Participant Call June 15

Participants: Rohit Mathur, Christian Hogrefe, Kenjiro Toyota, Jon Pleim, Colleen Baublitz, Olivia Clifton

Grid intercomparison (Activity 1)

- Model documentation:
    - On May 26, Christian sent an email with a questionnaire on model configurations to all participants. No responses were received to date. Documenting model configurations will be important for upcoming manuscripts. Christian will send a reminder after the call.
- Model data updates:
    - Christian: No updates on data uploads via email since the last call. Christian will follow up with Richard regarding updates to the dry deposition diagnostics for 10707 and Chris and Holly regarding data uploads for 10712.
- Data storage updates:
    - No updates since the last call - Files for 10707, 10710, and 10712 (initial tests only) as well as the latest set of receptor extractions are still on the sftp server until the next, final batch transfer will occur, all other files have been transferred to the ENSEMBLE server
- Data extraction and analysis updates:
    - To follow up on work Paul and Iannis presented at the ITM and are currently preparing for manuscripts, Christian performed the following additional data preparations and extractions at receptor locations:
        - Prepared observations and matched and extracted model results for 14-day average NH3 concentrations measured at AMoN sites (NA 2016 only)
        - Extracted 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.
    - These additional data extractions will be uploaded to the sftp server within the next week.

Point intercomparison (Activity 2)

- Activity 2 call held June 6. Call notes available at https://github.com/AQMEII4/Activity-3-Point-Intercomparison-runs/blob/master/ParticipantCallNotes/AQMEII4_Activity2_ParticipantCallNotes_20230606.pdf. Olivia is working on the responses to reviewer comments for the Activity 2 overview manuscript and expects to circulate a draft version in the near future. Anam provided updates on her work to calculate observation-based (water flux and carbon flux) estimates of stomatal effective conductances. A student intern who recently started working with Olivia is having a closer look at the point model intercomparison results at the Bugacpuszta site where the models are exhibiting significant differences in their stomatal vs. non-stomatal pathway splits during the warm season. Kenjiro shared initial results from Colin's work to use neural networks to calculate ozone deposition velocities at the flux measurement sites.

- 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 - discussion phase closed, two reviewer comments received (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 - may have draft in July
    - 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. – use of meteorological cluster analysis for point model evaluation
    - Activity 2: Lee, Makar et al. – physics-informed machine learning for potentially refining point model parameter values
    - Activity 2: Bash et al. – use of AQMEII4 flux measurement for optimization of selected STAGE resistances

- Next call July 13. Christian will send out a new series of meeting invitations for this upcoming call as well as future calls.