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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Odin-OSIRIS stratospheric aerosol data product and SAGE III intercomparison" *by* A. E. Bourassa et al.

Anonymous Referee #1

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Referee report

Article: Odin-OSIRIS stratospheric aerosol data product and SAGE III intercomparison by A. E. Bourassa, L. A. Rieger, N. D. Lloyd, and D. A. Degenstein

General comment This paper deals with an improvement of the OSIRIS/Odin aerosol retrieval algorithm. The change in algorithm is not very dramatic but anyhow important. The paper is well written and with a few exceptions readable. I would like to suggest that this paper should be published in ACP. I have the following rather minor comments on the paper:

Comments

p 25789, line 7: I would like to suggest that you define the normalized radiances by an

equation.

p 25789, line 17: How do you estimate the stray light contribution?

p 25791, line 13: Is the SASKTRAN calculation single or multiple scattering calculation?

p 25791, line 24: Eq. 3: You are missing tildes above the normalized radiances in both terms. Or ...?

p 25791, line 24: Eq. 3: y has now an extra subindex k. What does it mean?

p 25793, lines 4-19: Could you rewrite this part a little bit. If we assume that all observed signals are related to true radiances by calibration factors that depend on altitude and wavelength, derive the normalisation factor in Eq. (4).

p 25796, line 7-: The comparison to the earlier version of the OSIRIS aerosol product is missing. We need to know how much this new product differs from the old one and is it in better agreement with validating measurements. Please, add this information.

p 25798, line 25: Why do not you plot the distribution of r values? What kind of random variable is r? If the nominator and denominator are taken as random variables, the ratio may well be quite a complicated animal.

p 25798, line 10: You are introducing here still one more ratio. What is the agreemnet between OSIRIS and SAGE III Rayleigh extinctions? If they do not agree, the figure 6 is not so useful.

p 25807, Fig. 3: The y-axis goes down to 10 km but curves are shooting out from the frame. Cut altitude axis or extend x-axis.

p 25808, Fig. 4: Add zero-lines to subplots.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 25785, 2011.