

We thank the referee for their positive and constructive comments on our manuscript. We provide our response to each individual reviewer comment (shown in italics) below, including detailed changes to the manuscript (additions in red).

My only general criticism is that the figures need to be presented in a larger form that will be easier for readers to see.

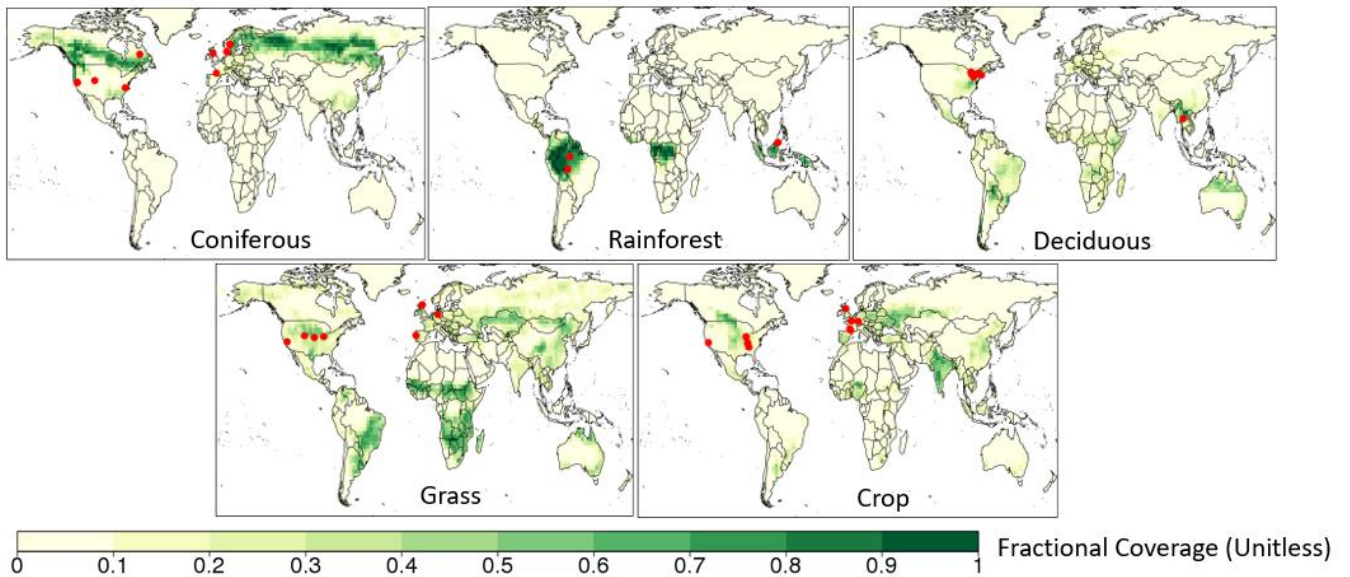
Response: We acknowledge that some of the figures are difficult to see, and our manuscript would benefit from addressing this. We have made improvements to Figure 1, 8, and 9 (see below) that we hope will help with readability.

Line 660 – 661: The blue dots are very difficult to see on these figures. The figures should be made larger!

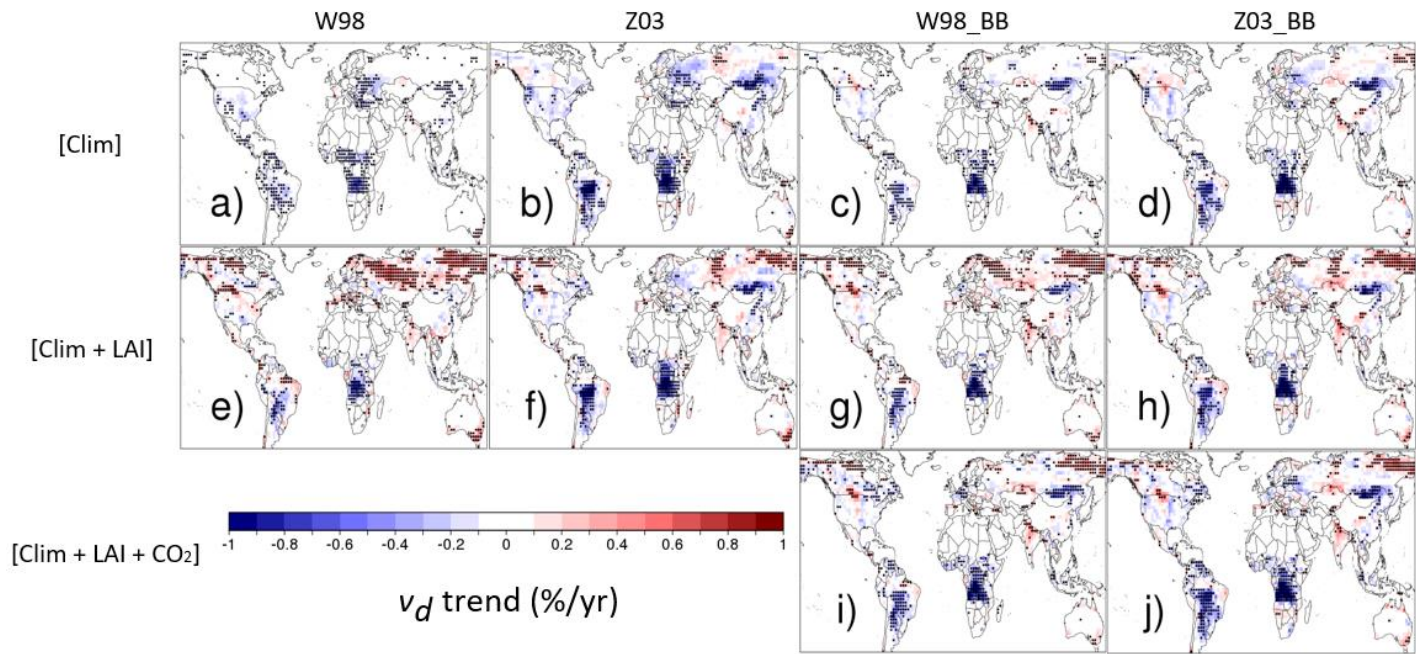
Figure 1 has been changed to show larger red dots that make them easier to see.

Furthermore, Figure 8 and Figure 9 have been adjusted to remove white space to allow for larger panels, and zooms into the Earth's land surface by removing areas around the edges where results were minor.

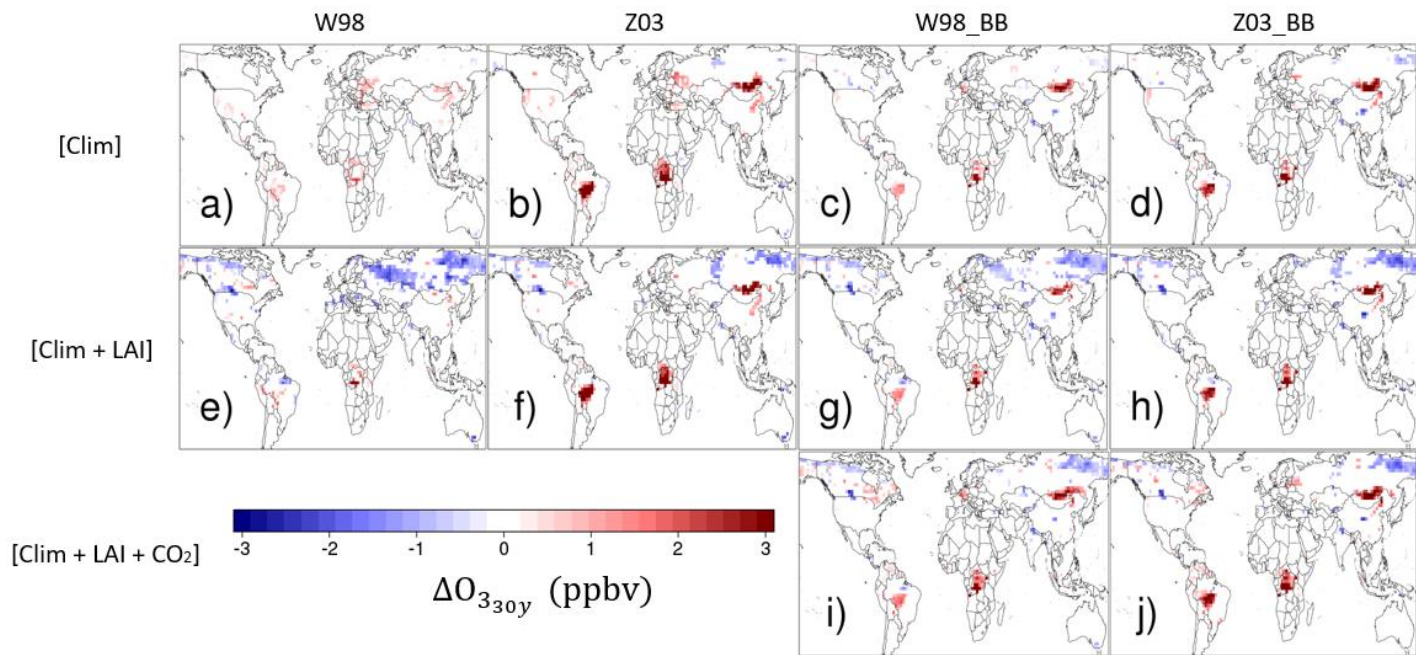
New figure 1:



New figure 8:



New figure 9:



Specific comments:

p. 1, line 27: Should be “The trend in July ...”, not “trends”.

Response: We have made this correction.

p. 2, line 62: Should be “... compiled ...”.

Response: We have made this correction.

p. 2, line 63: Should be “measurements from the EC and GM ...”.

Response: We have made this correction.

p. 7, line 205: Should be “... simulation described in the next sub-section.”

Response: We have made this correction.

p. 7, line 211: Should be “... to investigate how ...”.

Response: We have made this correction.

p. 7, line 216: Should be “... the increase in atmospheric ...”.

Response: We have made this correction.

p. 8, line 233: Should be “... developed by NOAA’s National Centers for Environmental Prediction (NCEP) and the NASA Global ...”.

Response: We changed the sentence to:

...developed by National Centers for Environmental Prediction (NCEP) of National Oceanic and Atmospheric Administration (NOAA) and...

p. 13, line 409: Should be “... We use the Theil-Sen method ...”.

Response: We have made this correction.

p. 14, lines 430-431: I believe it should be “... a concomitant decrease in July mean surface ozone ...”.

Response: We changed the sentence to:

...a concomitant ~~increase~~ decrease in July mean surface ozone...

p. 15, line 461: Should be “... as they allow for ...”.

Response: We have made this correction.

p. 16, line 497: Should be “... This suggests that the IAV ...”.

Response: We have made this correction.

p. 17, line 527: Should be “... To better constrain regional dry ...”.

Response: We have made this correction.

p. 17, line 530: Should be “... would be greatly benefited if results of ozone flux measurements were reported as both ...”.

Response: In response to comment from another referee, we have already the sentence to:

~~We also find that many existing ozone flux measurements are not usable for our evaluation purposes, since only FO3 is reported in detail instead of vd.~~ Evaluation and development of ozone dry deposition parameterizations will continue to benefit from publicly available ozone flux measurements and related micrometeorological variables that allow for partitioning measured flux into individual deposition pathways (e.g. Clifton et al., 2017; 2019, Fares et al., 2010, Wu et al., 2018).

p. 17, line 538: Should be “... a vast majority of land in ...”.

Response: We have made this correction.

p. 18, line 558: Should be “... mainly concentrates in the drier part of ...”.

Response: We have made this correction.

p. 18, line 562: Should be “... deposition measurements poses ...”.

Response: In response to comment from another referee, we have already changed line 562 to:

~~The scarcity of long-term ozone deposition measurement poses significant difficulty in evaluating the model predictions over interannual (and in particular multidecadal) timescales.~~ While our results show notable impacts across the globe, in many regions there are no available long-term observation to evaluate the model predictions over interannual timescales.

p. 18, line 566: Should be "... The magnitudes of trends are ...".

Response: We have made this correction.

p. 19, line 597: I believe it should be something like ... "... contribute to understanding the role of gaseous dry deposition on air quality, but also to biogeochemical cycling."

Response: We changed the sentence to:

...contribute to understanding the **role of gaseous dry deposition ~~role~~ on air quality, but also **to** biogeochemical ~~eyele~~ **cycling**...**

p. 19, line 600: Should be "... global nitrogen cycles."

Response: We have made this correction.

p. 19, line 607: Should be "... scarcity of measurements."

Response: In response to comment from another referee, we have already changed the sentence to:

~~The scarcity of long-term ozone deposition measurement poses significant difficulty in evaluating the model predictions over interannual (and in particular multidecadal) timescales.~~ While our results show notable impacts across the globe, in many regions there are no available long-term observation to evaluate the model predictions over interannual timescales.