Review of "OMPS LP Version 2.0 Multi-wavelength Aerosol Extinction Coefficient Retrieval Algorithm " by Taha et al.

General Comments

This paper describes the version 2 OMPS LP multiwavelength aerosol retrievals. OMPS results are compared to SAGE III, OSIRIS, and CALIPSO, for a variety of altitudes, latitudes, and measurement wavelengths. Sections 1 and 2 are very well written and enjoyable to read. In sections 3 - 5, however, the writing is of lower quality, with many grammatical errors and poorly formed sentences. The poor writing quality is evident when scanning in Reviewer #1's comments, which also point out many errors. Overall I find the work to be of sufficient quality to warrant publication after some minor revisions as described below. The paper will no doubt be useful to users of the OMPS observations.

Specific Comments

1) line 17: Define the acronym PyroCb

2) line 31: "ballon-borne"

3) line 81: Add "and good vertical resolution"

4) line 129: Do you mean solar scattering angle (SSA)?

5) line 145: Here and elsewhere, insert a comma before and after the variable name (e.g. h)

6) line 149: Define the acronyms GSLS RTM

7) line 155: The parenthetical reference should come after the subject

8) line 157: Refractive index can vary with the sulfate composition (wt. % H2SO4), please comment.

9) line 167: : should be a period, and the parentheses should be deleted.

10) line 208: "line-of-sight"

11) line 211: Please quantify "very small"

12) Figure 1: The caption does not describe what is in panels a) and b). Please locate "a)" and "b)" before the descriptive text. Also, consider combining Figures 1 & 2 since the point is to see how things change with scattering angle.

13) line 216: Please clarify what you term as a cloud, perhaps "…the cloud layer evident as enhanced extinction near 10.5 km…"

14) line 225 "of" measurements, also, this is a really long sentence…

15) line 229: …on the Meteor…

16) line 235: O4 ?

17) line 238: OSIRIS was already defined above

18) line 261: The lidar ratio can depend on the aerosol size and refractive index (composition), please comment on this.

19) line 263: Please describe the cloud filtering approach in more detail, or add a reference on the method.

20) line 269: This sentence need to be restructured for clarification, also please state the differences (%) with SAGE III/ISS

21) line 281 "1 km vertical intervals"

22) line 290: SAGE II is filtered for what? cirrus? PyroCb's ?

23) line 294 "model" should be "distribution", also, "ASD" was defined above

24) line 300: No need to redefine SSA

25) lines 302-303: It is not clear how the results in Fig. 3 demonstrates that the algorithm is insensitive to errors in the assumed ASD. You need to justify this statement with additional detail.

26) line 310: By reflecting surface, do you mean Earth surface?

27) lines 319-320: this sentence should be clarified.

28) line 321: Remove the parentheses from this sentence.

29) Figure 4: put the letters (e.g., "(a)") before the description.

30) line 337 and elsewhere): The preferred syntax would be "869 nm wavelength"

31) line 336: This paragraph is a bit clumsy overall.

32) line 351: There is no need to list the wavelengths at the end of this sentence.

33) line 352: To be precise, the comparisons do not show this. You deduce this, based on your knowledge of OMPS, and the comparison differences.

34) Figure 8: Please correct the label on the color bar, which should say 1 - the standard deviation of the difference (or 1 - sigma).

35) line 369: This is one example of a poorly formed sentence, which seem to be common in this section. "Based on SAGE III comparison, …" should be "Based on the comparisons with SAGE III,…"

36) line 386: Did OMPS measure "more aerosol" or "report higher extinctions"? Please clarify.

37) line 387: What do you mean by "heavily skewed by few daily measurements…"? Please explain this effect.

38) line 389: "…use of a fixed…"

39) line 393: I do not see how differences in vertical resolution could lead to differences in the time series of extinction after a volcanic eruption. These statements seem misdirected. Please clarify your thoughts on this, and / or consider other explanations.

40) line 400: Please remind us which Figure you are discussing.

41) Figure 12: This is a bit of a challenge to interpret. It might be improved by adding a legend to the figure, and using unique colors.

42) Figures 13 & 14: Referring back to Figure 12 for a description of the lines is tedious, please add captions to the figures.

43) line 429: should be "…18.5 km in the tropics.."; this is just one example of poor grammar in this section.

44) Figure 15: "Top panels show the…". Also, the color scale for panels d - f should indicate the units as (%).

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