

Interactive comment on “Day-time concentrations of biogenic volatile organic compounds in a boreal forest canopy and their relation to environmental and biological factors” by H. K. Lappalainen et al.

Anonymous Referee #2

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This paper presents atmospheric concentrations of volatile organic compounds observed in the boreal forest in Finland. Concentrations are reported throughout an annual cycle and compared against observed meteorological variables and biological activity such as budburst. The paper will be of interest to the scientific community and is generally clear and easy to follow. However, there are numerous minor errors (spelling, missing words etc) that must be corrected before publication.

Comments

P6252 Did you only use M137 to calculate monoterpenes? If so, discuss why you did not also use M81 and the related uncertainty (e.g., Rinne et al., 2007).

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P6258. The budburst of birch does not seem to be a likely explanation for the peak in methanol given that birch accounts for less than 1% of the trees in the area.

P6261, L11. What is the correlation between isoprene and S as reported for methanol and acetone?

P6261. Again how relevant is the leaf area of deciduous trees when they represent a very small fraction of the trees?

P6261-6262 I am not convinced by the discussed relationship between tree-stem diameter and isoprene. There are other periods where they appear almost anti-correlated.

P6263. Have such high monoterpene concentrations in March been reported previously? This is an important time for particle formation at this site so deserves more discussion.

P6266. The evidence for a soil source of VOCs is limited. Either provide more evidence or remove from the conclusion.

Minor comments

P6252 What is the status of the Ruuskanen et al., ACPD paper?

P6253, Line 21. Define TDR

P6265, L3 Missing number

Throughout there are many minor editorial corrections such as missing words, spelling, bad English including:

P6253, L27-28; P6255, L22; P6256, L17; P6256, L26; P6258, L29; P6260, L19; P6260, L28; P6263, L10; P6264, L8

Table 1. Are these local time?

Fig. 5: Missing “-“ in caption.

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Fig. 5 Blue and green lines are either very unclear or missing.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 6247, 2009.