**Atmospheric
Chemistry
and Physics
Discussions**

Interactive comment on "Eddy covariance VOC emission and deposition fluxes above grassland using PTR-TOF" *by* T. M. Ruuskanen et al.

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The authors thank the referee for the thorough review, constructive comments and suggested corrections. We have carefully gone through them and improved the manuscript. Here are our responses to the individual comments, the page, line etc numbering refers to the manuscript in ACPD.

Comment on paragraph 2.1.) The paragraph 2.1. was split into "2.1 Field Site" and "2.2 Instrumentation" and (Comment on Pag. 21083 L12-15) description of sonic data was logging was clarified to: "We calculated eddy covariance fluxes for 481 mass peaks from the 10 Hz PTR-TOF and the 20 Hz sonic anemometer data, which were collected to two separate computers, using a Matlab-routine based on the method described by Karl et al. (2002). We re-sampled the 20 Hz wind data to match the 10 Hz VOC data

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and applied a coordinate rotation of the wind data according to the planar fit method (Wilczak et al., 2001)."

The calibration procedure (Comment on Pag. 21083 L23-24) was described in detail: "...10 mlpm (ml per minute), 5 mlpm and 0 mlpm of a multi-component gas standard (Apel Riemer Environmental Inc., USA) and 200 mlpm VOC-free air used in background measurements..." and "...The calibration gas contained acetone...... in the ranges of 50 ppbv and 25 ppbv, respectively."

Corrected the text according to all Comments on Pag. 21083 L28 - Pag.21090 L23-25.

Comment on Tables: as the referee pointed out, presenting of the data for so many compounds during three different time periods in an easy to compare and accurate way is challenging. We tested many ways, including merging the tables 2, 3 and 4 and plotting each species with error bars, but unfortunately all these efforts did not result in more readable formats that would enhance the comparability. One merged table is too large for one page and a two or three page table is even more difficult to read. Showing the confidence levels in separate bar plots with error bars would result in a single figure with 17 panels. Such a set of panels would also be difficult to follow. Keeping this in mind we are keeping the tables 1-3 separate and point out that Fig. 5 shows roughly the same periods as in the tables 2-4 and the species are color-coded to three categories: oxygenated – red-green-blue; terpenoids and pure hydrocarbons – blue-violet-fuchsia; two oxygen containing – grey scale. Figure 5 visually presents the order of magnitudes of all species and diurnal patterns of fluxes during the three different periods.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 21077, 2010.