

Interactive comment on “Virtual disjunct eddy covariance measurements of organic compound fluxes from a subalpine forest using proton transfer reaction mass spectrometry” by T. G. Karl et al.

T. Hoffmann (Editor)

HOFFMANN@ISAS-DORTMUND.DE

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The paper of Karl et al. presents field measurements of biogenic VOC fluxes at a subalpine site in the Rocky Mountains by PTR-MS. Before the authors present their field data, the technique of 'virtual' disjunct eddy covariance is shortly described. Also the effect of long sampling lines (memory effects, surface reactions) on the results is discussed in the paper. Furthermore, the authors compare their flux data with model estimates and discuss the possibility to correlate BVOC-fluxes with sensible heat fluxes. Finally, a box modelling approach is applied to assess the effect of the BVOC release on the local and regional atmospheric chemistry. Certainly, the topic of the paper is

highly interesting for numerous readers of Atmospheric Chemistry and Physics Discussions.

However, in my opinion the general description of the 'Virtual Disjunct Technique' could be improved. Since myself and probably also other readers which are interested in BVOC flux measurement techniques are not very familiar with micro-meteorology, this part of the paper could be more elaborate. Certainly, a comprehensive discussion of the various flux measurement techniques would be too much for an introduction, however, a little bit more detailed description of pros and cons would be advantageous.

A remark to the discussion of the isoprene interference on the MBO signal (page 4) using PTR-MS. Looking at Figure 2 (Panel 2), I find an expression of the linear equation telling us the slope to be 0.261. However, in this case I cannot understand the numbers in the text, stating 25.7% and 74.3% abundance on mass 87 and 69 (20.7 and 79.3 % right?). Or where is my misunderstanding? Also the statement on that page that a good correlation was observed between the two masses is not convincing in my opinion, since actually in Panel 1 a tremendous variation of the two signals was observed (log-log scale). Any idea why the ratio of the two signals vary so much (assuming that it is just MBO) ? (perhaps the presence of other molecules in the drift tube influences the decay of m/z 87?)

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