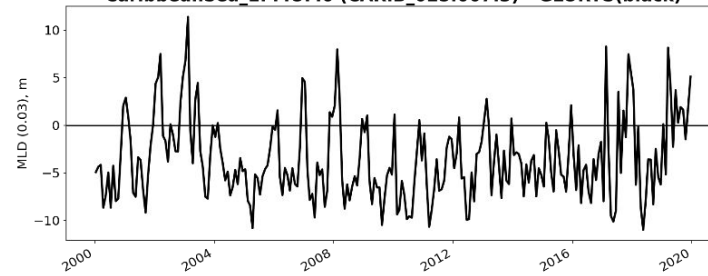
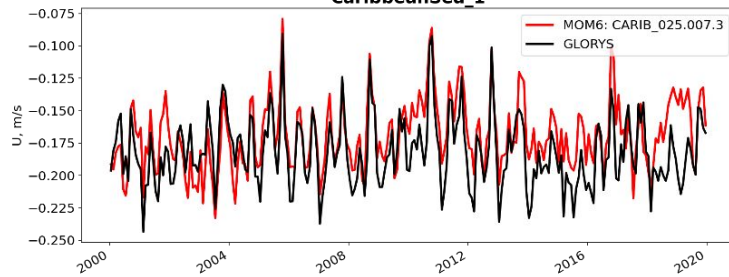
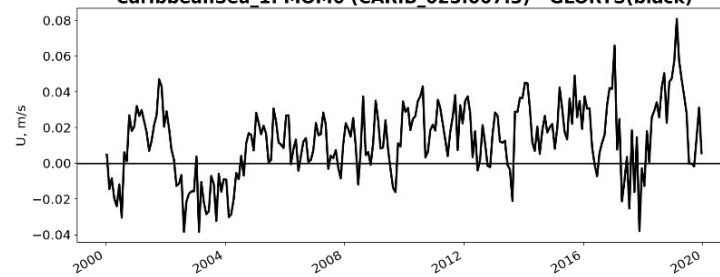
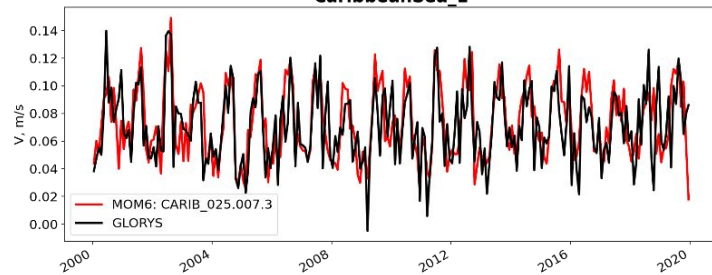
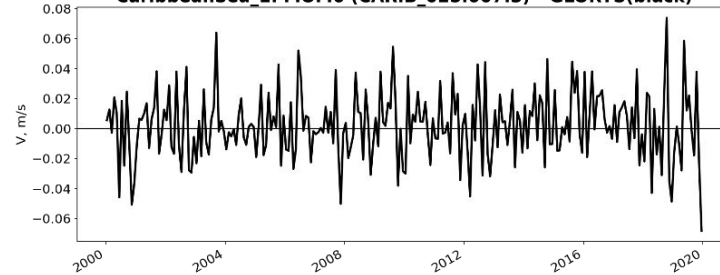
## Temperature: largest differences during Spring



## Salinity: largest differences during Fall

# Model performance within Caribbean Sea:



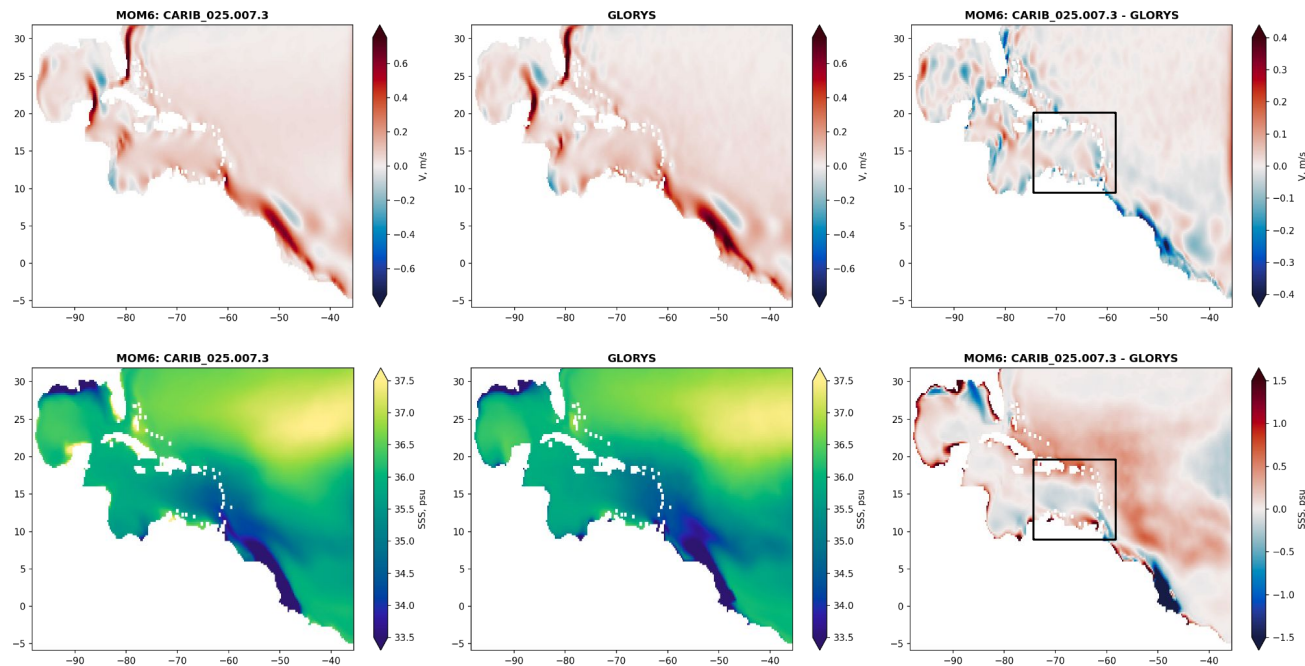
**CaribbeanSea\_1****CaribbeanSea\_1: MOM6 (CARIB\_025.007.3) - GLORYS(black)****CaribbeanSea\_1****CaribbeanSea\_1: MOM6 (CARIB\_025.007.3) - GLORYS(black)****CaribbeanSea\_1****CaribbeanSea\_1: MOM6 (CARIB\_025.007.3) - GLORYS(black)**

To analyze for this configuration:

- Section transports in/out Caribbean Sea
- EKE/MKE maps

To improve:

- Eastern boundary
- SSS/Salinity fluxes



Thank you for your attention