October 2016 work log

Activities for week of October 10, 2016

- Pull requests:
  - #14: Fix problem reading radiance_info files for some compilers https://github.com/wrf-model/WRF/pull/14
- From Jamie: instructions for hybrid were incorrect; ensemble perturbations should be in directory named "ep/" within working directory, not linked **into** the working directory
- Modified WRFDA regtest
  - MAJOR BUG FIX: get_repo_revision returned wrong hash due to missing "chdir" into repository
  - check for compatible netcdf/hdf5 builds on yellowstone
  - Stop renaming da_wrfvar.exe to include compiler/parallelism in filename; this hasn't been necessary for a long time and is cumbersome
  - Move addition of HDF5 library path to LD_LIBRARY_PATH inside the job script, so tests can easily be manually re-run
  - From Jamie: Fix hybrid tests as above
  - Add commit date to regression test online summary (not finished)
  - Consolidate some RTTOV code and allow command line option to specify whether or not to compile with RTTOV
- WRFHELP emails
  - User (University of Chicago) seeking help running stand-alone adjoint in WRFPLUS; replied with guidance from Jamie
  - Replied to Thomas Schwitalla about getting old SEVIRI data
  - Helped NCAR visitor Chester Huang with problems running jobs on Yellowstone
  - Helping user William Miller from University of Maryland with various questions and a 4DVAR issue. Ongoing.
- Updated website
  - Updated free_data site with new NOMADS archive link
  - Updated FAQ with question on how to run 4DVAR with nesting (not finished)
- Updated user's guide
  - From Jamie: Fix hybrid instructions (not put on web yet)
- Preparing external user's code (radar null echo assimilation) for review.
  - Put on Github branch in my fork (https://github.com/mkavulich/WRF/tree/null-echo-assimilation), made simple modification so it compiles for Linux (still needs updating)
- Made To-do list on the wiki: To do list
- Deleted some old branches in main repository; sent emails to some people asking about some more that might be deleted

Activities for week of October 17, 2016

- Ran some tests for Jamie regarding two bug fixes
  - Ran regtest for a radar assimilation bug; this lead to a few regtest modifications to catch problems with this option in the future
  - Ran regtest for a bug related to WRFPLUS with cu_physics=0 (confirmed temp fix works for 4DVAR). Also running stand-alone TL and AD models to try to diagnose the source of the problem
- Discovered bug in rsl printout for long filenames in WRF and WRFPLUS (found in above WRFPLUS testing) and verified a fix (not committed yet)
- Modified WRFDA regtest
  - Allow command-line specification of a github fork to check out the code from
  - Allow command-line specification of which tests to run, and only compile the necessary code
- WRFHELP emails
  - Answered two questions from UMD user, one about VARBC, the other about satellite thinning
  - User from University of Hawaii trying GPS_ZTD assimilation sent correction to help page (http://www2.mmm.ucar.edu/wrf/users/wrfda/OnlineTutorial/Help/littler.html#special); I verified the correction was correct and updated the page
  - User from University of Naples "Parthenope" was asking about reducing memory usage in 4DVAR
  - Sent some guidance to user looking for info on the PREPBUFR format
- Developer committee tasks:
  - Gave WPS repository access to two developers
- Took half-day of PTO

Activities for week of October 24, 2016

- Developer committee tasks:
  - Helped 3 developers with WRF repository access
  - Updated wiki page with more about creating and using forks: SVN to Git guide for WRF developers
  - Looking to reduce repository size by eliminating old, unused files from repo history
- Ran WRFDA regtests
  - gfortran 4.8.2: pass
  - gfortran 5.3.0 and 6.1.0: 4DVAR errors! Investigating...
- Modified WRFDA regtest
  - Put test namelists under version control, so changes to tests are tracked
  - Modified some tests to cover some more cases:
    - Modified the WRF namelist for cycle_sene_hires so that file names are long
    - Modified radar_4dvar_cv7 test so cu_physics=0; Jamie found a bug for this case in WRFPLUS
- Pull requests:
  - #26: Allow filenames greater than 30 characters to be correctly printed to RSL log files https://github.com/wrf-model/WRF/pull/26
- WRFHELP emails
  - Helping one user with radiance diagnostics
  - Answered one user from private company in Hong Kong looking to use scale-dependent blending scheme
  - User from University of Montana having compilation problems: due to HDF5 env variable
  - Answered a user's questions about the obs thinning method
- WRFPLUS:
  - Investigating easy method for keeping up-to-date with master using "git cherry-pick"
- Attended Release Committee meeting

- Some questions about upcoming release
  - Are we ready for theta_m on by default?
  - What needs to be changed for compatibility with new hybrid vertical coordinate?

Activities for week of October 31, 2016

- Ran WRFDA regtests
  - Still investigating 4DVAR failures. Seems to be due to MPI issue with a recent commit by Jamie; sent her more information so she can take a look
    - Jamie sent fix, all tests pass!
  - Now getting random failures on Yellowstone for all REGTEST jobs. CISL told me they are due to memory problems
- WRFHELP emails
  - Still having a back-and-forth with Maryland user about VARBC and other radiance-related questions
  - Answered user (Chinese Academy of Meteorological Sciences) asking about BE length scale and variance values
  - Giving a Russian user guidance on cycling frequency
- Working on stand-alone GENBE
  - Made a bunch of cosmetic changes, mostly eliminating unnecessary code copy-pasted from the WRF build system
  - Contacted Gael again with a few questions