

Earth Syst. Sci. Data Discuss., referee comment RC1
<https://doi.org/10.5194/essd-2022-45-RC1>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on essd-2022-45

Anonymous Referee #1

Referee comment on "1km Monthly Precipitation and Temperatures Dataset for China from 1952 to 2019 based on a Brand-New and High-Quality Baseline Climatology Surface" by Haibo Gong et al., Earth Syst. Sci. Data Discuss.,
<https://doi.org/10.5194/essd-2022-45-RC1>, 2022

Review

This manuscript reported on one dataset of 1km Monthly Precipitation and Temperatures Dataset for China from 1952 to 2019. Basically, the dataset of temperature and precipitation at monthly scale are believed to be not able make any new contributions to the field of weather and climate community. China Meteorological Administration has compiled and archived a wide range of temperature and precipitation dataset at finer scales, in which a series of strict and physically- based quality-control measures have been implemented. Technically, a variety of data have been used to compile the dataset. Nevertheless, my big concern lies at the ambiguousness of data sources, which needs further clarification. Importantly, the selection of the optimization model was simply relying on the sorting combination of various data sources, while the rationality or physical basis behind the different combinations is not explained at all. In addition, there were a lot of still descriptive errors in this manuscript, and most of the figures were not presented in scientific ways, among others. Sorry for that I cannot be more positive. Therefore, I have to recommend the rejection of the work. The specific concerns of mine are listed as follows:

- Section 3.1, line 273 "After removing duplicate and invalid weather stations", based on what methods and standards are invalid stations defined, and which station data have been removed?
- line286, Table 1 introduces the data used for the interpolation. The precipitation data

used the TRMM3B43 data from 1998 to 2019 as a covariate. Was the data from 1952 to 1997 a default covariate? Whether the two pieces of data (1952-1997, 1998-2019) were continuous? For the same reason, temperature series (TMEAN, TMAX, TMIN), the time range of LST data was 2001-2019, then how to deal with the data from 1952-2000, Were the two pieces of data (1952 -2000, 2001-2019) continuous?

- We learned that different optimization models (Table1, TableS7, TableS8) were used in different months, which means that data from different sources was applied to the entire sequence. Has the 1952-2019 change been assessed, how to consider the homogeneity of the climate series (ChinaClim_baseline)? Was this scheme reasonable?
- WorldClim data were downscaled from CRU-TS-4.03. The temperature data in this paper also used CRU as a covariate, and finally the WorldClim was compared with the sequence (ChinaClim_baseline) in this paper. What was the significance of comparing the same data source?
- There were only 613 observation stations in this paper. The satellite data was inversion data and non-observation data, and the accuracy was 25km*25km (0.25°). Other data (CRU) were the grid data with 613 station interpolation applied in China, and the accuracy was 25km*25km (0.25°). The 30-year average climate (1981-2010) data belonged to a 30-year average of 366 data for each station. Precipitation events are small and medium-sized local events of the weather system. Was it reasonable to interpolate these data to 1km with this method of multiple statistical downscaling?
- Section 2.1, lines 164-165: "Dataset of 30-year average climate (1981-2010) was obtained from two sources, 2438 weather stations from CMD and 25 weather stations from Central Weather Bureau ." It was inconsistent with the description in the legend of Figure 1.
- Section 2.1 Lines 167-168: "from the China Meteorological Data Service Center (CMD: <http://cdc.nmic.cn>)." the website cannot be accessible.
- Figure 2 and Figure 4-7 were not the standardized maps of China, and the location of the nine-dash line and the Diaoyu Islands and Huangyan Islands were not marked.
- The DEM data of the application and the method of how to make it into 1KM*1KM were not explained.