

Interactive comment on “Methanol exchange between grassland and the atmosphere” by A. Brunner et al.

A. Brunner et al.

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We thank the referee for his very careful reading of the manuscript and the detailed comments. We agree with all technical comments and the suggestions concerning the text formulation, and we will modify the text accordingly. In the following we respond individually to the scientific comments and questions. Whenever the referee is cited, the text has been written inside quotation marks.

“The CO₂ exchange between grassland and atmosphere was studied using the Eddy covariance method. Hence, the net ecosystem CO₂ exchange was measured and not assimilation. The net ecosystem CO₂ exchange is determined by activity of soil organisms as well as activity of the plants covering the soil. On the other hand it is assumed that the methanol emissions predominantly originate from the plants. Both together suggests that any relationship between methanol fluxes and CO₂ fluxes would be for-

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titious. I therefore propose delete the comparison between methanol fluxes and CO₂ fluxes.” All relationships presented in the manuscript concern the plant assimilation and not the net CO₂ flux and thus only include plant photosynthetic activity and do not include soil respiration. As mentioned in the paper (Sect. 2.1) The assimilation was derived from the measured CO₂ flux by the partitioning algorithm described in Ammann et al. (2007). The year in the latter reference was not correct and has been updated.

“There is a problem with figure 11. Figure 11 shows several spikes in the line demonstrating the calculated methanol emissions. These calculations are based on equation 4 which is a uniformly continuous function. Therefore spikes as shown in figure 11 are only possible if the water efflux from the field exhibits such spikes. This seems highly improbable and hints to some outliers in the water vapour measurements. If so, this should be mentioned.” The zero-spikes in Fig. 11 were caused by some missing water vapour flux data. The erroneous plotting has been corrected.

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