

Interactive comment on “Multidecadal trend analysis of aerosol radiative properties at a global scale” by Martine Collaud Coen et al.

Anonymous Referee #3

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The manuscript covers a comprehensive overview of long-term in-situ measurements of optical and physical properties of aerosols comprising data from numerous stations significant on global scale for the documentation of inert evolutions of radiative properties. It includes preparation and quality assurance of data, as well as several statistical methods used for trend analysis.

Few comments from my side:

P3, L10 and L11: there is a space between - and 0.45 (leading to a newline between)

P8, L15: Assuming an Absorption Angström exponent of one for SSA calculation could cause further dependence on changes of size distribution or chemical composition. What is the impact of this assumption?

C1

P8, L24 – L28: is part of data preparation and thus could be moved to section 2.4

Section 2.4 is missing a paragraph on assessment for nephelometer artefacts

P12, L15: do the monthly medians fit the log-normal distribution and what was the procedure to deal with negatives or zero values? What was the reason for median as aggregation method?

P16, L13: could add “Backscatter fraction (b)” for readability

P20, L15 and L17: “derived parameters” would be more specific (instead of “computed parameters”)

P23, L18 and L19: the intention of “Ideally, abatement policy. . .” is not clear and vague

P27, L15: “due because”

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2019-1174>, 2020.

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