

Interactive comment on “The Cloud Feedback Model Intercomparison Project (CFMIP) Diagnostic Codes Catalogue – metrics, diagnostics and methodologies to evaluate, understand and improve the representation of clouds and cloud feedbacks in climate models” by Yoko Tsushima et al.

Anonymous Referee #2

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This manuscript presents an ensemble of up to date diagnostics to evaluate the clouds as simulated by atmospheric models, in particular for those who participate to the CMIP project. This initiative is very welcome and should be encouraged. The availability of these diagnostics will facilitate their use within the community.

However, the usability of these diagnostics are very different among them. Some di-

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agnostics provide both the code and an ensemble of auxiliary files (e.g. diagnostic presented in sect. 3.1, 3.3, etc.), but many of them use make use of auxiliary files that do not exist in the repository (e.g. diagnostic presented in sect. 3.4, 3.5, 3.6, etc.). It will be very useful to have all the necessary files to be able to run a small demo for each diagnostic. As the best is the enemy of the good, I encourage the authors to be give as much information and files as possible, and to classify their diagnostics in a few categories, from the diagnostic that have all the necessary file to run a small demo to diagnostics that will require a lot of preprocessing and auxiliary material.

I recommend to accept this paper after modifications to improve it.

Detailed comments:

- The list of input and output variables are missing for some diagnostics (e.g. 3.7, 3.10, ...)
- general: most of the diagnostics use monthly mean data, some of them use daily (or other frequency) data. Please provide some information.
- p. 5, line 5: the metrics also often quantify the distance with observations.
- section 3.1: MODIS data are used according to Fig 1, but are not mentioned in the text
- p. 4 l. 15: “measures of fidelity”: can you say some words on it?
- p. 5, l. 13: specify unit of a_i (W/m²)
- p. 5, sect 3.2.2: this diagnostic is not available on github
- p. 5, l. 20-24: the explanation is not clear for me.
- sect 3.4, 3.6 and 3.7: are the ncl routines loaded at the beginning of the script standard routines?
- p. 7, sect. 3.5: the matlab routines use a large number of auxiliary files

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- p. 7, l. 18: “and the cloud vertical distribution from CALIPSO”: not on the figures, should be removed

- p. 12: line 9 and followings: “The too few, too bright problem.” The Konsta et al., 2015 paper should also be cited here.

- p. 12, l. 27: CFODDs: please expand the acronym

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