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Atmospheric Chemistry and Physics Discussions

Interactive comment on "SAGE II measurements of stratospheric aerosol properties atnon-volcanic levels" *by* L. W. Thomason et al.

L. W. Thomason et al.

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The authors would like to thank the reviewers for their efforts on this manuscript. We apologize for the delay in returning the revised manuscript. The first author was ill for several months and has only recently been available.

Reviewer 2.

Abstract, line 9: Add "during" in "On the other hand, during background periods"

Done.

Introduction: page 6962, line 6-7: Can the authors justify the statement that 80% of the seasonal cycle at 18 km in the tropics must be due to differences in H2SO4 entering the stratosphere? Could some of the difference be related to other aerosol components, such as organics?

The reviewer is definitely correct. We are speculating as to the source. We have indicated this and included organics as another possible source.

Section 2: page 6965, line 28: Figure 6 is said to refer to 25 subtropical events from December 2003. In the Figure 6 caption, it refers to events between October 2001 and September 2002.

Repaired.

page 6969, line 15: remove "that" from "in the ozone cross section for (that) the 525-nm channel."

Done.

page 6969, line 19: remove "also" from "was also changed by 1%" as this make it sound like both the 1020-nm and 525-nm channels were changed simultaneously.

Done.

Section 3: page 6972, line 22: "Fig. 11a" should be "Fig. 10a"

Repaired.

page 6974, line 1: The statement that aerosol number density tends to be around 10/cmˆ3 needs to be qualified, since this number can be larger by several orders of magnitude in nucleation regions near the tropopause and at high latitudes in winter. It may be more accurate to state that the number of particles greater than 10 nm radius is of order 10. And it should be made clear that the methods discussed to bound SAD are not appropriate in nucleation regions. This is stated in the summary (section 6) but should be stated early on in section 3 as well.

The reviewer is absolutely correct. We have made this correct

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Interactive comment on Atmos. Chem. Phys. Discuss., 7, 6959, 2007.

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Interactive Comment