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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Modeling inter-continental transport of ozone in North America with CAMx for the Air Quality Model Evaluation International Initiative (AQMEII) Phase 3" *by* Uarporn Nopmongcol et al.

Anonymous Referee #2

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The work presented in an interesting contribution to the scope of the ACP Special Issue and fits very well within the papers that I have seen published so far.

In fact in its relative simplicity it addresses questions that are nicely linking the global and the regional scale in two relevant ways: the influence of long range transport on regional scale chemical budgets (read Ozone); but also the possible influences of global scale models on regional scale ones, which acquires from the first the mass budget at the boundaries.

The paper is well written. If I have to find a criticism I would say that it is probably

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Discussion paper

too well written or better to little written. What I mean by that is that in many places, basically all sections the explanations as well as the writing style are a bit too concise and to the essence. A contrast is present between the will to present facts and figures and the fact that most of the time qualitative definitions like, “large, bigger, better, acceptable” are use to characterize the results.

The figures are nice and give clear quantitative indication of the various aspects that the study tackles, which however is not reflected in the text at times. More elaboration and quantification is needed here and there to make the story more interesting and appealing and to elevate the valuable content of this paper from a report style.

I am not asking to re-write the paper here, cause that would be unfair, just to indulge in a deeper explanation of the results by deepening only into those explanations that are worth exploring.

Cities are taken as locations for the comparison with data. It is important to characterize the monitoring sites and clarify whether those location are suitable to measure background levels of ozone. The inert ozone tracer is a powerful tool that should be exploited more in the future, considering the relevance of the impact of BC bias on regional scale models. A more detail break down in the vertical would be very instructive when studying for example boundary layer exchanges or transition from marine to land ABL. But this is probably for the future.

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