Participant Call February 16, 2023

Participants: Ummugulsum Alyuz, Roberto San Jose, Richard Kranenburg, Christian Hogrefe, Jesse Bash, Chris Holmes, Olivia Clifton, Paul Makar

Grid intercomparison (Activity 1)

- Participant updates on reruns, postprocessing, data upload, and analysis
    - We are now past the February 15 deadline for all remaining file uploads
    - Richard: re-processed wet deposition of sulfate to add missing hours (previously, the uploaded fields only included 1 hour each day), will post new files tomorrow.
    - Ummugulsum: uploaded 2009 - 2010 for almost all files - still working on some 012 - 122 cases (DFLUX - effective fluxes) and some 2009 emissions. Will upload these remaining files by Tuesday.
    - Chris: Holly and Chris finished the remaining script preparation, Holly is running these now. Holly and Chris will keep Stefano, Christian, and Paul updated on the progress of post-processing and file uploads.
    - For now, Christian plans on re-doing the obs/model matching using all final model results for the 001 (concentrations), 002 (deposition fluxes), and 005 (meteorology) cases except GEOS-Chem, and plans to share these with Iannis during the week of 2/27. Will add GEOS-Chem results when available.
- During the email exchanges to determine the lower-than-expected LOTOS-EUROS SO4 wet deposition results, it became clear that the group needs to revisit how models are to report WFLUX-HSO3-, WFLUX-SO4=, WFLUX-NO3-, and WFLUX-NH4+. Specifically, it became clear that there was some confusion over whether gaseous S/N species for which wet deposition fluxes are computed by a given model should be included in the reported wet deposition fluxes of WFLUX-HSO3-, WFLUX-SO4=, WFLUX-NO3-, and WFLUX-NH4+ (e.g. if a model explicitly simulates a wet deposition flux of SO2, should it be included in WFLUX-HSO3- or WFLUX-SO4=?). The consensus was that they should be, but some groups (certainly the CMAQ runs 10700, 10701, and 10710, maybe others) have not included them in the fields reported so far because of a misinterpretation of the variable definitions in the TSD. Whether or not including these species would make a noticeable differences was not clear – a quick CMAQ analysis for suggested that including SO2 with SO4 and HNO3 with NO3 wet deposition would not have a substantial impact, but Christian will perform a more thorough analysis and share the results with other modelers. In that email exchange, modelers will be asked to answer whether their model simulated wet deposition of gaseous S and N species, if so whether they included them in the fields reported so far, and, if they are simulated but not included so far, whether the modeling groups could reprocess the reported wet deposition fluxes to include them.
    - The group also noted that we need revisit obs/model pairing for wet deposition flux comparisons for SO4, i.e. that the sum of the reported modeled WFLUX-HSO3- (not reported by all models) and WFLUX-SO4= is the quantity which should be compared to the observations.
- All new files are still on the sftp server until batch transfer will occur – after the recent quota increase, things are currently o.k.
- The screening plots Christian prepared for the December meeting (maps, seasonal and diurnal cycles) are still in "results" folder on the sftp site, in a new subdirectory "20221207". The plots will be revised once all expected data are received. In the meantime, comments are welcome.

- Paul has started to provide model output for deposition fluxes to the groups performing the critical load analysis.

Point intercomparison (Activity 2)

- Activity 2 held a call on February 7. Olivia received revisions from co-authors on the overview manuscript that had been sent out in early January. Results were also received from the last remaining model, DO3SE. These results were added to the manuscript, though there might still be a few updates needed for the DO3SE runs for Hyytiala. A bit of documentation from DO3SE is also still needed.

- During the call, Anam Khan (a PhD student at the University of Wisconsin) and Olivia presented a plan for follow-up work building upon the work included in the overview manuscript. The work would focus on stomatal uptake, and particular on model responses to dry periods. Will try to estimate stomatal uptake from observations to evaluate/constrain modeled stomatal fluxes. Call notes will be sent out soon.

Next call March 16