



The HAFSv0.2A Baseline Configuration

(Based on the 2020 HAFS.v0.1A/S experiments)

EMC hurricane team

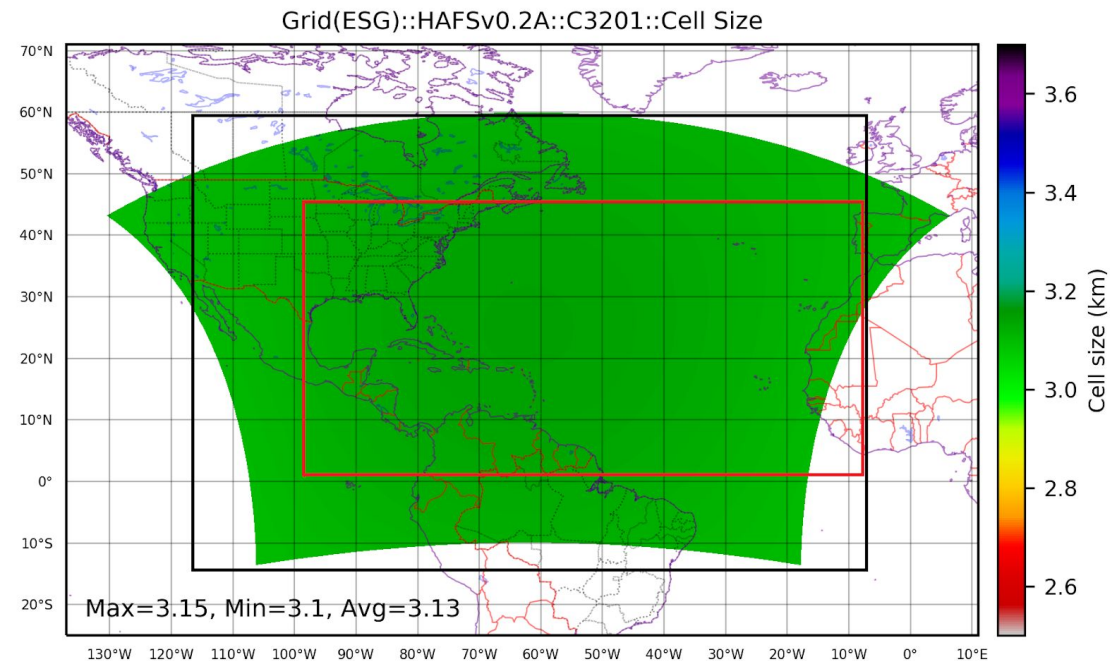


•The FV3ATM component

- Use **the feature/hafsv0.2_baseline branch** with its subcomponents synced with their latest authoritative branches (as of 01/20/2021)
- **~3-km regional ESG grid** with the L91 (10 hPa top) vertical levels
- **GFSv16** NETCDF files for IC; 3-hrly GFS grib2 files for LBC
- Lateral boundary condition blending (nrows_blend=10)
- Use the HAFS_V0_gfdlmp_nonsst physics suite
 - GFDL microphysics;
 - RRTMG radiation;
 - **saSAS convection**;
 - Noah LSM;
 - GFS surface layer with HWRF exchange coefficients;
 - GFS EDMF PBL with HWRF modification;
 - **Orographic GWD**

•The HYCOM component

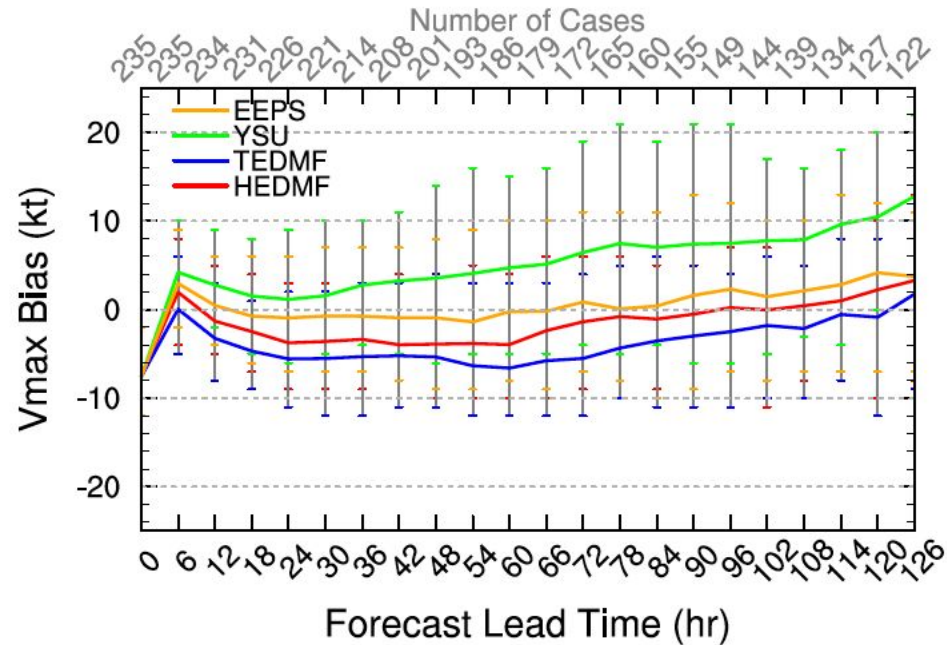
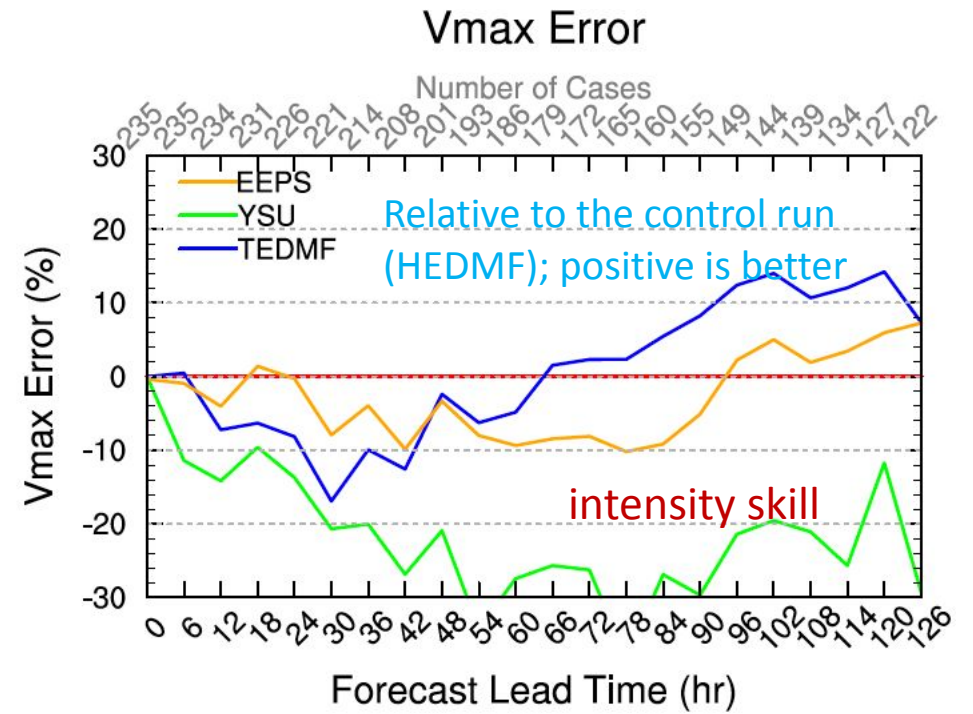
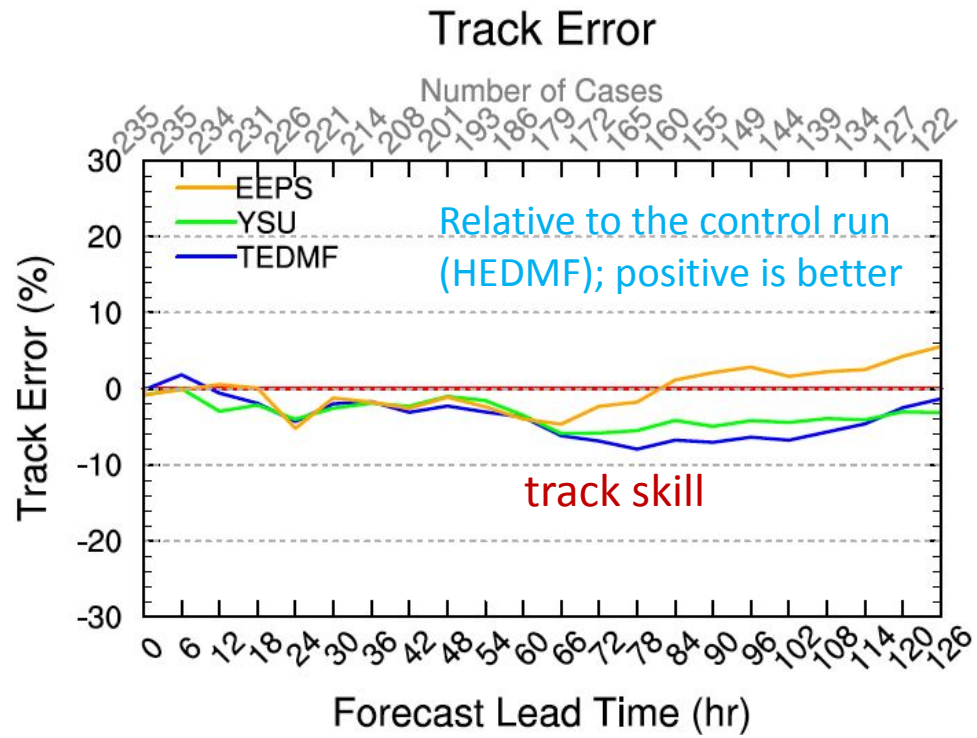
- **CMEPS based ocean coupling with the bilinear regridding method**
- Cover NATL basin (1-45.78N, 261.8-352.5E) at a 1/12-degree resolution with 41 vertical layers
- Ocean IC from **RTOFSv2** and use persistent oceanic LBC
- Atmospheric forcing from 0.25-degree GFS grib2 files to cover non-overlapped area



The Physics testing plan for the HAFSv0.2A

1. Shallow convection only for the saSAS scheme (tuning)
2. The Hybrid EDMF PBL scheme modified by FIU collaborator (Ping)
3. The TKE-EDMF PBL scheme modified by HRD (Andy)
4. The EEPS PBL scheme (tuning)
5. Thompson MP (technical tests – instability issue)
With $dt_{atmos} \leq 60s$ and optimal n_{split} and k_{split}
6. The GFS17 suite (low priority)
RRTMGp, Thompson, TKE-EDMF, uGWpv1, NoahMP
7. The HWRF suite (low priority)

PBL



FV3ATM only
HAFSV0.0A

Vmax and Pmin

