

Interactive comment on “9-year spatial and temporal evolution of desert dust aerosols over South-East Asia as revealed by CALIOP” by Emmanouil Proestakis et al.

Anonymous Referee #2

Received and published: 5 December 2017

The paper by Proestakis et al. present a 9-year climatology derived with mainly CALIOP measurements of the aerosol (dust) conditions over East and South Asia. The main focus is set on dust distribution but also non-dust aerosol is discussed. These novel results are thus of interest for atmospheric research and give a good overview of the dust distribution in this part of the world. Therefore in principle the paper is of interest for publication in ACP, however I recommend major revisions before it can be published. This is further explained below.

Major comments:

In my opinion the naming of the study area is misleading. Even though South-East Asia

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may not be a protected phrase, many people have a different understanding concerning the region called this way. See for example:

https://en.wikipedia.org/wiki/Southeast_Asia

Therefore, I recommend to find a better name for the study area (e.g. South and East Asia or whatever) to avoid confusion and change the title and text accordingly.

The difference between the climatological and conditional dust product needs be more discussed in both, the methodology section (I just understood the difference when reading Marinou 2017 but as this is essential it should be explained more explicitly here), but also in the result section. The reader is left alone with contradictory statements, like for example the dust top height which seems to be completely different between the two products. Therefore it should be clearly discussed:

- (1) Which product can be used for which purpose,?
- (2) Does it make sense to use this two different products, if yes why and for what?
- (3) What we can learn from the two products presented here with respect to South and East Asia.

Conclusion: The current conclusion is not very informative. Thus, it should be really overworked to highlight new things and discuss what lessons have been learned, i.e. what are new results or newly gathered knowledge or does your study just confirm former studies etc...

Please check spelling and grammar intensively again. There are many sentences which are fractals, i.e. words are missing. Furtermore, many commas are missing etc...considering the bunch of co-workers this should be no problem.

Further specific comments are in the attached pdf.

Please also note the supplement to this comment:

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<https://www.atmos-chem-phys-discuss.net/acp-2017-797/acp-2017-797-RC2-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-797>, 2017.

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