

2018-10-04

Steve H opened the meeting with a few announcements. Yannick was gone today but will be back next week. Also, we are now planning the next JEDI Academy, which will be the week of Nov 12 in College Park, MD.

Then we had a report of recent work on recent modifications to oops, ufo, and ioda. The most significant merge to occur in the last week may be Benjamin M's various bug fixes on bump, which were discussed last week and which were merged into develop last Friday. Also merged into develop at the same time was a new application from Guillaume to initialize the QG B matrix. On the ufo side, the BndGSI forward operator for GNSSRO was merged this week, along with a bug fix from Dan regarding the skipchan flag. Dan has also been working on the assimilation of AMSU-A radiances, with pull requests on oops (one merged, 3dvar pending) and ufo (3dvar pending). The current implementation introduces a new method to allocate a length 1 GeoVaLs object - discussion continues on whether this is the best approach.

Anna and Dan have also been working on an enhancement to the ioda locations class that allows for the temporal binning of observational data for 4dvar, as discussed last week. Progress has been made on this but it is not yet ready to be merged. We'll wait to run it by Yannick next week. When this is eventually merged, it will require changes to the model repos to accommodate the new features in the Locations class. Dan and Anna will post a summary of the required changes on the GitHub discussion threads when they are ready to be implemented into the models.

Dan is also working on adding a TL/AD implementation of the GOES physics packages into fv3-jedi.

Rahul then updated us on his progress with building FV3-GFS on the Amazon cloud. He expects it to be ready by the end of this week.

Then we turned to the UK Met Office. Marek mentioned that he had taken what Dan had done in his refactoring of fv3-jedi and applied it to LFRic. Then Steve (S) described progress on porting LFRic to different platforms.

Steve S requested instructions on the proper usage of the MPI updates that Mark has been doing to fckit. Mark has created a fork of the ECMWF fckit repository in order to make updates that support his work to replace the MPI calls in BUMP with the fckit MPI API. Mark has issued a pull request in OOPS (feature/fckit-mpi branch) that contains the BUMP MPI updates. Once this pull request is merged, users will need to point their fckit to the JCSDA fckit fork (JCSDA/fckit, feature/multi-wrappers branch). Users can continue to use the ECMWF eckit repository. Mark will eventually issue a pull request to merge the JCSDA fckit fork back into the ECMWF/fckit repository.

Then a report from NCAR: The wireless connection here was not good but BJ still managed to communicate some progress. They moved MPAS init and finalize from the geometry module to the run module and thereby reduced the run time for variational DA. They also looked into reducing run time by pre-computing the bump coefficients. And, with recent changes, MPAS can now work with the develop branch of oops. They recently ran a successful test of MPAS-jedi on cheyenne with a 1 degree resolution and confirmed that it works.

JJ is continuing to work with the MPAS group to link the main MPAS branch into MPAS-jedi.

Then we moved to an update from Boulder. Steve and Xin reported on progress with the redesign of the observation space data structures in ioda. He announced that the initial netcdf interface is now in place. Steven Vahl at NCAR will build on this to create a sub-class for ODB access. Xin reported that the basic C++ infrastructure for the new observation space class is in place. This is based on the multi-index functionality provided by the boost libraries. And, he is now finishing the new Locations and Obs_Vector classes. Then he will focus on getting test_ufo_radiosonde to work. He hopes to have a prototype ready by the end of this week.

Then Steve opened the floor for questions. Marek reported that they had implemented a doxygen documentation build in LFRic and asked if the JEDI team had any examples of what the doxygen html output should look like for comparison. Steve said he could tar up an html build on his machine and make it available on google drive. It was mentioned that in order to get the diagrams (call graphs, class diagrams, etc) to look as shown at the jedi academy or in the jedi documentation, for example, one would have to install the dot graphing tool. dot is provided as a component of the graphviz package which can be installed via homebrew or apt-get (though this may require root privileges). If dot is already installed, you may have to edit the doxygen configuration file (Doxyfile) to specify the path where it can be found (often /usr/local/bin). This is specified by setting the variable DOT_PATH in the Doxyfile. For further information, see [the JEDI documentation](#).