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Atmospheric Chemistry and Physics Discussions



# *Interactive comment on* "An evaluation of the SAGE III Version 4 aerosol extinction coefficient and water vapor data products" *by* L. W. Thomason et al.

**Anonymous Referee #1**

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The manuscript is documentation and assessment of new retrieval results of an important satellite experiment, SAGE III. It is focused on a new retrieval of aerosol extinction coefficient and first evaluation of water vapour data products in the stratosphere for this instrument. Both quantities are of high scientific interest. The new SAGE-III data products are compared (as averaged profiles) with those of other satellite experiments, i.e. SAGE II, AURA-MLS, HALOE and POAM III. Such a thorough assessment of data products is the basis for future scientific studies with these data.

The manuscript is well written and clearly structured.

I therefore recommend publication with only one modification as suggested in the fol-



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lowing.

The conclusions are more a summary of the results. The authors can assess by far more than just stating 'The SAGE III water vapour product below 45 km shows an excellent agreement with SAGE II, MLS, HALOE, and POAM III ...'. In fact, whether deviations of less than 10 or 15% are excellent, depends on the studies in which the data are intended to be used. From Figure 4, I derive that there is indeed an excellent agreement to MLS (15-45 km), and to somewhat lesser degree also to POAM III. Compared to SAGE II and HALOE, a bias is obvious, which corroborates previous findings as in SPARC2000 or comparisons between MLS-AURA and HALOE. I would like to encourage the authors to work out these ideas in their conclusions as such assessment is really needed in the community.

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Interactive comment on Atmos. Chem. Phys. Discuss., 9, 22177, 2009.