Comments on the revised version of the manuscript “Vehicular emissions of organic particulate matter in Sao Paulo, Brazil” by Oyama et al.

Major comments:

- The manuscript contains large parts of the text (especially the new inserts) which was clearly written in a rush, including many typos. Clearly not all co-authors revised the manuscript and a complete and careful revision of the text is mandatory in my opinion prior acceptance to ACP. At the current state the science of the work is clouded by unclear sentences, and is not compatible to the journal standard.

- If one is to thrust the measurement and data treatment, which is sound, explaining outstanding results is a major scientific goal of this work. However, the discussion on nitrogen-containing groups on section 3 is somewhat loose (especially after being revised) and needs to be better constrained. As for the first hypothesis in L. 391-398, the large contribution of N-compounds can really be attributed to biodiesel use, even at that small percentage in diesel? How much higher was NOx EFs compared to elsewhere? 2) Then, the authors claim that nitrate chemistry could produce SOA within the tunnel. As discussed elsewhere in the text OA in the TRA did not correlate well with ΔCO. Did individual fractions (e.g. CH) present a good correlation with ΔCO? Simple analysis in this line can shed a light into this important result and must be further explored to strengthen the manuscript.

Minor comments:

As previously stated, many unclear sentences and typos can be found throughout the text and will not be extensively revised here. The following list focus only on the scientifically misleading wording, and not persisting general grammar/syntax issues.

1. Abstract, L.26: “fine particles” is misleading towards number concentration, which is not the measured parameter. Please rephrase it to make it clear that it

indicated mass concentration.

2. Introduction, L. 69 and L. 88: Salvo and Geiger showed an INCREASE of O3 by replacing gasoline with ethanol, please correct the article citation accordingly.

3. Section 2.4: Not all LDVs are fueled with E25, as your fig.1 clearly shows. This means that assuming all LDVs are fueled with E25 introduces a bias. Please adjust your calculation using equation 5 and henceforth accordingly.

4. Section 2.4 & supplement material: Please include the plots of OA x dCO for TRA in the supplement material as well, although linear fit is eventually not used.

5. Section 2.4 & supplement material: If there is no other reason to use only a sub-set of the data (other than improving R2 by a little) to retrieve the background values, please use all data points. Also include the uncertainties of the background values (as a result of the linear fit).

6. Section 2.4 & supplement material: Background values seem reasonable for OC and OA, how reasonable are they for each individual ions? Please include in table S2 retrieved background values with uncertainty for indication on how reliable are calculated emission factors.

7. Section 3, L. 312: please rephrase this last sentence.

8. Figure 6: replace y-axis label by “Emission Factor”