

Interactive comment on “The International Satellite Cloud Climatology Project H-Series Climate Data Record Product” by Alisa H. Young et al.

Alisa H. Young et al.

alisa.young@noaa.gov

Received and published: 13 December 2017

RE: Interactive comment on “The International Satellite Cloud Climatology Project H-Series Climate Data Record Product” by Alisa H. Young et al. Anonymous Referee #2

Received and published: 8 November 2017

Review results for the manuscript entitled "The International Satellite Cloud Climatology Project H - Series Climate Data Record Product" by Young et al. I suggest rejecting the manuscript in its current form since a number of key elements are missing in the

C1

manuscript, e.g.:

RC1: 1) The introduction should have a broad scope, summarizing other international activities (e.g. Patmos-X, CMSAF CLARA-A1/2, MODIS Collection 6, ESA Cloud_cci) and putting them in contrast to the characteristics of the dataset presented. This is completely missing.

Response_1: None of the listed "activities" is international and none have a time resolution and record length comparable to ISCCP. In any case, most of these other products were compared to the D-version ISCCP product by the GEWEX Assessment, which is summarized by Stubenrauch et al 2013 and described in more detail in a larger report available at http://www.wcrp-climate.org/documents/GEWEX_Cloud_Assessment_2012.pdf. So, to respond to the concerns addressed in 1) the text has been modified to mention the GEWEX Assessment without a detailed listing of all other projects, which seems unnecessary. However, the updated manuscript has been modified to address the Reviewer's concerns. The Introduction of the paper now contains more references to other cloud datasets and work that has been done to evaluate global cloud characteristics and ISCCP. The language now provides more context regarding a broader scope of other cloud datasets, and addresses where the ISCCP products fit within that general schema.

The following references have been added: Cao, C., De Luccia, F. J., Xiong, X., Wolfe, R., and Weng, F.: Early on-orbit performance of the visible infrared imaging radiometer suite onboard the Suomi National Polar-Orbiting Partnership (S-NPP) satellite,

Evan, A. T., Heidinger, A. K., and Vimont, D. J.: Arguments against a physical long-term trend in global ISCCP cloud amounts, *Geophysical Research Letters*, 34(4), 2007. Hutchison, K. D., Roskovensky, J. K., Jackson, J. M., Heidinger, A. K., Kopp, T. J., Pavolonis, M. J., and Frey, R.: Automated cloud detection and classification of data collected by the Visible Infrared Imager Radiometer Suite (VIIRS), *International Journal of Remote Sensing*, 26(21), 4681-4706, 2005.

C2

Jiménez, C., Prigent, C., Catherinot, J., Rossow, W., Liang, P. and Moncet, J.L.: A comparison of ISCCP land surface temperature with other satellite and in situ observations, *Journal of Geophysical Research-Atmospheres*, 117(D8), 2012.

Norris, J. R.: What can cloud observations tell us about climate variability? *Space Sci. Rev.*, 94(1–2), 375–380, 2000.

Platnick, S., King, M. D., Ackerman, S. A., Menzel, W. P., Baum, B. A., Riédi, J. C., and Frey, R. A.: The MODIS cloud products: Algorithms and examples from Terra, *IEEE Transactions on Geoscience and Remote Sensing*, 41(2), 459-473, 2003.

Raschke, E., Bakan, S., and Kinne, S.: An assessment of radiation budget data provided by the ISCCP and GEWEX, *Geophysical Research Letters*, 33(7), 2006.

Stengel, M., Stapelberg, S., Sus, O., Schlundt, C., Poulsen, C., Thomas, G., Christensen, M., Henken, C.C., Preusker, R., Fischer, J. and Devasthale, A.: Cloud property datasets retrieved from AVHRR, MODIS, AATSR and MERIS in the framework of the Cloud_cci project, *Earth System Science Data*, 9(2), 881, 2017.

Stubenrauch, C.J., Rossow, W.B., Kinne, S., Ackerman, S., Cesana, G., Chepfer, H., Di Girolamo, L., Getzewich, B., Guignard, A., Heidinger, A. and Maddux, B.C.: Assessment of global cloud datasets from satellites, A Project of the World Climate Research Programme Global Energy and Water Cycle Experiment (GEWEX) Radiation Panel, 2012.

Stubenrauch, C.J., Rossow, W.B., Kinne, S., Ackerman, S., Cesana, G., Chepfer, H., Di Girolamo, L., Getzewich, B., Guignard, A., Heidinger, A. and Maddux, B.C.: Assessment of global cloud datasets from satellites: Project and database initiated by the GEWEX radiation panel, *Bulletin of the American Meteorological Society*, 94(7), 1031-1049, 2013.

EC2: 2) The manuscript needs to describe also all other product variables (not only cloud amount) more comprehensively, how are they retrieved, how do they look like

C3

(Showing examples of most of them), which caveats exist for them...

Response_2: The ISCCP Product has many variables. However, the cloud variables listed in the description of the text are the most widely used. A more comprehensive description of these variables are documented in other places including the C-ATBD. Thus the manuscript focuses on the updates to the ISCCP algorithm. A general description of the product's caveats are given.

Please also note the supplement to this comment:

<https://www.earth-syst-sci-data-discuss.net/essd-2017-73/essd-2017-73-AC3-supplement.pdf>

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2017-73>, 2017.

C4