

# Participant Call September 8, 2022

Participants: Stefano Galmarini, Aura Lupascu, Ummugulsum Alyuz Ozdemir, Holly Nowell, Jon Pleim, Christian Hogrefe, Roberto San Jose, Jesse Bash, Chris Holmes, Paul Makar

## **Grid intercomparison (Activity 1)**

- Participant updates on reruns, postprocessing, data upload, and analysis
  - Ummugulsum: post-processing issues are sorted out. 2010 post-processing is running, expecting to upload files next week. Rerunning 2009 CMAQ for a few days with missing data, will be ready for post-processing end of this week.
  - Holly: encountered server issues but found ways to speed up runs. Expect 2010 runs to finish this Saturday, 2016 will finish in ~1 week. Will initiate work on post-processing and uploading around September 20.
  - Roberto: uploaded EU 2009 (10708/0341) reprocessed resistances, will upload reprocessed resistances for EU 2010 (10708/0351) this weekend. Then, finally will process the entire new NA2010 case (10708/0241), hopefully still by the end of October.
  - Paul: unit issues for a few selected fields – will upload 7 corrected files per run
  - No updates from Richard regarding potential need for LOTOS-EUROS reruns. Stefano and Christian to follow up and set timeline.
- Common analysis by Iannis on hold until datasets are final
- Stefano noted that the data currently residing on ENSEMBLE will be transferred to a new server and will become available through a new public link (different from the current link <https://ensemble.jrc.ec.europa.eu/ensemble/pvt/aqmeii4/>). Stefano will share the new link once available. This change also will entail a new manual process for transferring data from the sftp data to this new server, therefore data providers will have to tell Stefano explicitly what should be transferred after uploading new data to the sftp server. Data from the sftp server will no longer be deleted automatically after file transfers, so manual cleanups may be required if space on the sftp server becomes an issue.

## **Point intercomparison (Activity 2)**

- Activity 2 call held August 30. For details, see [call notes](#)
- New datasets with updated solar radiation, PAR, and solar zenith angle checks were distributed on August 29. Groups using these variables are asked to rerun their models and upload their results by September 19.
  - WRF Chem, IFS, GEM-MACH, M3Dry & STAGE (possibly Borden only), and TEMIR
- Olivia circulated an updated draft manuscript and supplemental material and is requesting the following feedback by September 19:
  - Jon - please document assumptions when PAR is missing so this information can be shared with other models who use PAR (STAGE and TEMIR and maybe MLC-Chem).
  - Johannes, Paul, Jon, Jesse, Susie, Limei, Laurens - please see specific questions in the main manuscript highlighted by your name and model.
  - Johannes, Paul, Jon, Jesse - please see specific questions in the supplemental material highlighted by your name and model.

## **TOAR II Coordination**

- Stefano, Olivia and Christian participated in a coordination call with the leaders of the TOAR II Ozone Deposition Focus Working Group (ODFWG), Lisa Emberson and Leiming Zhang. Frank Dentener also participated in the call to discuss coordination with AgMIP. Prior to the call, Lisa and Leiming shared a 1.5 page writeup of planned TOAR II ODFWG work. Key planned OAR II ODFWG activities are:
  - Compare existing total and stomatal ozone deposition schemes.
  - Identify deposition sensitivity to land cover parameterisations and key input variables (e.g temperature, humidity, soil moisture, [CO<sub>2</sub>]).
  - Production of stomatal ozone flux (PODy) maps by land cover type and geographical region.
  - Assessing long-term trends of ozone stomatal flux and how these are affected by climate change.

Lisa summarized that in essence, the ODFWG will focus on application of key representative deposition schemes (with an emphasis on stomatal deposition) to understand variability in stomatal deposition and associated metrics due to land cover, geographies and future climate as well as trends in stomatal deposition over time.

Lisa also noted that future coordination (with AQMEII4 and other related activities such as AgMIP and WMO MMF) will take place within an TOAR II ODFWG Steering Committee (SC) to ensure complementarity of TOAR II to other existing initiatives. Next steps are to

- Establish the provisional time-lines for the activities of the TOAR II ODFWG so that they can feed into the TOAR II vegetation assessment and appropriately frequent ODFWG SC calls can be set up
- Provide more detail on the first of the four activities listed above and ask for comments of ODFWG SC

## **International Technical Meeting on Air Pollution Modeling and its Application**

- Next ITM will take place May 22 - 26, 2023 in Chapel Hill, NC, USA
- Abstracts are due September 15 - <https://itm2023.vito.be/en>
- The group discussed that it would be good to do an overview presentation of results from the grid model intercomparison, but there was a concern whether will Iannis' work be ready by May given that the dataset hasn't been finalized yet. There also was discussion on whether such a presentation would cover operational evaluation, a deeper analysis of inter-model variability of deposition pathways / diagnostics, or possibly both. Stefano to follow up with Iannis for decision on how to proceed
- Christian noted that it might also be of interest to present results from the point model intercomparison. Christian to follow up on this with Chris and Olivia after the call.

## **Presentation by Paul**

Paul presented an initial model-to-model comparison of sulfur and nitrogen base cation deposition over North America using gridded fields downloaded from ENSMBLE. Stefano asked whether Paul could share the presentation with Iannis.

**Next call October 13, 9:00 EDT / 15:00 CEST**

Upload Status September 8, 2022.

	Continent / Year	001 (gases + aerosols)	002 (grid-scale wet and dry dep fluxes)	005 (meteorology)	012 – 122 (grid-scale dry dep diagnostics)	132 -442 (LU-specific dry dep diagnostics)	452 (NH3 bi-directional)	462 (AQMEII4 LU fractions)	472 (native LU fractions)
10700 (EPA CMAQ M3DRY)	NA 2010	x	x	x	x	x	x	x	x
	NA 2016	x	x	x	x	x	x	x	x
10701 (EPA CMAQ STAGE)	NA 2010	x	x	x	x	x	x	x	x
	NA 2016	x	x	x	x	x	x	x	x
10702 (IASS WRF-Chem)	EU 2009	x	x	x	x	x		x	x
	EU 2010	x	x	x	x	x			
	NA 2010	x	x	x	x	x		x	x
	NA 2016	x	x	x	x	x		x	x
10703 (ECCC GEM-MACH BASE)	NA 2010	x	x	x	x	x	x	x	x
	NA 2016	x	x	x	x	x	x	x	x
10704 (ECCC GEM-MACH ZHANG)	NA 2010	x	x	x	x	x	x	x	x
	NA 2016	x	x	x	x	x	x	x	x
10705 (ECCC GEM-MACH OPS)	NA 2010	x	x	x	x	x		x	x
	NA 2016	x	x	x	x	x		x	x
10707 (TNO LOTOS-EUROS)	EU 2009	x	x	x	x	x		x	
	EU 2010	x	x	x	x	x		x	
10708 (UPM WRF-Chem)	EU 2009	x	x	x	x	x		x	x
	EU 2010	x	x	x	x	x		x	x
	NA2010								
	NA 2016	x	x	x	x	x		x	x
10709 (UCAR WRF-Chem)	NA 2010	x	x	x	x	x		x	x
	NA 2016	x	x	x	x	x		x	x
10710 Hertfordshire CMAQ	EU 2009								
	EU2010								
10712 FSU GeosChem	NA 2010								
	NA 2016								

Notes:

- 10702 (IASS WRF-Chem) occasional spikes and overall very low values of SO<sub>4</sub>, NO<sub>3</sub>, and NH<sub>4</sub> wet deposition fields. Likely will need to exclude these wet deposition fields from the common analysis.
- 10707 (TNO LOTOS EUROS) questionable values for some LU-specific deposition diagnostics. After investigating, Richard found problems with the stability calculations in the LOTOS-EUROS simulations and reran LOTOS-EUROS. He is now investigating which fields need to be re-processed and re-uploaded, in addition to the questionable diagnostics. There is a good chance that most of the currently uploaded fields will need to be updated, but no final determination has been communicated yet.
- 10708 (UPM WRF-Chem)
  - reprocessing diagnostic resistances for EU2010, expect to upload revised files by 9/15.
  - Finished simulations for NA2010 (not originally planned). Expect to upload results by end of October
- 10710 (Hertfordshire CMAQ STAGE) – tested post-processing with old 2009, will apply to new 2009 and 2010 simulations.
- 10712 (FSU GEOS-Chem) – Running both NA2010 and NA2016. Runs expected to finish around 9/15, updates on estimated post-processing timeline expected around 9/25.