Participant Call July 13, 2023

Participants: Christian Hogrefe, Jesse Bash, Ummugulsum Alyuz, Paul Makar, Kenjiro Toyota, Stefano Galmarini, Jon Pleim

Grid intercomparison (Activity 1)

- Model documentation:
  - The model documentation questionnaire has now been completed by all groups except LOTOS/EUROS (10706)

- Model data updates:
  - Richard via email (10707 EU): "I have finally managed to revise the resistance and conductance postprocessing of the LOTOS-EUROS model. I have uploaded for 2009 (0341-***) all files for subfolders 132 … 382. Some of the fields were put in the wrong variable number, and some of the others were not calculated correctly. Now it should be all in the correct field. Note that for all folders, the files -013,-027,-041,-055,-069, -083 are not present in the latest delivery. But I cannot delete files from the server, so the old files (with incorrect data) are still there. Beginning of next week, I will upload 2010 (0351-***) and let you know."
  - Holly via email (10712 NA): "While we have made progress, we are running into server storage space issues. I am talking with the IT department to save my analysis on a different server that is not regularly backed up in order to get more space. I plan on running test case 0241-002 as soon as that is set up as a stress test. Once that is complete, I can upload it for you to preview. I'm hoping this should all be able to run over the weekend once the setup is in place."
- Data storage updates:
  - No updates since the last call
- Data extraction and analysis updates:
  - Christian uploaded the following additional datasets at receptor locations:
    - Prepare observations and match and extract model results for 14-day average NH3 concentrations measured at AMoN sites (NA 2016 only)
    - Extract hourly and daily PM2.5 and PM10 species at hourly and daily PM25 and PM10 mass monitoring sites (NA, EU Airbase, EU EMEP). Even though at most of those sites PM species are not measured, this could help to diagnose model-to-model differences in model performance for PM25 and PM10 mass
  - Stefano: Iannis operational analysis of the multi-model results is continuing.
  - Paul, Stefano, and Christian will schedule a separate call to discuss plans for analyzing the ozone dry deposition diagnostics (grid-scale and LU-specific) and LU information submitted by all groups and for preparing a manuscript based on this analysis. They will update the group during the August call.
  - Paul shared results from his recent comparison of modeled NH3 concentrations against AMoN surface measurements and CRiS satellite retrievals, as well as a comparison of AMoN against CRiS. The analysis will be revisited using the most recent set of AMoN observations prepared by Christian that account for travel blanks, leading to lower AMoN values. For further interpretation of these results, Jesse shared this link for a paper analyzing NH3 at a site in southern Appalachia: https://bg.copernicus.org/articles/20/971/2023/

Point intercomparison (Activity 2)

- Activity 2 call held July 5. Call notes to be posted later this month.

Special issue

- Galmarini et al. (2021) Activity 1 overview technical note - published (https://acp.copernicus.org/articles/21/15663/2021/)
- Hogrefe et al. (2023) analysis of EPA CMAQ NA simulations - accepted for publication (https://acp.copernicus.org/preprints/acp-2023-10/)
- Clifton et al. (2023) Activity 2 overview manuscript – accepted for publication (July 17, 2023) (https://egusphere.copernicus.org/preprints/2023/egusphere-2023-465/)
- Additional planned / potential manuscripts:
    - Activity 1: Kioutsioukis et al. – multi-model evaluation and analysis of AQMEII4 grid models
    - Activity 1: Makar et al. – critical loads ensemble analysis – aims to have draft later this summer
    - Activity 1: Makar et al. potential updates to GEM-MACH - how can results from Activity 2 be used to check/update the representation of dry deposition in regional modeling
    - Activity 2: Khan, Clifton, et al. – observational constraints on stomatal conductance and point model sensitivity simulations
    - Activity 2: Lee, Makar et al. – physics-informed machine learning for potentially refining point model parameter values
    - Activity 2: Lee, Makar, et al. – use of meteorological cluster analysis for point model evaluation
    - Activity 2: Bash et al. – use of AQMEII4 flux measurement for optimization of selected STAGE resistances

- Stefano will contact Copernicus to extend the Special Issue submission deadline to summer 2024.

Next call August 10. Christian has sent out a new series of meeting invitations through March 2024.