List of changes made in the 1st and this revision

1st Revision (Nov, 2020)

We added another (NGAC-LBC) run for summer 2018 case to compare the three runs (section 4.2). The figures 13/14 were re-plotted accordingly and the corresponding discussion were changed

The species mapping and associated discussion (section 2.1) were expanded according to the reviewer comments

Other literature changes according to the comments

2nd Revision (Jan, 2021)

Following the comments from the reviewers and editor, we made comprehensive literature changes with native English speakers. Please see revised manuscript for detail.

The discussion for the firework signal duration was added to near end of section 3.1.

Answer to reviewer #1

The revised manuscript still is grammatically poor and significant effort is needed before publication.

Thank you again for your comments. Three native English speakers, including two of the co-authors, helped revise this manuscript, and corrected the grammar issues. Please check this revised manuscript for detail.

Answer to reviewer #2

It is difficult to track down where changes were made because they are not listed explicitly in the response document and I may have missed some things.

Sorry for this issue. Now we added the list of changes we made in these two revisions.

In response to my question about the firework discussion related to Figure 10 the authors respond that most emissions are injected aloft and that there is a "smearing". The authors provide a figure and explanation is ok, but the authors do not change the manuscript text. Other reasonable readers will have a similar question.

Thank you for your suggestion. We added the discussions for the firework-signal duration in end of section 3.1.

Sonntag et al., 2014 is not the best reference for AERO6 and neither is the Foley Reference. See References at the EPA repository:
https://www.airqualitymodeling.org/index.php/CMAQv5.1_SOA_Update

Thank you for this information. The paper of Carlton et al. (2010) is a better reference for Aero6. We added it in the reference.

Thank you again for your comments.