# *Interactive comment on* "A new merge of global surface temperature datasets since the start of the 20th Century" *by* Xiang Yun et al.

**Anonymous Referee #1**

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This manuscript devoted to generating a new merge of global surface temperature anomaly dataset, through merging C-LSAT and ERSSTv5 datasets. However, there are several problems in the manuscript.

1. The global monthly temperature anomaly product of 5 degree seems to be too coarse to serve for investigation of temperature variation, especially for some regions such as the land and ocean convergence zones. Currently, development of climatic dataset should provide data of higher spatial resolution.

2. In Page 12 and Figure 3, To calculate surface temperature anomaly at 5-degree scale, the authors adopted averaged value of temperature anomaly at 1-degree scale. Moreover, spatial transformation of sea surface temperature anomaly from 2 to 1 degree is not robust. Some geographic statistic methods should be employed to guide

these spatial transformations of geographic data, such as Nearest Neighbor, Bilinear, Kriging, and Inverse Distance Weighting interpolations.

3. I noticed that the dataset was stored as txt files. It is better to give product in NetCDF format to provide the longitude and latitude information. In addition, in the "readme.txt", authors stated that -999.99 was set as the missing value; however, I noticed that 999.99 and NaN were used as the missing value in the specific data files.

4. It is necessary to reorganize the statement of each part and find a professional English Editor to improve the language quality of the ms, because the whole ms is rough to be read.

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