Dear Fiona,

Thank you for providing us with the comments to the author. The reviewers asked us to make the following minor revision to the paper:

"The authors really worked hard on the new version of the manuscript considering comments from both reviewers. I believe the manuscript is in much better shape now and only have one minor comments on line 632. I think is likely biomass burning emissions are low, there are multiple studies you can cite that show this. Or maybe I'm misinterpreting something here?"

We made the following changes as per their request:

1. In-text changes:

One possible explanation for the underestimation in both primary and secondary hotspots, could be the potential deficiencies in modeled biomass burning emissions or aerosol processes in this simulation. Curci et al (2015) suggest that AOD under-predictions may be a common problem for current air-quality models. Other studies e.g., Pan et al. (2020) and Johnson et al. (2016) show underestimations of modeled AOD over biomass burning areas, which could be related to the shortcomings in biomass burning processes in air-quality models.

2. Additional references:

Johnson, B., Haywood, J., Langridge, J., Darbyshire, E., Morgan, W., Turnbull, K., Brooke, J., Marenco, F., & Coe, H., Artaxo, P., Longo de Freitas, K., Mulcahy, J., Mann, G., Dalvi, M., and Bellouin, N.: Evaluation of biomass burning aerosols in the HadGEM3 climate model with observations from the SAMBBA field campaign. Atmos. Chem. Phys. 16, 14657-14685. 10.5194/acp-16-14657-2016, 2016.

Pan, X., Ichoku, C., Chin, M., Bian, H., Darmenov, A., Colarco, P., Ellison, L., Kucsera, T., da Silva, A., Wang, J., Oda, T., and Cui, G.: Six global biomass burning emission datasets: intercomparison and application in one global aerosol model, Atmos. Chem. Phys., 20, 969-994, https://doi.org/10.5194/acp-20-969-2020, 2020.

3. Added two plots [(c) and (d)] to Fig. 11, to show the number mixing ratio of clouds at different levels:
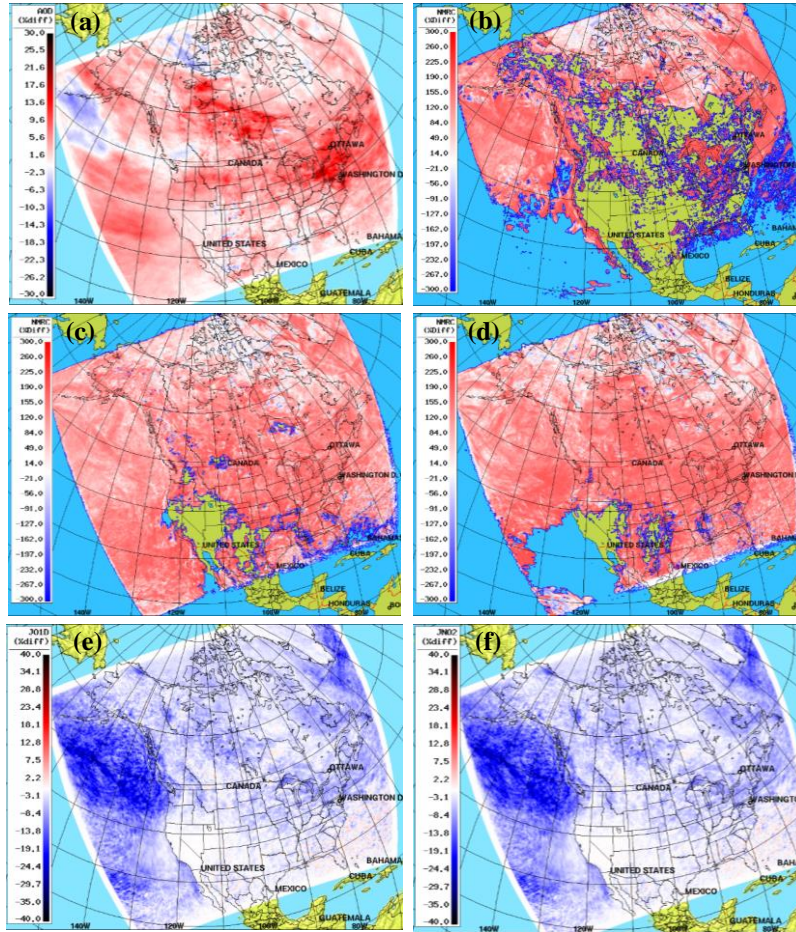
Figure 1: Percentage difference in daytime monthly average (June 2018) of (a) AOD (b), (c), (d) number mixing ratio of clouds at 120 m, 900 m, and 2 km above ground level respectively, (e) JO^1D at the lowest model level, and (f) JNO_2 at the lowest model level, with and without online aerosol feedbacks.

4. Added the text below, following the changes to Fig. 11:

Figure 1 is the monthly average percentage difference in AOD, number mixing ratio of clouds in the boundary layer at three heights, $J(O^1D)$ at the lowest model level, and $J(NO_2)$ at the lowest model level for June 2018 with and without interactive aerosol feedback on weather in the model (simulations S1 and S3).

Please let me know if you need more information.

Best Regards,

Mahtab Majdzadeh