Atmospheric
Measurement
Techniques
Discussions

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comment

Interactive comment on "EARLINET Single Calculus Chain – technical Part 2: Calculation of optical products" *by* Ina Mattis et al.

Anonymous Referee #1

Received and published: 23 March 2016

General comments

The paper describes in detail the procedure of the automatic calculation procedure of optical products from pre-processed lidar data that can be used for all the different EALINET lidars. A brief overview over the data evaluation methods commonly used in the lidar community and thus also in this algorithm is given without unnecessarily repeating their previously described details. More important, some specific algorithms derived for this automatic algorithm are outlined, as are automatic vertical smoothing, temporal averaging, and the merging of near and far range profiles. A validation of the algorithms is provided and the deviations of the different methods are discussed. The paper is the third in a series and completes the description of the EARLINET automatic data evaluation SSC algorithms. It is very valuable for the EARLINET members and the data user community. The paper is written in a clear and understandable way. I

Printer-friendly version

Discussion paper

recommend the paper for publication with minor corrections.

Specific comments

The description is of the algorithm parts is very detailed and runs over a long number of pages. The reader needs to follow these explanations carefully to not to get lost. A flow chart as suggested by quick reviewer 2 would probably help to follow these steps while reading. Some figures are very busy and need some clarifications. Those suggestions are given in the page and line comments below.

Specific comments and technical corrections sorted by page and line:

p2, line 33 - p3, line 9: the term "this paper" is used several times referring to at least two papers. It may be confusing for the reader which paper actually is meant. Please clarify.

p3, line 13: "were" instead of "have" especially developed.

p3, line 30-31: can you specify "high and lower resolution" by numbers?

p6, line 4: Compiler - compiler, not upper case

p5, lines 27-28: "The SCC daemon module automatically starts ELDA as soon as there are pre-processed signals of a new measurements available." is the same piece of information as: p6, lines 11-12: "When operated as module of the SCC, ELDA is started by the SCC daemon software automatically as soon as there are new intermediate NetCDF files available which have been produced by the pre-processing module."

p7, line 12: "... was found that ..." this part of the sentence may be redundant? Or do you mean: "...it was found that..." ?

p9, Fig 1: Unfortunately, the bold black line cannot be seen.

P10, line 9-11: please specify "agree very well" and "good agreement".

p11, line 13: "once" instead of "ones"

p11, line 27 and Fig. 2: olive and green lines are difficult to distinguish.

p14, line 13: blank between "section" and "3.4"

p15, Fig. 4: ... on May 28..., as in Fig. 3.

p17, line 19: ... used-defined -> user-defined p17, line 24: ... user defined -> user-defined

p18, line 2 two times "the"

p18, line 18, please give a number for the SNR too small for data analysis.

p19, Fig. 5: Since AMT is a European journal, I would suggest to use "grey" (BE) instead of "gray" (AE).

p21, line 25: . . . typical atmospheric situations . . .

p21, line 31: just "both methods", not "the" both methods

p24, Fig. 7: A blank is missing before the second sentence.

p26-28, Fig. 8-12: These figures contain a lot of information. To keep it a bit clearer:

1) the names PBL, FT, and LL for the three layers used in Fig. 7 should also be used here. Or at least be explained again in the figures text.

2) Having the error bars not equidistant around a value is confusing at first sight. Here further explanation than just the description of the error bars would help the reader to understand the figure more quickly.

p24 – 29: The conclusion are a summary! The title of the chapter should be changed accordingly.

Several occurrences: Different use of upper and lower case of the word "Figure / figure" inside a sentence were found.