

Response concerning the technical corrections

Response to the reviewer

Thank you for raising both important points!

We tackled both and clarified it in the manuscript.

First topic:

We added another sentence for a better explanation in lines 148 – 149. Now, it reads like this: “For the particle extinction coefficient, the statistical error is calculated from the error of the linear fit of the derivative without considering systematic uncertainties. This linear fit considers as much data points as the smoothing length (s) and is applied every 7.5 m.” It should now be clear that the linear fit is used to obtain the derivation of the lidar signal.

Second topic:

We agree with you that the use of percent for the depolarization ratio should be avoided. We plan to use the legacy diction for future publications but do not want to introduce too many changes at this stage of the manuscript preparation. Thus, we prefer to leave it like it is in this manuscript but will keep it in mind for future publications. But we changed the statement concerning the change of properties and added the term “relative” so that it should be now clear to understand: “Considering the wavelength dependence of the particle linear depolarization ratio, a relative decrease of 18 % from 532 towards 1064 nm was observed. Similar findings were made at Leipzig, Germany, and Morocco during SAMUM (relative decrease by 13 – 31 % [...]).” (See lines 231 – 232 in the new manuscript.)

Response to the editor

Thank you for carefully reading and for your hints! We implemented all technical corrections you proposed.

P4, L103: ASKOS is not an abbreviation but a Greek word originating from mythology. We added its meaning and stated that it is “just” a campaign name.

P5, L139: In this case, s is not a unit but the symbol of the smoothing length. For clarification, we added the multiplication sign.

P8, Figure 3 caption: The typical half spaces between number and unit exist already. We double-checked it.

P15, L317: You wrote: ‘Add “volcanic” after “eruption”’. Probably, you mean „before” instead of “after”. We added it there.