Participant Call June 3, 2021

Participants: Christian Hogrefe, Aura Lupascu, Richard Kranenburg, Saurabh Kumar, Rohit Mathur, Jesse Bash, Paul Makar, Donna Schwede, Roberto San Jose, Ralf Wolke, Ummugulsum Alyuz Ozdemir

- Technical notes
  - Activity 1 technical note accepted as discussion paper. One reviewer comment posted to date.
  - Point intercomparison / Activity 2 technical note: Submitted to ACP, waiting for editor assignment

- Grid intercomparison (Activity 1)

  - Updates to code generating optional netcdf-cf (.nc) files
    - Posted update to ens2nc so that the resulting netcdf files will have lat, lon, lat_bnds, and lon_bnds variables:
      - https://github.com/AQMEII4/enform_aqmeii4
      - https://github.com/AQMEII4/enform_aqmeii4/tree/master/ens2nc
    - Posted zip file with updated .cf metafiles:
      - Updates change time units for .nc files created by ens2nc (fixed "hours since …" for 2016 .cf files, removed "UTC" from end of units string to work with udunits)
      - https://github.com/AQMEII4/Activity-1-AQMEII-style-runs
      - https://github.com/AQMEII4/Activity-1-AQMEII-style-runs/raw/master/CF_Files_AQMEII4_updated_20210428_NA_EU.zip

  - Receptor processing tool - Email sent by Stefano on June 3, 2021:
    - Additional testing performed
    - Recently added capability to compute averages over arbitrary time periods based on hourly model output data (e.g. weekly wet deposition totals matching NADP measurement time periods)
    - Code available for download at https://github.com/enviroware/ensemble_rec_manager
    - Code will be used by participants to extract model values at receptor locations.
    - Roberto Bianconi also has prepared a number of observational data sets for analysis. 2009, 2010 (EU) and 2010, 2016 (NA) Meteorology:
      - https://www.dropbox.com/s/e0hqihixg6b2vtj/AQMEII4.METEO.EU2009.20210427.tar.gz?dl=0
      - https://www.dropbox.com/s/fmfk27khyxmhim7/AQMEII4.METEO.EU2010.20210427.tar.gz?dl=0
      - https://www.dropbox.com/s/e5dc9ap19l7nb7g/AQMEII4.METEO.NA2010.20210427.tar.gz?dl=0
      - https://www.dropbox.com/s/xr9fe9it8osqorr/AQMEII4.METEO.NA2016.20210427.tar.gz?dl=0
    - 2009, 2010 (EU) and 2010, 2016 (NA) Ozonesondes:

        - https://www.dropbox.com/s/zefkibw6zpask71/AQMEII4.OZONESONDES_20210416.tar.gz?dl=0
    - 2016 NA Gas and Aerosols:
        - https://www.dropbox.com/s/snok1xdpqm5iu0e/AQMEII4.NA2016.GAS_AEROSOL_20210527.zip?dl=0
  - The locations of the receptors in these datasets can be used to specify the target locations ("pool files") for the receptor processing tool

- LAI-T reporting (TSD 0241/005, 0251/005, 0341/005, and 0351/005, variable #32): make sure to report LAI-T as total leaf area per m2 of total grid cell area, not leaf area per m2 of vegetation in grid cell.

- Common analysis plans: Iannis Kioutsioukis started working with the receptor processing and ens2nc code to begin exploring the data submitted so far.

- Participant updates on postprocessing, data upload, and analysis
  - Aura: almost finished post-processing for EU 2009 - 2010, but encountered cluster slowdowns and disk quota issues. Hopes to start NA next week.
  - Richard: almost finished all processing for EU 2009 - 2010, plans to upload within the next week or so.
  - Saurabh and Ummugulsum: Proceeding with setting up WRF-Chem runs, working through TNO emission issues but should resolve these soon. CMAQ: running WRF month-by-month, hope to start CMAQ runs (also month-by-month) next week.
  - Roberto: working on post-processing for net deposition, should finish scripts in the next few days, then move to production mode
  - Paul: Reprocessing selected files (LU-specific diagnostics), gave presentation at NADP spring meeting. The slides are posted on the AQMEII4 github site
  - Christian: tested receptor code, started evaluation of North American runs uploaded to date
  - Ralf: person working on post-processing currently working on other projects, unknown when processing and uploading can continue. Hope that by July more focus can be given to AQMEII work.

- Point intercomparison (Activity 2)
  - Last call May 25, notes are posted on the github site
  - Focus has been on screening the observational data sets for outliers and other inconsistencies, updated some observational data, will update on the GoAnywhere site and will update the wrapper
  - Driving box models with grid model data
    - Chris Holmes identified which of the meteorological and LU-related data needed to drive the box models are saved as part of existing TSDs / source_term files and which are not
    - Christian made draft revisions to 2016 NA gridded meteo data source_term file (0251-005) to add requested variables

- Christian then used the revised 0251-005 source term file and the receptor processing code to extract 2016 USEPA WRF data for the two NA sites used in Activity 2, i.e. Harvard Forest and Borden Forest
- Extracted test data was shared with Activity 2 participants on the GoAnywhere site used by Activity 2
- Depending on feedback from both Activity 1 and 2 participants, may update 0241-005, 0251-005, 0341-005, and 0351-005 TSDs, source_term, and cf metafiles to include additional variables that can then be extracted at Activity 2 locations of interest
    - Alternative approach: ask grid modelers participating in Activity 2 to directly extract the fields currently not included in the TSDs from their archived model output at the Activity 2 locations of interest using whatever tool they have available for such extractions, without creating extra .ens files and then using those .ens files to extract data using the shared receptor processing code
- Paul: updating TSDs would allow an analysis of gridded fields as well, which could potentially be useful when the extracted values and observed values at the flux sites show large differences that warrant further investigation. Roberto agrees with this. Christian will work with Roberto Bianconi, Stefano, and Paul to update the TSDs and report back during the next call.

- Next call July 8, 9:00 EDST / 15:00 CEST