

Interactive comment on “Uptake and emission of VOCs near ground level below a mixed forest at Borden, Ontario” by M. Gordon et al.

Anonymous Referee #1

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The reviewer states her/his expertise is mainly in field of environmental microbiology. Thus, the reviewer assumes that used methods are appropriate and well conducted.

The results have scientific merit since this study demonstrates as one of very few ones that fluxes of important VOC (such as methanol) is downwards in a canopy of a mixed forest during the day suggesting deposition and consumption in soil. Nonetheless, these important aspects are not very well highlighted and the experimental design is somewhat limited since soil surfaces fluxes were not measured.

Generally the English language is quite wordy, i.e., the text might be shortened and more focussed. Objectives are well described, nonetheless the study is very descriptive not giving answers to the observed phenomena.

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On page 4507, lines 23 the authors state that trace gas uptake in soils is generally microbially mediated. This is only well shown for methane and there are some indications that this might be the case for methanol and halomethanes (Stacheter et al. 2013 ISME Journal). The reviewer is not aware of studies demonstrating it for acetaldehyde or acetone. Nonetheless, direct experimental evidences for microbial consumption of many VOCs from the atmosphere in soil is largely lacking yet and need intensive future research.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 4505, 2014.

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