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***Interactive comment on “Seasonal variation in vertical volatile compounds air concentrations within a remote hemiboreal mixed forest” by S. M. Noe et al.***

**Anonymous Referee #1**

Received and published: 15 June 2011

General comments:

The manuscript by Noe et al. describes the seasonal variation of concentrations of mono- and sesquiterpenes at different heights in a hemiboreal mixed forest. These measurements are interesting, profiling different terpenoid sources in a mixed forest in different seasons. It is surprising that isoprene does not show much variation within the forest although the only expected source is the leaves. Do you have any comments about that? Spruces have branches also low, could they be the main isoprene emitters at the site? High concentrations of monoterpenes close to the ground show that emissions from forest floor are also important especially during spring and early summer.

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The authors mention that they also measured sesquiterpenes, but these results are not shown. It would be interesting to see them as well. The main weakness of the manuscript is the inadequate description of the sampling. Was ozone removed from the sampling line? If not, especially sesquiterpene and limonene concentrations have degraded during sampling. In spite of this shortage the paper fits well to ACP. It is well written, most of the figures and tables are fit and I recommend it's publication after minor revisions.

## Specific comments:

1. Please, describe the sampling procedure in more detail. How many samples were collected, what was the deviation between the three replicates taken, was ozone removed from sampled air? 2. Figure 3 is unclear and it would be nice to see a Table in addition to the figure. 3. Aaltonen et al. have now published the article about monoterpene emissions from the forest floor and can now be referred to (Aaltonen et al., Agricultural and Forest Meteorology 151 (2011) 682-691) 4. Please, show sesquiterpene results too.

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Interactive comment on Atmos. Chem. Phys. Discuss., 11, 14607, 2011.

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