**Atmospheric
Chemistry
and Physics
Discussions**

Interactive
Comment

Interactive comment on "Measurements of the relation between aerosol properties and microphysics and chemistry of low clouds in northern Finland" *by* H. Lihavainen et al.
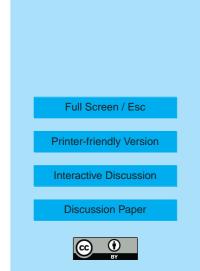
Anonymous Referee #2

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This paper contains significant original material, referring to cloud droplet numbers concentrations in northern Finland. It is suitable for publication in ACPD after responding to the following comments:

General statement concerning the title and introduction: Define *clouds*! This work considers only a small fraction of possible clouds types namely liquid water or warm clouds.

Abstract: *POM* needs *particulate* in the definition to make clear that you do not talk about *primary* organic matter.

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Interactive Discussion

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p.4, 3rd paragraph: I am not very familiar with the cloud water collector and though you mention one citation I think a more detailed description of the instrument right in the text would be useful. In addition it would be interesting to know how the errors of this instrument are and with respect to fig.7 how did you calculate the error bars there. To me the errors in fig.7 seem actually rather small, is the instrument that precise?

p.6. 2nd paragraph: It is important to make clear that there are uncertainties in the system and the authors need to admit this. It is never certain that there are identical air masses at both stations even when it might look like this.

p.7. 1st paragraph: Subtraction into a negative value – how often did this happen and to which order of magnitude?

Fig.5: The figure shows evidence of the first indirect effect. But is it possible to make some differentiation like showing secondary effects as the air mass origin (e.g. sea salt versus continental) or the aerosol size? I think this might be also an interesting outlook for future studies to put in the summary section.

Fig.7 versus Fig.8: Since the information from these figures is so similar, I suggest to use only one of them.

Table 4: I suggest using a more similar style with respect to table 3, e.g. add a *sample* column.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 14105, 2008.

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