

## ***Interactive comment on “Carbonyl sulfide in air extracted from a South Pole ice core: a 2000 year record” by M. Aydin et al.***

**M. Aydin et al.**

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In the revised version of the manuscript, the introduction has been revised and it does not state anymore that models may be underestimating the COS contribution to the stratosphere based on measurements of Notholt et al. (2003). In the new version, the introduction includes a reference to both the Notholt et al. (2003) and Barkley et al. (2008) measurements.

We partially agree with comments of M. Barkley that the difference between COS measurements reported in Notholt et al. (2003) and Barkley et al. (2008) may indeed be due to interannual variability in biomass burning or an overestimation of COS emissions from biomass burning. However, it is not clear to us why the explanations for the disagreement should only be thought of in terms of biomass burning. The discrepancy between the COS levels reported in these two studies extends to the lower troposphere

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over the entire latitudinal range of overlap and is not limited to the relatively small region of the tropical tropopause where Notholt et al. (2003) measured COS levels over 600 ppt. Other terms in the COS budget as well as inconsistency between the two sets of measurements can also cause the apparent discrepancy.

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Interactive comment on Atmos. Chem. Phys. Discuss., 8, 16763, 2008.

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