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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Distribution of hydrogen peroxide, methyl hydroperoxide and formaldehyde over central Europe during the HOOVER project" *by* T. Klippel et al.

Anonymous Referee #1

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General Comments:

This manuscript presents measurements of hydrogen peroxide, total organic peroxides, and formaldehyde over Europe during HOOVER in two seasons. The manuscript is well written and the data are a valuable contribution to the atmospheric chemistry community's understanding of HOx chemistry over Europe and in convective clouds.

Specific Comments:

The authors discuss methylhydroperoxide throughout the manuscript. However methyl-

hydroperoxide was not measured. The technique employed measures total organic peroxides and does not provide speciation of the organic peroxides. The authors argue in section 3.1 paragraph 3 that the simplification is justified. This detracts tremendously from the overall excellent quality of the manuscript. I strongly encourage the authors to revise the manuscript to reflect the actual measurements. I do not believe much will be lost in terms of the discussion but the manuscript will remain chemically correct.

All the model comparisons between a calculated methylhydroperoxide and the measured total organic peroxide are useless and should be removed. If one is going to do model comparisons then compare modeled total organic peroxide to the measured values. I am not familiar with the models, but I presume that the models also simulate other short chain organic peroxides.

Technical comments:

Section 3.1 The measured quantity is fluorescence intensity not UV absorbance, so UV spectroscopy is not correct, change to fluorescence spectroscopy. Figure 3. There is a mis-match between the caption and the figure panels which needs to be corrected.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 289, 2011.