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Interactive comment on "The flux of carbonyl sulfide and carbon disulfide between the atmosphere and a spruce forest" *by* X. Xu et al.

M. Heimann (Referee)

martin.heimann@bgc-jena.mpg.de

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The authors describe measurements of the vertical flux of COS and CS2 over a spruce forest determined by means of the relaxed eddy accumulation technique (REA). The application of this method for this purpose is novel and very promising. The results clearly merit publication.

However, I have a comment about the interpretation of the results. Based on the correlation between the COS flux and the CO2 flux, the authors extrapolate to the globe using global NPP. However, the measured local CO2 flux is not the photosyntesis flux, nor the local "NPP" (i.e. photosynthesis − autotrophic respiration), but net ecosystem exchange, which also includes heterotrophic respiration. A better way to extrapolate to the globe would have been to estimate respiration from the CO2 flux, e.g. by correla-

tion of night time CO2 flux and local temperature, and then estimate the local “NPP”. A correlation of this quantity with the COS flux would then be appropriate for scaling up using the global NPP. Failing to do this definitely will lead to an overestimation of the global COS flux by 20-40

Otherwise the manuscript is very well written and clearly should be published.

Interactive comment on Atmos. Chem. Phys. Discuss., 2, 181, 2002.