

Reply to Review of **Large synthesis of in situ field measurements of the size distribution of mineral dust aerosols across their lifecycle** by Paola Formenti and Claudia Di Biagio

This article surveys a vast amount of dust size distributions in the scientific literature (obtained by different groups using multiple techniques over different particle size ranges) and synthesizes it into a dataset that allows comparisons amongst the different techniques. Significant details about the operating premiss of the various instrumentation are provided so that the reader can understand why this synthesis is necessary and the mathematical relationships (and assumptions) between the different techniques. I find this an excellent article that is clear and well organized, and I do not have any significant suggestions for improvement. I list a few minor grammar suggestions below.

**We would like to thank Referee # 1 for his appreciation, this is valuable to us. Our answers are in indicated in blue**

Unfortunately, my comments only apply to the article itself, as I do not have access to the dataset. The links in the pdf resulted in a “doi not found” message from doi.org. The links on the ESSD website appear to be identical to the pdf links, but the ESSD links led me to [www.easydata.earth](http://www.easydata.earth), which NASA has blocked (apparently because the the site is not https protocol). I have requested access from NASA, but this could take weeks; if approved, the NASA approval might also expire at some point. Since there are many NASA employees who would be interested in this dataset, it would be wise for [easydata.earth](http://www.easydata.earth) to upgrade to https protocol or for the authors to find another home for the data.

**Referee # 1 is right that the links on the abstract of the pdf file are not working as they are truncated (somehow creating the pdf file merged the hyperlink with the page number). We have now reformatted the abstract to remove the problem. Everywhere else the links are correct. We have also checked with the EasyData team who confirmed that the portal uses a https protocol. The issue seems to be solved now after the intervention of our respective IT team. We thank G. Schuster for his assistance with the matter.**

**We also realized that the geographical coordinates for Figure 1 were missing. These are now reported in Table S2. By consequence Table S2 becomes Table S3.**

Line 151: Replace sizes with size.

**Done**

Line 173: I struggled with this sentence because I found the first 8 words rather klunky in their arrangement.

**We have rewritten the sentence like this “To remove differences in concentration, and in absence of information on original bin width, LEV0 data are normalized to the maximum of the volume size distribution”.**

**We hope that this is now easier to read.**

Line 201: It is a little strange to reference the first author as ‘personal communication.’ I would just omit.

**Removed**

Line 207: Try a comma after 'However' and replacing 'to note' with 'noting'.

**Done**

Line 286: Replace 'take' with 'taken.'

**Done**

Line 334: I don't know that intensity is the best word, given its link to optical intensity for your likely audience. Perhaps try "Particle volume concentration above 10 um remains unchanged..."

**Referee # 2 proposed to replace "intensity" by "magnitude", which we did. We hope this is acceptable for Reviewer #1 as well.**

Line 338: Replace 'to evaluate' with 'evaluation of'.

**Done**

Line 344: Remove ", but", including the comma.

**Done**

Line 345: Replace 'while we identify' with 'and there is', keeping the comma.

**Done**

Line 353: "A large statistics of data..." This is an important summary sentence that I believe could be made stronger with an active voice. " We did this.... based on..." Basically, brag that you did this, as it is worth bragging about!

**Thank you!**

**We propose to rewrite the sentence as "We retrieve robust information of the dust size distributions between 0.4 and 10 μm where a large statistics of data exist, while above and below this size range, observations are rare".**