Participant Call April 18, 2024

Participants: Stefano Galmarini, Ummugulsum Alyuz, Olivia Clifton, Annika Vogel, Christian Hogrefe, Jesse Bash, Rohit Mathur, Juan Luis Perez Camaño, Colleen Baublitz

Grid intercomparison (Activity 1)

- Model data updates:
    - 10709: Young-Hee has reprocessed the grid-scale effective conductances and fluxes for O3 for both 2010 and 2016 (0241/102 and 0251/102) to address the internal inconsistencies between O3 Vd and the sum of the effective conductances that was mainly caused by a resetting of the rac term to a maximum value of 100 in the WRF/Chem code that was not taking into account in the post-processing. Young-Hee is planning to work on reprocessing the LU-specific values for O3 next, followed by the other three species for which diagnostics were reported by 10709, i.e. HNO3, HCHO, and SO2.
- Data storage updates:
    - No updates since the last call
- Analysis updates:
    - Christian started writing the analysis portion of the multi-model ozone dry deposition manuscript. The goal is to have a draft version for co-authors by the end of May and initiate EPA review and clearance by the end of June.
    - Stefano reported that Iannis sent him additional plots for EU that complement the previous plots he had sent for NA. During the March call with Paul, Stefano, and Christian, Iannis also mentioned that he started a new line of analysis that showed promising results and that he would show results at a future meeting.
    - Paul is revising the draft manuscript with updated tables and figures while also addressing co-author comments provided on the first draft.

Point intercomparison (Activity 2)

- A brief Activity 2 call was held on April 2 where Olivia reported that Anam is working on her draft manuscript. Annika will have a workshop presentation at the end of May and will share draft slides at the May 7 call.

Special issue

- Submission deadline previously extended to July 31, 2024
- Given the approach of this extended deadline and the status of the manuscripts still being planned, the group discussed whether to request a further extension and decided to do so in May or June.

- Published articles:
    - Galmarini et al. (2021) Activity 1 overview technical note (https://acp.copernicus.org/articles/21/15663/2021/)
    - Hogrefe et al. (2023) analysis of EPA CMAQ NA simulations (https://acp.copernicus.org/articles/23/8119/2023/)

    - Clifton et al. (2023) Activity 2 overview manuscript (https://acp.copernicus.org/articles/23/9911/2023/)
- Active work:
    - Activity 1: Makar et al. – critical loads ensemble analysis - draft circulated to co-authors
    - Activity 1: Kioutsioukis et al. – multi-model operational evaluation and analysis of AQMEII4 grid models
    - Activity 1: Hogrefe, Galmarini, Makar, Kioutsioukis et al. - multi-model analysis of ozone dry deposition diagnostics (grid-scale and LU-specific) and LU information - Christian will start this analysis and Paul, Stefano and Christian will have monthly calls to review progress and scope out a draft manuscript. Target for draft manuscript: spring 2024
    - Activity 2: Khan, Clifton, et al. – observational constraints on stomatal conductance and point model sensitivity simulations - expect draft soon
    - Activity 2: Vogel et al. - error estimation analysis
    - Activity 2: Bash et al. – use of AQMEII4 flux measurement for optimization of selected STAGE resistances. Finished all calibration runs
    - Activity 2: Lee, Makar et al. – physics-informed machine learning for potentially refining point model parameter values
- No recent updates:
    - Activity 1: Toyota 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 1: Lee, Soares, Makar, et al. – use of hierarchical cluster analysis for grid model intercomparison
    - Activity 2: Lee, Makar, et al. – use of meteorological cluster analysis for point model evaluation
- Potential additional work:
    - Olivia's reported that the work she had initiated last year with Nichole Ruiz on analyzing data at the Bugacpuszta site might lead to an additional manuscript

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