HAFS Coordination Meeting  
August 18, 2021,  2-3 pm ET  
Agenda/Minutes/Chat


Agenda:

2:00-2:02 pm: Welcome

2:02-2:35 pm  HAFS Data Assimilation
   2:02-2:12 pm:  GSI-based Relocation - Jason Sippel
   2:12 - 2:15 pm: Q&A
   2:15-2:30 pm:  FV3-CAM DA - Curtis Alexander & Jacob Carley
   2:30-2:35 pm: Q&A

2:35-2:57 pm  HAFS Infrastructure and METplus
   2:35-2:45 pm: HAFS Coupling Infrastructure - Daniel Rosen
   2:45-2:50 pm: Q&A
   2:50-2:55 pm: HAFS METplus - Tara Jensen
   2:55-2:57 pm: Q&A

2:57-2:59 pm: Wrap-up

3:00 pm: Adjourn
Minutes:

Preliminary results on GSI-based Relocation - Jason Sippel
- GSI relocation is functionally working.
- Warmstarted 13L, sampled pseudo obs out to 600 km from center and translated location to account for error in 6 h tracker position.
- 50 km ROI looks superior to 150 km ROI.
- Hydrometeor relocation needs to be resolved.
- Needs to be combined with real data to assess impact.

DA and RRFS - Jacob Carley & Curtis Alexander
- RRFSv1 configured at 3km, Hybrid 3DEnVar Algorithm, 9 member ensembles; targeted implementation for FY23Q4.
- Coldstarted real time testing with passively use of GDAS EnKF members, no cloud analysis or radar DA yet.
- Promising results - geopotential height bias improved with DA, wind RMSE bias also slightly better.
- Ongoing efforts are to establish cycling strategy, semi coupled land analysis using lowest model level temperature and moisture increments applied to the soil states.
- Plan to establish 3km, 36 member hybrid 3DEnVar retro/real time parallel by FY21Q4.
- A possible solution to data latency is overlapping window.

Q. (Bin): Have you considered GSI instead of JEDI? GSI is very slow in terms of IO and IC, and could be the bottleneck.
A: Certainly need further coordination to work that out.

HAFS Infrastructure - Daniel Rosen
- Wave Coupling in HAFS is configurable in one-way or two-way atmosphere-ocean and atmosphere-wave coupling.
- Ocean data is available from OISST, MOM6, GHRSSST, RTOFS, HYCOM; Atmosphere data is available from ERA5, ECMWF, FGS, CFSR.
- All supported data configurations are integrated into the HAFS workflow in CMEPS mediator.
- HAFS Community developments have been merged into UFS Community. HAFS regression tests are now part of UFS development testing.
- HAFS Community HYCOM developments have diverged from NRL repository UFSATM Global-Nest Coupling. Support for global coupling within the USFATM Global-Nest configuration is in progress.

HAFS METplus - Tara Jensen
- Integrated GFDL Tracker into METplus, TC tracking completed, TC genesis and ET are in progress.
- Ongoing development is METexpress MET-TC App.
• Upcoming Development: support for E-Decks for Probability of Genesis, support for SHIPS diagnostics files and plotting MET-TC output via METviewer UI and Scorecards.

Q. Is the METexpress compatible with HAFS?
A: Will need to assess further.

Chat:

Zhan Zhang - NOAA Federal 2:16 PM
there will be a problem to relocate some big TCs like Sandy if the relocation method is storm size dependent

Ans: Want to make the relocation independent of storm size

Zhan Zhang - NOAA Federal 2:29 PM
@Jacob with overlapping window, is it possible some of the obs. may be assimilated multiple times?

Ans: Overlapping window method is configured for obs. so we eliminate that possibility.

Jonathan Poterjoy - NOAA Affiliate 2:30 PM
Hi Jacob, has your group considered replacing E3DVar with a pure EnKF DA strategy once the cycling EnKF DA capability is available?

Ans: Not considered yet, the hybrid not ready, mixing ENKF with ensemble DA capability not there yet.

Frank Marks - NOAA Federal 2:30 PM
I hope that any relocation is taking in account the uncertainty in NHC provided positions. In weak systems that could be as much as 50-100 km. In the past no initial position uncertainty was considered.

Frank Marks - NOAA Federal 2:36 PM
internet issues

Frank Marks - NOAA Federal 2:38 PM
@Sikchya my internet is really flakey today. My question or comment was directed at Jason Sippel and in particular Zhan Zhang's point about relocation

Zhan Zhang - NOAA Federal 2:43 PM
@Franks Good point. The flow-dependent ensemble may partially address the issue. the proper way to account for the TC position uncertainty is to run ensemble forecasts.