Atmospheric
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Discussions

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Interactive comment on "CLAAS: the CM SAF cloud property dataset using SEVIRI" *by* M. Stengel et al.

Anonymous Referee #2

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General comments:

The paper introduces a novel 8-year long dataset of cloud properties derived from the observations of the METEOSAT SEVIRI instrument. For potential users of this dataset, it provides a good overview of the underlying methodology, as well as presenting some results obtained as applications of the dataset, specifically the use of this dataset to quantify sampling uncertainties for polar-orbiting instruments, and to study differences in mean cloud properties over two regions. While the paper is useful as a reference for users of the dataset and suitable for publication in ACP, I do think that the paper needs some additional work to fix its rough edges, specifically regarding its language/phrasing. While some specific instances are pointed out below, these are by no means complete, so the authors are strongly urged to carefully revise the

manuscript to improve the presentation/language and make it suitable for publication.

Commments/technical corrections:

Abstract: -L6: "were intercalibrated" => intercalibrated with what? -L6: "Including latest development components of two state-of-the-art ...". Please rewrite this sentence, not sure what "development components" etc means. Also, using the latest versions does not ensure high accuracy by itself. L10: collecting per-timeslot histograms L18 "optical thickness and cloud water path" => "cloud optical thickness and water path" p5: the 15 minute scans only apply to the primary SEVIRI service (not the rapid scan service). Also, SEVIRIs nadir optical resolution is not 3km, but 4,8km according to Schmetz et al (while sampling resolution is indeed 3km). p6, l4: "this is an inherent feature of each SEVIRI instrument". I do not agree with this phrasing ("inherent feature"), as the positions of the satellites are controlled externally. p7, l13: why state again that this is done for each timeslot? l17: probabilistic cloud masks exist and contradict this statement. p8, l1: distinguished from what? p10, l27: what angle is used to exclude sunglint? p13, l8, "available 24 time steps", vs. p12, l14, "containing all 24 hour slots": please clarify, does the dataset use all available time slots, or only time slots on the hour? I'd suggest to add the information on temporal sampling also to Table 1. p17, l19: "are very present" => what does this mean? l20: "cylce" => cycle l21: "is very matured": not sure what this means l26: "in particular over the ... with values up to 90%." What does "values" refer to (I guess that 90% of clouds have COTS below 3.6)? Please also consider using cumulative histograms in figure 5c/d to better illustrate these estimates. p18, l9-10: This investigation indicates ..." this sentence is not really informative, and somewhat logically flawed. (cloud variability is never characterized by the first statistical moment!). Please be more concrete by specifying the applications studied. Also, "good" should be "well" as it is an adjective, l11: "convolving" This term is misleading, this is not a convolution in the mathematical sense. l13: "account" => "provide" p19, l2 "and their characteristics" => "and their associated cloud types."? l9: Why do you include 12UTC for CFC/CTP (and how do you get to 8 samples per day by

including one additional sample)? I cannot see any justification for choosing a different sampling strategy for some of the variables, I strongly urge the authors to keep this identical for all the panels of Fig.8. Fig8: Why use the acronym CTO for cloud top pressure here? Please use consistent acronyms.

Summary and Conclusions: Generally, this section could use some more polishing, specifically -p20, L11: "of which" not clear what this refers to. -L20: "shown": mabye "demonstrated"? -L22: "does not show": either "does not show up as" or "does not cause" -L6 "in the" => "within the" -L10: "the continues" => "the continued" -L15: last sentence is incomplete

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