

Original reviewer's comments in blue. Authors' responses in black.

### Replies to Comments of Associate Editor on June 2, 2017

There are a few minor issues I would like you to resolve for the final version which will be published. Please take into account the following:

Throughout the manuscript text and in the Figures you indicate columns in "mol/cm<sup>2</sup>", which means molecules per cm<sup>2</sup>. I suggest to abbreviate molecules as molec. and not as mol to avoid confusion with moles.

Authors' Reply: Done.

P1, L14: Besides methane, CO is also formed by oxidation of other volatile organic compounds. Please include that.

Authors' Reply: Done.

P2, L50: please quantify the weak growth in N<sub>2</sub>O already here (I know you do it later).

Authors' Reply: The purpose of this paragraph is to explain the concept qualitatively. We prefer to just state in this paragraph that N<sub>2</sub>O concentrations have been gradually increasing (with a relevant reference), and then describe this growth quantitatively slightly later in the text.

P7, L224: please clarify what 'RHS' stands for.

Authors' Reply: 'RHS' has been replaced with 'right-hand side'

Figure 3 and later figures: please indicate in the captions or in the Figures the physical units of the CO total column (for the lower right panels)

Authors' Reply: The last sentence in the caption to Fig. 3 has been revised to 'CO total column values as well as bias and standard deviation statistics for the total column are in units of molec/cm<sup>2</sup>.' Captions to Figures 4-10 include the sentence 'See caption to Figure 3' and therefore do not require revision. Caption to Figure 11 now includes added sentence 'CO total column bias values are given in units of 10<sup>18</sup> molec/cm<sup>2</sup>.' Captions to Figures 12-16 now include added sentence 'See caption to Figure 11.' Caption to Figure 17 now includes added sentence 'Total column error is given in units of molec/cm<sup>2</sup>.'