

The quality of the paper has improved significantly. However there are still a few issues which the authors want to address before publication in ACP. Here I only repeat my initial questions and include additional comments ("New"):

Major issues:

1) In most figures intra- and inter-annual variations are significantly larger than the 2005-2014 trend. For instance, the O₃ trend shows the highest increase from 2005-2014 (0.67 ppb/yr) in autumn (Fig. 3). However, this trend is only determined by 3 "outlier" months of the years 2012, 2013, 2014. These 3 months are just 10% of this specific data set. Another example is Fig. 5 which shows very large scatter in O₃ data for the autumn season. Also, for instance Fig. S10 about the annual trends of VOC/NO_x ratios is largely determined by the last two years. The question is: how robust are all the trends shown in this paper?

New:

I want to state that the term "outliers" I used in my initial comment does not refer to any characteristics of this data, which could be regarded as "bad" data, and I understand that the data shown in box-whisker plots consists of a larger data set. This is why I put the term "outlier" in brackets. My statement focused on the fact that these few years at the end of the reporting period 2005-2014 completely determine the statistical trend and one should be cautious to deduce a trend and this should be mentioned in the text. Looking into the VOCs/NO_x ratio time series (previously S10, now S17), for instance, it seems that there has been some significant variability. For instance the years 2009, 2011, and 2012 show significantly enhanced VOCs/NO_x ratio. Assuming the year 2015, just following the 2005-2014 time series, would show any values comparable to those seen in 2009, 2011 and 2012, the trend analysis would yield a completely different results. The similar comment would refer to O₃ time series (now S1). The authors should make the point why they believe that such variability could be excluded for future years and that their trend analysis is justified in this sense.

Other comments:

Page 4 L13-14:

How was the accuracy of 1-7% determined?

New:

I assume that a "measured mixing ratio" would ultimately depend on the weekly span checks and calibration. What makes a "measured mixing ratio" different from an "actual mixing ratio"?

Page 5 L25-29:

The authors only measured 21 VOCs. What assumptions did the authors have on other VOCs not measured, but needed as an input for MCM?

New:

The authors should include their comment specifically with respect to MCM in their manuscript.

Page 7, L16:

With regard to the precursors NO_x, total VOCs and CO did the authors calculate arithmetic means or medians? Would there be differences?

New:

I primarily referred to O₃ precursors, not O₃ itself. I doubt that the number of data determines, whether data ensembles are distributed normally or not. Rather it is an intrinsic characteristic of the specific data ensemble. The authors should mention in the manuscript that they used arithmetic means in order to compare with other studies. Unfortunately, it does not make the use of arithmetic means more correct, the more studies have used this quantity.

Page 12 L11:

I was just wondering if the definition of daytime (0700-1900 LT) is valid regardless what season is concerned.

New:

The authors should include their answer in the manuscript.

Page 21, L17:

"...increased emissions of alkenes from traffic related sources". Is this due to enhanced alkene emissions from changes in the composition of the traffic fleet or from increased traffic volume? If it is the latter, then emissions of aromatic compounds would also increase.

New:

The authors should include their answer in the manuscript.

Page 21, L20-21:

Diesel driven vehicles emit significantly less VOCs than gasoline driven vehicles. In other words was the DCV program a significant contribution to the overall traffic related alkene emissions?

New:

The authors should include their answer in the manuscript.

Page 21, L26-28:

Why would the AVOC (alkane) contribution to O₃ formation not increase with increasing alkane levels in 2005-2013?

New:

The authors should include their answer in the manuscript.

Page 22, L6-7:

The authors state that 90% of isoprene was emitted from biogenic sources, while traffic sources were less than 5%. From what sources did the remaining 5% isoprene come from?

New:

The authors should include their answer in the manuscript.