HAFS Coordination Meeting
May 1, 2019 (2-3 pm ET)

EMC ([HAFS EMC Updates](#) - Bin Liu)
- EMC built a HAFS prototype workflow for SAR configuration - with IC and BC from FV3GFS nemsio format analyses/forecast files, that can run on WCOSSDell, WCOSSCray, Theia and xJet (with Slurm).
- A near-real-time HAFS V0.A experiments is running on WCOSSDell to test the robustness of the prototype workflow.
- NATL basin focused SAR domain configuration is similar to that of nest within Global except for additional 5 degrees on north and south (magenta) sides.
- Work in progress/planning includes:
    - Testing computational capacity on other jets
    - Testing use of operational GFS data for IC/BC workflow
    - Setting up HAFS website and generating HAFS graphics
    - Determining dynamics and physics options
    - Establishing VI and DA/GSI relocation capability in the workflow
    - Incorporating other DA capabilities in the HAFS workflow
- The main issues encountered was unavailability of GFS grib2 data needed for testing, while data is available in nemsio format only.
- Other issues includes, use of lot of memory and unavailability of some utilities on Jet/Theia.
- Question of low scalability effect: no significant effect is found.

EMC ([HAFS DA updates](#) - Henry Winterbottom)
- Methodology for TC vortex relocation is being explored
    - The process includes two steps: synthetic obs. in the first step and the actual obs. in the second step
    - The FV3 first-guess is used to create synthetic profile-type observations for a cold start while the forecast from the previous cycle is used as the first guess for subsequent cycles
    - The position for these observations are updated based on tcvitals
    - These are then ingested in GSI in order to relocate the vortex
- Continuing efforts to create initial scripting interface for HAFS DA; shell scripting is being considered.
- Preparing for FV3-SAR code sprint (HAFS-DA workflow is both NCEP EE2 and NCEP WCOSS compliant).
- A clarifying discussion on the methodology between Gus, Gopal and Henry followed.

<u>AOML/HRD (Global nest- Xuejin Zhang/Andy Hazelton)</u>
- Ongoing effort on testing the double-nest:
    - codes are running well, the next step is to test whether it is usable in the implementation env.
    - In the process of verification with or without second-nest and verification at baseline
    - then the code will be moved to the common code repository
- Discussion with EMC on physics dynamics layout ongoing
- Bin Liu asked if the double nest is applicable to SAR and Andy replied yes.

<u>GSD (Curtis Alexander) Email updates</u>
Curtis Alexander's email: Henry Winterbottom talked with the CAM WG last week and we discussed the plan to provide an additional SAR FV3 run over the Atlantic Basin using the RAP/HRRR (continental CAM) physics suite as an additional data point to compare with the SAR that will be run using the global (I think) physics suite. No data assimilation would be executed within this additional SAR configuration.

Q: Is the RAP/HRRR physics suite only available in CCPP?

<u>NESII (Cecelia DeLuca)</u>
Cecelia updated that NESII is moving on working the community compiler to EMC.

<u>Updates from Physics Options meeting (Avichal)</u>
- HAFS 0.A and 0.B Physics options were discussed
- Some physics options might have to be changed
- Diffusion and advection options might have to be changed for dynamics
- PBL option successfully being used in HWRF/HMON may need to be reconsidered in FV3
- Advection schemes, though different in SAR and global version, is being tested extensively on both sides weighing in for the better option

Suggestion to invite Curtis on the next physics options meeting.

<u>Real-time reservation</u>
Sikchya showed 2019 HFIP Real-Time Demo Project Reservation schedule to the group.

<u>HFIP report</u>
Gopal and Sikchya reported that they are in the final phases of completing the HFIP annual report.