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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Spatial structure and dispersion of the 16/17 April 2010 volcanic ash cloud over Germany" *by* S. Emeis et al.

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Reply to Reviewer #1

Thank you for your assessment of the manuscript and the helpful comments.

Regarding your suggestion 1, we have decided to include a map of the measurement sites.

Regarding suggestion 2, we will change the title to: "Measurement and simulation of the dispersion of the 16/17 April 2010 Eyjafjallajökull volcanic ash layer in the northern Alpine region"

Reply to Reviewer #2

Thank you for your assessment of the manuscript and your helpful comments and hints for corrections. Your introductory text gives a good analysis of the aims of this publication.

Comment 1 (language): We will ask a native English speaker to revise the text.

Comment 2 (Table 1): We thought that quick information on the emission history is easier from a short table, so we would like to keep the table.

Comment 3 (Ultralight aircraft): The purpose of this section 5.2 is to give another clue for the abilities of the numerical dispersion model. This section does not intend to give a further independent proof of the volcanic nature of the detected aerosol particles. The arrival time of the further plume detected by the ultralight coincides well with the model results depicted in Fig. 12. Therefore, we would like to keep this material in section 5. The comparison of this ultralight data and the WRF results show that a reliable simulation of the dispersion over several days is possible today.

Comment 4 (figures): We will reconsider the quality of the figures. The y-axis in both Figures 6 and 12 shows height above ground in m, and we will add this information to these Figures. We see the advantages of having all time-height cross-sections together in one Figure. But we are afraid that the single frames in such a Figure would be too small then. We will investigate this point further during the revision process.

Comment 5 (Figure 11): We will probably skip the plot with the 45 km resolution. Simulations with altered vertical resolutions have not led to substantially different results. So, it is not meaningful to compare different vertical resolutions in this context.

Minor corrections: we will consider all these helpful corrections when producing a revised version of this paper.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 26117, 2010.

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