Atmos. Chem. Phys. Discuss., 10, C1632–C1633, 2010
www.atmos-chem-phys-discuss.net/10/C1632/2010/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Analysis of emission data from global commercial aviation: 2004 and 2006" *by* J. T. Wilkerson et al.

Anonymous Referee #1

Received and published: 14 April 2010

Analysis of emission data from global commercial aviation: 2004-2006 Wilkerson, Jacobson, Malwitz, Balasubramanian, Wayson, Fleming, Naiman and Lele.

I found this to be a very comprehensive and clearly written paper on a topic of importance. The data base on which this paper is based is clearly impressive and the data processing both impressive and clearly stated. I have a couple of questions that might be explicitly addressed in the text, but basically I judge this to be a paper that merits publication with little alteration.

1.) in paragraph 3 on page 2947 it is made clear that this paper covers commercial aviation and does not include military flights. It apparently includes "every flight within radar coverage. . .every flight that files a flight plan" (p. 2948), etc. For those (like me) who are unfamiliar with the language of aviation, how does this capture small, private

planes? I suggest a sentence on page 2947 or 2948 to make this absolutely clear.

2.) It appears to me that measures of CO2 emissions are always in units of mass of carbon. This is sometimes expressed as "(CO2-C)" but oftentimes numbers are given (see, for example page 2955, line 25) where it says only kg/km2. I suggest that it would be worth being very clear out front what "CO2-C" means and that measures are always in mass C.

3.) page 2950, line 15, the word "the" is out of place and needs to be deleted.

4.) Page 2954, line 3, "within the terminal control area of airports". Are we talking about planes in holding patterns waiting to land?

5.) Page 2956, lines 3-7, gasses like CO2 leak into the southern hemisphere over something like 18 months so there is not really an excess build-up in the northern hemisphere, just a lag time during which mixing occurs.

6.) Page 2956, line 11, the words "associated and" are transposed.

7.) Page 2959, line 25, can we get a brief explanation of why there should be an over-count?

8.) Page 2960, line 25, "ethene" should apparently be ethylene.

Bottom line: I thought that this was a nice piece of work.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 2945, 2010.