Geosci. Model Dev. Discuss.,
https://doi.org/10.5194/gmd-2017-69-AC1, 2017

Geoscientific Model Development Discussions

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.

Yoko Tsushima et al.

yoko.tsushima@metoffice.gov.uk

Received and published: 28 July 2017

Thank you for the comments. All of these comments were useful to improve our repository and paper. Please see our responses below.

>To provide sample input data and output results so that if the code needed to be re-

written in another programming language it would be easier to reproduce the original output results.

Thank you for this very useful suggestion. We have now included sample input data and output results for each repositories. If the sample input data size exceeds the GitHub limit, either the location information is provided or it is suggested to contact the author, which is described in the Readme page for each repository.

>To include a table in the beginning of Section 3, which would display some details of each diagnostics approach described in the article (i.e. Why that diagnostic was useful, what input data it required, etc)

We have created a table which summarizes the descriptions of each of the diagnostics. (The pdf file is attached)

>For one of the diagnostics included in the article, I found that, in the original paper (Sherwood at el., 2014) the authors restricted measurements to tropical ocean regions from 160 W to 30 E to compute the D parameter. However, in the code provided in GitHub repository in support of the article, the authors use area between 160 W and 45 E to compute the D. I would recommend keeping the method used in the code consistent with the original research.

Since this author was extremely busy, I created a folk branch, modified the region from 45E to 30E. Pull request has been sent to the author.

>Figure 3: I think this Figure is unnecessary and I suggest removing it.

The figure has been removed.

>Figure 8: I have difficulty reading the text associated with the colorbars.

In the revised figure the font size of the number next to the colour bar has been increased. (The revised figure attached)

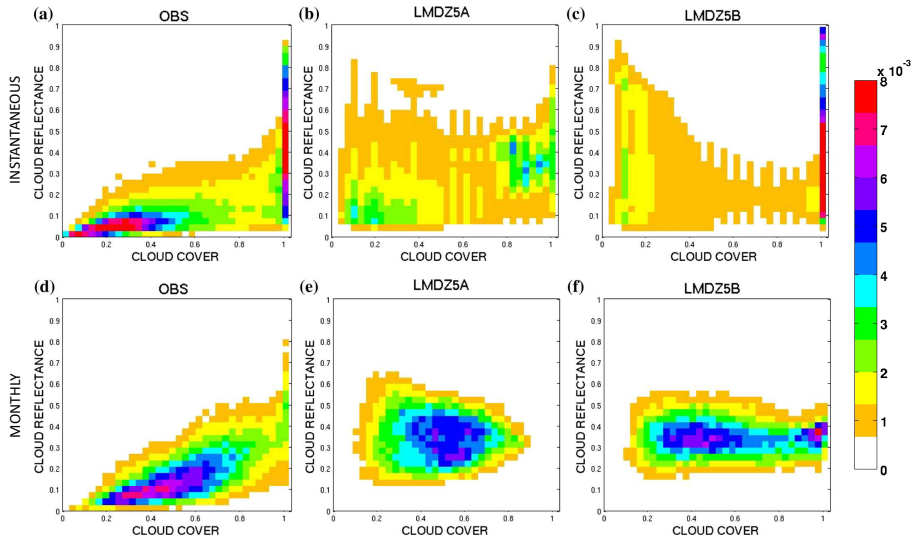

Fig. 1. Konsta et al (2015) figure

Diagnostics	Scientific target to evaluate	Does the code read CMIP data? (i.e. no preprocessing)	Time Frequency of Input Data	What auxiliary data is needed/ provided?
Klein et al.(2013)	ISCCP global cloud amounts	Y	Monthly	Processed Obs data/Y
Williams and Webb (2008), Tsushima et al.(2013) annual	Annual mean climatology of cloud regimes	Y	Daily	Processed Obs data/Y
Tsushima et al.(2013) seasonal	Climatological seasonal cycle of cloud regimes	Y	Daily	Processed Obs data/Y
Zelinka et al.(2012)	Cloud radiative kernels	Y	Monthly	Radiative Kernel /Y
Nam and Quaas (2012)	Zonal plots of GCM cloud and hydrometeor fraction	Y (post-processing done in script)	Monthly	N/A
Konsta et al (2015)	Instantaneous A-train cloud property	N	8 hourly Or daily	N/A
Nam et al.(2012)vertical distribution	Vertical distribution of low-clouds	Y (post-processing done in script)	Monthly	N/A
Nam et al.(2012)albedo	SW CRE and Parasol reflectance of low-clouds	Y (post-processing done in script)	Monthly	N/A
Suzuki et al.(2015)	Warm rain microphysical process diagrams	N	6 hourly	Processed Obs data/Y
Brient and Schneider (2016)	Sensitivity of tropical low-cloud reflection to SST at various time scales and the constraint to ECS	N	Monthly	Processed Obs data/Y
Qu et al.(2014)	Sensitivities of low cloud cover to EIS and SST	Y	Monthly	The observational estimates of EIS and SST slopes in the figures not included.
Sherwood et al.(2014)	Lower Tropospheric Mixing Indices	Y (,but IO routine not included)	Monthly	Land-sea mask/Y

Fig. 2. Summary Table