

Interactive comment on “Nine years of UV aerosol optical depth measurements at Thessaloniki, Greece” by S. Kazadzis et al.

Anonymous Referee #3

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General comments:

This manuscript presents 9-year time series of AOD measurements at Thessaloniki Greece. The analysis of AOD measurements is rather extensive and the paper is clearly structured and written. Therefore, I have only some minor items listed below that should be addressed by the author prior to publication.

Specific comments:

Page 545, line 3, The difference in percentage is about the same than what is given in the line 14 for the Brewer vs. Brewer comparison. Maybe similar statement, that is given in the lines 14-16, is relevant here as well. Or maybe one could speculate on some of the possible reasons that could partly explain: e.g. FOV of Cimel is 1.2

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degrees and is larger for Brewer, so the diffuse light effect for the latter should be larger. Of course, exact reasons are difficult to estimate, since different calibration and procedures are involved too.

Page 545, lines 5-7, The meaning of this sentence can be guessed. However, the sentence could be clarified. Presumably the purpose was to use longest wavelength, since it is least affected by ozone.

Page 545, line 25, MKIII is meant instead of MKII?

Page 454, line 26, Related to the earlier comment on many possible reasons: maybe "the difference ... is due to" could be rather "the difference ... is PARTLY due to".

Page 546, lines 4-6, These are for MKIII, it would be interesting to see these for MKII as well.

Page 547, around line 18, AOD seasonality in Figure 5 is discussed. Perhaps the slight seasonality in Ångström exponent could be mentioned too.

Page 550, line 15 onward, This paragraph is not easy to follow. It is said that "there has been a significant increase in the pollution load ..." and "...the decrease is ... for PM10 concentrations". The impression that can be drawn is the there has been increase in the number of vehicles on the one hand, on the other hand "positive development due to a series of measures..." counteracting. Maybe this is a wrong conclusion, so please clarify this paragraph.

Page 550, related to the figure 8, the scatter-plot of PM10 vs. AOD would be interesting. These type of comparisons exist for AOD retrieved from satellite data, while less using ground-based AOD measurements. Obviously, the correlation depends mainly on the actual variability in vertical profiles.

Technical comments:

Equation 1: more common is to have the exponent, a , as α . It would clarify the text

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as well, when it cannot be mixed with an indefinite article. Also, Ångström instead of Angström.

References should be checked. Most of them seem to be complete, while in many cases DOI identifiers, for instance, are not included.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 537, 2007.

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