Response to anonymous reviewer # 3:

We would like to thank reviewer for his/her valuable comments. We have tried our best to address the comment point by point.

Note: All the reviewer comments are in normal font and the responses by the authors are in bold and italics.

This MS suffers from many faults and should be completely rewritten. Part of the material has already been published in EST and should not be repeated here. The new results (PMF) are given here only in the supplement. As the MS has to be rewritten anyway if the authors wish to publish it, I give here only the most problematic points. The quality of writing is quite uneven, and may lead to misunderstandings of the scientific content.

The introduction is much too long on the one hand and - if a review of aerosol/fog chemistry was intended - not comprehensive enough on the other. It contains several contradictory statements and errors, e. g. there seem to be misunderstandings about the meaning of "aerosols" (the term is used here synonymously for "particles", but aerosols are two-phase systems consisting of particles _and_ carrier gas) and "interstitial particles" - these are the particles _not_ taken up by cloud droplets, and not particles inside cloud droplets (dissolved or not). Aerosol particles need not be toxic to cause negative health effects. The whole introduction should be deleted and a new one should be written focusing on the PMF part and containing only information relevant to this part.

The parts of the material repeated in the submitted manuscript will be referred to Kaul et al., 2011 in the revised manuscript. PMF related results will be moved to main manuscript in the revised manuscript. The introduction section will be shortened to keep the scientific objective and focus clear. We have misused the term interstitial particles; we mean those particles which are inside the fog droplets. Places where these terms were used will be improved and written as particles immersed inside the fog droplets. The health related references will be removed in the revised manuscript as health related effects are irrelevant to this study. We will try our best to improve the language of the revised manuscript to make the scientific content simple and clear to understand.

In the interpretation of the measured data, two points must be considered / discussed. At this time, many conclusions are based on handwaving arguments (changes in concentration are always explained by formation processes and other factors are neglected). Correlation analyses cannot determine causal links between the correlated variables.

1) What is the lower size cut of the fog sampler? If it is larger than 1 micrometer, all the discussion of changes in PM1 and its composition with the onset of fog is irrelevant, as humidity growth of accumulation mode particles will move part of this mode to the size range beyond 1 micrometer, so it will not be sampled by either the fog sampler or the PM1 sampler, and the partitioning of material between interstitial particles and fog droplets cannot be determined.

The lowest cut off size of the fog sampler is 4 µm (discussed at line 19 of page 14490 of the submitted manuscript). We have not attempted to understand the partioning of the material on interstitial particles (please see the reply above). We have inferred that gas phase organic compounds could have been easily scavenged by the fog droplets due to the favorable atmospheric conditions as deduced from the higher organic carbon content of the fog droplets.

2) Mixing height and its change is often mentioned, but the arguments always are in terms of changes of concentration. If mixing height changes, concentrations will change, too, so only changes in the relative contribution of the different substances to total mass concentration should be considered in the arguments.

The suggestion will be implemented at the required places in the revised manuscript.

There are numerous other points (e.g.: it is not surprising that the smallest fog droplets have the highest concentration of solutes - they contain the smallest amount of water), inconsistencies and contradictions (e.g. the formation or not of organosulfates in fog droplets), but as the MS has to be rewritten with a firm focus on the new material, a comprehensive list of points does not make sense here. I also strongly suggest that the English of the new MS is checked by a native speaker so that the scientific content is not compromised by problems with language.

The new paper should focus on new results, and be written

We will try our best to improve the language so that the scientific content could be understood easily. Discussion regarding organosulfate is included in reply to reviewer 1 in detail. PMF related results will be moved into the revised manuscript from the supplementary as suggested.