2019-09-26

Yannick opened the meeting announcing that there were no special topics to discuss this week. Yannick encouraged anyone who has a topic that they want discussed with the group to enter it in ZenHub. To do this:

- Follow this link to get to the ZenHub weekly meetings work space
    - Alternatively, if you want to navigate there directly, here are "manual" steps to get to the weekly meetings work space
        - Navigate to the JCSDA/jedi-docs repository
        - Click on the ZenHub tab
        - Near the top after the "JCSDA/jedi-docs" heading you should see "/workspace name". If the workspace name is not "JEDI-Weekly-Meetings", then click on the name and select "JEDI-Weekly-Meetings"
        - Click on the Labels pull-down menu and select "weekly meetings"
- Add an issue with your topic and attach the label "weekly meetings" to your issue

Yannick warned the group that a large merge (SABER) was going to occur later today.

Yannick asked the group to be on the lookout for a draft pull request containing a new argument (MPI communicator) for the Geometry constructor. This is being added for the ensemble DA capability that Clementine is working on. Initially, you don't need to utilize the new communicator argument, but you will have to modify your Geometry interface to include the new argument.

We then moved on to updates from the group.

Boulder

Mark M is looking for one or more intermediate sized test cases (something that will consume ~100 core hours) for evaluating the performance of the containers on HPC systems and AWS multi-node clusters. Mark O provided an H(x) and 3DVar application using a c768 fv3 gfs background but it would be nice to also get something that is a little more computationally intensive. An FV3-GFS C192 forecast might be good and he asked Dan or Rahul if they happened to have any c192 GFS input files that might be sufficient for that. Travis suggested using the quarter-degree SOCA setup.

Maryam is configuring more repositories (UFO, IODA, eg) for automatic testing. In particular, she is now adding code coverage for ioda.

Clementine is developing the EDA capability and hopes to have initial functionality merged in during October.

Xin has a PR under review for the beginning of the online calculation of bias predictors in the bias correction scheme. This PR contains interface updates, and a subsequent PR will complete the bias predictor calculations.

Steve H is working on an ODC reader in IODA. The initial purpose of this reader is to compare performance of ODC and Netcdf file types. Yannick emphasized that no decisions have been made about ODC versus Netcdf, and once the core team acquires more understanding of ODC we will work with our partners to make that decision together.

Mark O has constructed a prototype observations store on S3 which contains a large number of obs files organized in one hour windows. The idea behind the one hour files is that they can be pooled together to create larger time windows such as 6 hours for global DA. Creating this obs store is part of the workflow that Mark is developing and will be used for testing automated flows.

Hailing has a PR under review containing a change of name for the bending angle RO operator. Then old name was BndGSI and the new name is BndNBAM which more accurately reflects the algorithm used in this operator (NBAM => NCEP Bending Angle Method). Hailing will next work on further developing GNSSRO QC checks/filters, specifically for super refraction and error inflation.

Sarah L recently came on board and is working on aerosol and chemistry aspects of DA. She encouraged anyone with ideas in regard to these topics to discuss them with her.

Shih-Wei Wei is a new hire who will be working on aerosol impacts on radiative transfer and will be working with Ben J on CRTM.

Travis is wrapping up some tasks from the LETKF code sprint, and a couple PRs are on their way. He announced that we should be able to do initial testing of LETKF soon.

JJ is working with Junmei on 1 month cycling experiments with assimilated radiances. They are currently using bias corrected obs files, and will switch to Xin's bias correction scheme once that is completed. JJ and Junmei have also been developing a flow for running diagnostics software.

Steve V is developing ODC testing, and is currently generating input files that will be used for performance testing.

Chris S added that JJ and Junmei have been using CYLC for their diagnostics flow, and that they are interested in collaborating with Mark O.

EMC/GMAO

Ryan has been working on code cleanup for UFO, and mentioned a set of recent PRs (some under review) that remove ~80 files from the repository. Part of this is the removal of ncdiag.

Dan has a PR under review containing the Poisson solver he has been developing. Dan is also working on FV3 interfaces and testing of forecasts. Dan reported that the badges (which show the status of automatic testing) do not update sometimes after merging PR's. Maryam will look into this.

Guillaume mentioned that it would be nice to have both ODC and Netcdf reader/writers in IODA. Yannick added that we will go with this for a while, but long term we may only keep one reader/writer. Guillaume expressed interest in attending the discussions on the ODC, Netcdf decisions. Yannick responded that there have been no meetings yet, and the first one will likely take place in late October or early November. And, of course, Guillaume and other interested parties are welcome to participate.

Rahul reported that a PR was recently merged into IODA which provides access to spatially local observations for the LETKF functionality. For now a brute force method is used to select the local observations, and a more elegant k-d tree method is being developed. Rahul also has a PR under review which renames the ObservationSpace interface class in OOPS to ObsSpace so that naming is consistent with the various implementations of ObsSpace (qg, l95, ioda).

Stylianos is developing a workflow for ocean DA using Global workflow. He is currently verifying results from a one month cycling experiment.

Met Office

Marek is developing a time interpolation obs operator. He has a mixed C++, Fortran implementation merged into UFO and is currently writing a C++ only version. He will use the existing (C++, Fortran) operator for testing his new C++ implementation. Marek is anticipating one to two weeks to have a PR for the C++ only version.

NRL

Sarah K reported that recent improvements have resulted in BUMP running much faster. (NRL is using Intel compilers.) Marek was curious about what changes caused BUMP to speed up since they have not been experiencing a speed-up. Yannick advised Marek to contact Benjamin since there may be some BUMP configuration that needs to be changed before realizing the improved execution speed.