**Atmospheric
Measurement
Techniques**
Discussions

Interactive comment on "Software and database structure to analyze the relationship between aerosol, clouds and precipitation: SAMAC" *by* S. Gagné et al.

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This paper is describing a new software program for aerosol-cloud-precipitation data analysis. This software can be use on the field to check the quality of the data or later on to produce high quality figure for publications. This software was developed with a free and open source programming language, which makes it even more valuable. As the harmonization of airborne data is challenging, the use of this software by the entire community would be a first step.

The paper is well written and describe the software in an efficient way.

Major comments:

This software does not include the different corrections usually applied to the aerosol/cloud/precipitation data. Indeed, most of the aerosol measurements are corrected to take into account different artefacts like coincidences, truncation angles etc... These corrections are most of the time well described in the literature (Bond et al., 1998; Anderson and Ogren, 1998 ; Virkkula et al. (2010) ; Wiedensohler et al. (2012), etc...) and most of the times are similar from one data set to another. However, slight differences may exist and/or coding errors remain possible. Thus, this method should involve three steps : (1) integration of the raw data, (2) correction and (3) analyse of these corrected data. Of course, the codes to correct the data might beneficiate of the collaborative work from the entire community but it would be nice to, at least, mention it in the manuscript.

It is well known that the aerosol-cloud interactions highly depend on the cloud characteristics and on the atmospheric dynamics at cloud boundaries. In SAMAC, the type (cumulus, strato-cumulus...) of cloud are described but how do you take into account the cloud macroscopic properties ?

Minor comments:

P3653, Line 7: what do you mean when you said 'to compare large amounts of clouds with different characteristics'.

P3655, Line 12: 'The complete format description and an example of software guiding ...'. The format of the pdf file (AllDocumentation.pdf), which can be download with the software, make it difficult to read and to follow. It needs to be improved. Moreover, the wiki pages are helpful and a link is needed before the conclusions.

P3657, Line 28: The 'average_value' function : It is not clear what this function is doing. I tried this function and I compared it with results from excel and MATLAB (which are similar), It didn't match.

P3658, Line 22: The function 'MyFirstCloud.plotavsd' is not working, at least not with the SOLAS cloud object. According to the figure 1, I specify the instrument name as a FSSP124 but it didn't work.

Figure 4a: The color code that appears on the bottom figure4a corresponds to the different periods (above cloud, below cloud etc.). A color scale may be added to clarify this as well as a color scale for the time of flight on the top figure4a.

Figure 4b: The downloaded data are not corresponding to those plotted in the manuscript. Indeed, the flight trajectory is located near the French coasts.

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