

Dear Editor,

In this response we reply to the final comments by Referee #4 for the latest revision of our manuscript “A global perspective on CO2 satellite observations in high AOD conditions”.

Report #1 by Referee #4

The authors have adequately addressed to most of my questions. I now have only few minor comments. After that, I recommend the manuscript for publication.

Reply: We thank the referee for going through the of the manuscript again after the latest revision, and for spotting several typos and other deficiencies in the text. We have revised the manuscript accordingly and answer the comments below.

Minor comments:

P2, L59: we will also -> we also

P3, L90: to -> the

P10, L251: helps to the extend -> helps to extend

P11, L284: using e.g. density scatter plots -> using, for example, density scatter plots.

P13, L326: resulst -> results

Reply: These five points have been changed as suggested.

P21, L451: what relationship?

Reply: We refer to the observed linear relationship. We have changed the text from “we find that there is a relationship between OCO-2 XCO2 and MODIS AOD” to “we find that there is a linear relationship between OCO-2 XCO2 and MODIS AOD”.

Figure 1(c) title: btw -> between

Reply: We have changed the image titles in Figs. 1(c) and 6(b) as suggested.

Figure 2: Both the solid and dotted lines are too thin. This also happens in some other figures which makes it hard to see.

Reply: We now use thicker solid lines and have replaced the dotted lines indicating the interquartile range by shaded areas to make the figure clearer. We have also used thicker lines in Figs. 4, 8 and 10 to make them easier to see.