

Interactive comment on “Simplified SAGE II ozone data usage rules” by Stefanie Kremser et al.

Anonymous Referee #1

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Simplified SAGE II ozone data usage rules

S. Kremser et al.

This paper has been written with the primary goal of establishing a new set of screening criteria specifically for the version 7.00 ozone data distributed by the SAGE II team. Three new screening criteria are recommended by the authors and this list greatly simplifies the existing, somewhat complicated and seldom official set of recommendations. The new criteria developed by the authors, are more directly based on expert knowledge of the measurements and the measurement technique, and do not rely on visual inspection nearly as much as the previous set. Specifically, the new criteria are focused primarily on a more accurate, measurement-based discrimination of ozone measurement made in the presence of high aerosol loading. The new recommendations are evaluated against the old set and it is shown that less data are removed, and their re-

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moval likely does not contribute to measurement biases in the same way as those that were created when the old criteria were applied.

General Comments

This is a very useful work and it will greatly simplify the screening process for all scientists interested in using the historical SAGE II data set. I appreciate that even this long after SAGE II stopped producing valuable scientific data, the team associated with the instrument are still adding value through the improvement of this very important data record. I recommend this paper be published after addressing the comments below.

Specific and Mostly Minor Comments

1. There is inconsistent use of the nomenclature version 7.0 and 7.00 in the text.
2. (page 3, line 92) Can you better explain what horizontal resolution in square km means?
3. (page 6, line 172) The statement with “removing all points less than a fixed relative error . . .” seems to be inconsistent with rule #3. Have I misunderstood?
4. (page 7, line 177) The two sentences that begin this paragraph seem to be repetitive.
5. (page 7, line 185) This probably should read “percentage may be greater . . .”
6. (page 9, line 218) Can you clarify for me the statement about beta angles between -47 and 47 degrees? Aren’t the low beta angles the good ones for making occultation measurements?
7. I think the discussion about “short events” should be moved to a position in the text immediately following the description of the current rules, as it is a “current rule”.
8. (page 10) Are the cross sections for ozone and Rayleigh tabulated somewhere. At a minimum the ones used in the analysis presented should be referenced.
9. For Figure 4 is it possible to give an occultation identifier so a user can recreate the plot? In general if we the users want to employ these rules, we would benefit from some numerical examples in order to verify our calculations.
10. (page 13) The calculation of the aerosol extinction at 600 nm seems out of place. I suggest putting it very close within the text to the other relevant calculations. This is for ease of reference for somebody using the “recipe”.
11. The 200% discussion seems a little odd. Was it the intention of the data producer (Damadeo I assume) to discard these measurements? If so, this should just be clearly

communicated. 12. (page 25) The figure caption, and the figure, needs to include a), b) and c) indicators to clearly distinguish the altitude and latitude bins. 13. (page 24, line 470) The statement beginning “In this case . . .” is perhaps demonstrated throughout the paper, but it is not proven. It is intuitive that the statement is correct but much more work needs to be done to prove it. I suggest softening the language around the statement. It’s my opinion that you don’t need to prove it for the paper. This goes for other similar statements sprinkled throughout the paper.

Summary

This paper should be published with only minor revisions. It is a valuable contribution that I will use almost immediately.

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