

Interactive comment on “Spatiotemporal variation and trends of equivalent black carbon in the Helsinki metropolitan area in Finland” by Krista Luoma et al.

Anonymous Referee #2

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The overall quality of the preprint is excellent; any comments regarding the scientific aspects are minor.

Equivalent BC: Is there a different conversion for optical to mass concentration of BC from vehicle emissions vs. wood combustion?

Conclusions: Can you make any projections for the future of vehicle related BC emissions considering future changes in regulation, changes in traffic patterns, and changes in vehicle fleet type, either through better combustion, emission control or changing energy sources, e.g. electric?

Typographical and Formatting:

C1

The abstract could be shortened and streamlined, see supplemental pdf file suggestions.

In presenting ranges throughout the MS, e.g. page 13 line 18, use that format consistently to avoid confusion between minus sign and dash, “The trends at traffic sites varied from -0.31 to -0.15 $\mu\text{g m}^{-3} \text{ yr}^{-1}$ and ...”

Page 13, line15 at a curbside station. A trend study based only in London

Page 17 line 2 concentration has two positive effects: 1) improved air quality and 2) decreased warming effect on the global climate by light absorbing

Page 17 Line 6 relative trends of NO_x concentration, which varied between -19.7 – -4.0 % yr⁻¹. However, the relative trends of PM_{2.5} were did not decrease as rapidly as for eBC and NO_x and the relative trends of PM_{2.5} varied between -3.9 – -2.7 % yr⁻¹.

Fig. 5 Annual trends for the hourly data ...

Fig. S6 Add R value of linear fit. Add confidence limits, of slope, ie., is it significantly different than 1.0? The “trouble” with having so many data points is that one can see only the outline and not the distribution in the densest regions. To help the visual effect, plot the points in a lighter grey with the fits and limits in more intense, overlying colors.

Fig. S7 Add R value and statistics.

Fig. S9 Notably R value seem to be much less than for S6 and S7 by my ocular analysis.

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2020-201/acp-2020-201-RC1-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-201>, 2020.

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