

Dear Editor,

Please find attached revised manuscript with the comments addressed in green shading.

*p. 5, line153: Do you mean that the total BC mass is small relative to the total non-refractory mass measured by the AMS?*

This sentence has been clarified in page 5, line 154.

*p. 8, line 295: There is no Figure 6E.*

This should be Fig. 6B, corrected in page 8, line 287.

*Figure 8 caption: How is sigma defined?*

It is standard deviation, added in the revised caption.

*p. 9, Lines 320 – 321: It is not clear from Figure 8 that AS caused the largest perturbation in BC and deltaCO at all levels. NA appears to dominate deltaCO for altitudes < 2000 m and rBC for a fraction of the LT.*

This is clarified in Page 9, line 309-313.