

***Interactive comment on* “Seasonal variability of monoterpene emission factors for a ponderosa pine plantation in California” by R. Holzinger et al.**

R. Holzinger et al.

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We thank the three referees for their time and effort to review our manuscript. Unfortunately, two anonymous referees did not post their comments. Below are answers to all three reviews:

Referee #1 (M. Lerdau):

We thank Manuel Lerdau for insightful comments. We included some of it into the revised discussion and reference list.

Anonymous referee #2:

Referee #2 raised concerns that measuring monoterpene concentrations and vertical wind speed sequentially may be a source of error. The referee is right and he or she is

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also right in reckoning that the error is small as we have discussed in an earlier work (Lee et al., 2005) which is referred to in the manuscript. At our site a very small fraction of the monoterpene flux is transported with the very small eddies and therefore it is acceptable to work with the convenient data acquisition sequence we used.

Anonymous referee#3:

Specific comments:

A: We revised the discussion at the end of the paper and referred to other work as requested. However, we did not include new modeling approaches. We extensively use the simple exponential relationship between monoterpene emission and temperature and apply this to many different subsets of the data. Therefore we feel that applying yet another model would rather obscure than elucidate the particular characteristics of our 11 months dataset.

B: We replaced Figure 6 with a table that includes statistical information. We decided to keep this sub-section in the paper because it contains valuable complimentary information to some of our previous work and therefore should be of interest to the community.

C, abstract: We removed citations from the abstract.

D, introduction: We replaced the last 2 sentences of the introduction and outlined the aims of the study instead.

E, experimental: During summer and likely also during the other seasons the vast majority of monoterpenes is emitted from leaves. Therefore we kept the scaling to leaf area index and we added this information to the manuscript.

F, results: For clarification: we do not refer to artifact data but to data that did not exhibit a clear correlation with temperature. These data are nevertheless considered reliable because the wind direction was from the main tower fetch and the turbulence parameter, u^* , was above 0.3, suggesting the conditions allowed reliable eddy covariance measurements.

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We added a paragraph estimating the error for the discrepancy between measurements and the best model.

We also appreciate several technical comments.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 8791, 2005.

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