Participant Call December 11, 2025

Participants: Paul Makar, Laurens Ganzeveld, Colin Lee, Kenjiro Toyota, Anna Vogel, Christian Hogrefe

Special issue manuscript status

In November, Stefano contacted Copernicus to ask for an extension of the special issue submission deadline for another year (until the end of December 2026) and the request was granted.

- **Active work:**
  - Manuscript led by Paul and his postdoc Stefan Miller: analysis and sensitivity of SO2 deposition. Not using AQMEII4 datasets, but the topic is relevant to AQMEII4.
    - The Manuscript is currently undergoing the ECCC internal and external review and clearance process. Reviews are expected back by December 16. If no major changes need to be made due to reviewer comments, the manuscript may be submitted before Christmas.
  - Toyota et al. - updates to ozone dry deposition in GEM-MACH - how can results from Activity 2 be used to inform updates to the representation of dry deposition in regional modeling.
    - Over the last month, Kenjiro was mostly working on other commitments, but also performed some additional model runs for this manuscript. These additional runs updated the representation of seasonal transitions to address surface ozone performance issues in fall, where the changed dry deposition parameterization ahd increased ozone bias. With these additional changes, the updated dry deposition parameterization now improves ozone performance throughout the entire spring - fall ozone season. Kenjiro is now reorganizing the draft plots to include these additional runs. He may also add a section on ozone evaluation focused only on afternoon hours (e.g. MDA8). Following up on a question by Laurens about the relative importance of dry deposition vs. other processes for ozone model performance, Kenjiro shared a draft figure with process analysis results to be included in his manuscript.
  - Manuscript by Vladislavs Singarjovs and Laurens Ganzeveld based on their work with the MLC-Chem model using the Borden Forest data prepared for Olivia's AQMEII4 paper.
    - Vladislavs started reworking his M.S. thesis into a draft manuscript, Laurens is now looking at it to see if it could stand on its own as a manuscript to be submitted to the SI. Laurens also mentioned that his group is collecting measurements of canopy wetness at different levels as well as O3 and VOC fluxes that may be of interest for future studies. Paul expressed some interest based on his work on co-deposition performed with Stefan Miller.
  - Vogel et al. - error estimation analysis
    - Annika still plans to resume her analysis and the extension of the SI deadline is helpful.
  - Lee, Makar et al. – physics-informed machine learning for potentially refining point model parameter values
    - Colin is exploring the use of other short-term flux datasets for this analysis and has contacted Olivia about how to obtain them and get permission from the site PIs for using them. He is waiting for feedback from Olivia now. There also are ongoing upgrades to

the computational infrastructure at ECCC that are causing some adjustments to the workflow.

- Lee, Makar, Soares et al. – hierarchical clustering using AQMEII4 data
  - Work is ongoing but not at the top of the priority list. This work is also affected by the ongoing upgrades to the computational infrastructure at ECCC.

- **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/)
  - Makar et al. (2025) Critical loads ensemble manuscript (https://acp.copernicus.org/articles/25/3049/2025/
  - Khan, Clifton, et al. (2025) Observational constraints on stomatal conductance https://acp.copernicus.org/articles/25/8613/2025/
  - Kioutsioukis, Galmarini et al. – multi-model operational, probabilistic, and diagnostic evaluation and analysis of AQMEII4 grid models https://acp.copernicus.org/articles/25/12923/2025/)
  - Hogrefe, Galmarini, Makar, Kioutsioukis et al. - multi-model analysis of ozone dry deposition diagnostics (grid-aggregated and LU-specific) and LU information https://acp.copernicus.org/articles/25/12629/2025/

Next Call

The next call is scheduled for Thursday January 8, 2026.