

Earth Syst. Sci. Data Discuss., referee comment RC2
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Comment on **essd-2022-282**

Anonymous Referee #2

Referee comment on "Updated observations of clouds by MODIS for global model assessment" by Robert Pincus et al., Earth Syst. Sci. Data Discuss.,
<https://doi.org/10.5194/essd-2022-282-RC2>, 2022

Review of "Updated observations of clouds by MODIS for global model assessment"
by R. Pincus et al.

This paper describes the data processing of new MODIS products that have been specifically designed to facilitate the evaluation of climate models. The paper is well written and the content is adequate for publication in ESSD. It provides a very valuable overview of the dataset for the modelling community, presented in a more accessible format than the Users' Guide. I believe this paper is a useful addition to the scientific literature and deserves publication with only minor changes. Please see my specific comments below.

L25: CFMIP. Please expand acronym.

L50: summaries -> summarises?

L69-78: Is the 5km resolution true or nominal? It is not clear to me if the number of pixels that go into the calculation of the cloud fraction depends on the VZA. The text seems to imply that 25 '1km pixels' are used for all VZAs.

L89: missing (in citation.

L109: "of the of the"

L139-142: it would be helpful to explain why this approach for computing monthly averages is used.

L183-184: please can you quantify the impact of this bug, how small is "small"?

Figures 2-6: sometimes the global-mean values are mentioned in the text. It would be helpful to provide the global-means in the figure titles or in the captions.

Colour scales: please rationalise the use of the colour scales. Many different colour scales are used for no apparent reason. I suggest to consolidate all of them into two: dark to white, white to dark.

Figure 7: I assume that the results are area-weighted global means? Please clarify in the figure caption.

Figures 7,8,9: please revise labelling of y axes (e.g. cloudtoppressure) and include units.